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IDA/R2017-0142/1

May 8, 2017

Closing Date: Thursday, May 25, 2017 at 6 p.m.

FROM: Vice President and Corporate Secretary

Senegal-Dakar Bus Rapid Transit Pilot Project

Project Appraisal Document

Attached is the Project Appraisal Document regarding proposed credits to Senegal for a Dakar Bus Rapid Transit (BRT) Pilot Project (IDA/R2017-0142), which is being processed on an absence-of-objection basis.

Distribution:

Executive Directors and Alternates
President
Bank Group Senior Management
Vice Presidents, Bank, IFC and MIGA
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Document of

The World Bank

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Report No: PAD2209

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON

PROPOSED CREDITS

IN THE AMOUNT OF EURO 280.9 MILLION
(US$300 MILLION EQUIVALENT)

TO THE

REPUBLIC OF SENEGAL

FOR A

DAKAR BUS RAPID TRANSIT PILOT PROJECT

May 4, 2017

Transport and ICT Global Practice
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective Mar 31, 2017)

Currency Unit =	CFA Francs (CFAF)
US$1 =	CFAF 614
US$1 =	EUR 0.94

FISCAL YEAR
January 1 - December 31

ABBREVIATIONS AND ACRONYMS

AFTU	*Association de Financement des Transports Urbains* (Urban Transport Financing Group)
AGEROUTE	*Agence Autonome de Gestion des Routes* (Autonomous Road Management Agency)
APIX	*Agence chargée de la Promotion de l'Investissement et des Grands Travaux* (Investment Promotion Agency)
BRT	Bus Rapid Transit
BSI	*Budget Special d'Investissement* (Special Investment Budget)
CETUD	*Conseil Exécutif des Transports Urbains de Dakar* (Dakar Urban Transport Council)
CNG	Compressed Natural Gas
CPF	Country Partnership Framework
DA	Designated Account
DDD	Dakar Demm Dikk
DI	*Direction de l'Investissement* (Directorate of Investment)
EIB	European Investment Bank
EIRR	Economic Internal Rate of Return
EMP	Environmental Management Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESIA	Environmental and Social Management Assessment
FDUD	*Fonds de Développement des transports urbains* (Urban Transport Development Fund)
GCF	Green Climate Fund
GDA	Greater Dakar Area
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Global Information System
GoS	Government of Senegal
GIE	*Groupement d'Interet Economique* (Economic Interest Group)
GPN	General Procurement Notice
GRM	Grievance Redress Mechanism

ICB	International Competitive Bidding
IFR	Interim Financial Report
ITS	Intelligent Transportation System
LPDUD	*Lettre de Politique des Déplacements Urbains à Dakar (Urban Transport Sub-sector Policy Letter*)
MITTD	*Ministère des Infrastructures, du Transport Terrestre, et du Désenclavement (*Ministry of Infrastructure, Land Transport, and Opening-Up)
NCB	National Competitive Bidding
NDC	Nationally Determined Contribution
NPV	Net Present Value
OTPA	Open Trip Planner Analyst
PAP	Priority Action Plan
PDO	Project Development Objective
PIM	Project Implementation Manual
PSE	*Plan Sénégal Emergent* (Emerging Senegal Plan)
PPP	Public-Private Partnership
RAP	Resettlement Action Plan
ROW	Right-of-Way
RPF	Resettlement Policy Framework
SBD	Standard Bidding Document
SOE	Statement of Expenditure
SUF	Scale-Up Facility
TER	Train Express Regional
ToR	Terms of Reference
TUMP	Transport and Urban Mobility Project
UNDB	United Nations Development Business
VDN	*Voie de Dégagement Nord*
WA	Withdrawal Application

Regional Vice President:	Makhtar Diop
Country Director:	Louise J. Cord
Senior Global Practice Director:	Jose Luis Irigoyen
Practice Manager:	Nicolas Peltier-Thiberge
Task Team Leader(s):	Tojoarofenitra Ramanankirahina, Franck Taillandier

BASIC INFORMATION

Is this a regionally tagged project?	Country(ies)	Financing Instrument
No		Investment Project Financing

[ ] Situations of Urgent Need of Assistance or Capacity Constraints

[ ] Financial Intermediaries

[ ] Series of Projects

Approval Date	Closing Date	Environmental Assessment Category
25-May-2017	30-Jun-2023	A - Full Assessment

Bank/IFC Collaboration	Joint Level
Yes	Joint Project - involving co financing with IFC (loan, equity, budget, other) or staffing

Proposed Development Objective(s)

The Project Development Objective is to enhance urban mobility between Dakar and Guédiawaye through the development of a Bus Rapid Transit (BRT) corridor.

Components

Component Name	Cost (US$, millions)
BRT infrastructure, fleet, and systems	379.50
Public transport network restructuring and road works	25.00
Capacity building and project management	12.30
Road Safety	2.00

Organizations

Borrower : Ministry of Economy, Finance and Plan

Implementing Agency : CETUD

Safeguards Deferral

Will the review of safeguards be deferred?

[ ] Yes [ ] No

PROJECT FINANCING DATA (IN USD MILLION)

[✔] Counterpart Funding	[ ] IBRD	[✔] IDA Credit [ ] Crisis Response Window [ ] Regional Projects Window	[ ] IDA Grant [ ] Crisis Response Window [ ] Regional Projects Window	[✔] Trust Funds	[✔] Parallel Financing

Total Project Cost:	Total Financing:	Financing Gap:
426.30	426.30	0.00
	Of Which Bank Financing (IBRD/IDA): 300.00	

Financing (in US$, millions)

Financing Source	Amount
Borrower	10.80
EC: European Investment Bank	31.50
Green Climate Fund	30.00
International Development Association (IDA)	300.00
Foreign Private Commercial Sources (identified)	54.00
Total	**426.30**

Expected Disbursements (in US$, millions)

Fiscal Year	2017	2018	2019	2020	2021	2022	2023	2024
Annual	0.00	50.00	80.00	70.00	50.00	20.00	20.00	10.00
Cumulative	0.00	50.00	130.00	200.00	250.00	270.00	290.00	300.00

INSTITUTIONAL DATA

Practice Area (Lead)

Transport & ICT

Contributing Practice Areas

Public Private Partnership
Social, Urban, Rural and Resilience Global Practice

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Gender Tag

Does the project plan to undertake any of the following?

a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF

Yes

b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment

Yes

c. Include Indicators in results framework to monitor outcomes from actions identified in (b)

Yes

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Low
4. Technical Design of Project or Program	High
5. Institutional Capacity for Implementation and Sustainability	High
6. Fiduciary	Substantial
7. Environment and Social	Substantial
8. Stakeholders	Substantial
9. Other	High
10. Overall	Substantial

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✔] No

Does the project require any waivers of Bank policies?

[ ] Yes [✔] No

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	✔	
Natural Habitats OP/BP 4.04		✔
Forests OP/BP 4.36		✔
Pest Management OP 4.09		✔
Physical Cultural Resources OP/BP 4.11	✔	
Indigenous Peoples OP/BP 4.10		✔
Involuntary Resettlement OP/BP 4.12	✔	
Safety of Dams OP/BP 4.37		✔

Projects on International Waterways OP/BP 7.50	✔
Projects in Disputed Areas OP/BP 7.60	✔

Legal Covenants

Sections and Description

Schedule 2.I.C.1 of the Financing Agreement: No later than one month after the Effective Date (or such other date which the Association has confirmed in writing to the Recipient is reasonable and acceptable under the circumstances, as determined by the Association in its sole discretion), and in order to facilitate the carrying out of Parts A.1 and B.1 of the Project, the Recipient shall cause the Project Implementing Entity to engage the services of the Delegated Contract Manager in accordance with the provisions of Section III of this Schedule under a delegated management contract pursuant to which Project Implementing Entity shall delegate to the Delegated Contract Manager certain Project implementation responsibilities on behalf of the Recipient of the goods, works and services required for Parts A.1 and B.1 of the Project, in accordance with Sections I.D, I.E, I.F, I.G of Section II, Section III and Section IV of this Schedule to the Agreement, and under terms and conditions approved by the Association.

Sections and Description

Schedule 2.I.D of the Financing Agreement: No later than one month after the Effective Date (or such other date which the Association has confirmed in writing to the Recipient is reasonable and acceptable under the circumstances, as determined by the Association in its sole discretion), the Recipient shall adopt and thereafter carry out and cause the Project Implementing Entity to carry out Parts A.1, A.2, B, C and D of the Project in accordance with the arrangements and procedures set out in the Project Operations Manual (POM) under terms satisfactory to the Association (provided, however, that in case of any conflict between the arrangements and procedures set out in the POM and the provisions of this Agreement, the provisions of this Agreement shall prevail), and shall not amend, abrogate or waive the POM or any of their provisions without prior approval in writing by the Association.

Sections and Description

Schedule 2.V.1 of the Project Agreement: The Recipient shall take all necessary steps to put in place and maintain an overall legal, financial and institutional framework acceptable to the Association for the operational performance and maintenance of the BRT, and to this end shall, without limitation to the foregoing, unless otherwise agreed with the Association, enter into a contract or cause the Project Implementing Entity to enter into a contract, in a manner satisfactory to the Association, no later than 12 months after the Effective Date (or such later date acceptable to the Association), with a legal entity to serve as the BRT private operator, including, the acquisition of a bus fleet for the purposes of Part A.3 of the Project (the DSP Contract).

Sections and Description

Schedule 2.I.E.8 of the Financing Agreement: The Recipient, through MILTO, shall cause the Project Implementing

Entity, not later than two months following the Effectiveness of this Agreement (or such later date acceptable to the Association), to recruit two safeguard specialists, under terms and conditions and with qualifications satisfactory to the Association, for the purpose of supporting the Project Implementing Entity in the implementation of Parts A.1, A.2, B, C and D of the Project.

Sections and Description

Schedule 2.I.G.6 of the Project Agreement: The Project Implementing Entity shall:
(a) prepare, prior to the commencement of any construction works requiring clearance of a right of way under the Project, Site-specific Resettlement Action Plans (RAPs), satisfactory to the Bank, in accordance with the RPF;
(b) implement the Site-specific RAPs, including, unless otherwise agreed with the Association, payment in full of compensation or resettlement to all affected people prior to commencing any related works; and
(c) not amend, suspend or abrogate any of the provisions of the Site-specific RAPs without the prior agreement of the Association.

Sections and Description

Schedule.I.B.1 of the Project Agreement: To facilitate the carrying out of Parts A.1, A.2, B, C and D of the Project by the Project Implementing Entity, the Project Implementing Entity shall enter into a Subsidiary Agreement with the Recipient by not later than one month after the Effective Date (or such other date which the Association has confirmed in writing to the Project Implementing Entity is reasonable and acceptable under the circumstances, as determined by the Association in its sole discretion), whereby the Recipient shall make the proceeds of the Financing available to Project Implementing Entity, under terms and conditions approved by the Association.

Conditions

Type	Description
Effectiveness	The Project Implementing Entity Subsidiary Agreement has been executed on behalf of the Recipient and Project Implementing Entity.
Effectiveness	The Project Implementing Entity Subsidiary Agreement has been duly authorized or ratified by the Recipient and Project Implementing Entity and is legally binding upon the Recipient and Project Implementing Entity in accordance with its terms.
Disbursement	No withdrawal shall be made: (a) from the Financing Accounts until the Association has received payment in full of the Front-end Fee; and (b) for payments made prior to the date of this Agreement except that withdrawals up to an aggregate amount not to exceed €200,000 may be made for

	payments made prior to this date but on or after April 1, 2017, for Eligible Expenditures related to consultant services;

Type	Description
Disbursement	The sum of the Bank's financing percentage of Eligible Expenditures under the Loan combined with the financing percentage provided by the Co-financiers EIB and GCF and the recipient equals 100% of each Eligible Expenditure.

PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
Tojoarofenitra Ramanankirahina	Team Leader(ADM Responsible)	Transport	GTI08
Franck Taillandier	Team Leader	Urban Transport	GTI08
Cheick Traore	Procurement Specialist(ADM Responsible)	Procurement	GGO07
Mamata Tiendrebeogo	Procurement Specialist	Procurement	GGO01
Fatou Fall Samba	Financial Management Specialist	Financial Management	GGO26
Aguiratou Savadogo-Tinto	Team Member	Transport	GTI08
Aiga Stokenberga	Team Member	geo-mapping	GTI07
Anta Tall Diallo	Team Member	ACS	AFCF1
Arturo Ardila Gomez	Peer Reviewer	BRT	GTI10
Dahlia Lotayef	Safeguards Specialist	Environmental Safeguards Specialist	GEN07
Daria Goldstein	Counsel		LEGLE
Faly Diallo	Team Member	Finance	WFALA
Georges Bianco Darido	Peer Reviewer	BRT	GTI02
Ibou Diouf	Peer Reviewer	Transport	GTI07
Konjit Negash Gebreselassie	Team Member		GTI08
Mademba Ndiaye	Team Member	Communication	AFREC

Medou Lo	Safeguards Specialist	Environmental Safeguards Specialist	GEN07
Ndeye Anna Ba	Team Member		GTI01
Peter F. B. A. Lafere	Safeguards Specialist	Social	GSU01
Tara Shirvani	Team Member	GHG	GTI08
Yacouba Konate	Team Member	Social	GSU01

Extended Team

Name	Title	Organization	Location

SENEGAL
DAKAR BUS RAPID TRANSIT PILOT PROJECT

TABLE OF CONTENTS

I. STRATEGIC CONTEXT

A. Country Context

1. Senegal is a medium-size (197,000 km^2) Sub-Saharan African country with a rapidly growing (+3.1 percent per year) young population (50 percent of the population is below 18) of about 15.1 million inhabitants in 2015.[1] Senegal is experiencing rapid growth in its urban population (+3.9 percent per year). About 45 percent of the population live in urban areas of which about half live in the Greater Dakar Area (GDA). If current demographic trends persist, about 60 percent of the population will live in urban areas by 2025.

2. Senegal's per capita gross domestic product (GDP) using the Atlas method was US$980 in 2015. The poverty rate was about 46.7 percent in 2011 and 45.6 percent in 2014 and it ranked 163 out of 187 in the United Nations Human Development Index (2014 report). Over the last five years, the country's average real GDP growth rate was around 4.1 percent (6.5 percent in 2015). The improved GDP growth rate performance, starting from 2014, is linked to strengthening of domestic demand, boosted by public investment in infrastructure. However, Senegal's economy remains vulnerable to exogenous and endogenous shocks such as a deterioration in the terms of trade, poor rainfall, fall in remittances, tourist arrivals, and aid flows, and spikes in food and oil prices.

3. To accelerate poverty reduction and boost shared prosperity, the Government of Senegal (GoS) has prepared the Emerging Senegal Plan (*Plan Senegal Emergent*, PSE) 2035, which it has started to implement with the Priority Action Plan (*Plan d'Action Prioritaires,* PAP) 2014–2018 that operationalizes the PSE for the first four years. Under the PSE (which replaces the National Strategy for Economic and Social Development [*Stratégie Nationale de Développement Economique et Social*], 2013–2017), the GoS has developed a highly ambitious long-term development program. The PSE intends to place Senegal on an accelerated stable GDP growth path of about 7 percent per year starting from 2017 for about 10 years to substantially develop the economy and reduce poverty so that Senegal can become an emerging economy by 2035. One of the key focuses of the PSE is to invest heavily in infrastructure to support private sector development. The PAP 2014–2018 places specific emphasis on a mass transit system project in Dakar through a Public-Private Partnership (PPP) mechanism. The proposed Bus Rapid Transit (BRT) pilot project is part of the PSE.

B. Sectoral and Institutional Context

4. **GDA is plagued by congestion and its consequences.** More than US$18 million were lost in 1998 (2 percent of 1998 GDA GDP) because of negative externalities (pollution, economic losses, and so on) of urban transport in GDA. Since then, the congestion has worsened as a result of two combined factors: (i) a highly paced growing population in GDA that now accounts for about 3.5 million inhabitants that will grow to about 5 million by 2030; and (ii) a peculiar geographic configuration of the city in the form of a peninsula, and a dispersed bipolar urbanization spatial configuration, that places an increasing strain on the provision of urban transport infrastructure and services.

5. **Dakar is one the few major cities in Sub-Saharan Africa, which has all transport modes.** The railway between Dakar and Rufisque is operated by the '*Petit Train de Banlieue*' (1 percent of public

[1] World Bank Open Data database

transport ridership). The state-owned bus company, Dakar Demm Dikk (DDD), is operating 23 routes and accounts for 6 percent of daily public transport trips. The Urban Transport Financing Group (*Association de Financement des Transports Urbains,* AFTU), an association of independent operators organized within 14 cooperatives (*Groupement d'Interet Economique* [Economic Interest Group, GIE]), is operating 56 routes licensed by Dakar Urban Transport Council (*Conseil Exécutif des Transports Urbains de Dakar,* CETUD), and accounts for 35 percent of daily trips. The AFTU's operators have formal routes, bus stops, and proper ticketing arrangements and the drivers are formally registered. About 24 percent of daily trips are covered by the informal public transport mode '*Cars Rapides*' and '*Ndiaga Ndiaye*' operated by independent freelance operators. Similar to most of the informal public transport in Sub-Saharan Africa, their level of service is poor. The demand for public transport services is high in Dakar and there are not enough public transport service providers to meet this demand, hence an important fleet of formal and clandestine 5-seat taxis (also known as collective taxis [22.5 percent of daily trips]) is available. About 1.5 percent of daily trips are covered by clandestine buses, schools and company buses, and boats while the remaining 10 percent are covered by a combination of several public transport modes.

6. **There is a strong need for a comprehensive well-coordinated plan for urban mobility in Dakar**. Despite the low quality of services, public transport accounts for 80 percent of all motorized daily trips, highlighting the importance of this mode of transport. It is expected that these daily trips will double over the next 20 years rising to about 4.2 million. In the absence of a well-coordinated, planned response by all concerned public-private stakeholders, urban mobility in the GDA could substantially worsen. Furthermore, most of land development in the GDA continues to occur on the city outskirts at relatively low densities, particularly in the northeast. This sprawl pattern of urban development combined with increased motorization can only exacerbate urban mobility if not addressed.

7. **Against this backdrop, the GoS has endorsed a holistic and ambitious strategy for sustainable mobility.** To avoid lock-in and maintain the high share of public transport trips against the individual motorized mode in a context of a likely increase in motorized trips in the future, the GoS has adopted an ambitious comprehensive five-year plan, Urban Transport Sub-sector Policy Letter (*Lettre de Politique des Déplacements Urbains à Dakar,* LPDUD), to address issues related to integrated planning, institutional strengthening, non-motorized modes, parking and traffic management, sustainable financing schemes and development of an integrated public transport network. The LPDUD also highlights the need to develop an efficient, safe, and reliable mass transport system. The choice of the GoS is the establishment of a modern bus transport system with high level of service (BRT) to the north of the city and the development of a train express regional (TER) to the south of the city.

8. **The GoS has undertaken the professionalization of the informal public transport sector.** The process was initiated in 1992 through a very large consultative and participatory process supported by the Sub-Saharan Africa Transport Policy Program, the World Bank's Urban Transport and Capacity Building (Technical Assistance - TA) Project (1997–2001). The informal private operators are gradually moved to the 'formal' private sector through the AFTU, owing to the ongoing scrapping mechanism initially established in 2003 under a World Bank-funded project P055472 (2000–2008). The resources provided by the World Bank were converted to a revolving fund that could help leverage other funds. As a result, the majority of public transport services are now provided by the AFTU's operators, whereas informal operators 'Cars Rapides' and '*Ndiaga Ndiaye'* are gradually phased out. With 900 vehicles remaining, the latter should be completely phased out by 2019 (300 per year).

9. **The BRT project benefits from a strong political ownership and will include some transit-oriented development components for a higher impact.** A prefeasibility study has been undertaken to select the corridor with the highest potential ridership,[2] assessing several hypotheses. This first line will go through 14 '*communes*' connecting some of the major traffic generators: university, hospital, and administrative services. It is the first step of a comprehensive plan for mass transit corridors development and is identified in the Nationally Determined Contribution (NDC) of Senegal as a major potential contribution of the transport sector to reduce greenhouse gas (GHG) emissions. This pilot BRT project (red line) is part of the mitigation activities in the climate action plan submitted by Senegal ahead of the 2015 Paris Agreement. This pilot BRT line is the only transport project under the unconditional option. In that context, the Government approached the World Bank to support the implementation of this first BRT project serving some of the city's most populated areas with a strong emphasis on accessibility, integration in the city, and connection with the public network to leverage the gain of a mass transit system.

C. Higher Level Objectives to which the Project Contributes

10. The proposed project will contribute to the Government's ambition of Senegal becoming an emerging market. The design of this pilot project is in line with the following Government development paths described in the PSE: (a) raise sustainably the growth potential and (b) stimulate the creativity and initiative of the private sector to satisfy the high aspirations of the population for a better life.[3]

11. The proposed project will contribute to five out of the 17 sustainable development goals: (a) promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all (Goal 8); (b) build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation (Goal 9); (c) make cities and human settlements inclusive, safe, resilient, and sustainable (Goal 11); (d) take urgent action to combat climate change and its impacts (Goal 13); and (e) strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development (Goal 17).

12. The proposed project will contribute to the World Bank Group's twin goals of ending extreme poverty and promoting shared prosperity by providing the poor with improved access to job opportunities and markets through a cost-effective and efficient mass transit transport.

13. The proposed project is aligned with the current Senegal Country Partnership Framework (CPF) (FY13–17)[4] (Report# 73478) and its first pillar: accelerating inclusive growth and creating employment that has placed emphasis on rural and urban connectivity and mobility through roads, rail, and air infrastructure investments, as well as port/logistics infrastructure and urban mass transport systems. In addition, the project will address the crosscutting theme of supporting gender equity.

14. This project is identified in the NDC of Senegal as a major potential contribution of the transport sector to reduce GHG emissions. It is expected that this project will decrease traffic congestion, limit

[2] *Préparation d'une expérience pilote d'un système de bus rapides en site propre à Dakar, et de son programme d'investissement - Rapport de phase 2, Développement du réseau*.SCE/Safege, July 2014.
[3] http://www.finances.gouv.sn/en/index.php/finance/executive-summary.
[4] A Systematic Country Diagnostic is currently under preparation for Senegal.

motorized trips by private vehicles, and will lead to health benefits through reduced respiratory diseases.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

15. The Project Development Objective (PDO) is to enhance urban mobility between Dakar and Guédiawaye through the development of a BRT corridor.

B. Project Beneficiaries

16. The population living in the influence zone of the BRT will have access to a safe, reliable, and affordable mass-transit transport system. They will also benefit from a less polluting transport system. Women, the elderly, children, and other vulnerable populations will benefit from an accessible and safe mass public transport. Women will have increased opportunities to qualified jobs created by BRT operations. The local transport operators will run the operations of the feeder lines to the BRT system. They will also have an opportunity to own a share of the capital of the BRT operator company. The Government at the local and central level will benefit from capacity building in preparing and implementing this pilot project. The business environment in Senegal will also benefit from the success of the PPP transaction.

C. PDO-Level Results Indicators

17. The achievement of the PDO will be monitored through the following proposed key results indicators:

(a) Average daily passenger ridership in the BRT buses per weekday
(b) Average rush hour in-vehicle travel time by public transport from Guédiawaye Prefecture to Petersen Bus Station in Dakar Plateau (Dakar)
(c) Percentage of population of Greater Dakar Area residents with access to the city center (Medina) within 60 minutes commuting period using the BRT
(d) Number of kilometers serviced by the BRT buses per weekday
(e) Satisfaction rating by public transport users of the BRT, disaggregated by gender.

III. PROJECT DESCRIPTION

A. Project Components

18. The core of the World Bank-financed project is the construction of a 18.3 km fully segregated BRT line connecting Petersen Bus Station in Dakar Plateau (town center) to Guédiawaye Prefecture (northern suburbs), including three major passenger terminals and 20 additional stations; provision of safe, convenient, and secure access and crossings for pedestrians; and provision of a bus fleet and a significant intelligent transportation system (ITS) to assist in managing and operating services and to collect fares (Component 1). The project also includes restructuring of the public transport network,

provision of street furniture[5] along feeder routes, road works on feeder roads and on vicinal roads along the corridor, and various technical assistance and support with a strong emphasis on accessibility and nonmotorized modes (Component 2). Capacity building and project outcome monitoring constitute Component 3. Component 4 is dedicated to road safety activities, including communication and training.

Component 1: BRT infrastructure, fleet, and systems (Estimated cost: US$379.5 million, of which US$255.5 million financed by IDA)

19. This component will finance goods, works, and services for detailed design, construction, and supervision of the BRT core infrastructure including the road infrastructure and its drainage system, landscaping, depot, terminals, stations, intersections, corridor traffic management systems, pedestrian crosswalks, sidewalks, and some bike lanes along the corridor. Clearance of the right-of-way (ROW) will be financed by the GoS through an approved resettlement plan.

20. This component will also finance the provision of ITS (including a mirror system) and fare collection systems which will enable a centralized control of bus operations and fare management.

21. Articulated buses (capacity of 150 passengers each) will be financed under this component by the private operator, to be selected through a PPP procedure, who will be responsible for the bus operations.

22. **BRT infrastructure.** The BRT will consist of an 18.3 km-long segregated BRT lane in a dense urban area connecting Guédiawaye Prefecture in the northern suburb of Dakar to Petersen Bus Station on Dakar Plateau. The infrastructure design was developed after an assessment of the service plan requirements including the expected demand and the capacity of the BRT running way, together with the passenger capacity of stations and terminals. It has the following key characteristics:

- Closed trunk-feeder system and fully segregated lane in the median of the roadway;
- Eleven sections are identified along the corridor with the ROW varying from 25m to 60m. The infrastructure adapts to a constrained and sometimes very narrow ROW to best accommodate BRT lanes and general mixed traffic lanes. On sections with the narrowest ROW,[6] one lane may be removed from general traffic. Diverted traffic will be supported by road works financed under Component 2;
- Passing lanes at all 20 stations;
- Two interchanges;
- Concrete pavement with at least a 30-year life span along the whole corridor will ensure better service and operations than asphalt for a longer period and will minimize the need for and the cost of maintenance; and
- The left turn movements are banned at all intersections. Diverted traffic will be supported by road works and developments in the vicinity of the corridor under Component 2.

23. Detailed engineering studies are ongoing. Several options are studied to make the connection between the BRT terminal in Petersen Bus Station and the main railway station in Dakar, 700 m farther

[5] Street furniture such as benches, trash cans, bus shelters, bus stops, street lamps, etc

[6] 'Section Fadia', 'section Obelisque', 'section Grand Yoff'

from the bus terminal. The demand is, however, low and the ROW narrow on Avenue Faidherbe. At the start of BRT operations, a dedicated bus service will be functional between Petersen Bus Station and the railway station as a temporary alternative solution while waiting for the final choice. Compensation for clearance of the ROW will be financed by the GoS with an approved resettlement plan that amounts to a total of about CFAF 4.7 billion (US$8.5 million).

24. **Stations, terminals, and depot**. There are three stations (out of 23) that are terminals at Grand Medine, Guédiawaye Prefecture, and Petersen Bus Station. The layout of the stations has been designed to better accommodate the constrained ROW and expected demand. Key characteristics are the following:

- All stations are centrally aligned requiring left-door bus fleet and preventing other buses to populate the corridor;
- All stations have sur-elevated platforms and are closed with off-board fare collection systems to control access. It enables faster boarding, alighting and at-level access;
- Three types of stations exist: center stations that serve both directions, staggered but axially aligned stations with a connection link, and staggered and axially non-aligned stations with a connection link to adapt to the ROW while allowing dock bays and passing lanes. The width of stations may vary between 3.5m and 5m depending on configurations;
- Average distance between stations is 777m with a usual range between 650m and 750m except at three locations where distances are above 1000m due to two roadway bypasses and on General de Gaulle historical avenue where military parades occur; and
- Terminals will offer intermodal connections with other modes with parking slots, safe and secure pedestrian access, and convenient connections with other bus routes.

25. The surface of the depot located in Guédiawaye is about 6ha. It will comprise all necessary facilities for maintenance, the BRT operations control center, parking places for the fleet, administrative services, and facilities for drivers.

26. **Fleet of buses to be financed and operated by a private operator with high level of services.** The BRT will include a provision of around 140 modern high floor left door articulated buses with a capacity of 150 passengers each. Different bus technology options are currently being analyzed by the GoS (Euro IV or V diesel, Compressed Natural Gas (CNG), hybrid diesel-gas, and so on) to find the best environmentally friendly technology adapted to the context of Senegal. The fleet shall be financed and operated by a private operator chosen after a PPP procedure. PPP structuring is currently undertaken by International Finance Corporation (IFC) Advisory Services. It is expected that local operators will have an opportunity to become shareholders of the BRT operator.

27. Four services will be proposed: two express services, one limited service and one local service. Speeds will reach up to 21.9 km/h for local service and 26.3 km/h for express service against less than 14 km/h today for a minimum time saving of 45 minutes for a current 95 minute long travel between Guédiawaye Prefecture and Petersen Bus Station in Dakar Plateau. Frequency will be 2 minutes for express service at peak hour. The design chosen offers a maximum capacity of up to 27,000 pax per hour, thus saving some capacity for the future. ITS and fare collection systems will enable centralized control of bus operations and fare management.

28. **Corridor integration in urban environment with a focus on gender.** The construction of the corridor will place a strong focus on accessibility and road safety along the corridor with rehabilitation of sidewalks, construction of bicycle paths, provision of convenient and safe pedestrian crossings, and assessment and mitigation measures for road safety during design and construction of the infrastructure. Beyond accessibility, gender and safety also receive strong focus: well-lit and camera surveilled stations for a safer environment and job opportunities for women with a long-term objective to offer the same opportunities for men and women workers in the BRT operating company. There will be no competing bus routes along the corridor. Following consultations, an agreement was signed between the AFTU and DDD to provide 26 feeder lines with integrated fares. Other measures financed under Component 2 will provide further integration with the overall public transport network.

Component 2: Public transport network restructuring and road works (Estimated cost: US$25 million financed by IDA)

29. This component will finance goods, works, and services for road works along feeder routes, road works on vicinal roads to support diverted traffic due to suppressing of left turn movement as well as reduction of the ROW, and provision of urban furniture for public transport along feeder routes.

30. It will also finance communication campaigns and technical assistance to make the BRT fully functional including but not limited to restructuring of the public transport network, fares integration system, parking management plans, and integration of the BRT in the urban environment. Additional technical assistances targeting the whole transport system in GDA are also essential and will be financed. This technical assistance includes the reforming of the licenses issuance procedure for taxis and public transport, the professionalization of urban transport operators, and the improvement of the vehicle control system.

Component 3: Capacity building and project management (Estimated cost: US$12.3 million, of which US$10 million financed by IDA)

31. This component will finance provision of technical assistance, operational costs, and capacity building in project implementation as well as in sustainable monitoring and supervising of BRT operations (including a mirror system), fiduciary and safeguard activities, monitoring and evaluation (M&E), and financial audits.

Component 4: Road safety (Estimated cost: US$2 million financed by IDA)

32. This component will finance provision of road safety technical assistances, education and sensitization campaigns of local communities to the BRT operations, and training and equipment. One technical assistance and provision of equipment will focus particularly on development of a road accident mapping system along the BRT corridor.

B. Project Cost and Financing

33. The lending instrument for this project will be an Investment Project Financing.

34. The project has a total cost of US$426.3 million. It will be financed by an IDA Regular Credit of €28.1 million equivalent to US$30 million complemented by an IDA Scale-up Credit of €252.8 million equivalent to US$270 million, an expected US$30 million Green Climate Fund (GCF) loan,[7] and an expected €30 million (equivalent to US$31.5 million) from the European Investment Bank (EIB).[8] These different funds will be used in co-financing where IDA will finance up to its total contribution of US$300 million.[9] The GoS has requested that the IDA credits be in Euros under the IDA Single Currency Lending Pilot Program. The provision of BRT buses, systems, and equipment should be financed by the private operator for a total amount of US$54 million.[10] The resettlement costs estimated at about US$8.5 million will be fully funded by the GoS as well as about US$2.3 million of operational costs.

35. The project costs are as summarized in table 1.[11]

Table 1. Indicative Costs and Financing (US$, millions)

Project Components	Indicative Costs	Financing				
		IDA (Regular and SUF)	GCF	Private	EIB	GoS
1. BRT infrastructure, fleet, and systems	379.5	255.5	30	54	31.5	8.5
1.1 BRT Infrastructure and system	325.5	255.5	30	—	31.5	8.5
1.2 BRT fleet	54	—	—	54	—	—
2. Public transport network restructuring and road works	25	25	—	—	—	—
2.1 Technical assistances	2	2	—	—	—	—
2.2 Road works	23	23	—	—	—	—
3. Capacity building and project management	12.3	10	—	—	—	2.3
4. Road Safety	2	2	—	—	—	—
Base cost total	418.8	292.5	30	54	31.5	10.8
Price and physical contingencies	7.5	7.5	—	—	—	—
Total taxes included	426.3	**300**	30	54	31.5	10.8

Note: SUF = Scale-up Facility;

[7] GCF Board approval should take place in July 2017.
[8] EIB approval is expected in July 2017. The risk that the EIB and GCF will not provide financing is low and if it will not materialize, the project will request for additional financing since this financing is required to reach the results.
[9] In accordance with current Republic of Senegal per capita income and IDA 17 lending criteria, the credits will be financed under the Single Currency IDA regular credit terms, with 38-year maturity including a 6-year grace period for the IDA Regular Credit and with 24-year maturity including a five year grace period for the IDA SUF credit. The single currency amount (EUR 280.9 million) will be converted to the final SDR amount for commitment authority and country allocation management purposes on the day of project approval. For information, the estimated value of the credit in Special Drawing Rights (SDR) is SDR 221.2 million.
[10] The financing by the private sector shall be more precisely known after PPP negotiations in the summer of 2017.
[11] Most of the studies and project preparatory activities have been funded under the Senegal Transport and Urban Mobility Project [TUMP, P153078].

C. Lessons Learned and Reflected in the Project Design

36. **Strong and continuous political leadership and ownership is key to the success of a mass transit public transport project.** The Dakar BRT has benefitted from an early and continuously renewed political commitment. The project is mentioned in the recently adopted sustainable strategy for urban mobility, Urban Transport Sub-sector Policy Letter (2015–2020),[12] included in the 2014–2018 implementation plan of the PSE and repeatedly mentioned in presidential speeches. The corridor has been chosen after a thorough evaluation of the different options for mass transit modes and corridors. This project is also identified as the only transport project under the unconditional option in the NDC of Senegal as a major potential contribution of the transport sector to reduce GHG emissions. Close monitoring, strong ownership, and quick decision making by the Minister of Transport and the Transport Authority contributed to the smooth preparation of the project.

37. **Project design should be based on a comprehensive and multimodal approach with a strong focus on accessibility and integration in the city.** In the design of the BRT infrastructure and the choice of the fleet, a strong emphasis is placed on accessibility by nonmotorized modes, safety, and inter-exchange with other transport modes through three passenger terminals and a restructuring of feeder routes. The project also implies an overall upgrading of the feeder road network and technical assistance to improve the organization of urban transport in Dakar including (a) the restructuring of the urban transport network; (b) the review of the urban transport licensing system; and (c) the setting up of a fare integration system.

38. **Early implementation of institutional, stakeholder, and public communication strategy is key to ownership of the project and its success.** The 2015 approved additional financing to TUMP has been financing a comprehensive communication strategy from the start of the preparation. Institutional communication started in December 2015 with Mayors and political decision makers of all municipalities along the BRT line. The challenge of relocation and/or incorporation of the AFTU's buses is being addressed through extensive consultations to support the reassignments.[13] The PPP scheme also enables existing bus owners to acquire shares in the BRT operating company. A public communication campaign also started in July 2016, through various media outlets. A comprehensive communication strategy has been adopted by CETUD to be carried out throughout the implementation of the project.

39. **Challenges of delays in the PPP procurement of the operator** as faced in the Dar es Salaam BRT Phase 1 project would be addressed by ensuring that the potential bus operators are short-listed before the commencement of the BRT trunk corridor works.[14.] It is expected that the PPP contract will be signed within 12 months from the effectiveness of the financing agreement.

[12] *Lettre de Politique des Déplacements Urbains à Dakar* (LPDUD) 2015–2020

[13] Following four consultations dedicated to the BRT project, the presidents of all bus cooperatives and members of the AFTU, signed an agreement with the Government on December 5, 2016 for acceptance of reassignments of affected buses along feeder routes and other routes in Dakar.

[14] Expression of Interest was issued in December 2016. The choice of the private operator is expected by end 2017.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

40. CETUD will be the main implementing agency and will have fiduciary and technical responsibility of all project related activities. CETUD is a public entity whose main responsibility by law is to organize, monitor, and develop urban mobility in the GDA. Its organizational structure includes the President's Office (chair of the General Assembly) and the Permanent Secretary led by the Director General who supervises a team of experts. CETUD is already in charge of Component 2—capacity building for the development of public transport services in the GDA—of the ongoing IDA-financed TUMP.

41. CETUD will technically supervise the project's activities as well as perform all operationally related tasks such as M&E, financial management, procurement (except for the works which will be undertaken by the Autonomous Road Management Agency (*Agence Autonome de Gestion des Routes,* AGEROUTE—an experienced road agency and implementing agency of the TUMP), and safeguards. The Administrative and Financial Unit of CETUD will oversee the financial management aspects of the project, including the consolidation of financial statements for project activities, providing quarterly interim financial reports, monitoring financial transactions of the project's account through the Directorate for Investissment (*Direction de l'Investissement)*, and making the necessary arrangements for the annual financial audit. CETUD will be strengthened to cope with increased activity levels.

42. CETUD will supervise the private operator under the Delegation of Public Service (*Délégation de Service Public*) contract. The private operator will be responsible for BRT operations, as well as all aspects of BRT system management. The private operator will be a qualified investor/operator in a joint venture with local participation. The private operator will acquire the buses for the BRT, and will possibly manage fares on behalf of the GoS.[15] Shareholding is yet to be determined by the GoS, but the qualified investor/operator will have a majority. The modalities of share acquisition by local private companies are being defined under the PPP process. A shareholder agreement will regulate relationships and the roles of different parties. An interface agreement will regulate the transition period from the signing of the concession agreement, through the construction of the infrastructure, until the start of the BRT operations.

43. In addition to its implementing tasks as part of the project, CETUD will supervise performance contracts of local operators in charge of the 26 BRT feeder lines based on its obligations as Transport Authority. The participation of existing operators in the BRT system operations gives them a buy-in and is likely to trigger cooperation instead of opposition.

44. **Component 1**: **BRT infrastructure, fleet, and systems**. The infrastructure construction will be carried out through AGEROUTE. It is by law responsible for road management and maintenance including rehabilitation and construction of roads in Senegal. The other activities (provision of systems) will be managed directly by CETUD in coordination with the infrastructure construction. The fleet will be financed, provided, and operated by the potential future BRT operator.

[15] Close monitoring along with a mirror system will be required to supervise this activity.

45. **Component 2**: **Public transport network restructuring and road works**. The infrastructure construction will be carried out through AGEROUTE. The other activities, mainly technical assistance, will be managed directly by CETUD.

46. **Component 3**: **Capacity building and project management**. This component will be implemented by CETUD in coordination with the different beneficiaries.

47. **Component 4**: **Road safety**. This component will be implemented by CETUD under the oversight of the entity in charge of coordinating road safety activities in Senegal – to be created by the Government (independently from this project). In the meantime, the Directorate of Road Transport (*Direction des Transports Routiers*) of the Ministry of Infrastructure, Land Transport, and Opening-Up) (MITTD) (Ministère des Infrastructures, du Transport Terrestre, et du Désenclavement) is in charge of that oversight role.

B. Results Monitoring and Evaluation

48. CETUD will develop, implement, and operate the M&E system. The Public Transport Operation Monitoring Division, inside the Operations Department of CETUD, will collect and aggregate the relevant data produced, either from entities in charge of the project (future BRT operator, AGEROUTE) or from other technical departments. This division is already in charge of collecting, aggregating, and disseminating information and data concerning the public transport in GDA. CETUD will also send a periodic detailed report on the implementation of any Environmental Management Plan (EMP) and Resettlement Action Plan (RAP) associated with the project. CETUD has been monitoring and supervising Component 2 of TUMP and has the required skills.

C. Sustainability

49. Once constructed, the BRT system is expected to be financially sustainable over its operating life. The financial modelling of the project indicates that from its launch, the BRT system will be profitable for the private operator, covering all recurring costs including bus amortization, vehicle operating costs (fuel, drivers, service personnel, maintenance, and so on), and the costs of management of the BRT system (system manager, control center personnel, terminal staff, fare collection cost, infrastructure maintenance, and rapid response vehicles), and should lead to a substantial concession fee for the Government. In addition, a quick market poll has been conducted and showed that potential investors are interested in financing about US$54 million of bus fleet in the project, which is a sign of sustainability.

50. Sustainability relies also on affordable fares. The proposed tariffs for BRT are aligned with the existing fares in Dakar, while at least 17 percent of users under a social program will benefit from half-discounted fares. Integrated fares will also allow for reduced tariff when boarding BRT and feeder lines.

D. Role of Partners

51. Apart from the private sector contribution through PPP and the World Bank financing, the project will be financed by a GCF financing and an EIB financing as co-financing, and a contribution from

the GoS. In addition, the French Development Agency has expressed its interests in financing an urban transport project, which will complement this proposed BRT pilot project.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

52. The overall risk is Substantial mainly due to challenges related to the lack of capacity for managing the competitive recruitment and the supervision of the qualified BRT private operator. Other challenges relate to ensuring high quality of technical design of an infrastructure that is new in Senegal and to smoothly managing the process of resettlement of the households impacted by the project.

53. **Political and governance risks.** This risk is rated Substantial. A complaint or demonstration against the project may weaken the Government's commitment to the project. This risk is being mitigated by a focused communication campaign and by involving all project stakeholders during all project phases.

54. **Macroeconomic (budgetary).** This risk is rated Substantial. The resettlement cost of the project is estimated at about CFAF 4.7 billion (about US$8.5 million). Given the budget constraints in Senegal, the Government may not be able to afford to pay the resettlement cost on time. This risk will be mitigated by involving the Ministry of Finance well ahead to include this future expense in the Government budget.

55. **Technical design.** This risk is rated High. This is the first time a BRT project has been prepared and implemented in Senegal. No similar project has been done previously. This risk will be mitigated through the hiring of well-qualified BRT consultants and experts to advise during all project phases. The use of PPP in which a professionally qualified, renowned BRT operator will be involved will also mitigate this risk.

56. **Institutional capacity.** This risk is rated High. This is the first time a BRT project is prepared and implemented in Senegal. In addition, an express urban rail project linking downtown Dakar and the future airport via the western suburbs is also being prepared by the GoS. The preparation of two major mass-transit projects in parallel in GDA is stressing the institutional capacity of the GoS.

57. Despite a long and difficult start of CETUD, as pointed out in a recent Independent Evaluation Group (IEG) report,[16] CETUD's capacity has continuously been reinforced through TUMP. CETUD is now an empowered transport authority. Besides, the capacity-building component of the proposed BRT will continue reinforcing CETUD. In addition, AGEROUTE, which is an experienced agency and the main implementing agency of World Bank-financed TUMP, will be in charge of the infrastructure construction, thus reducing the implementation risk of CETUD.

58. The financial sustainability of CETUD is also a risk. Financial resources of CETUD have to grow given its increased responsibilities with the implementation of the BRT project and the supervision of BRT operations. To mitigate this risk, the GoS has committed to increasing its financing to CETUD. An

[16] http://ieg.worldbankgroup.org/Data/reports/ppar_Senegal_102016.pdf

additional financing of about US$2.3 million (equivalent to CFAF 1.3 billion) of operational costs of CETUD will be provided by the GoS during the lifetime of the project.

59. **Fiduciary risks.** This risk is rated Substantial considering the additional workload for CETUD and AGEROUTE and the lack of previous experience for procuring such complex and highly technical contracts. The mitigation plan includes the hiring of additional qualified procurement specialists with strong experience in World Bank procedures by the implementing agency.

60. **Environment and social.** The risk is rated Substantial considering the resettlement of about 1,138 households affected by the project. However, Senegal already has experience in implementing more complex resettlement during the construction of the Dakar Diamniadio Toll Highway (P087304) with almost 10,000 households affected. To mitigate the risk, CETUD is working in collaboration with the Investment Promotion Agency (APIX) (*Agence chargée de la Promotion de l'Investissement et des Grands Travaux)* which implemented the Dakar Diamniadio Toll Highway Project.

61. **Stakeholders**. This risk is rated Substantial. This project will reshape the current public transport environment in Dakar and some of the current operators may oppose it. The mitigation plan includes permanent communication and citizen engagement activities during all the project stages and an involvement of current local transport operators in BRT system operations through the provision of feeder services and participation in the capital of the private BRT operator. Financial analyses undertaken during preparation have shown that the public transport network restructuring would not decrease the revenues of the local private bus operators. Furthermore, the presidents of all cooperatives of buses and members of the AFTU signed an agreement for acceptance of the scheme.

62. **Others.** This risk is rated High. There is a risk induced by the necessity to undertake an 18.3 km BRT infrastructure construction in a densely populated and congested area. Traffic congestion will be more exacerbated during the construction. Thus, it may worsen road users' frustration and lead to an opposition to the project. This risk will be mitigated by carefully planning the infrastructure construction, by hiring highly qualified contractors and supervision firms, and by undertaking an appropriate information campaign to the general public and road users. In addition, the road corridor called VDN (*Voie de Dégagement Nord*) is currently being extended and widened. This will provide an alternative road for traffic and thus will mitigate congestion along the BRT corridor.

63. Accident risks also exist. This will be mitigated through the road safety component and the safeguards requirements.

64. Another risk is that no qualified private operator is interested in investing in and operating the BRT project. This risk will be mitigated by establishing a fair and balanced PPP arrangement and start the selection of a qualified private investor/operator before the beginning of the BRT infrastructure works.

VI. APPRAISAL SUMMARY

A. Economic and Financial (if applicable) Analysis

65. **Economic analysis**. A detailed economic analysis was carried out for investments spanning Components 1 and 2, which together account for over 97 percent of the total cost. The economic analysis only accounts for BRT operations and not the feeder routes. Total recurring costs (including direct labor, fuel, maintenance, administrative costs, system management, fleet depreciation, and infrastructure maintenance) per year are expected to be around US$30 million for BRT operations in the opening year after the ramp-up period. The economic evaluation is based on savings in travel time, reductions in vehicle operating costs, as well as quantified external benefits including traffic accident reductions and an estimate of GHG and other pollutants reductions because of improved fleet operations under the new BRT system. Although, all investments in Component 2 are included in the assessment, some of the induced gains are not quantified: improved image of the city and more livable urban environment along the corridor. The approach is thus very conservative.

66. Passenger demand forecast was carried out based on travel demand data collected through a series of field surveys (frequency and visual occupancy, boarding and alighting, and transfer) on a subdivision of 215 transport zones in GDA to represent Origin/Destination figures. The analysis performed used the simulation tool EMME to forecast passenger demand figures and support the service plan proposal for the BRT corridor. The model assignment results were obtained using a generalized impedance, or cost function, which considers all times associated with the commute (in-vehicle, waiting, access to the network, and transfer) and fares paid. Proposed tariffs are aligned with the existing fares in Dakar and will be benchmarked against the ongoing stated preference surveys that will assess the willingness to pay. The average fare is assumed to be CFAF 300 per passenger for a trip on the BRT alone, CFAF 200 for a trip on a feeder alone, CFAF 400 as an integrated fare for boarding one feeder line and the BRT, and CFAF 500 for two feeders and the BRT.

67. About 320,000 passengers are expected to board the BRT per day with 27,300 at peak hours. The traffic demand is estimated to grow by 3 percent per year. Over a project lifetime of 27 years (out of which operations are in place for 24 years), the project is expected to deliver an economic internal rate of return (EIRR) of 13.4 percent with a conservative value of time of CFAF 450 per hour and 15.8 percent with a value of time of CFAF 600 per hour, which is above the conventional threshold of 9 percent. The net present value (NPV) is estimated at respectively US$140 million (for CFAF 450 per hour) and US$220 million (for CFAF 600 per hour) at a rate of 9 percent. The results are robust against different assumptions with sensitivity tests conducted against investments cost rising by 10 percent, operating cost increasing by 10 percent, and demand decreasing by 20 percent.

Table 2. Economic Analyses and Sensitivity Tests

	Value of Time (CFAF)	EIRR	NPV (CFAF, billions)	NPV (US$, millions)
Results	450	13.4	77	140
	600	15.8	121	220
Sensitivity: demand −20%	450	10.8	28	51

	600	13.7	81	147
Sensitivity: investment +10%	450	12.7	65	118
	600	15.0	110	200
Sensitivity: operation costs +10%	450	12.1	48	87
	600	14.6	95	173

68. **GHG accounting.** Carbon dioxide (CO_2) emissions are estimated based on aggregated composition of traffic, existing travel conditions, and the estimated impacts from the project interventions. GHG emissions savings are estimated from (a) GHG savings related to emissions of public transport vehicles switched to BRT and (b) GHG savings related to modal switch from cars. Total savings amount to 437,000 tCO_2 over the 24 years of the project lifetime with Euro V diesel buses (18,200 tCO_2 on average per year). This figure is however conservative and the expected benefits are possibly much higher in the long term.

69. The BRT project acting as a pillar of a comprehensive strategy to limit private motorized modes should indeed take credit for part of the GHG savings because of this strategy compared to the baseline scenario where the motorization rate is likely to increase. Senegal is a low-income country with motorized trips mainly relying on public transport and a low motorization rate (26 cars per 1,000 people in 2015).[17] Since a 7 percent annual growth of income is expected in the coming years, without a strong urban mobility strategy, Senegal would experience a correlated growth of individual motorization rate and modal share of cars and consequently an increase in GHG emissions as the trend shows worldwide. The BRT and other mass transit systems are critical pillars of an ambitious and comprehensive strategy for sustainable urban mobility in Dakar (PSE 2014–2018 and LPDUD) with key objectives to limit the increase of the private mode of motorized transport.

70. **Financial analysis.** A full financial analysis of the PPP has been carried out by IFC Advisory. According to the demand assessment, about 60 percent of passengers will use both trunk and feeder buses. In addition, in the financial simulation, full tariff was considered for 83 percent of passengers, while 17 percent would pay half price under a social program to be determined by the GoS. The financial analysis examines if the project has sufficient operational cash flows for the private operator to recover its investment, including a benefit.

71. The project appears to be viable with an excellent return for the private sector and the GoS. If standard concession (net cost contract: market risk on operator) is the option chosen by the GoS for PPP, possible yearly fee payment to the GoS on conservative scenarios start from US$13 million up with private investor's return starting from 15 percent. If payment on kilometer spent (gross contract) is the option chosen, payment to the operator would be equivalent to revenues associated with 100,000 passengers a day, which would cover the charges of the private operator. In such an option, the GoS would keep the surplus revenues generated by volume beyond this threshold.

72. Stress tests show that the GoS could still get fees or keep surplus revenues, with simulations on sensitivity to 30 percent fuel increase or 25 percent demand reduction. In a sensitivity scenario without feeder lines (a lose-lose scenario for the population and authorities), that would be the equivalent of 40

[17] *Enquête Ménage Déplacements.* 2015.

percent of the volume of forecasted ridership, the project would still be profitable for the private sector but it would not generate any fee or surplus for the GoS anymore.

73. **Rationale for public financing.** Financial analysis shows the profitability of the concession for private investors and thus justifies the private investment sought for fleet and ITS equipment for the concession, the 10-year duration of which is linked to the lifetime of the buses. Infrastructure, which has amortization duration, ranges between 25 and 30 years and which is public goods, shall be financed by public funds. Seeking private investment for infrastructure would imply an increase in the duration of the concession up to 30 years, which is not advisable because the risk endorsed by the private operator will be too high and the concession will not be viable.

74. **Value added of the World Bank Group.** The involvement of the World Bank Group brings the following value-added: (i) global knowledge for the project design and implementation based on lessons learnt from the significant number of BRT projects supported throughout the World; (ii) convening power to involve development partners into the project; and (iii) intra-group expertise for the public and private aspects of the project.

B. Technical

Physical Design

75. The project is a closed trunk-feeder system. The physical design of the 18.3 km BRT trunk infrastructure considers the limited ROW in a dense urban area without compromising BRT effectiveness. The whole trunk corridor is fully segregated in the median of the roadway with passing lanes at all 23 stations. In some segments with insufficient ROW, to accommodate both the BRT segregated lane and general traffic lanes, a general traffic lane has been removed. Similarly, layouts of centrally aligned stations have been adjusted to fit the constrained ROW along the corridor. Furthermore, left turn movements will be banned at all intersections along the BRT corridor for improved efficiency and speed. In view of this, Component 2 will finance a parking plan management, detailed studies, and all related road works along the corridor to support for diverted traffic because of integration of the BRT in the urban environment.

76. All 23 stations are centrally aligned, closed, with sur-elevated platforms and off-site fare collection systems. It enables better control, faster and at-level boarding and alighting, and thus improved commercial speed. The size and number of modules have been determined to meet expected demand at each location. The need for a specific left door bus fleet will also prevent the risk of other buses populating the corridor.

Different Operating Services with Articulated Buses to Meet the Demand

77. Four types of services will be operated—two express services, one limited service, and one local service —to meet the various needs of the population. Commercial speeds will reach up to 26.3 km/h (express) against a current average of 14 km/h - saving time on a trip between Cabral and Guédiawaye of more than 45 minutes. With the provision of 141 articulated buses, including a reserve of seven (with a capacity of 150 passengers each and air conditioning), with an elevated platform for fast and convenient at-level boarding, a frequency of two minutes at peak hour for express services, the whole

system will meet the forecasted demand of up to 16,500 passengers at the peak hour in one direction and could accommodate up to 27,000 in one direction with bi-articulated buses, thus providing a large capacity saving for a likely future demand growth.

Public Transport Integration and Improved Access

78. There will not be competing bus routes along the corridor. The BRT will thus introduce a need to reorganize all public transport routes that provide services within or to/from the BRT corridor. This will involve some existing public transport routes being terminated and others being turned back or diverted to new routes to complement the BRT and serve as feeders. Twenty-one existing routes will be terminated and 26 new feeder routes will be created, as identified through a comprehensive assessment, with fares integration implemented between BRT and feeders. Consultations have led to a signed agreement about the reallocation of feeder routes to the existing operators. A study for restructuring the whole transport network in GDA with TER and BRT as the two bare bones mass transit corridors will be financed by the project. A fares integration study will enable a smooth integration between different bus services and these mass transit systems.

79. The technical design of the whole infrastructure and the 23 stations will support measures to improve physical integration between public transport modes and their access or onward journey modes (for example, walking and cycling). Providing convenient, secure, and safe pedestrian access to the stations will receive specific attention as well as the rehabilitation of sidewalks along the corridor for an improved environment for pedestrians.

Operational Arrangements and Integration of Local Private Operators

80. There is currently no local capacity to invest, operate, and maintain a fleet of modern articulated buses with associated new technology for modal coordination and maintenance of the whole system. At least one renowned qualified investor/operator is thus sought through an open and transparent procedure. It will constitute a joint venture with local operators and will acquire and operate the BRT fleet while the AFTU's operators and DDD will run the feeder routes.

81. Several measures have been designed to address and mitigate potential impacts on the AFTU's operators: besides its ongoing weekly dialog, for now 15 years, CETUD has conducted four consultations with the AFTU specifically dedicated to the BRT to explain the concept, the consequences, and the proposal of reorganization. The Presidents of GIEs signed an agreement on the principles of this new scheme. CETUD has carefully assessed impacts with GIEs: four GIEs and 265 buses will be affected. About 150 of the buses would be reassigned to feeder routes, for which financial analysis has shown profitability, others would be proposed to be hired as drivers or employees of the BRT operator, and the remaining could be reassigned to other routes in Dakar where the demand exceeds the level of available public transport services. CETUD will also build on the existing scrapping mechanism to help these operators upgrade their affected fleet toward more modern buses and the project will finance training sessions for professionalization. The GoS would help the operators regarding investment. The AFTU will take shares in the private company recruited by the PPP to run the BRT under modalities that will be defined during the PPP bidding process. The private investor shall also hire and train local staff (drivers, mechanics, and so on) to operate and manage a BRT. Local capacity will thus be increased.

The PPP is being structured by IFC Advisory working under contract with the Government

82. The PPP structuring process is ongoing with IFC Advisory as the transaction advisor. A complete overview of risk sharing, private, and public roles and liabilities, the business and financial models, and legal issues and the procurement procedure have been completed. The concession agreement will be carefully reviewed to have a fair and balanced concession and to safeguard both the GoS and the private investor.

83. The private operator is expected to finance and operate the bus fleet and some ITS equipment. Local operators may be involved in the shareholder structure of the future operator together with a qualified renowned BRT operator.

C. Financial Management

84. **Fiduciary.** CETUD will have the overall fiduciary responsibility for the project. On the procurement side, CETUD will delegate this responsibility to AGEROUTE for infrastructure construction under Components 1 and 2. AGEROUTE will prepare technical and bidding documents, conduct all the selection processes, sign contracts, and supervise the execution. Both CETUD and AGEROUTE are implementing agencies for TUMP in Senegal and have good knowledge of the World Bank procurement rules. However, anticipating the future workload, there is a need to strengthen both CETUD's and AGEROUTE's capacity in procurement as well as in technical expertise.

85. CETUD is familiar with World Bank Financial Management procedures. CETUD implemented the previous World Bank-financed Urban Mobility Improvement Project (P055472) and it is currently implementing one component of TUMP. CETUD's financial management arrangement is adequate for the project. However, the internal control in place needs to be strengthened and the accounting and financial manual needs to be updated. The overall FM risk for the financing is rated Moderate.

D. Procurement

86. **General.** Procurement, under the proposed project will be carried out in accordance with the World Bank's 'Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers' dated January 2011 and revised July 2014; 'Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers' dated January 2011 and revised in July 2014; 'Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants', dated October 15, 2006 and revised in January 2011; and other provisions stipulated in the Financing Agreement.

87. All procuring entities, as well as bidders and service providers such as suppliers, contractors and consultants shall observe the highest standard of ethics during the procurement and execution of contracts financed under the project in accordance with paragraph 1.16 of the Procurement Guidelines and paragraph 1.23 of the Consultants Guidelines.

88. A General Procurement Notice (GPN) will be prepared and published in United Nations Development Business (UNDB) online, on the World Bank's external website, and in at least one national newspaper after the project is approved by the World Bank Board and before project effectiveness. Specific Procurement Notices for all goods and works to be procured under International Competitive Bidding (ICB) and Requests for Expressions of Interest for all consulting services to cost the equivalent of US$300,000 and above will also be published in UNDB online and the World Bank's and the borrower's external websites and the national press. For works and goods using National Competitive Bidding (NCB) procedures, the Specific Procurement Notice will only be published nationally.

89. **Capacity assessment and remedial actions.** An assessment of the executing agencies' capacity to implement procurement was carried out by the World Bank's procurement specialist in December 2016. The assessment reviewed the organizational structure for implementing this additional project. The assessment found that CETUD and AGEROUTE possessed satisfactory know-how, technical expertise, and experience in World Bank procurement procedures during the implementation of the past and ongoing IDA-financed projects. Their procurement capacities include (a) having acceptable experience in applying the World Bank's procurement procedures (from planning to contract awards) and (b) having demonstrated proficiency in managing contracts (scheduling and quality control of delivery).

90. The main identified weaknesses are the following: (a) insufficient qualified procurement specialists and technical experts with strong experience in World Bank procedures to correctly handle the additional workload; (b) technical experts in CETUD with limited experience in World Bank procedures; (c) absence of payment document in procurement filing in CETUD; and (d) the delays in preparation of technical documents for main contracts.

91. The main risks comprised (a) implementation delays and poor quality of contract deliverables; (b) obsolescence in procurement and contract management knowledge leading to continued poor quality of results; (c) delay in project processing and implementation due to lack of proper planning, and (d) project delays due to unfinished bidding documents/Request for Proposals.

92. The risk is Substantial. The following mitigation measures have been proposed:

(a) The preparation of a delegated management contract (*Convention de Maître d'Ouvrage Délégué*) between CETUD and AGEROUTE. This contract clearly defines activities to be implemented by AGEROUTE, establishes responsibility of each part, and describes the organization to be put in place for project implementation. The World Bank will review and approve the document before signature.
(b) Hiring of an additional qualified procurement specialist by CETUD.
(c) Identification or hiring by AGEROUTE of a dedicated and qualified procurement specialist with strong experience in World Bank procedures for works and consultant selection.
(d) Identification of gaps in technical expertise for technical documents elaboration and bids evaluation and action plan to fill this gap.
(e) Planning of the preparation of the technical specification and terms of references (TORs) and proposed actions to avoid delays in the production of these documents.
(f) Preparation of a comprehensive Procurement Plan of the main activities for the first 18 months.

E. Social (including Safeguards)

93. **Social benefits.** The proposed project is expected to deliver significant social benefits by improving public transport services, not only along the BRT corridor but also in GDA. The civil works related to the construction of the BRT, will create income-generating opportunities for professionals in the transport sector, for skilled workers including youth, and for manual labor. The operation of the BRT will create other job opportunities, which will particularly include women. About 320,000 passengers are expected to use the BRT daily, with about 27,300 at the morning peak hour. Transport service benefits will include but not be limited to improved mobility, increased access to public transport services, reduced transport fees, reduced travel time, and improved comfort and safety.

94. The BRT corridor passes through the most densely populated area and the mapping of employment, educational, shopping, services, and health-related opportunities suggest that these opportunities are concentrated along the BRT route (see maps in annex 5) and heavily concentrated in Dakar Plateau where the Place Cabral Terminal is located. The gain in accessibility to these opportunities for the GDA population provided by the project has been assessed. The project will monitor the increase of accessibility of the GDA population to the city center. It is expected that when the BRT operates, about 69 percent of the population will have access to the city center in less than 60 minutes during rush hour using public transport compared to about 57 percent in the no-project scenario (annex 5).

95. Access to employment opportunities in Dakar will increase by 7 percentage points in a 1-hour radius. In 2020, Dakar residents will thus have access to 59 percent of all employment opportunities in GDA using public transport with a travel time of up to 1 hour (compared to 52 percent in the baseline scenario without the BRT). About 66 percent of the population will have access to at least 8,000 more opportunities in 2020 within a 1-hour radius. The increase will specifically benefit certain poorer areas such as Guédiawaye, where, in some neighborhoods, accessibility will increase by over 120,000 employment opportunities. Besides, increased employment density along the BRT and its feeder routes is expected and will likely improve these conservative estimates of the accessibility benefits. The project will also generate major improvements in accessibility in urban transport within 30 minutes to educational (universities, colleges, middle, and high schools) and health care-related services and shopping opportunities (annex 5).

96. **Gender.** The increase in employment opportunities is also expected to be highly positive for women. Despite progress over the past decade on gender equity, women continue to live and work at a disadvantage, and economic advancement is a priority in the SNDES,[18] SNEEG,[19] and CPF. Women's economic participation is significantly lower than men's: only 66 percent of women participate in the labor force against 88 percent of men. Furthermore, 83 percent of women work in the informal sector, and only 10 percent of permanent full-time workers are female, which is less than half of the average in Sub-Saharan Africa.[20] Although the satisfaction rating of public transport for women and men is

[18] SNDES Program for Governance, Institutions, Peace and Security – *Stratégie Nationale de Développement Economique et Sociale*
[19] National Strategy on Equity and Gender Equality (SNEEG), priority 2 – *Stratégie Nationale pour l'Équité et le Genre*
[20] Annex 6 on Gender in Senegal, CPF, page 96

similar,[21] household travels surveys suggest that women travel less than men (20 percent less) and use less of motorized transport than men (6 percentage points less during weekdays).[22] The project addresses some of these gender challenges by providing an accessible mass-transit transport system that will increase the access to job opportunities.

97. **Gender inclusion and participation in design.** Upgrades in sidewalks and walking infrastructure, paired with well-lit and camera-surveilled stations, will provide for safer access to and from public transport for women. A broad-based social assessment and a gender sensitive stakeholder engagement plan will further ensure that women's transport needs are heard and considered. Best practices tools for citizen engagement, reporting and preventing gender-based violence in public transport, will also be incorporated in the project. Women will have increased access to the qualified jobs created by BRT operations with a long-term target of equal opportunities for women workers for the BRT operator compared to 6 percent in the public transport sector today. Results will be monitored through the level of satisfaction of women using the BRT and the percentage of women staff among BRT operator staff.

98. **Poverty and equity.** Household travel surveys (2015) suggest that households spend 11.4 percent of their expenditure for transport in Dakar, this figure reaching 17.2 percent for the first quintile and 14.3 percent for the second quintile,[23] which are dependent on public transport. Overall, the level of satisfaction with public transport services is slightly lower among people depending exclusively on this mode of transport at 65.8 percent against 66.6 percent in general and only 58.1 percent for unemployed people.[24] The major concerns raised by the public transport users are crowds on board, waiting time at bus stops, headways, and number of seats available.

99. The project addresses some of the challenges faced by low income users by providing a reliable, convenient, and affordable mass-transit transport system that will increase the access to job opportunities, educational opportunities, and health care related services more specifically from areas with high density of poor households where the corridor goes (see maps). The proposed tariffs are aligned with the existing fares in Dakar, while at least 17 percent of users chosen under a social program targeting the poor will benefit from half-discounted fares.

100. The Unique National Registry (*Registre National Unique*) will be used to help target the BRT users who will benefit from a social fare (half prices). The registry is located at the General Delegation of Social Protection and National Solidarity, which is under the aegis of the Presidency of the Republic. This registry updated every four years contains the names of the extremely poor population in Senegal (about 450,000 in total). The names of the extremely poor are available for each neighborhood in GDA.

101. **Involuntary Resettlement.** The construction of the 18.3 km fully segregated BRT line from Petersen Bus Station in Dakar Plateau (town center) to the Guédiawaye Préfécture, as well as the construction of three passenger terminals and 20 BRT system stations through some of the most densely populated areas of Dakar will require clearance of the ROW and physical and economic displacement. The BRT route was selected along a sufficiently wide corridor that will enable most of its construction

[21] *Enquête Satisfaction des Usagers du Service Public de Transport Urbain, Rapport définitif, Janvier* 2016

[22] *Enquête Ménage Déplacements, décembre 2015, tableau 6.1*

[23] *Enquête Ménage Déplacements, Décembre 2015, tableau* 7.3

[24] Enquête Satisfaction des Usagers du Service Public de Transport Urbain, Rapport définitif, Janvier 2016

within the existing ROW to minimize involuntary resettlement. Approximately 7,000 people will be affected by permanent or temporary, physical or economic involuntary resettlement for the BRT corridor itself—including 288 households that will suffer loss of housing. A RAP for 18.3 km of the BRT corridor, that was designed before appraisal, was developed, consulted, and disclosed both in country on January 22, 2017 and at the World Bank's InfoShop on January 23, 2017. For the construction of the remaining sections and the passenger terminals, a Resettlement Policy Framework (RPF) was developed, consulted, and disclosed on the same dates to guide the development of RAPs.

102. CETUD will be recruiting a resettlement expert within their social and environmental team to manage and supervise the implementation of the resettlement activities and is working in collaboration with APIX, the agency that successfully implemented the Dakar Diamniadio Toll Highway Project (P087304), which involved the resettlement of 10,000 households.

103. **Other negative social impacts related to the construction of the corridor and terminals**, such as noise pollution, temporary reduced mobility, and exacerbated traffic congestion as well as other health and safety risks were identified in the Environmental and Social Impact Assessment (ESIA) and appropriate mitigation measures were included in the Environmental and Social Management Framework (ESMF) that was developed, consulted, and disclosed in-country and in InfoShop on January 23, 2017. In addition to the mitigation measures described, the VDN road corridor is currently being extended and widened. The VDN widening will be completed before the commencement of works on the BRT and will provide an alternative road and mitigate congestion along the BRT corridor during the works.

104. **Other negative social impacts related to the operation of the BRT.** The project will reshape the public transport economy and environment in Dakar and will induce an urban transformation along its core route and feeder routes, but also in other parts of the city. Private bus operators, informal minibus operators, operators of horse-drawn carts, microenterprises along the route, persons with disabilities, the ultra-poor, riparian middle-class residents with parking needs, women, renters and property owners, schoolchildren, youth using public space for social activities, seniors, professional associations, and park users will all experience change and differentiated impacts that will need to be assessed, managed, and in some cases mitigated. A broad-based social risk assessment will identify the differentiated potential negative impacts on these groups or stakeholders in the project, with special attention to those project-affected parties (individuals or groups) who, because of their particular circumstances, may be disadvantaged or vulnerable,[25] and those who may have different concerns and priorities about project impacts, mitigation mechanisms, and benefits, and who may require different or separate forms of engagement and mitigation.

[25] 'Disadvantaged or vulnerable' refers to those individuals or groups who, by virtue of, for example, their age, gender, ethnicity, religion, physical, mental or other disability, social, civic or health status, sexual orientation, gender identity, economic disadvantages or indigenous status, and/or dependence on unique natural resources, may be more likely to be adversely affected by the project impacts and/or more limited than others in their ability to take advantage of a project's benefits. Such an individual/group is also more likely to be excluded from/unable to participate fully in the mainstream consultation process and as such may require specific measures and/or assistance to do so. This will take into account considerations relating to age, including the elderly and minors, and including in circumstances where they may be separated from their family, the community, or other individuals upon whom they depend.

105. **The social risk mitigation strategy** is based on five pillars: (a) extensive consultation processes on the project and the identified social and environmental risks, appropriate to the size and scope of the project during project preparation; (b) a public communication campaign; (c) a broad-based social risk assessment that identifies specific social risks on different stakeholder groups; (d) a stakeholder engagement plan that will describe the timing and methods of engagement with different stakeholder groups throughout the life cycle of the project—including feedback mechanisms to receive information from them and a social fund to mitigate impacts and improve local communities; and (e) a grievance redress mechanism (GRM) to receive and manage social and/or environmental concerns and grievances in a prompt and transparent manner.

106. **Consultations.** Project design and preparation are based on consultative processes and stakeholder engagement at several levels. Representatives of the National Government, city authorities, local government officials, public transport operators, and local communities along the BRT corridor, were the key stakeholders consulted during the preparation of the project. Other groups specifically engaged included: formal and informal transport operators and project-affected persons including youth, women, local community leaders, and persons affected under OP 4.12 (Involuntary Resettlement). Consultations with these stakeholders, including civil society and direct beneficiaries, will continue to be carried out throughout the project's implementation and are part of the project M&E system.

107. The challenge of relocation and/or incorporation of the AFTU's existing buses is being addressed through extensive consultations with operators to support the reassignments. Following a series of consultations dedicated to the BRT project, the presidents of all cooperatives of buses and members of the AFTU, signed an agreement with the Government on December 5, 2016, and accepted the reassignments of impacted buses along feeder routes and other routes in Dakar. The PPP scheme will also enable existing bus owners to take shares in the BRT operating company.

108. **Communication campaign.** Institutional communication started in December 2015 with majors and political decision makers of all municipalities along the BRT line. A public communication campaign started in July 2016, through various media channels and a comprehensive communication strategy has been adopted by CETUD for communication with Dakar citizens and policy makers throughout project implementation.

109. **Social risk assessment.** Social impacts on key stakeholder groups have been assessed. For other groups a broad-based social assessment is underway. Financial analyses undertaken during preparation have shown that the public transport network restructuring would not decrease the revenues of the local private bus operators. Taxi services, will continue in the BRT corridor without any restrictions, but may also need to adapt their services to ensure they remain competitive with the BRT. Mitigation measures to address potential loss of livelihood for the informal sector public transport providers, are included in the technical design of the project and will continue to be assessed and consulted with the providers themselves during the implementation of the project.

110. The BRT system is designed with specific features tailored to address the needs of women, children, the elderly, and the physically disabled. The BRT system is designed for ease of boarding and alighting with buses and stations platforms at the same level. In addition, the BRT vehicles will provide

for more space for luggage or bags when compared with Ndiaga Ndiaye[26] or traditional buses. Upgrades in sidewalks and walking infrastructure, paired with well-lit stations, will provide for safer access to and from public transport. Finally, the provision of well-organized public transport stations will reduce the conflict between vehicles and pedestrians, providing a safer environment for all, especially women and children. Additionally, the GoS committed that gender balance among workers will be an obligation for the BRT private operator provided all workers should comply with the same labor constraints. Road safety will be assessed during design and construction of the infrastructure and monitored throughout the life cycle of the project. Training sessions for the drivers and public communication campaign will take place.

111. The social risk assessment will further assess specific risks for stakeholder groups including operators of horse-drawn carts, microenterprises along the route, persons with disabilities, the ultra-poor, riparian middle-class residents with parking needs, women, renters and property owners, school children, youth using public space for social activities, seniors, professional associations, and park users.

112. **Stakeholder engagement.** The BRT will develop strong, inclusive, constructive, and responsive relationships with project-affected people and other interested parties that are important for the management of a project's environmental and social risks, and that allow these parties to participate in the development of their neighborhoods and transport system. Based on the differentiated impacts on stakeholders, their main characteristics and interests, and the different levels of engagement and participation required, a comprehensive stakeholder engagement strategy will be developed in the first phase of the project to set out how communication with these groups will be handled throughout the construction and operation of the BRT, focusing on specific measures to improve the inclusiveness of the project by removing obstacles to participation and by capturing the views of differently affected groups particularly of those identified as disadvantaged or vulnerable.

113. Stakeholder engagement will be based on technical assistance and learning from other urban transport systems to respond to communities' needs, to pilot different approaches, and to improve neighborhoods.

114. A GRM appropriate for the size and scope of the construction works and involuntary resettlement activities has been included in the ESMF and RPF. However, given the population density in Dakar, the many stakeholders and the large number of passengers that the BRT will serve when it is operational, a more elaborated technology-based GRM will be developed and piloted to respond to a wider range of potential queries, feedback, and complaints and to report on them regularly and transparently. Initially, the objective of this GRM is to pilot the approach and contribute to the social and environmental risk management. In the medium to long term (two to three years after the start of operation), the GRM will be further developed into a stakeholder and citizen engagement tool that promotes citizen participation at all levels and that contributes to an accountable operation of the BRT in Dakar.

115. **Citizen engagement and social inclusion in the Results Framework.** CETUD undertakes a transport user satisfaction survey every two years on the public transport system in Dakar and will continue to do so to monitor the satisfaction rating of the BTR by its beneficiaries through the Results

[26] Traditional informal public transport.

Framework. These satisfaction surveys will add to the information generated through the monitoring of the CETUD-led GRM that will be operational during both construction and operation of the BRT. The BRT's citizen engagement strategy will emphasize inclusion of different stakeholders and vulnerable groups and will gradually shift its focus from consultations and social risk mitigation to promoting feedback and accountability in the BRT operation. Gender inclusion will be promoted through an increase in women bus operators from 6 percent (current) to 25 percent, and separate monitoring of male and female user satisfaction in the surveys.

F. Environment (including Safeguards)

116. The proposed project has been classified as a Category A project according to the World Bank's policy on Environmental Assessment (OP/BP 4.01). Two environmental safeguard policies were triggered: OP/BP 4.01 (Environmental Assessment) and OP/BP 4.11 (Physical Cultural Resources). A comprehensive Environmental Assessment including an Environmental and Social Management Plan (ESMP), and an ESMF have been prepared, consulted upon and disclosed in country on January 22, 2017 and at the World Bank's InfoShop on January 23, 2017.

117. The ESIA covers the 18.3 km long section of the corridor reserved for the BRT system. The negative environmental impacts of the project are mainly related to additional pollution (even minimal) because of the arrival of the new fleet of the BRT project. This will be offset by a modal shift and a decrease in car traffic. Other impacts include the destruction of trees because of the enlargement of the ROW and in some other areas, including sandpits and quarries; the nuisances caused by waste generated on the site; the relative pressure on part of casuarinas trees (*bande des filaos*) in the northern part of Guédiawaye and so on. These negative impacts of the project will be managed through the mitigation measures proposed by the ESMP and that can be categorized: (a) capacity building of the Center for the Management of Air Quality; (b) compensatory reforestation and development of tree lines; (c) compliance with standards (minimum Euro 3) in the acquisition of the new buses; and (d) capacity building on environmental surveillance and monitoring of the stakeholders involved in the implementation of the ESMP.

118. The ESMF provides the basis for the environmental and social preparation needed for the activities for which the precise locations and potential impacts cannot be identified before appraisal. The ESMF outlines an environmental and social screening process for future activities to ensure that they are environmentally and socially sound, sustainably implementable, and in line with the GoS and World Bank operational safeguards policies and guidelines. No known physical cultural resources are identified by the ESIA in the 18.3 km long section of the corridor reserved for the BRT system. However, chance-find procedures will be included in the contractor contracts, and the ESMP includes measures to manage the physical cultural resources.

119. During the construction, all bidding documents for civil works will have embedded environmental and social clauses, to enable contractors to follow up on environmental and social due diligence and to mitigate the anticipated negative impacts and risks. In particular, contractors will adopt a code of conduct for their workforce in their ESMP and EMP. Overseeing the implementation of the environmental and social clauses will be part of the tasks of the supervising engineer (*Bureau de contrôle*).

120. For BRT operations, the private entity that will be selected as operator of the BRT must have the capacity to identify, assess, and manage the environmental and social impacts risks associated with the activity for which it is responsible including road safety standards. To this end, the operator must, before the start of operations, establish an Environmental and Social Management System and prepare an ESMP for his activities (including health and safety aspects, an emergency plan, and so on) in accordance with the project's safeguards instruments, and which is acceptable to the World Bank and in compliance with the performance standards, before the start of operations.

121. CETUD will be in charge of the overall implementation of the ESMP. CETUD will hire a two-person team of Environmental and Social Safeguards Specialists to adequately handle the implementation of social and environmental prescriptions of the safeguard instruments. They will report to the World Bank on a quarterly basis on the status of compliance with the safeguard instruments.

G. Other Safeguard Policies (if applicable)

122. **Mitigation co-benefits**. This BRT project is eligible for classification as climate mitigation finance. Urban transport modal change is one of the three subcategories of transport activities eligible for classification as climate mitigation finance in annex C of the Joint Report on Multilateral Development Bank's Climate Finance 2015.[27] There are two types of activities in this subcategory: (a) urban mass transit and (b) nonmotorized transport (bicycles and pedestrian mobility). The BRT pilot project, particularly Component 1 and to a large extent Component 2, addresses both with a strong emphasis on the first one. The project as a whole is an urban mass transit activity. The pedestrian sidewalks and bridges/crossovers and the bike paths which will be constructed along both the 18.3 km BRT line as well as urban road works of Component 2 will be the nonmotorized transport activities of the project. As mentioned earlier, this project is also the only transport project under unconditional option in the NDC[28] of Senegal to mitigate the adverse impacts of climate change.

123. **Adaptation co-benefits.** According to the Economic and Spatial Study of the Vulnerability and Adaptation to Climate Change of Coastal Areas in Senegal 2013,[29] the respective evolutions of land occupation and of climate will combine and lead to an increase of natural risks. In the Dakar agglomeration, the main natural risks are flood risks, notably because of the insufficient evacuation capability of the storm water network or the absence of network in the neighborhoods of Pikine and Guédiawaye. Another study realized in 2009—Preparing to Manage Natural Hazards and Climate Change Risks in Dakar, A Spatial and Institutional Approach[30]—stated that flooding is one of the most severe hazards threatening Senegal, and in recent decades, it has become a frequent and enduring reality.

124. This BRT project will contribute to address this flooding vulnerability resulting from the adverse impacts of climate change. The drainage system, which is an integral part of the BRT infrastructure and the urban roads (Subcomponent 1.1 and Subcomponent 2.2) will be carefully designed to adapt to this flooding risk. The norms and standards used to calculate the drainage system will be adapted to take

[27] http://pubdocs.worldbank.org/en/740431470757468260/MDB-joint-report-climate-finance-2015.pdf
[28] http://www4.unfccc.int/Submissions/INDC/Published%20Documents/Senegal/1/CPDN%20-%20Sénégal.pdf
[29] https://openknowledge.worldbank.org/handle/10986/16986
[30] https://openknowledge.worldbank.org/handle/10986/12921

into account this flooding vulnerability. It is expected that the BRT infrastructure and the urban roads will be resilient to flooding and will help in making the project area flood-prone.

H. World Bank Grievance Redress

125. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework
COUNTRY : Senegal
Dakar Bus Rapid Transit Pilot Project

Project Development Objectives

The Project Development Objective is to enhance urban mobility between Dakar and Guédiawaye through the development of a Bus Rapid Transit (BRT) corridor.

Project Development Objective Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Average daily passenger ridership in the BRT buses per weekday		Number (Thousand)	0.00	320.00	Biannual	CETUD will collect the number of passengers using BRT buses through the mirror system.	CETUD BRT operator
Description: This indicator measures the average passenger ridership of the BRT (all service plans: 2 express services, 1 limited service and 1 local service). This indicator will reflect the number of direct beneficiaries of the project: the BRT passengers.							

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Average rush hour in-vehicle travel time by public transport from Guediawaye Prefecture to Petersen Bus Station in Dakar Plateau		Minutes	95.00	45.00	Biannual	Data to be obtained from the ITS.	CETUD BRT operator
Description: Average rush hour in-vehicle travel time by the BRT express service from Guédiawaye Prefecture to Petersen Bus Station in Dakar Plateau at morning peak hours between 7:00am and 9:00am. This indicator measures the improved mobility objective of the project.							
Name: Percentage of population of Greater Dakar Area residents with access to the city center (Medina) within 60 minutes commuting period using the BRT		Percentage	57.00	69.00	Annual	A global information system (GIS)-based spatial analysis will be conducted using the open source accessibility tool developed by the World Bank called Open Trip Planner Analyst (OTPA).	CETUD BRT operator (for the GPS data)
Description: This indicator measures the improved mobility objective of the PDO and more specifically the improved accessibility the project is expected to provide to the residents of the suburban part of Greater Dakar Area in terms of opportunities for jobs and services located at the CDB.							
Name: Number of kilometers serviced by the BRT buses per weekday		Kilometers	0.00	37000.00	Biannual	Data to be obtained from the ITS.	CETUD BRT operator

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Description: Number of km run by BRT buses (all service plans) per weekday from Guédiawaye Prefecture to Petersen Bus Station in Dakar plateau and on the way back. This indicator will reflect the improved mobility objective of the BRT project by quantifying the public transport services provided.							
Name: Satisfaction rating by public transport users of the BRT		Percentage	66.00	80.00	Annual	Public transport user surveys will be commissioned by CETUD on an annual basis among the BRT users.	CETUD BRT operator Consulting firm
Satisfaction rating by female public transport users of the BRT		Percentage	66.00	80.00	Annual	This sub-indicator will report women answers.	CETUD BRT operator Consulting firm
Description: This indicator will reflect the improved public transport services and the increased satisfaction by BRT users.							

Intermediate Results Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: A concession agreement with a private company to invest and operate in the BRT operations between Dakar and Guédiawaye is signed		Yes/No	N	Y	Once	The Yes value will be reached when the concession agreement between the private operator and the GoS is signed meaning that the deal is closed.	CETUD
Description: This indicator measures the operational effectiveness of the project with a signed concession agreement with a BRT operator. This indicator will reflect the first step in putting in place the BRT system.							
Name: Percentage of the Dakar Guédiawaye BRT infrastructure constructed		Percentage	0.00	100.00	Biannual	CETUD will collect the information from the supervision firms via AGEROUTE.	CETUD
Description: This indicator will monitor the progress of the construction of the whole BRT infrastructure towards the full 18.3km long segregated infrastructure.							
Name: Number of operational BRT buses		Number	0.00	140.00	Biannual	CETUD will collect the information from the BRT operator which has the number of operational buses every day.	CETUD

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Description: This indicator will reflect the supply level of transport services, more specifically the availability of the BRT fleet (privately financed) after the hiring of the BRT operator.							
Name: Roads rehabilitated, Non-rural		Kilometers	0.00	28.00	Biannual	This indicator will be the length of road works entirely completed. CETUD will collect the information from the supervision firms via AGEROUTE.	CETUD
Description: Kilometers of all non-rural roads reopened to motorized traffic, rehabilitated, or upgraded under the project. Non-rural roads are roads functionally classified in various countries as Trunk or Primary, Secondary or Link roads, or sometimes Tertiary roads. Typically, non-rural roads connect urban centers/towns/settlements of more than 5,000 inhabitants to each other or to higher classes of road, market towns and urban centers. Urban roads are included in non-rural roads.							
Name: Number of feeder lines operational		Number	0.00	26.00	Biannual	CETUD as the urban transport authority will provide the value.	CETUD
Description: This indicator will measure the number of operational feeder lines to the BRT. This is the first expected outcome of the public transport network restructuring activities. These feeder lines will be operated by the existing local transport operators.							
Name: A revised public transport licensing system is in use		Yes/No	N	Y	Once	The YES target value will be reached when the reform of the public transport licensing system is	CETUD

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
						operational.	
Description: This indicator will measure the progress in the reform and the professionalization of the public transport sector. This is a key expected outcome of component 2, highly expected by existing public transport operators (AFTU) who expressed it during the preparation of the project.							
Name: Annual disclosure by CETUD of the audited annual financial statements and the operational results of the Dakar Guédiawaye BRT		Yes/No	N	Y	Annual	The audited annual financial statements as well as the operational results will come from the BRT operator under the supervision of CETUD.	CETUD
Description: CETUD will be the main entity in charge of monitoring the BRT operations and concession. This indicator will reflect the capacity of CETUD in playing that role and the transparent implementation of the BRT operations and concession.							
Name: A mirror system to monitor the fare collection system is in use at CETUD		Yes/No	N	Y	Biannual	The value will be Yes when a reliable mirror system is fully in use at CETUD.	CETUD
Description: This indicator will monitor the progress of the implementation of a mirror system at CETUD to monitor the fare collection system and BRT operations. This indicator will reflect monitoring capacity of CETUD.							
Name: Number of serious injuries and deaths involving		Number	0.00	0.00	Biannual	The data will be collected by CETUD that supervises the	CETUD

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
a BRT bus						BRT operator as well as by the department in charge of road safety at the Ministry of Infrastructure.	
Description: The 0 target value of this indicator reflects the ambitious and noble objective that no one should be injured (hospitalized) or killed by a BRT bus in operation. Baseline is 0 because no segregated data on road accident is currently available in the BRT area.							
Name: Road safety assessment carried out on the BRT corridor with focus on pedestrians		Yes/No	N	Y	To be rated after the completion of the implementation of the BRT infrastructure	After completion of implementation of the BRT trunk corridor works, an independent road safety audit/inspection will be conducted for all pedestrian crossings.	CETUD
Description: This indicator measures the status of implementation of high-quality road safety measures along the BRT corridor supported under the project with a focus on pedestrian crossings.							
Name: A road safety management plan is in place within the BRT operator		Yes/No	N	Y	Annual	CETUD will monitor that the BRT operator gets and maintains a road safety certification.	CETUD

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Description: This indicator will measure the focus on road safety for BRT operations. The requirement for a road safety management plan will be part of the concession agreement.							
Name: A system for mapping road accidents along the BRT corridor is in use		Yes/No	N	Y	Annual	The indicator will have a YES value when a centralized mapping system is functional.	CETUD
Description: This is a key outcome of component 4 given that a mapping of road accidents in Dakar does not exist.							
Name: Percentage of women staff in the BRT operator		Percentage	6.00	25.00	Biannual	CETUD will collect the total number of the BRT operator staff of which women in order to get the percentage.	CETUD BRT operator
Description: This indicator will reflect the gender empowerment of the project. The GoS has made a long-term commitment towards equal job opportunities for men and women in the public transport sector. Taking into account that only 6% of staff working in public transport in Dakar are women, the 25% target value (4 times the baseline) among the BRT operator staff after 5 years will be an outstanding achievement.							
Name: A GRM (Grievance Redress Mechanism) is in use during construction		Yes/No	N	Y	Biannual	CETUD with the support of the WB will ensure that a GRM is permanently operational.	CETUD

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Description: This is to ensure that any citizen has the possibility to provide feedback during the construction of the infrastructure and any complaint/reclamation is appropriately handled and addressed, keeping the citizen informed about the status of the complaint until its conclusion							
Name: A GRM (Grievance Redress Mechanism) for the BRT operation is in use		Yes/No	N	Y	Biannual	CETUD with the support of the WB will ensure that a GRM is permanently operational.	CETUD
Description: This is to ensure that any citizen has the possibility to provide feedback on the BRT operations and any complaint/reclamation is appropriately handled and addressed, keeping the citizen informed about the status of the complaint until its conclusion.							
Name: Annual net savings of GHG emission (ton CO2)		Number	0.00	13884.00	Annual	Diesel consumption of the fleet of BRT buses, number of km run by this fleet as well as number of passengers will be collected by CETUD via BRT operator.	CETUD
Description: This will measure the savings in GHG emissions thanks to the project.							

Target Values

Project Development Objective Indicators

Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	End Target
Average daily passenger ridership in the BRT buses per weekday	0.00			150.00	250.00	300.00	320.00
Average rush hour in-vehicle travel time by public transport from Guediawaye Prefecture to Petersen Bus Station in Dakar Plateau	95.00			50.00	45.00	45.00	45.00
Percentage of population of Greater Dakar Area residents with access to the city center (Medina) within 60 minutes commuting period using the BRT	57.00	57.00	57.00	63.00	69.00	69.00	69.00
Number of kilometers serviced by the BRT buses per weekday	0.00			18000.00	32000.00	37000.00	37000.00
Satisfaction rating by public transport users of the BRT	66.00			70.00	75.00	80.00	80.00
Satisfaction rating by female public transport users of the BRT	66.00			70.00	75.00	80.00	80.00

Intermediate Results Indicators

Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	End Target

Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	End Target
A concession agreement with a private company to invest and operate in the BRT operations between Dakar and Guédiawaye is signed	N	Y	Y	Y	Y	Y	Y
Percentage of the Dakar Guédiawaye BRT infrastructure constructed	0.00	30.00	80.00	100.00	100.00	100.00	100.00
Number of operational BRT buses	0.00						140.00
Roads rehabilitated, Non-rural	0.00	0.00	0.00	0.00	15.00	28.00	28.00
Number of feeder lines operational	0.00			26.00	26.00	26.00	26.00
A revised public transport licensing system is in use	N		Y	Y	Y	Y	Y
Annual disclosure by CETUD of the audited annual financial statements and the operational results of the Dakar Guédiawaye BRT	N			Y	Y	Y	Y
A mirror system to monitor the fare collection system is in use at CETUD	N			Y	Y	Y	Y
Number of serious injuries and deaths involving a BRT bus	0.00			0.00	0.00	0.00	0.00
Road safety assessment carried out on the BRT corridor with focus on pedestrians	N	N	N	Y	Y	Y	Y

Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	End Target
A road safety management plan is in place within the BRT operator	N			Y	Y	Y	Y
A system for mapping road accidents along the BRT corridor is in use	N			Y	Y	Y	Y
Percentage of women staff in the BRT operator	6.00			15.00	20.00	25.00	25.00
A GRM (Grievance Redress Mechanism) is in use during construction	N	Y	Y	Y	Y	Y	Y
A GRM (Grievance Redress Mechanism) for the BRT operation is in use	N			Y	Y	Y	Y
Annual net savings of GHG emission (ton CO2)	0.00		12706.00	13087.00	13480.00	13884.00	13884.00

ANNEX 1: IMPLEMENTATION ARRANGEMENTS

COUNTRY: Senegal
Dakar Bus Rapid Transit Pilot Project

Project Institutional and Implementation Arrangements

1. **The Ministry of Infrastructure, Land Transport, and Opening Up** is the line ministry in charge of the BRT project. CETUD and AGEROUTE are under its aegis.

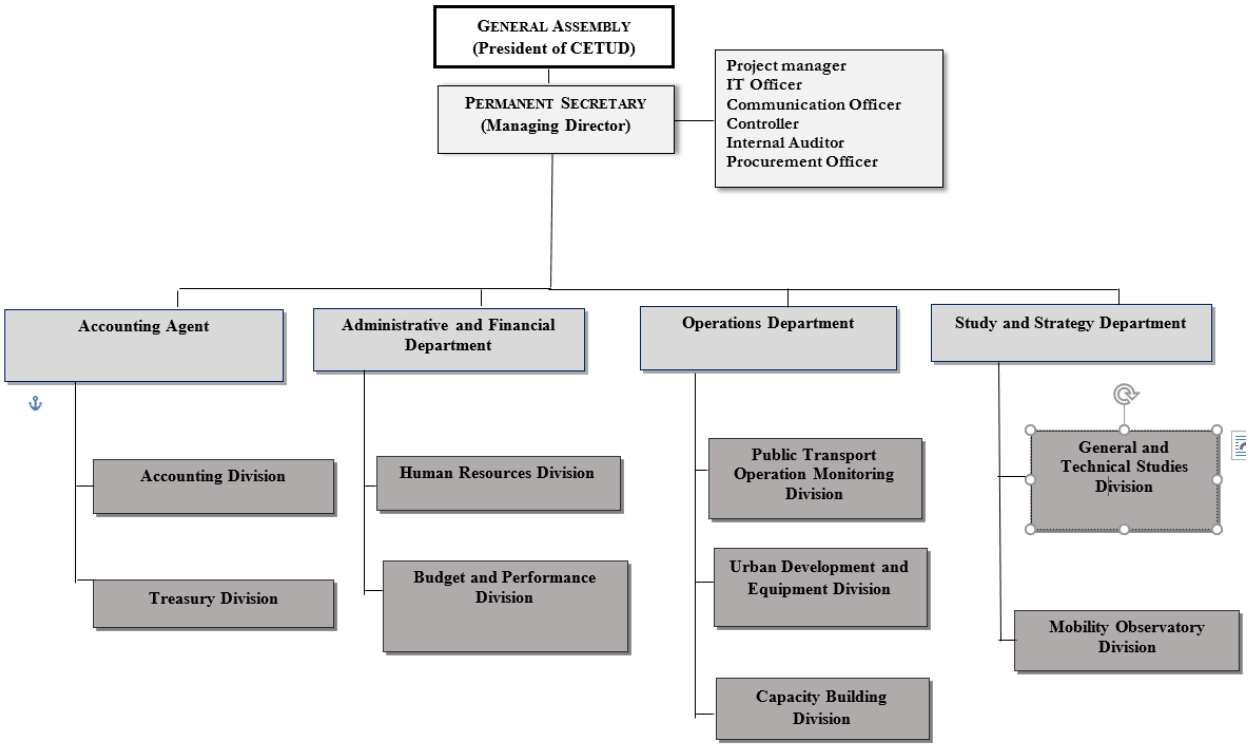
2. **A Steering Committee** has been created specifically for the BRT project in August 2016. The committee includes representatives from the different ministries and local collectivities involved in the BRT project as well as the association of privately owned bus companies in Dakar. The Minister of Infrastructure, Land Transport, and Opening Up is its head.

3. The committee's role is (a) formulating the strategic directions and plans for developing the BRT in a manner that is consistent with international best practices; (b) setting policies, guidelines and procedures to facilitate the implementation of the BRT activities; (c) carrying out all administrative procedures necessary for the implementation of the project; (d) monitoring, evaluating and reporting on the impact of BRT development; and (e) reviewing and approving the Project Reports and the Annual Work and Financial Plans.

4. **CETUD.** CETUD has been created by law in March 1997 (law 97-01). The decree 2001-557 adopted in 2001 describes its roles and responsibilities. CETUD is mainly in charge of defining the urban public transport network, monitoring the urban public transport services, proposing the urban public transport fare system, calculating the eventual urban public transport subsidies, providing licenses to urban public transport operators, and promoting urban public transport. CETUD's geographical area of intervention is limited to Dakar and its suburbs.

5. CETUD is composed of a Permanent Secretary and a General Assembly. The Permanent Secretary, which will be the main implementing agency of the project, is in charge of the day-to-day activities of CETUD. The structure of the Permanent Secretary of CETUD is as follows:

Figure 1.1 : Organizational Chart of CETUD



6. To implement the project, CETUD will hire a Project Coordinator who will report directly to the General Director (Managing Director). The Project Coordinator as well as the General Director will be supported by various short-term/long-term technical experts/consultants as needed. In addition, additional staff/consultants will be added to the various departments to cope with the increase in workload.

7. The General Assembly of CETUD has the role of a board of directors. The General Assembly meets at least every three months. The President of CETUD plays the role of a Chairman and is nominated jointly by the MITTD and the Ministry of Economy and Finance. The General Assembly of CETUD, as well as its President is renewed every three years. The General Assembly is composed of representatives from the President of the Republic, the Government, local collectivities, transport operators, and users. It has the following 18 members:

- A representative appointed by the President of the Republic;
- Six representatives from the Government—one each from the MITTD, Ministry of Economy and Finance, Ministry of Urban Renewal and Housing, Ministry of Interior and Public Safety, Ministry of Armed Forces, and Ministry of Commerce;
- Five representatives from the local collectivities in the region of Dakar—the President of the Regional Council of Dakar and the Mayors of Dakar, Pikine, Guédiawaye, and Rufisque; and

- Six representatives from transport companies and users—one from the state-owned bus company DDD, one from the railway company in Senegal, two from the associations of transport operators, one from the car insurance funds, and one from the federation of the consumers' associations.

8. CETUD has an annual budget of about CFAF 750 million (about US$1.4 million) of which about CFAF 350 million is from the Special Investment Budget of the Government (*Budget Spécial d'Investissement*) and CFAF 400 million is from the Urban Transport Development Fund (*Fonds de Développement des Transports Urbains,* FDUD). FDUD should be financed equally by the Government, the local collectivities, and the transport operators, but only the Government pays its annual contribution of about CFAF 400 million (about US$0.75 million). If the local collectivities (Dakar, Guédiawaye, Pikine, and Rufisque) and the transport operators pay their part of FDUD, CETUD would have an annual budget of CFAF 1.5 billion (about US$2.7 million). CETUD also receives some concession fees such as those from the operation of the main intercity/interstate bus station, but its amount is still limited.

9. **AGEROUTE.** AGEROUTE was created in 2010. AGEROUTE is in charge of implementing all road works in Senegal including construction, rehabilitation, and maintenance. AGEROUTE is also in charge of the management of the classified road network in Senegal. AGEROUTE is legally the implementing agency of all projects having road works components. All intervention on the classified road network in Senegal by other entities require a prior approval from AGEROUTE.

10. The operating costs of AGEROUTE is mainly financed by the autonomous road maintenance funds (*Fonds d'Entretien Routier Autonome*, FERA) in Senegal. In 2016, its operating costs were about CFAF 3.2 billion (about US$5.8 million). AGEROUTE has disbursed about CFAF 427 billion (about US$770 million) from its road maintenance/rehabilitation/construction programs.

11. An agreement will be signed between CETUD and AGEROUTE for the implementation of the infrastructure construction in the project. Another agreement between CETUD, AGEROUTE, and the BRT operator will be prepared during the first years of project implementation to detail the maintenance of the BRT road corridor during the BRT operation phase.

12. **The private operator of the BRT.** Given that the expected remuneration of the private operator will originate from the fares paid by the users and not from availability payment paid by the public sector, the law in Senegal mentions that such project shall be carried out as a public service delegation contract (also known as PSD). Therefore, a public service delegation contract (under a concession type scheme) will be entered into by the conceding authority (CETUD) and the winning bidder of the PPP transaction. According to the Public Procurement Code (*Code des Marchés Publics*) in Senegal, public service delegation contracts are done either through an open tender procedure with a prequalification stage, or through a specific two steps call for tenders. The first option has been selected by the GoS for the concession process.

13. A quick market poll was conducted in November 2016 with preliminary information provided to possible investors. The overall feedback was positive. Smaller investors said that market risks should be on the government; larger ones said they would consider taking the risks, depending on conditions and confirmed traffic volumes; some mentioned a minimum market guaranteed, beyond which revenue

share would be welcome; and exclusivity on the corridor was mentioned by most. All welcomed local participation as the key. Most indicated a preference for a minority share for local operators.

14. On December 20, 2016, a request for expression of interest was launched. Previously contacted operators confirmed their interest while new candidates expressed interest and some might form consortia to continue their participation in the process. Prequalification has been launched and the opening of the prequalification bids will take place in May 2017. Prequalified bidders will be invited to participate in the tender for the BRT transaction.

Financial Management

15. **Financial management and disbursement arrangements.** CETUD is the implementing unit of this project; even if more than 50 percent of projects activities will be implemented by AGEROUTE, CETUD will have the overall financial management responsibility. The Financial Management Assessment of CETUD was carried out in accordance with requirements under OP/BP 10.00 and Financial Management Manual for World Bank investment project financing operations, re-issued on February 4, 2015, and effective from March 1, 2010. The financial management and disbursement arrangements are provided in the following paragraphs.

16. **Budgeting arrangements.** CETUD will prepare the project annual work plan and budget and periodic reports of budget monitoring and variance analysis should be prepared by the financial management team each quarter. This report should be part of the interim financial reports (IFRs).

17. **Reporting and monitoring.** CETUD will prepare quarterly unaudited IFRs covering each quarter. The IFRs are due within 45 days after each quarter end. The format and the content of the IFRs will be agreed upon by project negotiation. CETUD will produce the project's annual financial statements, which will comply with SYSCOA and World Bank requirements.

18. **External audit.** An External Auditor with qualification and experience satisfactory to the World Bank will be appointed to conduct audits of the project's financial statements in accordance with International Auditing Standards. The ToR will be submitted to IDA for review. Audit reports should be submitted to IDA within six months after end of each year and after the project closure.

19. **Internal control arrangements.** CETUD has a manual of financial and administrative procedures that does not take in account project's activities. Furthermore, an Internal Auditor has recently been appointed but he lacks experience in doing internal audit and his role and mission have not been reflected in the manual yet. The current manual will be updated accordingly. However, project transactions are randomly reviewed before the payment of suppliers, but the Direction of Investment (DI) accounts in Senegal will have the overall responsibility of payments.

Disbursements

20. **Disbursements and funds flows.** Disbursements under this project will be carried out in accordance with the provisions of the Disbursement Guidelines ('Disbursement Guidelines for Investment Project Financing,' dated February 2017), the Disbursement Letter, and the Financing Agreement.

21. **Disbursement methods.** The project will have the option of using any of the four disbursement methods (Reimbursement, Advance, Direct Payment, and Special Commitment) indicated in the Disbursement Letter.

22. **Designated Account.** One [segregated] Designated Account (DA) in CFAF with a ceiling of CFAF 5 billion, equivalent to three months of project cash forecast, will be opened, at a commercial bank acceptable to the World Bank managed by the DI the entity assigned with the overall responsibility of payments.

23. **Advances to DA and reporting on the use advances.** At project effectiveness and upon receiving a withdrawal application (WA) signed by the recipient's authorized signatories, IDA will disburse an initial advance equivalent to the ceiling amount (CFAF 5 billion) into the DA. Subsequent advances will be made upon receiving monthly WAs supported with Statements of Expenditures (SOEs) which report on the use of the initial/previous advance. At the request of the recipient, direct payments from the IDA Credit account will be made to service providers, as needed, to pay for eligible project expenditures. All the WAs will be signed by signatories appointed by the Government. All detailed supporting documentation for the SOEs will be retained at CETUD and must be made available for periodic review by World Bank missions and external auditors.

24. **Disbursement categories and percentage of expenditures to be financed.** The IDA Credit will finance up to 100 percent of eligible expenditures as set forth in the Financing Agreement.

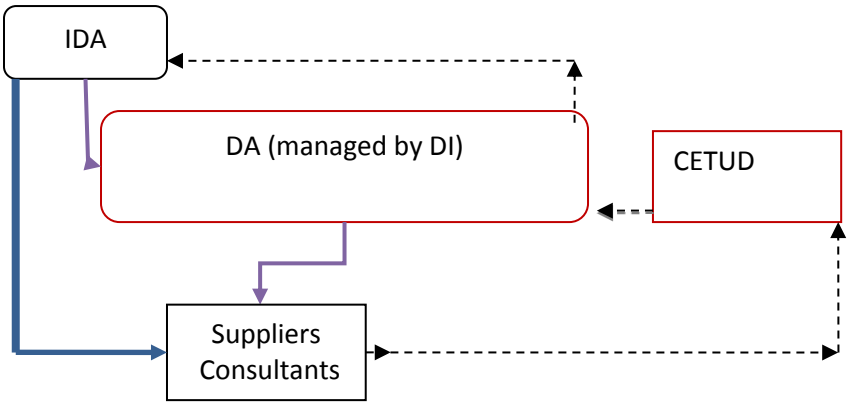
Table 1.1. Disbursement table as set forth in the Financing Agreement

Category	Amount of the Regular Credit Allocated (expressed in Euro)	Amount of the SUF Credit Allocated (expressed in Euro)	Percentage of Expenditures to be Financed (Inclusive of Taxes)
(1) Goods, works, non-consulting services, consultants' services (including Project audits, Training and Workshops, and Incremental Operating Costs) for Part A.1 and A.2 of the Project	28,100,000	211,100,000	Such percentage of Eligible Expenditures as the Bank may determine for each calendar year, starting in calendar year 2017, covered by the respective AWBP in accordance with the provisions set forth in Section B.2 of Schedule 2 of the Financing Agreement.
(2) Goods, works, non-consulting services, consultants' services (including Project audits, Training and Workshops, and Incremental Operating Costs) for Parts B, C and D of the Project	0	41,700,000	100

Category	Amount of the Regular Credit Allocated (expressed in Euro)	Amount of the SUF Credit Allocated (expressed in Euro)	Percentage of Expenditures to be Financed (Inclusive of Taxes)
TOTAL AMOUNT	28,100,000	252,800,000	

25. **Retroactive financing.** Up to EUR200,000 may be used for the activities paid before the signing date of the credit but on or after April 1, 2017 for consulting services.

Figure 1.2 : Cash-Flow Chart



Procurement

26. **Filing and record keeping.** The Procurement Procedures Manual will be part of the project operations manual and will set out the detailed procedures for maintaining and providing readily available access to project procurement records, in compliance with the Loan Agreement. The implementing agencies will assign one person responsible for maintaining the records. The logbook of the contracts with unique numbering system shall be maintained.

27. The signed contracts as in the logbook shall be reflected in the commitment control system of the borrower's accounting system or books of accounts as commitments whose payments should be updated with reference made to the payment voucher. This will put in place a complete record system whereby the contracts and related payments can be corroborated.

28. **Procurement Plan.** The Recipient and CETUD have prepared a detailed 18-month Procurement Plan that was agreed upon during the loan negotiations. The Procurement Plan will be updated annually in agreement with the World Bank or as required to reflect the actual project implementation needs and improvements in institutional capacity.

29. **The recruitment of civil servants as individual consultants** or as part of the team of consulting firms will abide by the provisions of paragraphs 1.9 to 1.13 of the Consultants Guidelines.

30. **Training, workshops, seminars, and conferences.** 'Training' means the reasonable costs, included in the annual work plans, of provision of training to persons under the project, including seminars, workshops, knowledge sharing activities, and study tours, consisting of the following: travel and subsistence costs for training participants, costs associated with securing the services of trainers, renting of training facilities, preparation and reproduction of training materials, and other costs directly related to training preparation and implementation. All training and workshop activities will be carried out on the basis of approved annual programs that will identify the general framework of training activities for the year, including (a) the type of training or workshop; (b) personnel to be trained; (c) institutions that will conduct the training; and (d) duration of the proposed training as well as the outcome and impact of the training.

31. **Operating costs.** The operating costs means the incremental expenses, included in the Annual Work and Financial Plans, and incurred by the project implementing entities on account of project implementation, management, supervision, evaluation and monitoring, for office space rental, utilities, and supplies, bank charges, communications, vehicle operation, maintenance, and insurance, building and equipment maintenance, advertising expenses, travel and supervision, salaries of contractual and temporary staff, but excluding salaries of civil servants.

32. **Procurement Manual.** Procurement arrangements, roles and responsibilities, methods and requirements for carrying out procurement shall be elaborated in detail in the Procurement Manual that will be a section of the Project Operations Manual. The Project Operations Manual shall be prepared by the borrowers and agreed with the World Bank, not later than within one month from project effectiveness.

33. **The expenditures for the following categories shall be financed from the credit under the project.** The implementing agencies will carry out procurement for their needs to implement the project and for the ministries as explained later in the document. They may also procure goods, works, or services for other institutions and agencies of the health system in their countries for the purpose of the project as included in the Procurement Plan and agreed with the World Bank.

34. **Procurement methods.** The methods as indicated in the table and within the thresholds indicated in the below tables can be used. The thresholds for the World Bank's prior review requirements are also provided in the table below:

Table 1.2. Thresholds for Procurement Methods and Prior Review

Expenditure Category	Contract Value (Threshold, US$)	Procurement Method	Contract Subject to Prior Review
1. Works	≥10,000,000	ICB	All
	<10,000,000 (*)	NCB	None
	<200,000 No threshold	Shopping Direct Contracting	All of US$100,000 and above
2. Goods	≥1,000,000	ICB	All of US$2,000,000 and above
	<1,000,000 (*)	NCB	None
	<100,000	Shopping	None
	No threshold	Direct Contracting	All of US$100,000 and above
3.Consultants			
Firms	>300,000	QCBS FBS QBS	All of US$1, 000,000 and above
	<300,000	QCBS CQ LCS	None
Individuals	>100,000	IC (at least 3 CVs)	All of US$300,000 and above
	<100,000	IC (at least 3 CVs)	No
	No threshold	Single-Source Selection (firms and individuals)	All of US$100,000 and above
All ToRs regardless of the value of the contract are subject to prior review.			

Note: *In specific circumstances, for example, when there is no sufficient number of qualified firms to ensure competition in the local context, ICB will apply even if the estimated amount is below the thresholds.
QCBS = Quality and Cost-based Selection; CQ = Selection based on Consultants' Qualifications; FBS = Fixed Budget Selection; LCS = Least-Cost Selection; QBS = Quality-Based Selection; and IC = Individual Consultants.

(a) All contract amendments raising the initial contract value by more than 15 percent of the original amount or above the prior review thresholds will be subject to prior review by the World Bank as determined mandatory in paragraphs 2 and 3 of annex 1 of the World Bank's Procurement Guidelines.

(b) **Post review.** For each contract for goods and public works not submitted to prior review, the procurement documents will be submitted to IDA post review in accordance with the provisions of paragraph 5 of annex 1 of the World Bank's Procurement Guidelines. The post review will be based on a ratio of at least one of five contracts. The prior review thresholds and other measures to be taken to mitigate the procurement risk should be reevaluated once a year with a view toward adjusting them to reflect changes in the procurement risk that may have taken place in the meantime and to adapt them to specific situations. In case of failure to comply with the agreed mitigation measures or the World Bank guidelines, a reevaluation of both types of thresholds, ICB, and prior review, may be required by IDA.

(c) The Association shall determine by notice to the recipient the revision of procurement prior review thresholds.

35. **National competitive bidding procedure.** For the procurement method designated as *Appel d'Offres Ouvert* (Open Bidding) to be acceptable to IDA and used for NCB, the following special requirements will need to be followed: (a) bids shall be advertised in national newspapers with wide circulation; (b) bid evaluation, bidder qualification, and award criteria shall be specified clearly in the bidding documents; (c) bidders shall be given minimum four weeks following the date of the invitation to bid or the date of availability of the bidding documents, whichever is later to prepare and submit bids; (d) bids shall be awarded to the lowest evaluated bidder; (e) eligible bidders, including foreign bidders, shall not be precluded from participating; and (f) no preference margin shall be granted to domestic contractors. In addition, the following provisions of the national procurement code will not apply: (a) 3.4c(i) related to the procurement of fuel for vehicles for the public administration and 3.4c(iii) referring to the procurement of hotel services, if such goods and services need to be procured reference will be done to the relevant methods described in the Procurement Manual; (b) 52 containing the possibility of excluding foreign bidders' participation in direct contracting; (c) 76 2(b) and 2(c) involving political decisions in the use of direct contracting in the context of emergency; and (d) 108 related to quality control and possible price reduction.

36. **Procurement documents.** Procurement will be carried out using the World Bank's Standard Bidding Documents (SBDs) or Standard Request for Proposals, respectively for all ICB for goods and works and recruitment of consultants. For NCB, while waiting for the Government and the World Bank to respectively validate and give the 'no-objection' on the national bidding documents in preparation, the recipient will use the SBD for ICB for goods and works, and the World Bank's Standard Request for Proposals for recruitment of consultants. In the same vein, the Sample Form of Evaluation Reports developed by the World Bank will be used until the new national samples are reviewed and found satisfactory to the World Bank.

37. **Advertising procedure.** The GPN, Specific Procurement Notices, Requests for Expression of Interest, and results of the evaluation and contracts award should be published in accordance with advertising provisions in the following guidelines: 'Guidelines: Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers' dated January 2011, and revised July 2014, and 'Guidelines: Selection and Employment of Consultants by World Bank Borrowers' dated January 2011, and revised July 2014.

38. In the case of shopping, the procurement will be done in accordance with the World Bank's Memorandum 'Guidance on Shopping,' dated June 9, 2000, (provided this Memorandum does not contradict the Procurement Guidelines) and the 'Guide for the Procurement of Small Contracts' issued on February 1, 2011.

39. **Frequency of procurement supervision.** In addition to the prior review supervision to be carried out from World Bank offices, the capacity assessment of the implementing agency has recommended (a) supervision missions every six months to visit the field and (b) at least one annual post procurement review.

40. **Procurement and technical audit.** A procurement and technical audit will be carried out at least every two years during project implementation and a report will be prepared on the procurement process, contract management, fiduciary compliance, and so forth.

Monitoring and Evaluation

41. CETUD will be in charge of M&E and will be the main responsible for collecting, aggregating, and disseminating the results indicators of the project. Apart from the PDO and intermediate results indicators, the following indicators will be monitored:

- Works progress break down by type of works (road, station, park and ride, and so on).
- Level of user's satisfaction which will be broken down by gender and revenues. An annual satisfaction survey will be undertaken to monitor these indicators.
- Number of accidents, injuries, and eventually deaths along the BRT line.

42. CETUD will also monitor the financial situation of the concession (BRT operator) which will produce annually audited financial statements. Financial indicators will be monitored such as the following:

- EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization);
- Net income;
- Gross profit; and
- Net profit.

43. An impact evaluation will be undertaken given that this is the first time such kind of project is implemented in Senegal and in West Africa Francophone.

Table 1.3. Results Chain

Inputs	**Activities**	**Outputs**	**Outcomes**		
Resources	Tasks	Products and services delivered	Short term	Medium term	Long term
• IDA financing, • Other financing, and • Implementation support	Project activities: • Works, • Goods, • Services, • Technical assistance, and • Training	• BRT infrastructure and equipment, • BRT fleet and operator, • Improved urban roads, • Restructured urban transport network, • Integrated	• Increased mobility, • Reduced travel time, • Improved transport services, • Increased use of public transpor	• Better accessibility to services, jobs, and opportunities, • Increased revenues for the local transport operator	• Better living conditions, • Improved business environment, and • Economic growth.

		fare system, • Trained and equipped local staff and institutions, and • - Informed community and citizens.	t, • Increased local capacity, • Safer transport system, • Increased job opportunities for women, and • - Better transparency and citizen engagement.	s, • Reduced pollution, and • Reduced road accident	

Role of Partners (if applicable)

44. The EIB and the GCF will provide cofinancing to the project. Through a Memorandum of Understanding, the World Bank will ensure the project lead role and no double review of the project documentation (safeguards, technical, procurement, and so on) will be undertaken by the partners. These contributions from the partners will be primarily financial and will not affect the institutional arrangements and the project technical aspects. Specific 'no-objection' from partners (EIB, GCF) will not be required during implementation, as a 'no-objection' from the World Bank suffices. The EIB and the GCF will be informed on the project progress through the World Bank regular supervision missions. Allocation of financing between the source of funds (IDA, GCF, EIB) may vary from one activity to another and will be decided on a case-by-case basis during implementation as the project progresses. Financing from one source of funds is flexible and may vary from zero to 100 percent for each given activity.

45. The French Development Agency is identifying an eventual urban transport project, which will complement this proposed BRT project. This potential complementary project would focus on upgrading the BRT feeder roads not benefiting from the BRT project, renewing the BRT feeder lines fleet, and improving the BRT feeder lines services.

ANNEX 2: MAPS AND ACCESSIBILITY RESULTS[31]

COUNTRY: Senegal

Dakar Bus Rapid Transit Pilot Project

Figure 2.1 BRT Map with Stations. The Terminal at Petersen Bus Station (Cabral) is at the Center of the City of Dakar

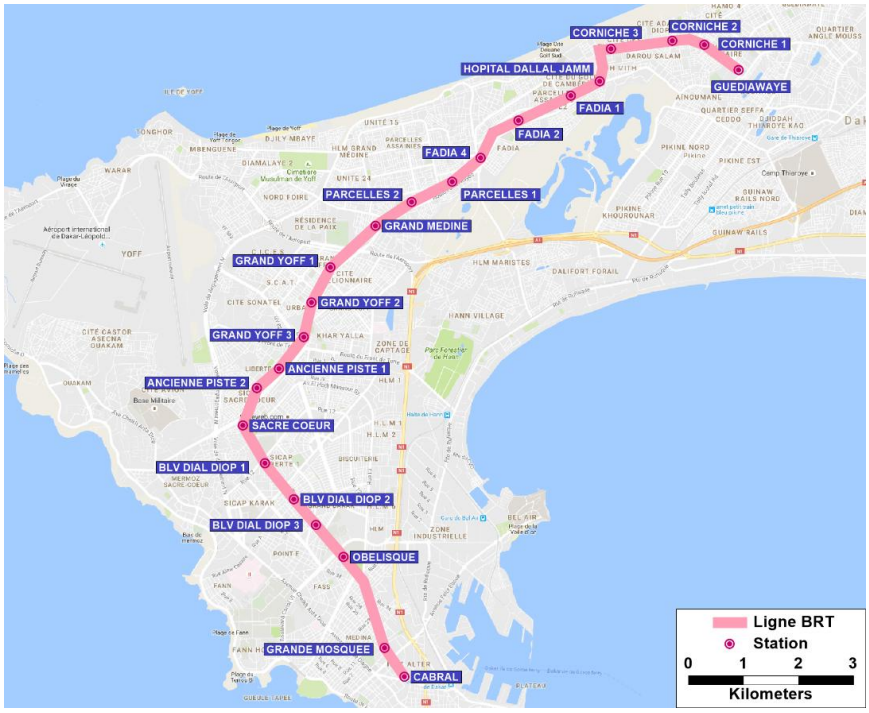
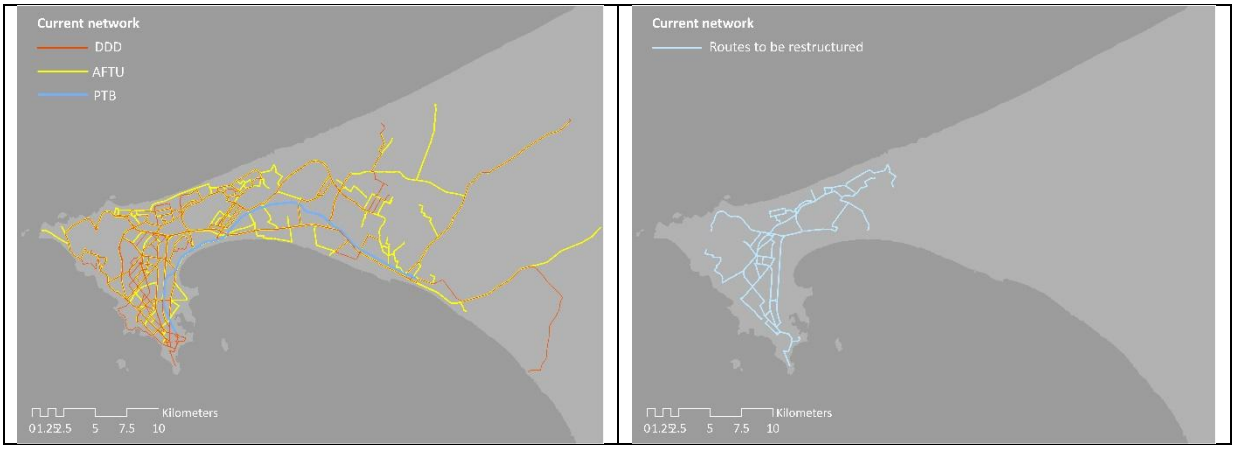
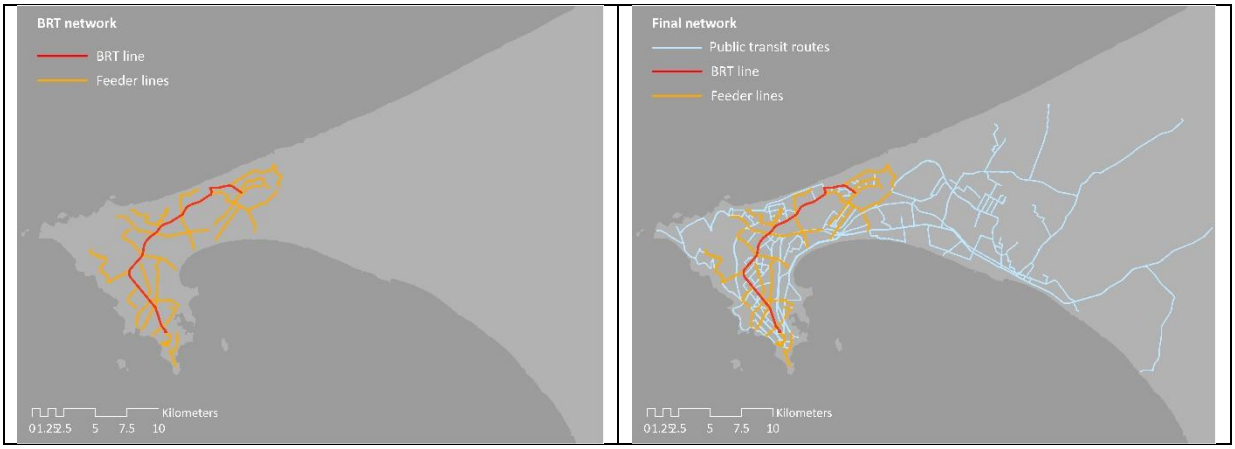


Figure 2.2. Public Transport Network Restructuring. Top-left: Current Network, Top-right: Routes to be Restructured, Bottom-left: BRT and 26 Feeder Routes, Bottom-right: the Final Network after Restructuring



[31] Methodology and deeper analysis are available in the report on *Urban Accessibility Analysis for Dakar, Senegal,* Aiga Stokenberga, 2017



Distribution of Population, Opportunities, and Poverty

Figure 2.3. Population Density (top-left). Number of Poor Individuals per km^2 (top-right). Employment per km^2 (bottom-left). Regular employment per km^2 (bottom-right)

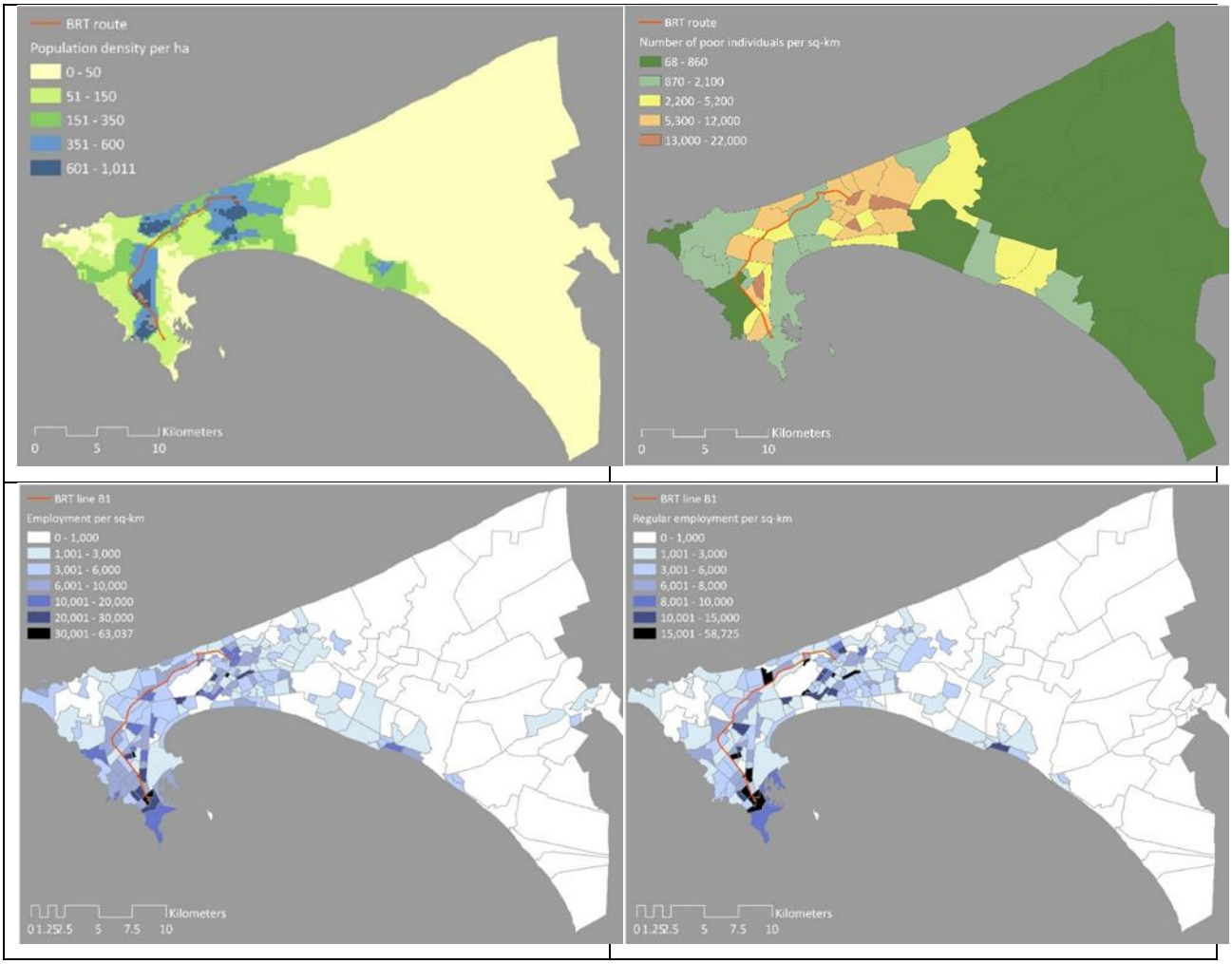
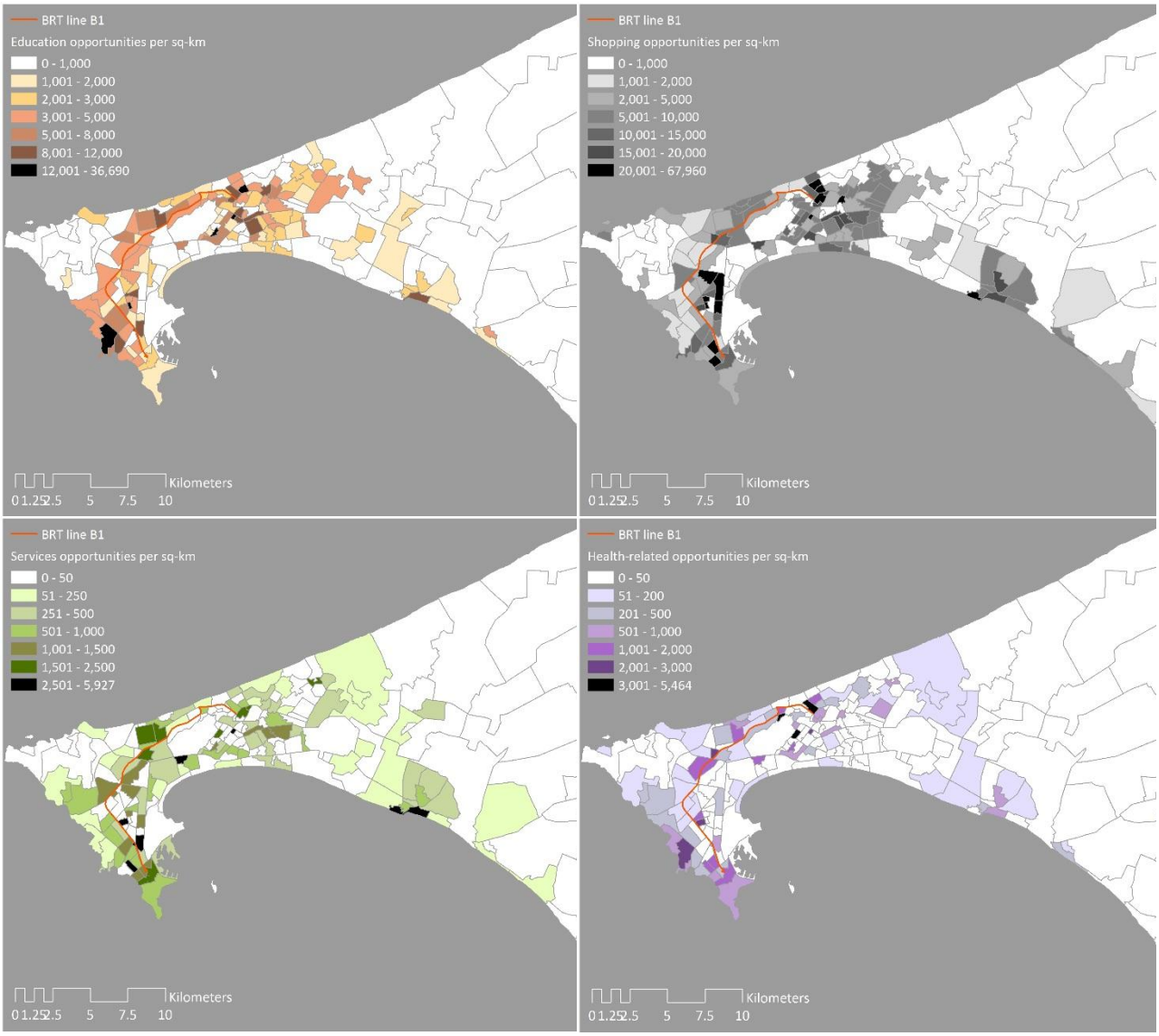
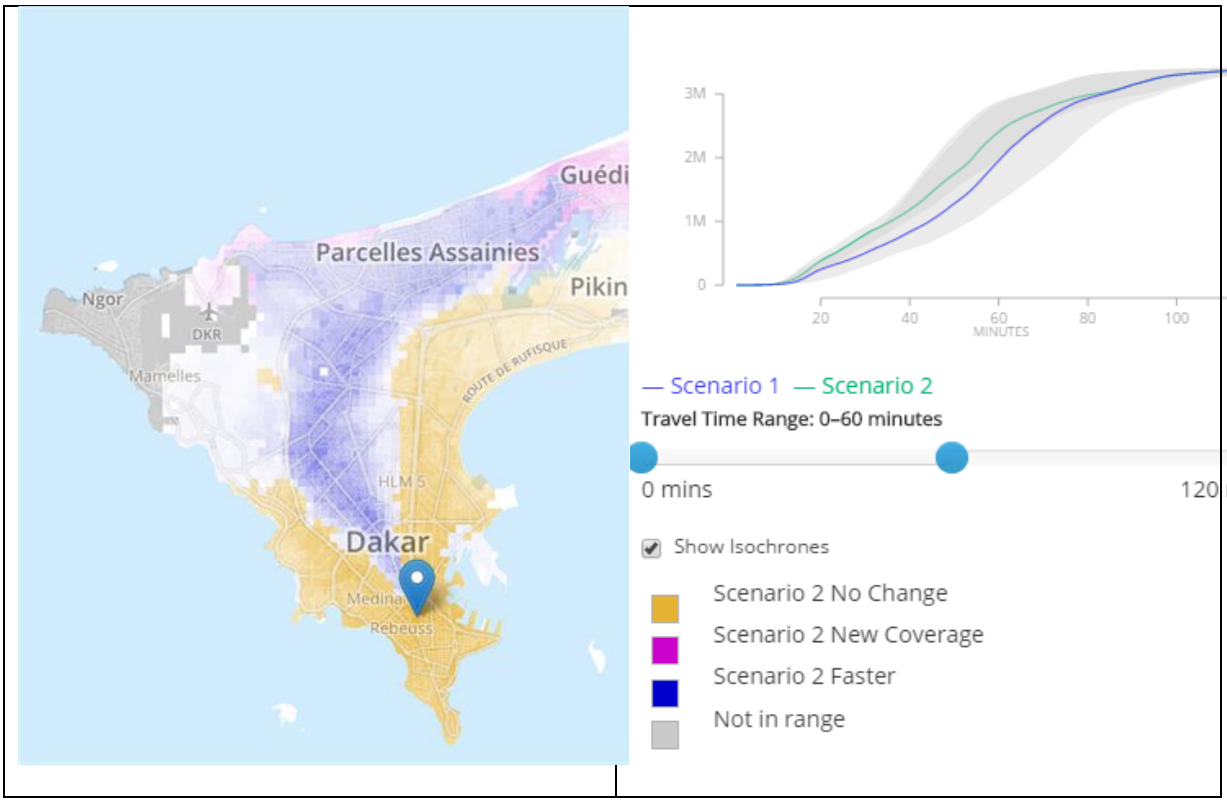


Figure 2.4. Relative Spatial Distribution of Trips for Educational, Shopping, Services, and Health-related Purposes (EMTASUD 2005 data)



Gains in Accessibility Results

Figure 2.5. Increase of Accessibility to the City Center



Note:

- Share of population who can access Medina during rush hour in 60 min using PT: Baseline scenario in 2020 without BRT: 57 percent
- Scenario in 2020 but with BRT: 69 percent
- Increase in population able to access Medina in 60 min during rush hour: 12 percentage points, or 21 percent
- Share of population who can access Medina during rush hour in 45 min using PT: Baseline scenario in 2020 without BRT: 30 percent
- Scenario in 2020 but with BRT: 42 percent
- Increase in population able to access Medina in 45 min during rush hour: 12 percentage points, or 41 percent

Table 2.1. Weighted Mean Accessibility to Employment Opportunities within 1 hour of Travel using Public Transport

		All employment	Regular employment	Regular employment, no formal education	Regular employment, higher education
No-project scenario 2020	Number	414,731	331,458	114,618	48,646
	Percent	52%	55%	57%	52%
Project scenario 2020	Number	461,372	367,466	125,744	55,990
	Percent	59%	61%	62%	59%

Figure 2.6.Accessibility to Employment Opportunities (Percentage of jobs Accessible by the Average Person in 1 hour). Baseline Scenario in 2020 (left). With Project Scenario in 2020 (right)

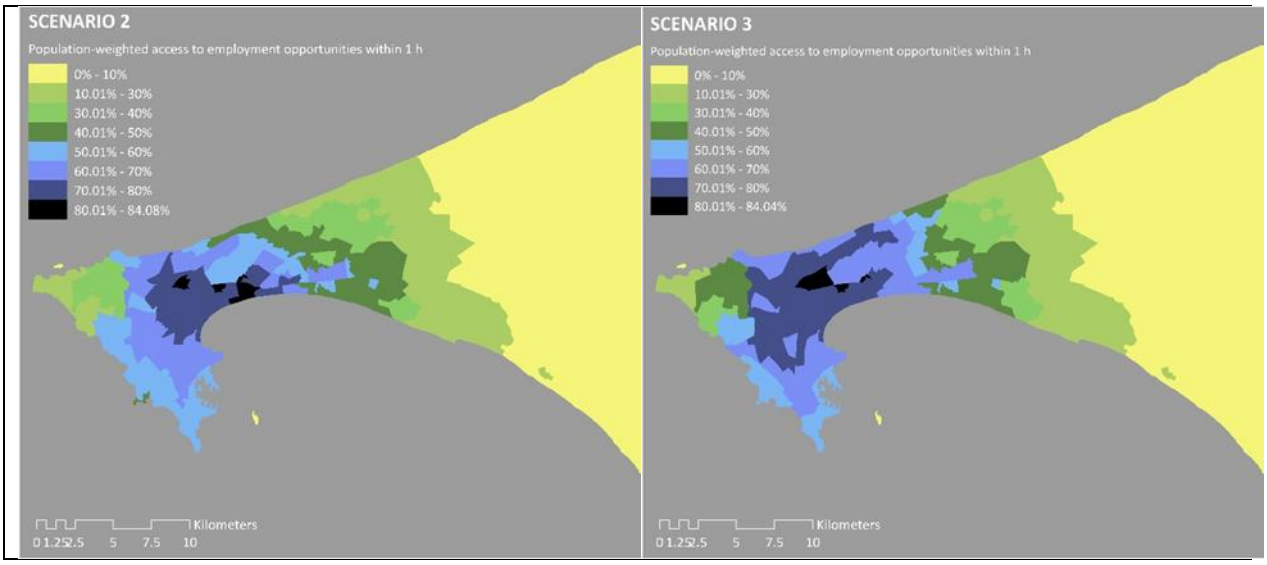


Figure 2.7. Change in Share of Employment Opportunities Accessible by Average Person in 1 h by Public Transport when Moving from Baseline Scenario to 'With Project' scenario

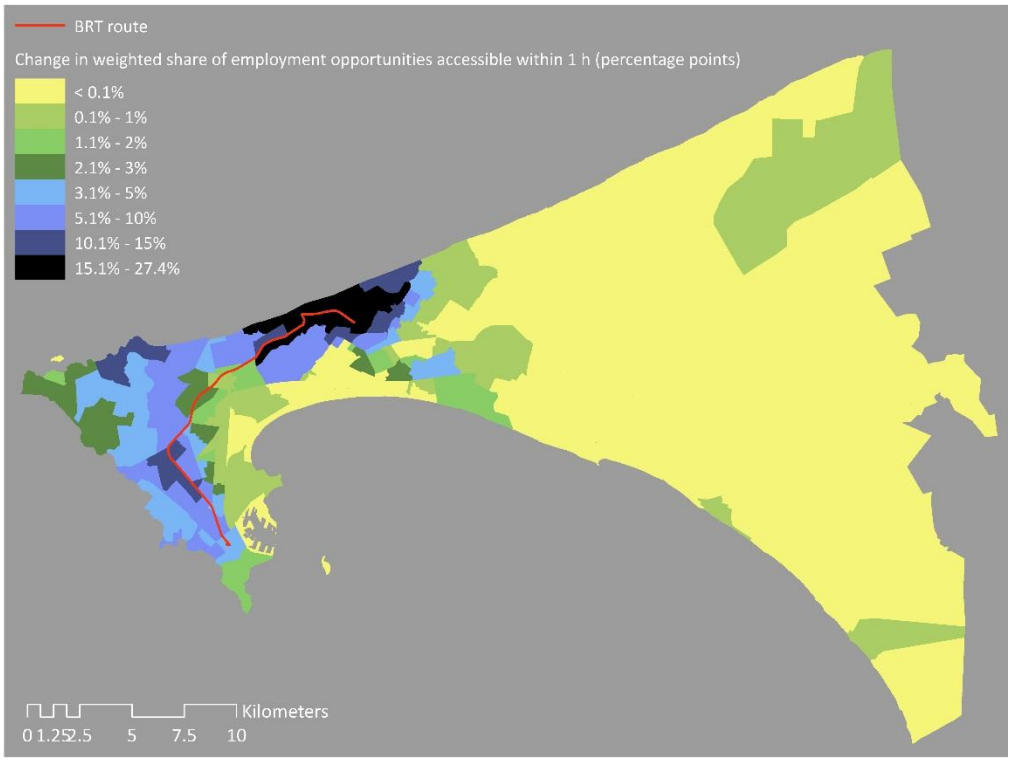
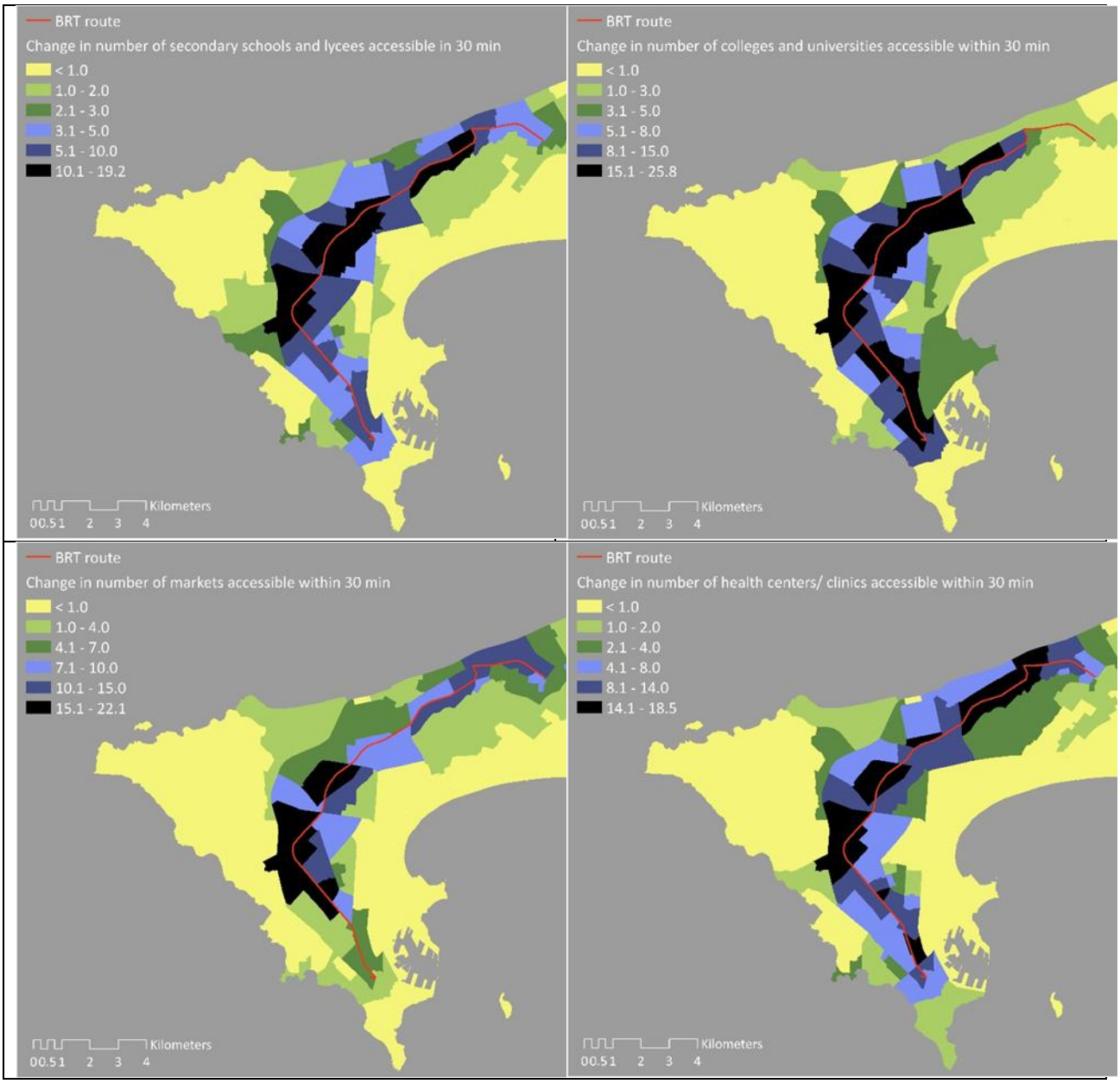


Figure 2.8. Change in Number of Health, Education, and Shopping Opportunities Accessible by Average Person in 30 min by Public Transport when Moving from Baseline Scenario to 'With Project' Scenario in 2020



ANNEX 3: DETAILED RESULTS FRAMEWORK METHODOLOGY DESCRIPTION

COUNTRY : Senegal
Dakar Bus Rapid Transit Pilot Project

Indicator Name	Unit of Measure	Frequency	Data Source/Methodology	Responsibility for Data Collection
Project Development Objectives				
Average daily passenger ridership in the BRT buses per weekday	Number (Thousand)	Biannual	CETUD will collect the number of passengers per day during hours of operations (6:00 am to 10:00 pm) using BRT buses in the 4 BRT service plans. CETUD will obtain these data through the mirror system that it will use to monitor the BRT operations. This indicator will be the average of the values collected for all weekdays, excluding weekends and vacation days, over a period of 6 months.	CETUD BRT operator
Average rush hour in-vehicle travel time by public transport from Guediawaye Prefecture to Petersen Bus Station in Dakar Plateau.	Minutes	Biannual	Data to be obtained from the ITS because the BRT buses are equipped with GPS. Travel time will be the difference between the bus departure time in Guédiawaye Prefecture and the bus arrival time in Petersen Bus Station (the main direction in the morning peak). The value of this indicator will be the average over a period of 6 months of these daily numbers for all BRT buses at morning peak hours between 7:00 am and 9:00 am collected on weekdays excluding weekend and vacation days. Baseline data were obtained in 2013 before BRT construction. They were measured from the existing AFTU and DDD's buses from Guédiawaye Prefecture to Petersen Bus Station in Dakar Plateau at morning peak hours between 7:00 am and 9:00 am.	CETUD BRT operator
Percentage of population of Greater Dakar Area residents with access to the city center (Medina) within 60 minutes commuting period using the BRT	Percentage	Annual	A GIS-based spatial analysis will be conducted using the open source accessibility tool developed by the World Bank called OTPA (https://analyst.conveyal.com) A single analysis is conducted that assesses the accessibility to/from the city center (Medina, coordinates WGS84 [−17.441, 14.677]) by PT services. This methodology requires the population density obtained from the most recent 'World Population Data' and public transport services speeds. The average speeds for BRT services will be obtained through the GPS installed in BRT buses when operational. They will be measured for an average working day of the school year (excluding weekend and vacation days) at morning peak hours. For speed of other public transport services, annual on-board speed surveys will be	CETUD BRT operator (for the GPS data)

			conducted for at least 50% of GDA public transport services on weekdays of school year at morning peak hours. Each survey will have a duration of at least one week to obtain an accurate average. The baseline data were derived from a similar methodology and from a similar survey that is based on existing AFTU and DDD services.	
Number of kilometers serviced by the BRT buses per weekday	Kilometers	Biannual	Data to be obtained from the ITS. Each bus will have a GPS installed and a logbook assigned, enabling to obtain the number of kilometers serviced. The indicator will be the average of number of km run per weekday excluding weekends and vacation days over a period of 6 months for all BRT buses. The target was derived from the demand and services plan assessment.	CETUD BRT operator
Satisfaction rating by public transport users of the BRT	Percentage	Annual	CETUD undertakes a user satisfaction survey every 2 years on the public transport in Dakar through a consulting firm. The baseline in this results framework is the latest known results (2015). The sample was 2,235 users; the questionnaire used a 5-point Likert scale (1: unsatisfied; 2: moderately unsatisfied; 3: neutral; 4: moderately satisfied; 5: satisfied) and 24 questions; the result is weighed depending on the most important element from each user (punctuality, affordability, comfort, safety, and so on) and aggregated. For this indicator, CETUD will commission public transport user surveys following a similar methodology similar but on an annual basis and only among the BRT users. The ToR of the survey will be submitted for the World Bank's review. The sample size will be at least 1,000. The 5-level satisfactory scale will be kept and the questionnaire will be the same as the questionnaire for the survey of the other public transport services. A sub-indicator will report women's answers. The survey will be undertaken by a specialized consulting firm.	CETUD BRT operator Consulting firm
Satisfaction rating by female public transport users of the BRT	Percentage	Annual		

Intermediate Results Indicators

Indicator Name	Unit of Measure	Frequency	Data Source/Methodology	Responsibility for Data Collection
A concession agreement with a private company to invest and operate in the BRT operations between Dakar and Guédiawaye is signed	Yes/No	Once	The YES value will be reached when the concession agreement between the private operator and the GoS is signed meaning that the deal is closed.	CETUD

Percentage of the Dakar Guédiawaye BRT infrastructure constructed	Percentage	Biannual	It will be the aggregation of the physical progress of each works contract (roads, stations, terminals, depots, and so on). CETUD will collect the information from the supervision firms through AGEROUTE.	CETUD
Number of operational BRT buses	Number	Biannual	CETUD will collect the information from the BRT operator which has the number of operational buses every day. The number will be an average of these daily numbers.	CETUD
Roads rehabilitated, Non-rural	Kilometers	Biannual	This core indicator will measure the number of km of road works financed under Component 2. This indicator will monitor the progress of the road works outside of the BRT infrastructure, which are key physical outputs of Component 2. This indicator will be the length of road works entirely completed. CETUD will collect the information from the supervision firms through AGEROUTE. The information can be easily assessed on site.	CETUD
Number of feeder lines operational	Number	Biannual	CETUD as the urban transport authority will provide the value.	CETUD
A revised public transport licensing system is in use	Yes/No	Once	The YES target value will be reached when the reform of the public transport licensing system is operational to professionalize and regulate adequately the public transport operations in GDA.	CETUD
Annual disclosure by CETUD of the audited annual financial statements and the operational results of the Dakar Guédiawaye BRT	Yes/No	Annual	The audited annual financial statements as well as the operational results will come from the BRT operator under the supervision of CETUD and will be published on CETUD website for transparency purposes.	CETUD
A mirror system to monitor the fare collection system is in use at CETUD	Yes/No	Biannual	The baseline is NO because the mirror system is not yet in place. The value will be YES when a reliable mirror system is fully in use at CETUD. It will allow CETUD to monitor in real time the flow of revenues from fares in the BRT system.	CETUD
Number of serious injuries and deaths involving a BRT bus	Number	Biannual	The data will be collected by CETUD that supervises the BRT operator as well as by the department in charge of road safety at the Ministry of Infrastructure.	CETUD
Road safety assessment carried out on the BRT corridor with focus on pedestrians	Yes/No	To be rated after the completion of the implementation of the BRT infrastructure	Before the implementation of the project, most of the pedestrian crossings are considered to be unsafe, and therefore the baseline is NO. After completion of implementation of the BRT trunk corridor works, an independent road safety audit/inspection will be conducted for all pedestrian crossings and the corridors will be considered to be safe and rating upgraded to YES if it can attain a road safety rating equivalent to 3-star i-RAP (International Road Assessment Program) rating (or	CETUD

			equivalent assessment).	
A road safety management plan is in place within the BRT operator	Yes/No	Annual	CETUD will monitor that the BRT operator obtains and maintains a road safety certification. The YES value of this indicator will be reached when the BRT operator is certified ISO39001 (or equivalent certification).	CETUD
A system for mapping road accidents along the BRT corridor is in use	Yes/No	Annual	The indicator will have a YES value when a centralized mapping system is functional to report each road accident along the BRT corridor (date and hour, location, nature of the accident, injuries, deaths, and so on)	CETUD
Percentage of women staff in the BRT operator	Percentage	Annual	CETUD will collect the total number of the BRT operator staff of which women to obtain the percentage	CETUD BRT operator
A GRM (Grievance Redress Mechanism) is in use during construction	Yes/No	Biannual	CETUD with the support of the World Bank will ensure that a GRM is permanently operational.	CETUD
A GRM (Grievance Redress Mechanism) for the BRT operation is in use	Yes/No	Biannual	CETUD with the support of the World Bank will ensure that a GRM is permanently operational.	CETUD
Annual net savings of GHG emission (ton CO2)	Number (ton CO2)	Annual	Diesel consumption of the fleet of BRT buses, number of km run by this fleet as well as number of passengers will be collected by CETUD through BRT operator. Knowing the type of buses will enable to assess the annual GHG emissions of the BRT buses. The methodology used is the internal methodology recommended by the World Bank Transport and ICT Global Practice.	CETUD