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Report No: PAD3367

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED SCALE-UP FACILITY CREDIT

IN THE AMOUNT OF EUR 267.6 MILLION
(US$300 MILLION EQUIVALENT)

TO THE

REPUBLIC OF CÔTE D'IVOIRE

FOR THE

ABIDJAN URBAN MOBILITY PROJECT

June 3, 2019

Transport Global Practice
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective Apr 30, 2019)

Currency Unit =	CFA Franc (CFAF)
CFAF 587 =	US$1
US$1=	EUR 0.891

FISCAL YEAR
January 1 - December 31

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ABBREVIATIONS AND ACRONYMS

AADT	Annual Average Daily Traffic
AFD	French Development Agency *(Agence Française de Développement)*
AfDB	African Development Bank
AFJCI	Association of Women Lawyers of Ivory Coast (*l'Association des Femmes Juristes de Côte d'Ivoire*
AGEROUTE	Road Management Agency *(Agence de Gestion des Routes)*
AMUGA	Greater Abidjan Urban Mobility Authority *(Autorité de Mobilité Urbaine du Grand Abidjan)*
ANAGED	National Agency for Waste Management
ANDE	National Environment Agency
AWPB	Annual Work Plan and Budget
BCEAO	Central Bank of West African States *(Banque Centrale des États de l'Afrique de l'Ouest)*
BNETD	National Bureau of Technical Studies and Development *(Bureau National d'Études Techniques et de Développement)*
BRT	Bus Rapid Transit
CBD	Central Business District
CFAF	African Financial Community Franc *(Communauté Financière Africaine Franc*)
CIAPOL	Ivorian Anti-Pollution Center *(Centre Ivoirien Antipolution)*
CNLVBG	National Committee for the Control of Gender Based Violence (*Le Comité National de Lutte contre les VBG)*
CNLVFE	National Committee Against Violence Toward Women and Children (*Comité national de Lutte Contre les Violences faites aux Femmes et aux Enfants)*
CNP-PPP	National PPP Steering Committee *(Comité National de Pilotage des PPP)*
CO	Carbon Monoxide
CoC	Code of Conduct
CPF	Country Partnership Framework
DA	Designated Account
DAA	Autonomous District of Abidjan (*District Autonome d'Abidjan*)
DEPG	Directorate of Equality and Gender Promotion (*Direction de l'Egalité et de la Promotion du Genre)*
DGTCP	Directorate of Treasury and Public Accounts (*Direction Générale du Trésor et de la Comptabilité Publique)*
DGTTC	Directorate of Road Transport and Mobility (*Direction Générale des Transports Terrestres et de la Circulation)*
EIB	European Investment Bank
EIRR	Economic Internal Rate of Return
EMP	Environmental Management Plan
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESR	Environmental and Social Respondents
ESS	Environmental Safeguards Specialist
FA	Framework Agreements
FDI	Foreign Direct Investment
FDTR	Road Transport Development Fund *(Fond de Développement du Transport Routier)*

FGM	Female Genital Mutilation
FM	Financial Management
GAA	Greater Abidjan Area
GBV	Gender Based Violence
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIF	Global Infrastructure Facility
GIS	Geographic Information System
GoCI	Government of Côte d'Ivoire
GPN	General Procurement Notice
GRM	Grievance Redress Mechanism
GWh	Giga-watt hour
HEIS	Hands-on Extended Implementation Support
ICB	International Competitive Bidding
ICR	Implementation Completion and Results Report
ICT	Information and Communication Technology
IFC	International Finance Corporation
IFI	International Financial Institution
IFR	Interim Financial Report
IGF	General Inspectorat of Finance *(Inspection Générale des Finances)*
INDC	Intended Nationally Determined Contribution
IPCC	Intergovernmental Panel on Climate Change
ITS	Information Technology System
JICA	Japan International Cooperation Agency
KPI	Key performance indicator
kWh	Kilo-watt hour
LSMS	Living Standards Measurement Survey
M&E	Monitoring and Evaluation
MCC	Millennium Challenge Corporation
MFD	Maximizing Finance for Development
MIGA	Multilateral Investment Guarantee Agency
MoT	Ministry of Transport
MSFFE	Ministry of Solidarity, Family, Women and Children (*Ministère de la Solidarité de la Famille, de la Femme et de l'Enfant)*
MWh	Mega-watt hour
NCB	National Competitive Bidding
NDC	Nationally Determined Contribution
NMT	Non-Motorized Transport
NO_x	Nitrous Oxides
NPV	Net Present Value
OFT	Observatory of Road Fluidity
OHS	Occupational, Health and Safety
OPEX	Operating Expenses
OSER	Office of Road Safety *(Office de Sécurité Routière)*
OSM	Open Street Maps
PA	Project Account

PACOGA	Greater Abidjan Port-City Integration Project P 159697 *(Projet d'intégration ville-port du Grand Abidjan)*
PAMOSET	Transport Sector Modernization and Corridor Trade Facilitation Project P156900 *(Projet de Modernisation du Secteur des transports et facilitation du commerce sur le Corridor Abidjan-Ouagadougou)*
PAH	Project Affected Household
PAP	Project Affected Person
PAVVIOS	Center for the Care of the Victims of Sexual Violence (*Le Centre de Prise en Charge des Victimes de Violences Sexuelles)*
PCU	Project Coordination Unit
PDA	Project Definition Activity
PDO	Project Development Objective
PEFA	Public Expenditure and Financial Accountability
PFM	Public Financial Management
PH	Peak hour
PIM	Project Implementation Manual
PLR	Performance and Learning Review
PM	Particulate Matter
PND	National Development Plan *(Plan National de Développement)*
PPIAF	Public – Private Infrastructure Advisory Facility
PPP	Public-Private Partnership
PPSA	Project Preparation and Structuring Activity
PPSD	Procurement Project Strategy for Development
PRICI	Côte d'Ivoire Infrastructure Renewal Project P124715 *(Projet de Renaissance des Infrastructures de Côte d'Ivoire*)
PSC	Project Steering Committee
PSV	Passenger Service Vehicles
PSW	Private Sector Window
QCBS	Quality and Cost Based Selection
RAP	Resettlement Action Plan
REoI	Request of Expression of Interest
RFP	Request for Proposals
ROW	Right-of-Way
RPF	Resettlement Policy Framework
RSF	Risk-Sharing Facility
SAE	Small-Area Estimation
SAI	Supreme Audit Institution *(Cour des Comptes)*
SDGs	Sustainable Development Goals
SDUGA	Greater Abidjan Urban Master Plan *(Schéma Directeur d'Urbanisme du Grand Abidjan)*
SEA	Sexual Exploitation and Abuse
SIA	Specialized Implementing Agency
SME	Small and Medium-Sized Enterprise
SOE	Statement of Expenditure
SOTRA	Abidjan Public Transport Company *(Société des Transports Abidjanais)*
SPN	Specific Procurement Notice
SRCR	Reference and Counter-Reference System (S*ystème de Référence et de Contre Référence)*

SSS	Social Safeguards Specialist
SUF	Scale-Up Facility
tCO_2e	Tons of Carbon Dioxide Equivalent
TOD	Transit-Oriented Development
ToR	Terms of Reference
TT	Travel Time
UITP	International Association of Public Transport *(Association Internationale des Transports Publics)*
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNOCI	United Nations Operation in Côte d'Ivoire
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
US$	United States Dollar
VfM	Value-for-Money
VKT	Vehicle Kilometers Travelled
VOC	Vehicle Operating Cost
WA	Withdrawal Application
WAEMU	West African Economic and Monetary Union
WBG	World Bank Group
WHO	World Health Organization

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DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Cote d'Ivoire	Abidjan Urban Mobility Project	
Project ID	**Financing Instrument**	**Environmental Assessment Category**
P167401	Investment Project Financing	A-Full Assessment

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[✓] Fragile State(s)
[ ] Disbursement-linked Indicators (DLIs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	

Expected Approval Date	Expected Closing Date
27-Jun-2019	14-Oct-2025
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 improve accessibility to economic and social opportunities and to increase efficiency of the public transport system along the Yopougon-Bingerville corridor and its feeder lines in Abidjan.

Components

Component Name	Cost (US$, millions)

Implementation of the East-West Bus Rapid Transit (BRT) corridor between Yopougon and Bingerville	380.00
Strengthening of SOTRA and the restructuring of the feeder system to mass transit lines	75.00
Organizing the artisanal transport sector and last-mile accessibility	50.00
Human Capital Development and Operational Support	25.00

Organizations

Borrower: THE REPUBLIC OF COTE D'IVOIRE

Implementing Agency: Ministry of Transport

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	540.00
Total Financing	540.00
of which IBRD/IDA	300.00
Financing Gap	0.00

DETAILS

Private Sector Investors/Shareholders

Equity	Amount	Debt	Amount
Government Contribution	10.00	IFI Debt	400.00
Government Resources	10.00	IDA (Credit/Grant)	300.00
Non-Government Contributions	40.00	Other IFIs	100.00
Private Sector Equity	40.00	Commercial Debt	90.00
		Unguaranteed	90.00
Total	**50.00**		**490.00**

IDA Resources (in US$, Millions)

	Credit Amount	Grant Amount	Guarantee Amount	Total Amount
Scale-up Facility (SUF)	300.00	0.00	0.00	300.00
Total	**300.00**	**0.00**	**0.00**	**300.00**

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2019	2020	2021	2022	2023	2024	2025
Annual	0.00	10.00	30.00	50.00	110.00	70.00	30.00
Cumulative	0.00	10.00	40.00	90.00	200.00	270.00	300.00

INSTITUTIONAL DATA

Practice Area (Lead)

Transport

Contributing Practice Areas

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	Moderate
4. Technical Design of Project or Program	Substantial
5. Institutional Capacity for Implementation and Sustainability	High
6. Fiduciary	Substantial
7. Environment and Social	High
8. Stakeholders	High
9. Other	Substantial
10. Overall	High

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	✓	
Performance Standards for Private Sector Activities OP/BP 4.03		✓
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, Section I.A.1.d: The Recipient shall ensure that, throughout Project implementation, the PCU is maintained with staff in sufficient number, with experience and qualifications satisfactory to the Association, in carrying out its responsibilities, including through recruitment or appointment by the PCU, under terms of reference and with qualifications and experience satisfactory to the Association, of a coordinator, a deputy coordinator, a procurement specialist, a financial management officer, an accountant, an assistant accountant, an environmental management specialist and a social management specialist.

Sections and Description
Schedule 2, Section I.A.1e: No later than two (2) months after the Effective Date, the PCU shall acquire an accounting software.

Sections and Description
Schedule 2, Section I.A.1e: No later than five (5) months after the Effective date, the PCU shall recruit an external auditor.

Sections and Description
Schedule 2, Section I.A.2.a: The Recipient shall establish and thereafter maintain, at all times during the implementation of the Project, a project steering committee with a composition, mandate, and resources satisfactory to the Association ("Project Steering Committee" or "PSC").

Sections and Description
Schedule 2, Section I.B.2.a: No later than three (3) months after the Effective Date, the Recipient shall prepare under terms of reference acceptable to the Association, and furnishes to the Recipient and the Association, an implementation manual for the Project containing detailed arrangements and procedures.

Sections and Description
Schedule 2, Section I.D.1.a: The Recipient shall not later than November 30 of each year of Project implementation, prepare and furnish to the Association, an annual work plan and budget ("Annual Work Plan and Budget"), containing all activities proposed to be included in the Project and a proposed financing plan for expenditures required for such activities for the following calendar year, including the expenditures to be financed by the Association in accordance with this Agreement, the Co-financing Agreement and by the Recipient under each Part of the Project (for each such expenditures, with the source of funds and its corresponding percentage of financing), as well as a cashflow and disbursement forecast.

Sections and Description
Schedule 2, Section IV.A: No later than July 1st, 2020 , the Co-financing Agreement shall be executed and delivered respectively and all conditions precedent to its respective effectiveness or to the right of the Recipient to make withdrawals under it (other than the effectiveness of this Agreement) shall have been fulfilled.

Sections and Description
Schedule 2, Section IV.B.1: The Recipient shall revise the concession agreement entered into between SOTRA and the Recipient dated November 11, 1998 in a manner satisfactory to the Association, no later than six (6) months after the Effective Date or before the launch of the call for bids for the selection of a BRT private operator (or such later date acceptable to the Association), in order to define (i) the financial obligations of the Recipient and (ii) include indicators to measure SOTRA's performance.

Sections and Description
Schedule 2, Section IV.B.2: The Recipient shall submit SOTRA' audited financial statements no later than September 30 of each year of Project implementation.

Sections and Description
Schedule 2, Section IV.B.3: 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 in a manner satisfactory to the Association, no later than twelve (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 selected through a transparent international competitive bidding process, including the acquisition of an electric bus fleet or any other type of bus fleet as agreed with the Association, for the purposes of Part A.1 of the Project (the "PPP Agreement").

Sections and Description
Schedule 2, Section IV.B.4: The Recipient shall exercise its rights under the PPP Agreement in such manner as to protect the interests of the Recipient and the Association and to accomplish the purposes of the Financing.

Sections and Description
Schedule 2, Section IV.B.5: Except as the Association shall otherwise agree, the Recipient shall not assign, amend, abrogate or waive the PPP Agreement or any of its provisions.

Sections and Description
Schedule 2, Section IV.C.1: The Recipient shall no later than three (3) months after the Effective Date hire (a) one (1) additional stakeholder engagement specialist and (b) additional consultants in sufficient numbers and with qualifications acceptable to the Association to strengthen the capacity of the PTUA to handle sensitization and outreach activities with the PAPs and to facilitate the implementation of the PTUARAP.

Sections and Description
Schedule 2, Section IV.C.1: The Recipient shall no later than six (6) months after the Effective Date, (i) mobilize sufficient funds in the budget law for the compensation of any additional PAPs identified in the complementary census and (ii) create two (2) additional offices staffed with qualified personnel in charge of the grievance redress mechanism to ensure a presence in all the relevant municipalities impacted by the PTUA.

Conditions

Type	Description
Effectiveness	Article V: The Recipient has established the Project Coordination Unit (PCU) in accordance with the Implementation Arrangements section of the Financial Agreement
Type	Description
Effectiveness	Article V: Delegated Management Contracts have been duly executed, on terms and conditions acceptable to the Association, between the Recipient, acting through the PCU , and each of the Specialized Implementing Agencies as defined in the financial agreement
Type	Description
Effectiveness	Article V: The Recipient has: (i) completed a complementary census of households affected by the PTUA and (ii) prepared, cleared and disclosed and the addendum to the RAP for the PTUA.
Type	Description
Disbursement	Schedule 2, Section III B.1b: No withdrawal shall be made under Category 2, until and unless the Association has received evidence satisfactory in form and substance that the Risk Sharing Facility Framework Agreement and the first Partial Credit Guarantee Agreement have been signed
Type	Description
Disbursement	Schedule 2, Section III B.1c: No withdrawal shall be made under Category 4, until and unless the Association has received evidence satisfactory in form and substance that the Recipient has entered into an agreement with ENPC and INP-HB defining the payment mechanism and the selection process of the awardees of the scholarships
Type	Description
Disbursement	Schedule 2, Section III B.1d: No withdrawal shall be made under Category 5, until and unless the Association has received evidence satisfactory in form and substance that the Recipient has entered into an agreement with CNPS defining the payment mechanism and selection process of the drivers and entrepreneurs of the artisanal public transport sector that will benefit from the social protection coverage

I. STRATEGIC CONTEXT

A. Country Context

1. **Côte d'Ivoire is continuing its healthy recovery following the post-electoral crisis of 2011.** The country is the largest economy in francophone Sub-Saharan Africa, and the third-largest in West Africa, with a population of 24.3 million and a Gross Domestic Product (GDP) of US$39.91 billion in 2017. The country's GDP grew at a rate of 7.7 percent in 2017 and around 7.4 percent in 2018, while inflation has remained below 3 percent. Growth is expected to continue at a rate above 7 percent in 2019, reflecting buoyant domestic demand, steady foreign direct investment (FDI), and continued public spending, particularly on transport, information and communication technology (ICT), and energy infrastructure. The economy, however, remains vulnerable to external shocks, especially the volatility in the prices of the country's main export commodities (that is, cocoa, cashew nuts, palm oil, and cotton) and climate change, as well as to political uncertainty, especially in the lead up to the next Presidential elections scheduled in 2020.

2. **Côte d'Ivoire is one of the most urbanized countries in Sub-Saharan Africa and the Greater Abidjan Area (GAA) is its engine of growth.** More than half—56 percent—of Côte d'Ivoire's population lives in urban centers, with urbanization increasing at 5 percent yearly, albeit with high spatial disparity between the GAA and other cities. By 2050, the share of urban population will increase to two-thirds. The GAA is home to approximately 5.4 million people, representing 42 percent of the country's urban population. It covers 19 municipal jurisdictions, of which 13 are part of the Autonomous District of Abidjan (DAA) and the remaining six are surrounding municipalities.[1] It is the country's main economic hub, contributing approximately 60 percent of its GDP (with an average GDP per capita 4.5 times higher than the rest of the country), 80 percent of formal employment, and 90 percent of formal enterprises. The GAA is expected to grow further, to reach seven million inhabitants by 2030 and over 10 million by 2040 and will remain the main driver of the country's future economic growth and achievement of the national objective of becoming a middle-income country by 2035. However, the contribution by GAA has not yet been maximized because of several inefficiencies: low economic density, weak human capital, poor spatial organization, and high transport costs.[2]

3. **The national poverty rate in Côte d'Ivoire is on a downward trend, declining from 51 percent in 2011 to 46.3 percent in 2015**. However, as revealed by the 2015 Living Standards Measurement Survey (LSMS), living conditions in urban areas have worsened, and urban poverty has increased from 29.5 percent in 2008 to 35.9 percent in 2015. There are high spatial disparities in poverty incidence across the country, with the city of Abidjan displaying the lowest poverty rate (22.7 percent). At the same time, Abidjan is also the region with the highest absolute contribution to national poverty: it is home to more than 11 percent of the country's poor population. Success in tackling poverty in a mega-city like Abidjan depends on the ability of poor households to access jobs and economic opportunities which, in turn, requires good access to affordable and safe transportation. Côte d'Ivoire remains one of the countries in which the disparities between women and men are the greatest. Despite efforts to reform the laws, women do not always have equal access to education and professional possibilities as

[1] The GAA covers the metropolitan area of Abidjan and consists of 19 municipal jurisdictions, of which 13 are part of the DAA (Abobo, Adjamé, Anyama, Attécoubé, Bingerville, Cocody, Koumassi, Marcory, Plateau, Port-Bouët, Songon, Treichville, and Yopougon) and 6 are surrounding municipalities (Grand-Bassam, Bonoua, Alépé, Azaguié, Dabou, and Jacqueville).
[2] World Bank. (2015). *Côte d'Ivoire Urbanization Review*. Washington, D.C., June 12

men. They also need better access to healthcare and family planning.

4. **Vulnerability to climate change and disasters is a key concern for Côte d'Ivoire.**[3] Côte d'Ivoire is among the least resilient countries worldwide: it is ranked 147th out of 169[4]. Based on the Intergovernmental Panel on Climate Change's (IPCC) estimates, climate change could reduce GDP by 2 to 4 percent across Africa by 2040 and by 10 to 25 percent by 2100. These losses would be borne by the agricultural, human capital, and infrastructure sectors and could send 2 to 6 percent more households into extreme poverty by 2030. In Côte d'Ivoire, that would amount to nearly one million more people in extreme poverty (living on less than US$1.90 per day), in addition to the six million poor in the country today.

B. Sectoral and Institutional Context

5. **Despite significant public investments in road infrastructure in recent years, GAA suffers from unreliable urban transport, high transport costs and growing congestion, which hinders its competitiveness.** Urban mobility has become a major challenge: the population growth and the economic development of Abidjan have a significant influence on the demand for transport, and this pressure is reinforced by the weaknesses of the current public transport supply which is dominated by informality, lack of coordination, obsolescence, inadequacy and shortage of system management personnel. Approximately 51 percent of all firms in the country consider transport to represent a "major" or "very severe" obstacle to their operations; this figure rises to 57 percent in Abidjan. The burden manifests itself in several ways, including through low physical accessibility to labor force and congestion-related delays in delivery times. When compared to other countries in West Africa, firms based in Abidjan are significantly more burdened by transport issues. If household expenses on transport were to decrease by 20 percent, this could lead to a gain of 1.9 percent per year in economic growth.[5]

6. **Because of an expensive and poor public transport system, Abidjan's population suffers from inadequate mobility and high transport costs.** Each household spends an average of CFAF 1,075 (US$1.82) per day and "loses" more than three hours commuting. Residents in outlying neighborhoods are the most adversely affected because their trips are longer (78 minutes per trip compared to a city-wide average of 33 minutes). In aggregate, more than CFAF 4 billion is spent daily (in monetary and opportunity costs), equivalent to CFAF 1,200 billion (US$2 billion) per year. Transport represents the third highest expenditure in Abidjan's household budgets (after food and housing) and about 4 to 5 percent of the national GDP in 2017. At current public transport fares, households earning less than CFAF 100,000 (US$173) per month would have to spend, on average, 30 percent of their overall budget to afford a round-trip per day for two people. In contrast, a transport system is generally considered "affordable" when daily commuting does not absorb more than 10 percent of household budgets. High transport costs disproportionally impact the poor and women who tend to rely most on public transportation.

7. **Public transport[6] accounts for approximately 80 percent of all motorized trips in the city**. It is provided by two different types of operators: (i) formal service providers operating and organized within a formal framework of contractual agreements, and (ii) informal service providers that operate more flexible routes, subject to compliance with certain conditions (such as registration and payment of a fee). The first type of service is provided primarily by the Abidjan Public Transport Company (SOTRA - *Société des Transports Abidjanais*), with

[3] World Bank. (2018). *Côte d'Ivoire Seventh Economic Update: So Tomorrow Never Dies*. July 12.
[4] https://gain-new.crc.nd.edu/country/c-te-d-ivoire
[5] World Bank. (2019). *Que la Route Soit Bonne : Améliorer la mobilité urbaine à Abidjan*. Washington, D.C., January.
[6] Public transportation includes regular, continuing shared-ride surface transportation services that are open to the general public.

approximately 750 buses currently operating on 110 lines. In addition, lagoon ferries are operated by contractually formalized services provided by SOTRA and two private operators (STL and Citrans) – with a total of 30 to 40 boats. The remaining transport services in Abidjan are provided by the artisanal sector comprising minibuses (Gbakas) – about 5,500 vehicles; municipal taxis (Woro-woro) – about 12,000 vehicles; and other taxis – about 11,300 vehicles. Private vehicles account for just 11 percent[7] of the daily trips. According to the latest household survey (2013), the percentage of households in Abidjan owning a car is only 8.9 percent.

8. **Between 1998 and 2013, the formal public transport share has decreased by more than 50 percent and represented less than 12 percent of total public transport trips in 2013**, mainly because of the poor performance of the SOTRA reflected in their low commercial speed (less than 15 km/h), insufficient coverage and obsolete equipment. The average waiting time for a SOTRA bus in 2013 was around 30 minutes, far more than the average time for both the woro-woro and the Gbaka. This is mostly because the size of the SOTRA bus fleet has dropped dramatically due to the failure to purchase new buses since the early 1990s, peaking at 1,200 buses in 1987 to just about 750 currently available. In addition, government compensations for the subsidization of monthly passes for students and civil servants are often delayed, causing a financial problem for SOTRA. These factors constrained SOTRA's operating performance and its ability to increase its market share.

9. **Conversely, the share of the informal sector, consisting of Gbaka, metered taxis, woro-woro, and inter-communal taxis, increased from 68 percent of public transport trips in 1998 to more than 85 percent in 2013** (the woro-woro and the Gbaka alone account for 77 percent of Abidjan's daily public transport trips). The artisanal sector suffers from lack of coordination and regulation, absence of workers protections, and poor condition of vehicles that pose safety, reliability, and pollution problems. The average age of the woro-woro and Gbakas is 22 and 17 years, respectively, and due to lack of proper maintenance, their condition is often very poor.

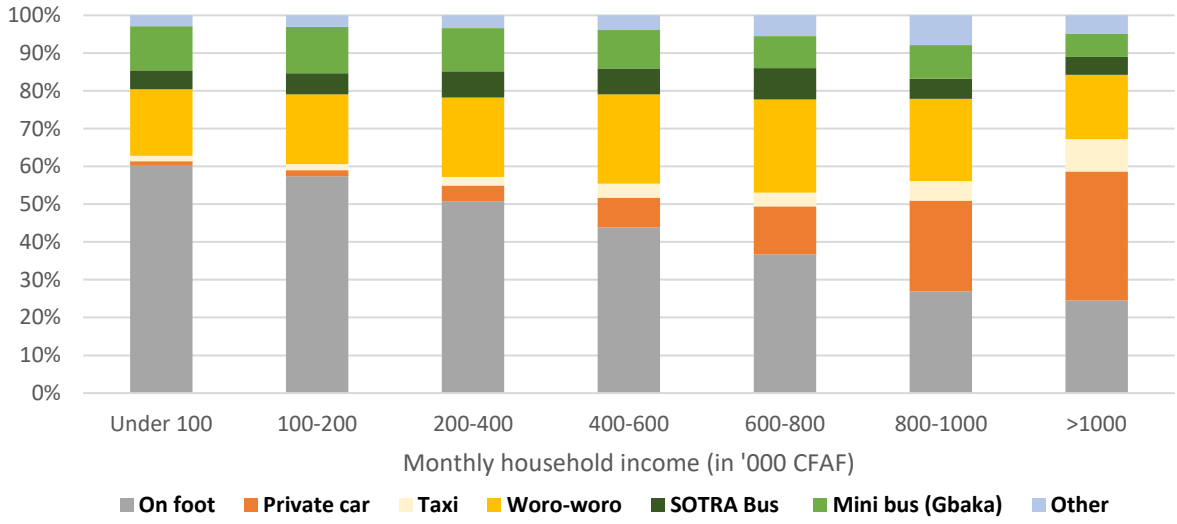


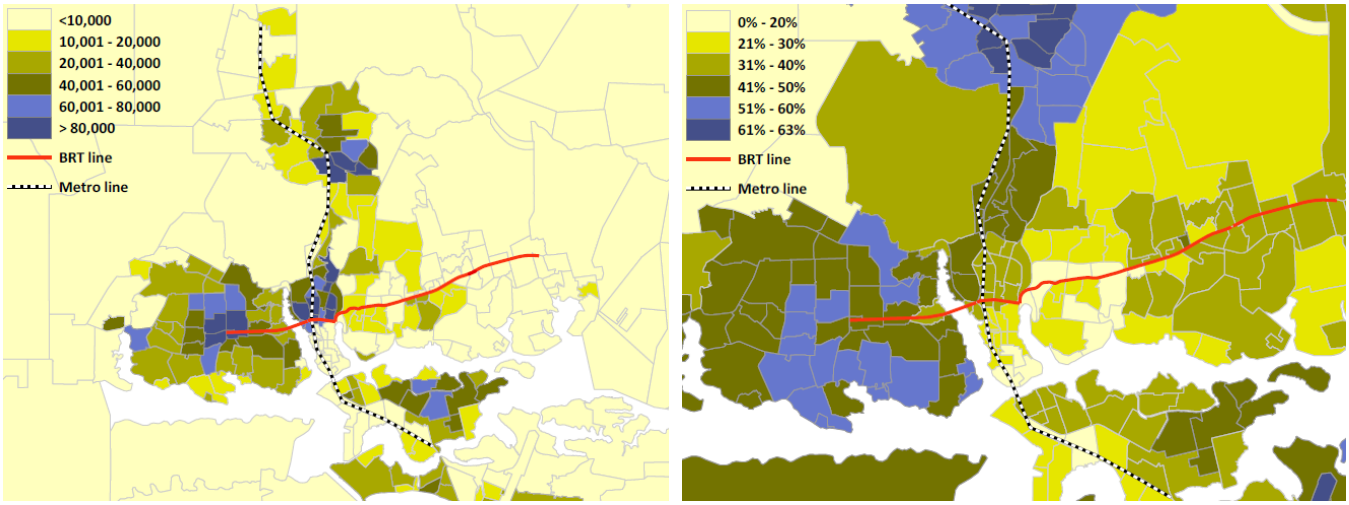
Figure 1: Modal split, by household income (household survey 2013)

10. **As a result, a large share of Abidjan's population continues to depend on walking for their daily mobility needs.** Approximately 40 percent of the 13.6 million daily trips in the city take place on foot. In poorer areas such

[7] This represent 1.5 million trips

as Yopougon and Abobo, located respectively to the west and north of the Central Business District (CBD), the modal share of walking is up to 60 percent, due to a poor-quality and unaffordable public transport system (Figure 1 illustrates the disproportionately higher share of walking among low-income households). This further accentuates the accessibility challenges of disadvantaged neighborhoods unable to efficiently reach the municipalities with higher concentrations of job opportunities and other services – hospitals, educational centers, etc. Work and business activities, including the port and industrial activities, are concentrated in the center of the city (Plateau, Adjamé, Cocody) and in the city's southern areas, with far fewer jobs in the periphery. The inhabitants of the densest and poorest neighborhoods can access only a small share of the labor market within a reasonable commuting time. Abidjan is therefore losing out on the potential agglomeration benefits that come from a spatially integrated labor market.

11. **The quality of the connectivity and the congestion in Abidjan have a direct impact on the preservation of human capital.** The lack of accessible, affordable, and reliable mass transit alternatives combined with poor management of the existing atomized public transport services causes the worsening of road safety and pollution, with adverse impacts on the health of the city's population and the natural environment. Vulnerable road users – including pedestrians, cyclists, and motorcyclists – represent 46 percent of all the road traffic related victims of the more than 3,600 fatalities on Côte d'Ivoire's roads each year[8]. The majority of these occur in urbanized areas, particularly the GAA. Furthermore, transport constraints directly affect access to social services. In the Ivoirian context, any constraints to access are significant, considering the country's low Human Capital Index score.[9]



Population density per km² *Share of walking in overall trips ending in the zone*

Figure 2: Population density, reliance on walking, and planned mass transit lines; Sources: SDUGA, PACOGA

12. **The public authorities, through the Greater Abidjan Urban Master Plan (SDUGA), have chosen to promote mass transit systems to link the most populated areas with employment areas.** Two major corridors have been identified for construction of mass transit under prioritized and exclusive right-of-way (ROW) arrangements by 2025. These are the North-South and East-West axes of the Abidjan urban area, serving large population basins in the dense areas of Abobo and Yopougon (north and west) linking them to the main

[8] Global Burden of Disease (2017)
[9] The Human Capital Index was developed by the World Bank in 2018 and combines education, health and child mortality indexes. Côte d'Ivoire scored 149 out of 157 countries on that index.

employment areas of the Plateau, Adjamé (Center), and the port and industrial zone (south). The two axes identified in the SDUGA are presented in Figure 2 (the East-West Bus Rapid Transit (BRT) line and the North-South Metro line). The Figure 2 (right) illustrates the proposed mass transit lines in the context of dependence on walking in different neighborhoods. As noted before, dependence is particularly high in the dense and relatively poor municipalities such as Yopougon.

13. **The SDUGA has received significant support from private and public stakeholders within the country and from donors, who have committed funding to several mobility projects in Abidjan**. The Metro Line 1 North-South project is financed by the French Treasury for EUR 1.5 billion (studies that will enable the operator to make a binding offer are under preparation; a first phase is expected to become operational in 2022 and the second and last in 2023). Various transport infrastructure projects in the city are receiving the support from the Millennium Challenge Corporation (MCC) (US$300 million), the Japan International Cooperation Agency (JICA), and the African Development Bank (AfDB) (US$700 million). The World Bank Group (WBG) is involved with the Greater Abidjan Port City Integration Project P159697 (US$400 million), approved in June 2018.

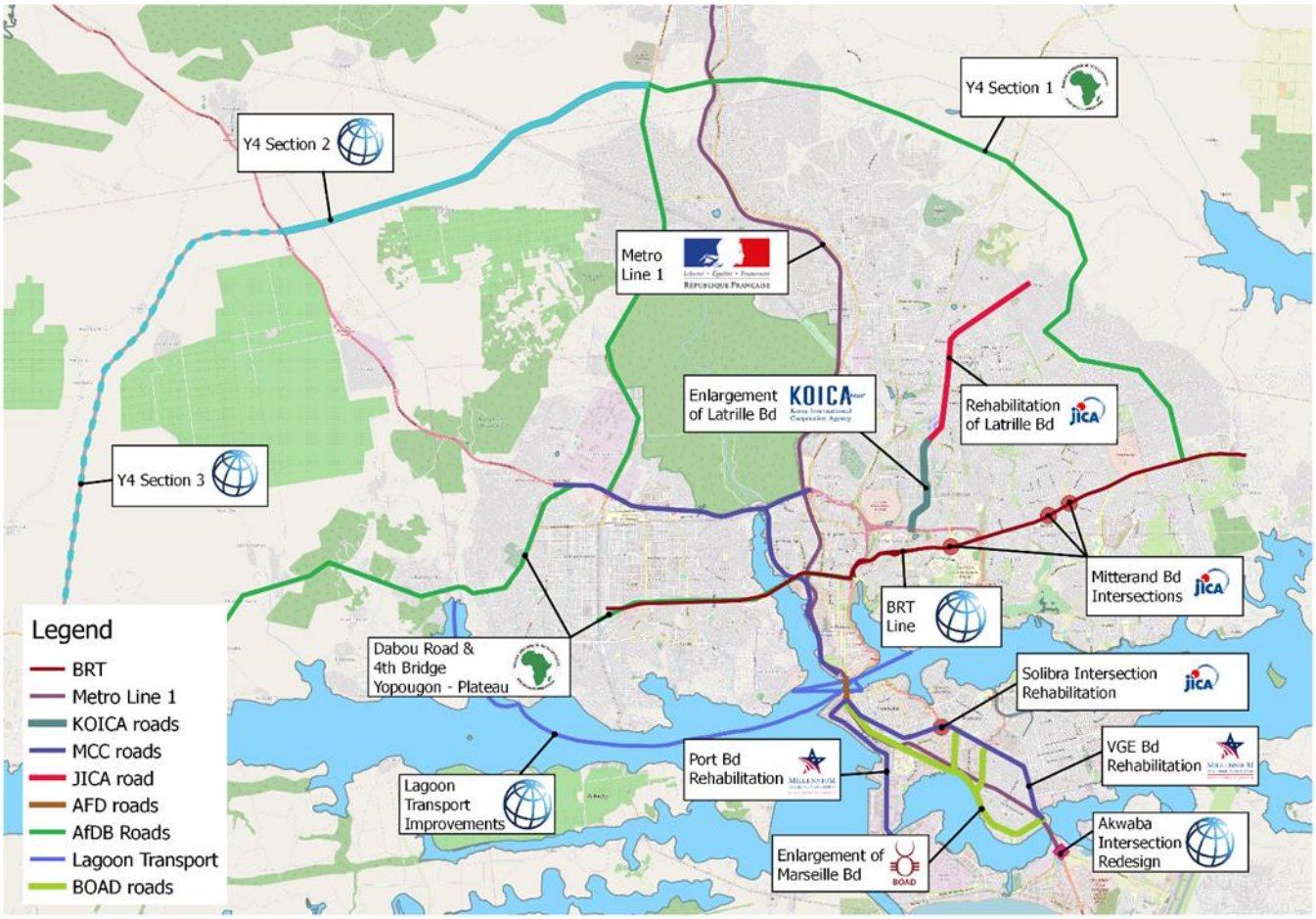


Figure 3: Donor Interventions in the Greater Abidjan Area

14. **As part of SDUGA implementation, AfDB and JICA are making substantial contributions to building trunk infrastructure to operationalize an East-West axis to the North of the CBD**. AfDB is financing under the Abidjan

Urban Transport Project (PTUA, or *Projet de Transport Urbain d'Abidjan)* the construction of a 2x3 lane expressway in Yopougon, together with a 1.2 km bridge to Adjamé (known as the Abidjan 4th Bridge Project). This infrastructure will provide the heart of Yopougon with a direct access to the city center, while up until now it was necessary to travel via the Autoroute du Nord located several kilometers away. The construction contract for this motorway has been signed and resettlement procedures are ongoing.[10] JICA is financing the upgrade of three major interchanges on the Boulevard Mitterrand in Cocody, in an area which already features a 2x3 lane carriageway with multiple at-grade signalized intersections, generating significant traffic jams in peak hours.

15. **SDUGA implementation can also benefit from the long tradition of Public-Private Partnerships (PPPs) in transport services and urban infrastructure in Côte d'Ivoire**, which includes urban water supply, rail and airport operations since the mid-1990s. The construction of the third bridge in Abidjan (Henri Konan Bédié Bridge), completed in 2015 with Multilateral Investment Guarantee Agency (MIGA) support, is a more recent PPP, which also demonstrated the capacity of the Government to fulfill availability payments to guarantee the financial balance of the private investment.

16. **Government plans for transforming urban transport will change the nature of work in the sector and require more skilled and professional workers both in the formal and informal sectors.** In the formal sector, the new bus, BRT, and Metro systems will introduce new technologies (e.g. automated fare collection and fleet management). The Government's urban mobility program could therefore be an opportunity to create many new qualified jobs. In the informal sector, the professionalization of the Gbaka and woro-woro compelled by this transformed urban transport system will require a more qualified, skilled and certified workforce, and would benefit from social protection services and improved entrepreneurship competencies. The current training and support systems for the formal sector is not up to the new demands and is non-existent for the informal sector.

17. **Women are under-represented in the transport sector worldwide and Côte d'Ivoire is no exception.** Women represent only 8 percent of the SOTRA workforce (of about 4,000 employees) and are mostly employed in clerical jobs (only 10 women are drivers or work in bus maintenance). Few women (less than 20) are woro-woro, taxi or Gbaka drivers in GAA, although it is believed that a slightly higher proportion of women own vehicles.

C. Relevance to Higher Level Objectives

18. **The proposed project is aligned with the 2016–2020 National Development Plan (PND) and city-level priorities.** The PND has set as a priority the strengthening of the competitiveness of urban economies to drive national growth, promote private sector-led development, and improve competitiveness. It highlights the overarching objectives of: (a) reinforcing the quality of institutions and governance; (b) accelerating the development of human capital and social welfare; and (c) accelerating the structural change of the economy. The proposed project will directly contribute to achieving these objectives through: (a) leveraging private development and financing of infrastructure through the proposed PPP for the BRT system and (b) facilitating efficient and sustainable mobility of people and job accessibility in GAA. Through its various activities, the project aims to facilitate long-term, efficient urban mobility and is expected to contribute to the city's increased competitiveness.

[10] The PTUA project, designed on the Yopougon side as a 2x3 urban expressway, will be modified in its scope and nature to allow the functional and operational insertion of a BRT corridor within its median reserve. The urban expressway features access to motorists at specific locations through dedicated interchanges.

19. **The proposed project will contribute to the WBG's twin goals of ending extreme poverty and promoting shared prosperity and to a range of Sustainable Development Goals (SDGs)**. The national household survey indicates that Abidjan and its surrounding area has a poverty rate of 22.7 percent. The proposed project investments will focus on some of the poorest areas of Abidjan (Yopougon, Attécoubé and Adjamé) and hence will benefit the urban mobility of the poorest. The proposed project will contribute to six out of the 17 SDGs: (a) achieve gender equality and empower all women and girls (Goal 5); (b) promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all (Goal 8); (c) build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation (Goal 9); (d) make cities and human settlements inclusive, safe, resilient, and sustainable (Goal 11); (e) take urgent action to combat climate change and its impacts (Goal 13); and (f) strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development (Goal 17).

20. **The project is identified in the Nationally Determined Contribution (NDC) of Côte d'Ivoire as a major potential contribution of the transport sector to reduce greenhouse gas (GHG) emissions**.[11] It is expected that this project will decrease traffic congestion, limit motorized trips by private vehicles, support the fleet renewal of old and polluting public transport vehicles, encourage the use of clean technology such as e-buses for the BRT, and will lead to health benefits through reduced respiratory diseases.

21. **The project is aligned with the World Bank Group (WBG) FY16–FY19 Country Partnership Framework (CPF)[12] for Côte d'Ivoire and the recently approved Performance and Learning Review (PLR).[13]** The proposed project is linked to the first focus area of the CPF (accelerating sustainable private sector-led growth) by directly contributing to CPF Objective 2: strengthen economic infrastructure especially in transport, as well as by addressing spatial inequality within the GAA. In addition, the project responds to the CPF through leveraging synergies between activities focused on urban transport infrastructure development, urban planning and services delivery, and capacity building activities on urban mobility for both the public and private sectors. The following additional aspects of the project are in direct alignment with the CPF: the provisions toward women and vulnerable population groups (Cross-Cutting theme 1); the support for the modernization and professionalization of the artisanal transport sector (Focus Area 2 – Objective 5); as well as gender, climate change and road safety provisions (Cross-Cutting theme 1). The contribution by the International Finance Corporation (IFC) to the project is consistent with its objective to bolster small and medium-sized enterprises (SMEs). To strengthen the WBG's efforts towards poverty reduction and shared prosperity, and in response to recent developments in the country, the PLR of May 2018 proposes further emphasis on addressing inclusion and limited economic opportunities, particularly gender, productive jobs and governance. It stresses the urgent need to address the lingering structural drivers of fragility in the country, including land management and job creation for disenfranchised youth by crowding in private investment and making the most of limited public resources.

22. **IDA-Scale-up Facility (SUF) Funding.** SUF financing has been mobilized for the proposed project in view of its strong, transformative development impact on social and economic conditions in the GAA, in terms of improving the efficiency of mass transit services and of the overall urban transport system, as well as the future urban development of the city. Specifically, this includes (a) a near doubling of the number of jobs accessible, on average, within an hour of travel, and (b) a reorganization of a sector employing more than one hundred thousand

[11] The implementation of Côte d'Ivoire's NDC requires the involvement of all national actors in the fight against global warming, in order for the country to achieve the goal of reducing GHG emissions by 28 percent by 2030.
[12] World Bank Group (WBG) FY16–FY19 Country Partnership Framework (CPF)13 for Côte d'Ivoire Report No. 96515-CI
[13] https://hubs.worldbank.org/docs/ImageBank/Pages/DocProfile.aspx?nodeid=29834408 for the period FY16-FY19

people that will have a significant impact on the efficiency and competitiveness of the urban area, while transforming one of the most traditional service sectors in Côte d'Ivoire. Finally, it will leverage at least US$100 million of other international financial institution (IFI) funding and increase the efficiency of use of the major infrastructure being built with funding from AfDB (Abidjan 4th bridge and expressway in Yopougon) and JICA, for amounts exceeding US$400 million. In addition, with the creation of the BRT using a PPP model, the project will help crowd in additional private sector resources (US$130 million) and bring in the needed know-how and innovation with a cleaner transport service.

23. **The proposed operation is aligned with the WBG Maximizing Finance for Development (MFD) approach.** By exploring options for private sector participation, especially for revenue-generating activities such as BRT operations and the renewal of the artisanal public transport fleet and taxis, this project will optimize the use of limited public resources and leverage private sector finance and expertise**.** There is a long tradition of PPPs in Côte d'Ivoire, including for urban infrastructure and transport services, that indicates that such an approach can be implemented. The use of IDA resources would therefore be limited to bridging the funding gap and public goods investment. In addition to IDA public loans, the WBG could deploy other financing instruments to maximize finance for development and to de-risk private investment; these include IFC debt and commercial debt mobilization, MIGA guarantees for equity and/or debt providers, IDA Guarantees to provide ongoing liquidity for government related risks, and IDA Private Sector Window (PSW) products for IFC and/or MIGA, including blended finance and credit enhancement. To maximize private sector contribution and ensure the best PPP structuring, the proposed project has been identified as a pilot project under the WBG MFD accelerator initiative. IFC, MIGA and World Bank staff have been working from the project identification stage as one team.

24. **The proposed project will leverage existing WBG engagements in the country.** The project will complement ongoing activities focused on: (a) urban planning, infrastructure rehabilitation and access to basic services in Abidjan through the Greater Abidjan Port-City Integration Project (P159697) and the Côte d'Ivoire Infrastructure Renewal Project (*Projet de Renaissance des Infrastructures de Côte d'Ivoire*; PRICI; P124715) and (b) fleet renewal and professionalization through the Transport Sector Modernization and Corridor Trade Facilitation Project (PAMOSET; P156900). The present project is explicitly anticipated in the Greater Abidjan Port-City Integration Project, which includes an allocation of US$5 million for the feasibility study and detailed preliminary design of a pilot BRT corridor on the Yopougon-Bingerville axis as well as provisions for supporting the capacity of an Urban Transport Authority in Greater Abidjan (created in January 2019 but not yet in operation) and for the development of a multi-modal transport plan for Abidjan.

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

The Project Development Objective is to improve accessibility to economic and social opportunities and to increase efficiency of the public transport system along the Yopougon-Bingerville corridor and its feeder lines in Abidjan.

PDO Level Indicators

(a) Percentage of the population of GAA able to access the Plateau[14] within 60 minutes during rush hour by public transport (Percentage) (breakdown by share of poor residents[15])
(b) Percentage of the population of GAA able to access at least one *additional hospital* within 30 minutes during rush hour by public transport compared to baseline (Percentage) (breakdown by share of poor residents)
(c) Percentage of population of GAA able to access at least one *additional secondary school* within 30 minutes during rush hour by public transport compared to baseline (Percentage) (breakdown by share of poor residents)
(d) Satisfaction rating by public transport users of BRT and its feeder lines (Percentage) (breakdown by satisfaction rating by women and poor public transport users)
(e) Average passenger ridership in the BRT buses per weekday (Number) (breakdown by female ridership)
(f) Number of transport service providers trained through formal training programs (Number) (breakdown by formal, female formal, informal and female informal transport providers)

B. Project Components

25. The proposed project is part of a general initiative to improve urban mobility conditions on Abidjan's East-West corridor. While the first component will support the establishment of the East-West BRT corridor between Yopougon and Bingerville through PPP arrangements, the other three components will address the inefficiencies and shortcomings of GAA's existing urban mobility sector by: (i) supporting the strengthening of SOTRA and the restructuring of the formal bus transport network around the two mass transport corridors (North-South Metro line and East-West BRT corridor); (ii) supporting the professionalization of the artisanal transport sector and improving last mile connectivity in the BRT corridor's catchment areas; and (iii) supporting human capital development in the urban transport sector by improving skills and social protection schemes. The project's operational costs will be financed in the fourth component.

Component A: Implementation of the East-West Bus Rapid Transit (BRT) corridor between Yopougon and Bingerville (US$380 million equivalent, of which US$200 million IDA and at least US$130 million expected from a private sector partner as part of a PPP[16])

26. This component will finance the implementation of a BRT system and its associated facilities along the Yopougon-Bingerville corridor. This corridor will use the right of way of the 4th bridge Project (PTUA) and of the three road interchanges financed by JICA in Cocody. This component will finance any potential modifications to the infrastructure provided under the PTUA that may arise due to the BRT insertion. The objective of this component is to implement a mass transit solution fully integrated with the existing public transport network and with its urban environment with a specific focus on Yopougon for this latter aspect.

27. Public contribution to the BRT will depend on the type of PPP arrangement and risk sharing agreed between the Government of Côte d'Ivoire (GoCI) and the BRT operator(s). Credit enhancement or government support mechanisms such as guarantees could be considered after completion of ongoing due diligence and transaction services for the BRT operations. Such mechanisms could come from several sources including MIGA,

[14] Defined as Place de la République
[15] Population whose total annual consumption (food and non-food) expenditure is below the official poverty line (269,075 CFAF per capita, in 2015).
[16] Estimated amount: the specific scope and investment amount of the PPP are being refined and studied with Global Infrastructure Fund (GIF) and Public – Private Infrastructure Advisory Facility (PPIAF) support.

IFC, in either case potentially with the support of the IDA PSW.

Sub-component A1. Implementation and operationalization of the BRT system along the corridor between Yopougon and Bingerville (US$325 million, including US$130 million by private sector partners)

28. This sub-component will finance (a) the construction of the infrastructure and BRT associated facilities (bus lanes, depots, terminals, stations including the station connecting with the North-South metro line in Adjamé) as well as (b) BRT rolling stock. It will also finance the finalization of studies and transaction advisory services enabling the selection of the operator(s) in charge of the construction of infrastructure and BRT associated facilities and the rolling stock. Contractual arrangement(s) and contribution(s) will depend on the type of PPP and may include goods, services, works and/or a defined contribution (such as viability gap funding). Possible options may comprise a PPP that includes both infrastructure and rolling stock, or public funding of all or part of the infrastructure. All possible PPP options are considered under an ongoing PPP assessment[17]. The financing contribution proposal above is based on a private sector financial contribution corresponding to one hundred percent of the cost of the rolling stock and a small participation in the cost of infrastructure (10 percent) while the public financial contribution corresponds to the remaining cost of the infrastructure (90 percent). Following the feasibility studies, any additional costs could be the subject of a funding request from other donors.

29. The East-West BRT corridor consists of a 20-km long corridor, made up of two sections: (1) the Yopougon-Adjamé section including a bridge (the 4th Bridge, under construction); and (2) Adjamé-Bingerville passing through the François-Mitterrand boulevard. In the proposed design, the BRT route is fully segregated in the median of the roadway. The design of the three road interchanges on François-Mitterrand boulevard (Bingerville road), planned as part of the JICA-funded project, already includes the necessary arrangement for BRT insertion. The infrastructure will be designed taking into account climate and disaster resilience aspects.

30. The BRT corridor will have 22 stations with an average distance between stations of 700 meters, except where the BRT crosses the Banco Bay between Attécoubé and Adjamé. Stations will be median aligned. They will be closed, with an off-board fare collection system and level boarding which will enable faster passenger boarding and alighting movements. The exact location, layout and design of the stations will be further defined in the ongoing detailed engineering studies. The design will conform to the Universal Access Guidelines, which ensure access for persons with disabilities, which is aligned with the IDA 18 target.

31. The BRT will include a provision of modern articulated buses with a capacity of approximately 160 passengers each. To support the commitments made by the GoCI under the Climate Change Paris Agreement, the BRT system will feature high-efficiency low-emission vehicles (electric buses) that are currently being identified and evaluated through detailed design studies.

Sub-component A2: Integration of the BRT with the existing public transport network and in the urban environment (US$25 million)

32. This sub-component will finance technical assistance to improve the integration of the BRT corridor with the existing public transport network and within its urban environment. This will include but may not be limited to the implementation of a physical and fare integration study, a parking management plan, a traffic management plan, non-motorized transport (NMT) plans (cyclists and pedestrians), and a strategy for supporting Transit-

[17] This assessment benefits from grants from the GIF and PPIAF.

Oriented Development (TOD) within the project's area of influence, particularly in Yopougon. The TOD approach aims to ensure that the Government and local authorities can direct future development to areas that are most accessible to public transit and that they can derive income from this increased development to help finance and develop services within the project's catchment area.

33. This sub-component will finance, for the entirety of the BRT corridor, the civil works, goods and services necessary to achieve optimal urban integration of the BRT infrastructure with their neighborhood areas.

34. The construction of the corridor and of all infrastructure built as part of the project will place a strong focus on accessibility and road safety, through measures such as rehabilitation of sidewalks, construction of bicycle lanes, provision of convenient and safe pedestrian crossings, and assessment and mitigation measures for road safety during the design and the construction of the infrastructure. Beyond accessibility, security for women will also be in focus with well-lit and camera-monitored stations and camera-monitored buses. Other measures, financed under Components B and C, will provide further integration with the overall public transport network.

Sub-component A3: Modifying Abidjan's 4th bridge built as part of the PTUA (US$30 million)

35. The financing and contract for the 4th Bridge and the Yopougon Urban Motorway (PTUA) were prepared before the GoCI decided to develop the BRT on the Yopougon axis. As a result, the studies and contract were awarded without considering the BRT infrastructure. This will require the modification of 1,400 meters of the bridge structure to widen the right-of-way and its access roads. Feasibility studies to enable these adjustments have been concluded and discussions with the AfDB (PTUA financier) are ongoing to determine how to finance the additional civil works. At the request on the GoCI, based on preliminary estimates, a provision of US$30 million has been included in the proposed project.

Component B. Strengthening of SOTRA and the restructuring of the feeder system to mass transit lines (US$75 million equivalent, of which IDA US$35 million)

36. The main objective of this component is to strengthen the integration of the BRT into the rest of Abidjan's urban transport network. Implementing an efficient feeder bus system around the two mass transit lines is key to increasing the overall performance of the public transport system by ensuring physical, functional and fare integration of public transport modes to best meet users' needs and to offer optimal city public transport coverage. An efficient feeder network will also help maximize ridership on the two mass transit lines, thus optimizing the financial profitability of the BRT investment and its attractiveness for a private operator.

Sub-component B1. Restructuring the public bus network and strengthening SOTRA (US$35 million)

37. SOTRA is finalizing its strategic Vision 2020-2030 that relies on: (i) a large-scale vehicle acquisition (more than 2,000 buses and 40 bus boats by 2020); (ii) the hiring of 5,000 new staff; (iii) the construction or rehabilitation of dedicated infrastructure such as depots and terminal stations; (iv) a strategy for improving internal processes and customer relations, including the deployment of an interoperable fare collection system, a new information technology system (ITS) for improved passenger information and operations management; and (v) training and capacity building activities.

38. Following consultations with all stakeholders, it has been agreed that this sub-component will finance

goods, works and services for the following activities:

a) Technical assistance to restructure SOTRA's public bus network and to improve the integration of the mass transport system with the formal bus feeder network;
b) Technical assistance to improve SOTRA's operational performance, including but not limited to improved operations management, deployment of a new ITS system and a fare collection system (in coordination with the BRT);
c) Construction of two bus depots in Yopougon and Port-Bouët and two large terminal stations in Yopougon and Cocody.

Sub-component B2: Improvement of feeder roads and street furniture and investments for public transport (US$40 million)

39. The performance and commercial speed of SOTRA's buses will be further improved through financing of goods, works, and services for:
    a) Road works along the main feeder roads and local roads supporting diverted traffic in the communes of Yopougon, Attécoubé, Adjamé, Cocody, and Bingerville;
    b) Street furniture and equipment needed to improve the quality of service and commercial speed of public bus transport along feeder routes, including but not limited to: dedicated lanes, junctions with public transport priority, bus stops and stations, multimodal transport hubs, street furniture, etc.

40. Consultations with the Road Management Agency (AGEROUTE) and the municipalities crossed by the BRT corridor have allowed identification of and geo-referencing of approximately 100 projects for road rehabilitation, road widening, new road construction and investments in pedestrian infrastructure within the influence of the BRT corridor for a total amount of US$320 million. Prioritization will therefore be carried out in consultation with the relevant stakeholders and based on criteria such as the volume of traffic supported by the feeder road (with a focus on public transport traffic), existing ROW and potential population and activities resettlement issues, and technical readiness. Should additional resources be available, a larger volume of works could be considered. This sub-component will finance works along the main feeder and vicinal roads while sub-component C1 will mainly finance intra-neighborhood tertiary road works and pedestrian infrastructure investments for the last/first mile access. The climate and disaster resilience of this project component will be enhanced by design features such as efficient drainage systems along the roads.

41. Investments in specific public transport facilities and furniture will be identified following a restructuring study that will be launched in September 2019 and will enable the start of works by December 2019. The volume of work will also depend on the available financing envelope.

Component C. Organizing the artisanal transport sector and last-mile accessibility (US$50 million equivalent, of which US$40 million IDA)

42. The objective of this component is to (i) improve integration of artisanal transport service providers into an overall upgraded public transport system; (ii) ensure their provision of efficient feeder services for the larger-scale mass transit services (Metro, BRT, and SOTRA); and (iii) improve non-motorized (pedestrian and bicyclist) accessibility to the BRT corridor and public transport system to ensure last-mile accessibility for BRT users.

Sub-component C1: Support for the organization of artisanal public transport service and last-mile accessibility (US$15 million)

43. This sub-component will finance the following activities in the municipalities served by the BRT corridor (Yopougon, Attécoubé, Adjamé, Cocody, and Bingerville):

a) Support for organizing woro-woro and Gbakas lines based on the recommendations of the restructuring study to be launched in September 2019;
b) Civil works for taxi and Gbaka stations on the main interchanges along the BRT corridor;
c) Civil works for parking and passenger loading facilities along the feeder roads connecting to the BRT corridor;
d) Pedestrian and bicycle path construction works in the areas served by the BRT corridor;
e) Facilities and equipment necessary for improved service quality and safety and security (especially for vulnerable people and women) in stations and along upgraded roads, including pedestrian areas, street lighting, street furniture, etc.

44. A prioritization of the facilities to be improved will be carried out in consultation with the relevant stakeholders, based on criteria such as their impact on inter-district access and accessibility to the BRT corridor. In the event of additional resources, a larger volume of works could be considered. The climate and disaster resilience of this sub-component will be enhanced by design features such as efficient drainage systems along the feeder roads and pedestrian and bicycle paths.

Sub-component C2: Renewal of the taxi and minibus fleet (US$35 million)

45. This sub-component will support the fleet renewal program of small-scale urban transport vehicles. In line with the strategy implemented by the Road Transport Development Fund (*Fond de Développement du Transport Routier*, or FDTR) and in line with the fleet renewal mechanism developed by the PAMOSET project, the project will finance the renewal of 2,000 taxis and 1,000 Gbaka vehicles. This will be accomplished by:

a) Providing the payment for scrapping premiums to eligible vehicles owners, based on the scrapping premium grid (by type of vehicle) established by the Ministry of Transport within the framework of the PAMOSET project, corresponding to approximately 10 percent of the price of a new vehicle, as an initial contribution paid to the commercial banks involved in the program. The eligibility criteria for the fleet renewal are defined in the Program Manual developed under the PAMOSET and include professionalization criteria. The vehicles will be scrapped in the scrap yard financed by the PAMOSET project. As part of the fleet renewal, all renewed vehicles will use lower-carbon fuels than the scrapped ones allowing major GHG benefits accounted for in the economic analysis. A bonus for electric vehicles and equipment using new technologies may be granted on a pilot basis; and

b) Establishing a first loss guarantee to cover a risk-sharing facility (RSF) that the IFC will set up with commercial bank partners. The joint IDA-IFC RSF will encourage private commercial banks and, potentially, other financial intermediaries to serve a new cohort of transport operators by partially mitigating creditor risk through first-loss cover.

Component D. Human capital development and operational support (US$25 million equivalent, of which US$25 million IDA)

46. This component has two main objectives: (i) the development of skills required for the existing and future needs of the urban formal and informal transport sector and (ii) support for the establishment of social protection systems for workers of the informal public transport sector. The activities also aim to promote women's employment in the sector and the development of a cohort of highly technically educated female executives.

Sub-component D1: Skills development in the urban transport sector (US$12 million)

47. The proposed sub-component will finance technical assistance and training for formal and informal transport service providers including:
    a) Technical assistance to assess beneficiaries' skills profiles and training needs and to develop the sector's strategy and training framework;
    b) Scholarships to allow high level transport specialists or executives of public administrative institutions – including staff of the future transport planning authority of Abidjan – to obtain the Professional Master degree in Transport currently developed at the Institut National Polytechnique Houphouët-Boigny (INP-HB) in partnership with the Ecole Nationale des Ponts et Chaussées (ENPC), and financed by the Greater Abidjan Port-City Integration Project. This activity will also allow developing a pipeline of female executives, by ensuring gender balance in the targeting of the education sponsoring process;
    c) Training: (i) The renovation of the SOTRA Institute and the training of its instructors; this activity will contribute to gender-sensitizing SORTA's training curriculum and bringing in female instructors, thus helping SORTA attract and retain female trainees in future; and support for the training of public transport (SOTRA, BRT and Metro) technicians; and (ii) Support for the professionalization of drivers and entrepreneurs in the informal transport sector, through the training of 5,000 drivers and 1,000 transport company owners, using curricula developed with the support of the European Union; regional training programs will also be explored in the design and implementation of this activity. (i) and (ii) will include provision of training in basic digital literacy and skills to all drivers and transport workers. The gender-sensitization of the training programs will help reduce gender stereotypes that affect women's self-efficacy and interest in engaging in professional roles in the public transport sector.
    d) The development of (i) literacy centers and other types of training in the stations redeveloped by the project; and (ii) accompanying measures and support to the informal transport service providers who are negatively impacted by the project

Sub-component D2: Implementation of a social protection scheme for workers of the artisanal public transport sector (US$5 million)

48. This sub-component will finance:
    a) Technical support for the development of a social protection program for self-employed public transport sector actors and the implementation of a collection system for workers' social security contributions (*système de collecte*) for workers of the informal public transport sector;
    b) Implementation of social security coverage (health, temporary job loss insurance and pension schemes) for drivers and entrepreneurs of the informal public transport sector; and
    c) The development of social centers in the stations redeveloped by the project, which will offer information, awareness programs, gender-based violence prevention campaigns, and screening spaces for HIV/AIDS

and sexually transmitted diseases.

Sub-component D3: Project management (US$8 million)

49. This sub-component will finance project management support to the Project Coordination Unit (PCU) in the Directorate of Road Transport and Mobility (*Direction Générale des Transports Terrestres et de la Circulation*, or DGTTC) within the MoT. This includes support for fiduciary activities, monitoring and implementation of environmental and social safeguards measures, citizen engagement and communication activities, as well as coordination between all public and private implementing agencies.

50. The PCU will also be responsible for monitoring and evaluating the project results according to the agreed indicators described in the results framework. This sub-component will finance data collection and regular updating of project indicators.

C. Project Cost and Financing

51. The project has a total cost of US$540 million. Of this amount, US$300 million will be financed by the IDA Scale-Up-Facility (SUF) window, US$100 million by the Agence Française de Développement (AFD)[18] and US$130 million by the private sector. The resettlement costs estimated in the Resettlement Policy Framework (RPF) are about US$10 million and will be fully funded by the GoCI. The costs of resettlement of other associated projects such as the 4th Bridge are not listed among project costs. While the IFC may finance part of the PPP scheme, it is too early to anticipate the debt and equity contributions, thus the financing plan only mentions a private sector source of financing. MIGA guarantees can be offered for both the equity investments and any commercial debt if they come from outside of Cote d'Ivoire. IDA financing will not cover the BRT bus fleet.

52. The project costs are as summarized in Table 1.

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

Project Components[19]	Indicative Costs	Financing				
		IDA (SUF)	AFD	GoCI	Private	
A. Implementation of the East-West Bus Rapid Transit (BRT) corridor between Yopougon and Bingerville	**380.0**	**200.0**	**50.0**		**130.0**	
Studies and transaction	5.0	5.0	0.0		0.0	
BRT infrastructure	210.0	155.0	35.0		20.0	Possible guarantee
BRT fleet and ticketing system	110.0	0.0	0.0		110.0	
TOD Corridor, land use management and studies	25.0	10.0	15.0		0.0	
Provision for the PTUA bridge	30.0	30.0	0.0		0.0	

[18] The financing provided by the AFD will make it possible to support the implementation of the BRT and the feeder system and to finance all the investments necessary for optimal management of the feeders, inter-modality, urban development and access roads to the public transport system up to the "last mile".
[19] Contingencies are included in the activities cost.

Project Components[19]	Indicative Costs	Financing				
		IDA (SUF)	AFD	GoCI	Private	
amendment on the corridor						
B. Strengthening of SOTRA and the restructuring of the feeder system to mass transit lines	**75.0**	**35.0**	**40.0**		**0.0**	
Technical assistance to SOTRA and public transport infrastructure	35.0	15.0	15.0		0.0	
Road works and investments for bus public transport	40.0	20.0	25.0		0.0	
C. Organizing the artisanal transport sector and last-mile accessibility	**50.0**	**40.0**	**10.0**		**0.0**	
Infrastructure (including stations and last-mile connectivity)	15.0	5.0	10.0		0.0	
Fleet renewal	35.0	35.0	0.0		0.0	Risk sharing (US$50 million of Bank loans mobilized)
D. Human capital development and operational support	**25.0**	**25.0**	**0.0**		**0.0**	
Skills training and development	12.0	12.0	0.0		0.0	
Social protection for informal workers	5.0	5.0	0.0		0.0	
Project management	8.0	8.0	0.0		0.0	
Provision for implementation of the resettlement Policy Framework (GoCI)	**10.0**			**10.0**		
Total	**540.0**	**300.0**	**100.0**	**10.0**	**130.0**	

D. Project Beneficiaries

53. The population living in the catchment area of the BRT will have access to a safe, reliable, and affordable mass-transit transport system. The size of this population is estimated at about 940,000 in 2020 and approximately 1.26 million in 2030.[20] The beneficiaries will also benefit from a less polluting transport system. Women, the elderly, and other vulnerable populations will benefit from an accessible and safe and secure mass public transport. Women will have increased opportunities to obtain qualified jobs created by the BRT operations and to work in a more professionalized urban transport informal sector. The project will put a strong focus on gender inclusion and participation in both the formal and informal sectors. It is also proposed that women are favored in accessing the qualified jobs created by BRT operations, in line with a long-term target of equal opportunities in the public transport sector. A 30 percent target is set for the number of female staff hired by the BRT operator.

54. The local transport operators will operate the feeder lines of the BRT system. They represent a workforce of above one hundred thousand people. They will benefit from Components C and D of the project through support to professionalization and the setting up of a better social welfare system. The business itself will benefit

[20] Defined as population living within approximately 1 km of the BRT corridor.

from the fleet renewal initiative. The Government at the local and central level will benefit from capacity building in preparing and implementing the project. The business environment in Côte d'Ivoire will also benefit from the success of the PPP transaction and from easier access to business centers for the labor force.

E. Results Chain

55. The overall theory of change, or results chain, of the project is shown in Figure 4. The short-term outcomes expected as a result of the outputs of the project include increased mobility, reduced travel time, and improved transport safety, among others. In the medium term, these are expected to result in better accessibility to jobs and services, increased revenues for the transport system operators, reduced pollution and GHG emissions, and a reduction in the number of road accidents. The expected long-term outcomes include, among others, economic growth and improvements in human capital.

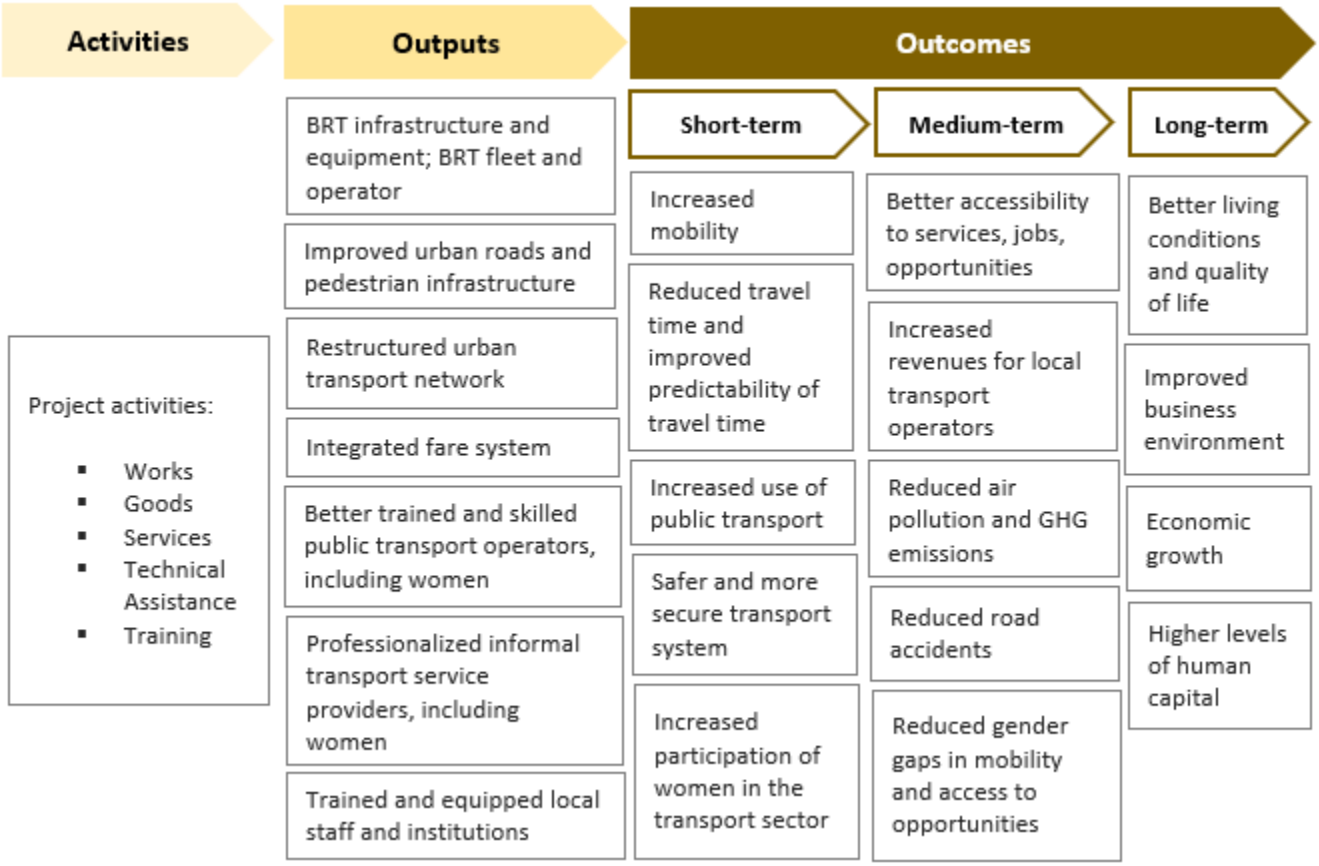


Figure 4: Results Chain

F. Rationale for World Bank Group Involvement and Role of Partners

56. The WBG's involvement in the proposed project is fully justified by the following considerations:

(a) The World Bank has been involved in the current reform of the overall urban transport sector in

Abidjan through the Greater Abidjan Port-City Integration Project (P159697), including in the implementation of the city's transport services restructuring and the setting up of the metropolitan transport authority, and is well positioned to support the incorporation of new services in the system;

(b) The complexity of establishing a new service and coordinating it with a large array of stakeholders requires a substantial amount of coordination among various infrastructure and urban mobility projects in Abidjan. It also requires ensuring their effective implementation, mitigating any negative social and environmental impacts, and ensuring long-term sustainability. This is particularly relevant for GAA, where the Government's technical and financial capacity to support the development of an integrated urban transport system is limited, requiring support from its development partners;

(c) The financial needs of the system are such that several development partners are needed, and the World Bank is well placed to provide a convening and coordination role, including by managing funds on behalf of other partners such as the AFD;

(d) The need to mobilize private financing, which can be helped by IDA's convening power and facilitated through the mobilization of IFC and MIGA as needed;

(e) MIGA's experience in supporting the first major PPP in Côte d'Ivoire in the transport sector and in mobilizing private equity and finance, as well as its overall experience in de-risking PPPs in Africa and globally; and

(f) IFC's experience in the region and in Côte d'Ivoire in setting up risk sharing facilities to support SMEs has improved the design of the proposed project support to the informal transport sector operators.

57. The WBG has a longstanding track record in preparing urban transport projects throughout the world, including BRT systems developed through PPPs, underpinned by public investment in the improvement of urban infrastructure and sector reorganization (for example the Dakar BRT project (P156186) and the WBG support to the Mexican and Colombian Urban Transport Programs: P110474, P117947). Involvement by the WBG in this project should help steer and attract private sector proposals for investment for BRT infrastructure and rolling stock. The WBG's involvement will provide confidence to the private sector to invest in a new sector/market in Côte d'Ivoire and ensure that the project follows the highest environmental and social standards. Moreover, through the IFC, the WBG can provide expertise to support the structuring of the PPP transaction required to develop the BRT system and can mobilize commercial debt through its syndication platforms.

G. Lessons Learned and Reflected in the Project Design

58. **Strong and continuous political leadership and ownership is key to the success of a mass transit public transport project.** The Abidjan BRT has benefitted from an early and continuous political commitment by the GoCI and support from other development partners. The East-West mass transit line is mentioned in the SDUGA as complementary to the Metro Line 1.

59. **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 non-motorized modes, safety, and integration with other transport modes through intermodal stations and a restructuring of feeder routes. The project also provides for an overall upgrading of the feeder road network and technical assistance to improve the organization of urban transport in Abidjan, including the restructuring of the urban transport network, professionalization of the informal transport service providers, fleet renewal for informal transport service operators, and a fare integration system.

60. **Early implementation of an institutional, stakeholder, and general public communication strategy is key to ownership of the project and its success.** The challenge of relocation and/or incorporation of the existing public transport system (SOTRA and informal operators) has been addressed through extensive consultations by the DGTTC of the Ministry of Transport (MoT) since project identification. A coordination platform has been set up for continued involvement. Consultations and preparation meetings are also regularly organized with all institutional stakeholders, municipalities, AGEROUTE, SOTRA, and various sectoral Ministers involved.

61. **Challenges of delays in the PPP procurement of the operator** as faced in the Dar es Salaam BRT Phase 1 project (P103633) will be addressed by ensuring that the potential bus operators are short-listed before the commencement of the BRT trunk corridor works. It is expected that the PPP contract will be signed within 18 months from the effectiveness of the financing agreement.

62. **All possible PPP options should be explored.** In the Dakar BRT project (P156186), private sector participation was sought only for BRT operations and BRT fleet financing. From the start it had been decided that infrastructure would be publicly financed. Consequently, only two BRT operators were pre-qualified following a comprehensive worldwide market sounding. By exploring all PPP options under the proposed project, including potential private sector constructor/BRT operator joint venture, it is expected to broaden the spectrum of private sector candidates and strengthen the competition to maximize private sector contribution.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

63. The Ministry of Transport, through the DGTTC will be the main implementing agency and will have overall responsibility for all project related activities. The project management responsibility as well as the contractual oversight of the BRT itself is intended to eventually be transferred to the recently created Greater Abidjan Urban Mobility Authority (AMUGA).[21] Support for the operationalization of AMUGA is planned within the framework of the Greater Abidjan Port-City Integration Project, with capacity-building activities for its staff and technical support for the development of planning tools. The transfer of management activities to the AMUGA is not expected before early 2020 and would be accepted by IDA only after the completion of a thorough assessment of its fiduciary capacity and the staff capacity to manage the project and to ensure a smooth transition from the MoT. More details on the implementation arrangements are provided in Annex 1.

64. The overall institutional structure of the project will be composed of: (i) a Steering Committee that ensures the coherence of activities with the sectoral strategy and intersectoral coordination for sub-components under the responsibility of other ministerial departments, companies and local authorities, and (ii) the PCU in the DGTTC within the MoT to ensure the coordination of project implementation. Capacity building has already started for the institutions involved in the project preparation, in particular DGTTC management and technical staff.

65. **The Steering Committee** will be created specifically for the project. Given the transport focus of the project, this committee will be chaired by the Minister of Transport or his/her representative, and will include the following Ministers or their representatives: the Minister of Economy and Finance; the Secretary of State to the Prime Minister in charge of Budget and State Portfolio; the Minister of Equipment and Road Maintenance; the

[21] Decree 2019-100, January 30, 2019

Minister of Construction and Urban Planning; the Minister of Employment and Social Protection; the President of the District of Abidjan; the Mayors of Yopougon, Attécoubé, Plateau, Adjamé, Cocody and Bingerville; and the Head of the employers federation of road transport companies (*Haut Conseil du Patronnat des Entreprises de Transports Routiers de Cote d'Ivoire*). The Steering Committee will provide overall supervision of the project, ensure coherence of activities with the sector strategy and convene inter-sectoral coordination. The committee will also validate the Annual Budgeted Work Plans.

66. **The PCU** will be responsible for fiduciary management, communications, monitoring and evaluation activities. This unit will need to be strengthened in terms of its fiduciary skills (FM and procurement) and technical skills needed to manage the project, including ability to monitor the implementation of environmental and social safeguards. The PCU will also be able to rely on the National Bureau of Technical Studies and Development (BNEDT), if necessary, under a convention for technical assistance that can be financed by the project.

67. **Specialized Implementing Agencies (SIAs)**, such as the AGEROUTE, CNP-PPP, MEPS, FDTR, MCLAU, SOTRA, and the DGTTC itself, will implement the various project activities which fall within their respective institutional mandate. Thus, although the PCU will retain overall fiduciary responsibility for the project, it will sign a delegated management contract with all identified SIAs. The contracts will define the scope of roles and responsibilities for the agencies involved in the project implementation (see Annex 1 for details). In addition, the project will leverage a partnership with the International Association of Public Transport (UITP) in the development of training programs aimed at transport sector professionalization.

68. **The Risk Sharing Facility** under sub-component C.2 will be implemented through IFC in accordance with the provisions of several documents: (a) the Risk Sharing Facility Framework Agreement (between IDA, IFC, and the GoCI); and (b) Partial Credit Guarantee Agreements (between the participating commercial banks and IFC). In addition, GoCI will entrust IFC to open and maintain on its behalf an account (the Risk Sharing Facility Account) that will receive part of the proceeds of the credit and will be used to make payments under the RSF (in accordance with the terms and conditions established in the Risk Sharing Facility Framework Agreement).

B. Results Monitoring and Evaluation Arrangements

69. The PCU will develop, implement, and operate the Monitoring and Evaluation (M&E) system. The PCU will organize surveys to collect and aggregate the relevant data produced directly and with the support of the SIAs and will send a periodic detailed report on the project results framework as well as on the implementation of the Environmental Management Plan (EMP) and Resettlement Action Plan (RAP) associated with the project.

C. Sustainability

70. The project preliminary financial assessment indicates that the BRT system can be profitable for a private operator, covering all recurring costs, including bus amortization, vehicle operating costs (fuel, drivers, service personnel, maintenance), 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). The design of the BRT will incorporate the lessons learned from existing projects on the continent, which should lead to increased financial sustainability. Preliminary market sounding identified interest by the private sector to participate in the BRT, and the project has been identified as high potential for private sector leveraging by IFC. Including an offer for MIGA political risk insurance can also help attract the private sector. Moreover, based on other cities' experiences with similar potential ridership and tariffs, in particular the recent experience in Dakar, there is confidence that the project will attract private sector participation.

71. Sustainability also relies on affordable fares. In Abidjan, the fares of SOTRA, while still low, are nevertheless higher than in many comparable metropolises: the Abidjan public transport service users are used to pay tariffs exceeding US$1 for Gbaka services between Cocody and Bingerville. The tariffs for the BRT proposed by existing studies are comparable with the existing fares for Gbakas[22] and the fares proposed for the future metro system, and the likely passenger demand is consistent with that level of fares. The strong involvement of the rest of the operators in the public transport system and the financing of feeder connections also reinforces the sustainability of the overall system. Finally, fare integration and the setup of an overall funding system is supported by the Greater Abidjan Port-City Integration Project as part of the establishment of the AMUGA and the network restructuring.

72. Sustainability of the feeder roads and last-mile accessibility infrastructure built as part of the project will depend on the appropriateness of the maintenance and operations arrangements of the beneficiary municipalities, which will need to be enhanced during implementation. AGEROUTE, as the national road management agency is in charge of road maintenance and has proved apt at managing maintenance for renovated infrastructure.

73. SOTRA has proved its resilience over the years to maintain some operations despite the limited number of vehicles, even at times of financial hardship. It was for a long time the only surviving public bus operator in West Africa, partly because the GoCI had maintained a subsidy scheme to provide lower fares for specific passenger groups. Sustainability of its activities going forward will rely on the Government and the municipalities to ensure an appropriate fare level complemented by a secure financing scheme for the overall urban transport system in the GAA.

74. Component D will strengthen the sector in the long term through capacity building and improving the livelihoods of the urban transport sector professionals, and it is expected that the design of the training components will include elements to improve the sustainability of the training institutions themselves. However, elements such as the social protection system for self-employed workers do not yet have arrangements in place for the recurrent sources of funding required to make it sustainable.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis

75. **Economic analysis**: The project will significantly impact the metropolitan area transportation system. Thus, the beneficiaries of the project will be the large share of Abidjan residents who are public transport users, as well as population groups who are currently disconnected from public transit but who will gain access because of the project. More specifically:

(a) The resident population of GAA, especially along the East-West corridor, who will benefit from the improved mobility, better access to job opportunities and basic services, improved road safety, and reduced air pollution.
(b) Firms, will benefit from reduced congestion and transport costs, improved physical access to labor, and improved competitiveness.
(c) The transport sector workforce will obtain skills and competencies that will allow it to be more productive and competitive in the labor market. It will also benefit from social protection schemes that allow for professionalization and higher productivity.
(d) Women will benefit from a more secure public transport system and from greater employment opportunities in the public transport sector.
(e) The Government will widen its tax revenue base from the incremental activities generated by investments and companies benefiting from the project.

76. A technical study funded by Swedfund, completed in January 2018, assessed the feasibility of high-quality bus services along an East-West corridor and other routes. Results showed that a BRT system could meet the demand along this axis at least in the short- and medium-term. A traffic study of a dedicated public transport system between Bingerville and Yopougon, funded by the World Bank, was completed in early 2019. It performed an audit of the previous traffic studies and updated the traffic model to confirm ridership and hence the adequacy of the BRT as the appropriate mode solution.

77. The main economic benefits from the project are expected as a result of the significant increase in travel speeds on the East-West corridor. The average speed of the planned BRT line is expected to be 25 km/h, with average headways in the morning Peak Hour (PH) of about 0.4 minutes (2.5 buses/min). The speed will be twice that of the current bus lines on the same route. Between 2023 and 2030, the total annual passenger-km are expected to increase by about 54 percent; and between 2023 and 2040 by about 170 percent.

78. In the economic analysis of the BRT component of the project, the infrastructure cost calculation considers all BRT associated facilities (BRT lanes, stations, terminals, depots, charging systems, ITS, operations control center, one-off costs) and a contingency of 20 percent for a total estimated at CFAF 122 billion (US$210 million). With a spare ratio of 10 percent (including idle buses), 157 buses are estimated to be required on the corridor for a PH headway of 0.4 minutes and a total cost of CFAF 64 billion (US$110 million). The annual vehicle-kilometers corresponding to 157 buses are estimated at 12.6 million, and the total operating costs (OPEX) are estimated at CFAF 872 billion (US$1.5 billion). The OPEX calculation is done for a 26-year period of operation (2023 - 2049) and considers all system operations costs, including fleet maintenance and operation of stations and infrastructure (roads, structures, and maintenance centers). Net Present Value (NPV) is estimated at a discount rate of 10

[22] Survey from the MoT, 2016

percent.

79. In terms of benefits, the economic analysis considers generalized travel time savings (cost and time), reductions in vehicle operating costs, and the monetized reductions in GHG emissions and accidents. Two different assumptions of the social cost of carbon are applied in the monetization of the GHG emissions savings.

Table 2: Summary of Results of the Economic Analysis and Sensitivity Tests

	Value of time (CFAF)	EIRR	NPV (CFAF, billion)	NPV (US$, million)
Social cost of carbon (Low)				
Results	545	**15%**	**68.408**	**117.586**
Sensitivity: Demand -20%		14%	57.320	98.527
Sensitivity: Capital costs: +10%		13%	50.982	87.633
Sensitivity: Operating costs: +10%		14%	61.900	106.399
Results	606	**16%**	**94.117**	**161.777**
Sensitivity: Demand -20%		16%	83.029	142.718
Sensitivity: Capital costs: +10%		15%	76.691	131.824
Sensitivity: Operating costs: +10%		16%	87.609	150.590
Social cost of carbon (High)				
Results	545	**16%**	**81.796**	**140.599**
Sensitivity: Demand -20%		15%	70.708	121.539
Sensitivity: Capital costs: +10%		14%	64.37	110.645
Sensitivity: Operating costs: +10%		15%	75.288	129.412
Results	606	**17%**	**107.504**	**184.788**
Sensitivity: Demand -20%		16%	96.416	165.729
Sensitivity: Capital costs: +10%		16%	90.078	154.834
Sensitivity: Operating costs: +10%		17%	100.997	173.603

80. **In addition to the benefits estimated directly as part of the economic analysis, the project will entail significant economic benefits associated with improved accessibility to the CBD and employment opportunities.** In the absence of the BRT project, by 2030, approximately 18 percent of GAA's jobs will be accessible to the average resident of GAA within one hour during rush hour using public transit. With the implementation of the BRT, this would increase to 34 percent. An estimated 600,000 *additional* jobs will become reachable within an hour, on average. Among the poor population, as defined by the official poverty line, the respective increase will be from just below 18 percent to about 31 percent. The most significant additional gains – compared to the Reference scenario – are expected to occur for the residents of the neighborhoods living in the poorer districts such as Yopougon and Adobo that are located to the East and to the West of the Plateau. The large accessibility benefit of the BRT vis-à-vis the Reference is due to the doubling of speeds on the East-West route compared to current levels and the fact that a large share of the population and jobs in 2030 is expected to concentrate precisely on this route.

81. **While under the Reference scenario about 26 percent of the 7.7 million residents of Greater Abidjan in**

2030 will be able to access the city's CBD within an hour during rush hour using public transit,[23] **the implementation of the BRT will increase this share to about 64 percent.** In other words, nearly 2.9 million additional people would gain access to the CBD. Among the poor population of the GAA, the improvement in accessibility to the CBD will also be significant, estimated to be from 27 percent to 52 percent. The detailed results of the analysis, along with methodological assumptions and accompanying maps, are shown in Annex 2.

82. **Greenhouse Gas (GHG) emissions and pollution impacts.** The proposed project will support the development of a modern cost-effective infrastructure that will reduce GHG emissions, in line with the country's commitment to the Paris Agreement. Reductions in GHG emissions – and the emissions of other pollutants, such as Particulate Matter (PM), carbon monoxide (CO), and nitrous oxides (NO_x) – are expected from (i) the fleet renewal of taxis and Gbakas and (ii) modal shift associated with the implementation of the BRT and the use of clean bus technologies. Significant direct GHG savings are estimated for both components.

83. *Avoided emissions associated with the BRT component***.** About 1 percent of the passenger-kilometers of metered taxis, about 1.9 percent of the passenger-km of Gbaka, and about 21.6 percent of the passenger-km of the woro-woro are expected to shift to the BRT once it is operational. Furthermore, the estimation of GHG savings for the scenario of a BRT fleet composed of electric buses takes into account the Government's commitment to progressively transition its electricity generation mix towards cleaner fuel sources.[24] As the BRT service will be provided by electric buses, the cumulative emissions savings would reach about 1,207,400 tCO_2e by 2049 if accounting for the emissions generated in the production of the electricity that will power the electric BRT bus fleet and about 1,511,400 tCO_2e by 2049 if only the direct tailpipe emissions are considered. These figures highlight the significant savings provided by electric technology as the total avoided emissions with diesel-fueled buses would have been only about 948,300 tCO_2e by 2049.

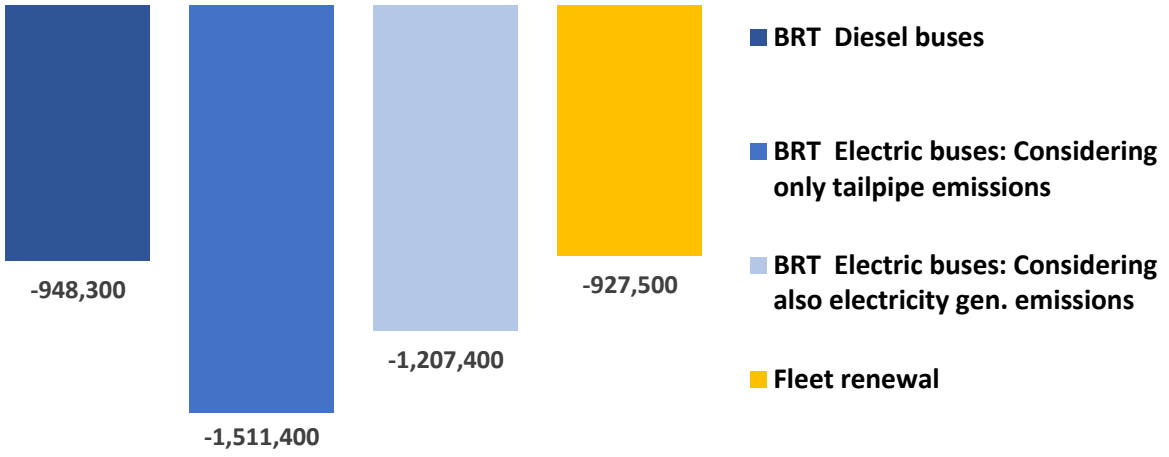


Figure 5: Cumulative GHG emissions savings by 2049 associated with BRT and fleet renewal components, respectively (tCO_2e)

[23] The Central Business District is assumed to be represented by Place de la Republique in the Plateau.

[24] Côte d'Ivoire's electricity emissions are expected to decrease by 7.81 percent until 2030, according to the Intended Nationally Determined Contribution (INDC) of GHG emission reduction targets (*Contributions Prévues Déterminées Au Niveau National De La Côte D'Ivoire*, 2014). The analysis assumes that the same rate continues to apply until 2049.

84. *Avoided emissions associated with the fleet renewal component***.** Based on the study commissioned by the IFC in 2018,[25] the renewal of 97 percent of the fleet of Gbaka, taxis, and woro-woro would lead to 190,000 tCO_2e of annual savings, corresponding to a 26-percent reduction compared to the baseline.[26] The project will finance the renewal of 2,000 taxis and 1,000 Gbaka vehicles. Thus, the total avoided GHG emissions directly associated with the fleet renewal component of the project are estimated at approximately 927,500 tCO_2e by 2049.

85. The *total GHG savings* for the BRT and the fleet renewal components combined will amount to about 2.083 million tCO_2e by 2049 when considering electricity generation emissions. The NPV of the cumulative GHG emissions savings is estimated at between US$27.4 million and US$54.8 million if accounting for electricity generation emissions. [27]

86. The *gross GHG emissions* estimated during 2023-2049 for the BRT component will reach 303,974 tCO_2e (emissions generated in the production of electricity used to power the bus fleet); average annual gross emissions are estimated at 11,258 tCO_2e.

87. *Impacts on pollution***.** In addition to the GHG emissions savings presented above, the project will have significant economic and health impacts due to the resulting reduction in *local pollutants* (PM, NO_x, and CO). Estimates from the 2018 study financed by the IFC show that, under the assumption of 16 percent of the overall Gbaka, taxi, and woro-woro fleet renewed by 2028, PM emissions would be reduced by 28 percent, NO_x emissions by 17 percent, and CO emissions by 21 percent (for a total monetized value of between US$74.8 million and US$83 million). The project will directly finance the renewal of about 10 percent of the taxi and Gbaka fleets, overall reducing CO emissions by 3,952 tons during the 2023-2049 operating period; NO_x emissions by 3,578 tons; and PM by 195 tons.

88. The BRT component, too, will have a positive impact on air quality, and it is expected to be more significant as electric bus technology (i.e. e-buses), rather than diesel engine buses, are used to provide the BRT service (see Table 3). The use of electric rather than diesel buses will result in 20 percent higher CO emissions savings, 51 percent higher NO_x savings, and 8 percent higher PM savings. It should be noted that even a small percentage increase in pollution reduction would translate into sizable absolute benefits in terms of human and environmental health.

Table 3: Estimated impact on air pollution associated with the BRT component, 2023-2049

Bus technology	CO reduction (tons)		NO_x reduction (tons)		PM reduction (tons)	
	Total	*Mean annual*	*Total*	*Mean annual*	*Total*	*Mean annual*
Diesel	7,626	282	3,918	145	241	8.9
Electric	9,134	338	5,927	220	261	9.7

89. **Impacts on the electric grid.** The impact of the electric BRT fleet on the power grid and its stability is expected to be moderate, thus requiring little to no additional investment. Electricity production in RCI is about 10,000 Giga-watt hours (GWh), compared to an estimated average annual electricity consumption by the entire

[25] IFC. (2018). *GHG emissions impact of a fleet renewal of Gbaka, classic taxis, and wôrô-wôrô*. Final Report.
[26] The analysis does not consider the emissions generated over the entire life cycle (only focusing on vehicle activity phase).
[27] The range in the NPV is due to the difference between the "low" and the "high" trajectory of the social cost of carbon applied, as defined by the World Bank *Guidance note on shadow price of carbon in economic analysis* (2017).

BRT fleet of 28,633 Mega-watt hours (MWh), or 573,000 kilo-watt hours (kWh) per day, under the assumption of overall fleet travel of approximately 70,000 km per day. In other words, the BRT-related electricity consumption would represent approximately 28/10,000ths of the electricity produced.

90. **Financial analysis**. The World Bank mobilized a Global Infrastructure Facility (GIF) Project Definition Activity (PDA) grant to evaluate the commercial and operational viability of the proposed BRT system and the Government may request further support in the form of a GIF Project Preparation and Structuring Activity (PPSA) to fund the transaction advisory work. The GIF support was requested to structure an optimal PPP deal that maximizes value for money by leveraging the private sector's operational and commercial know-how and technical and innovation capabilities. A full financial analysis of the PPP options, expected to be completed by July 2019, is carried out by a consulting firm [Nodalis] based on a model that defines several levels of financing for the rolling stock and the BRT infrastructure. An assessment of the contingent liabilities and potential fiscal impacts of the BRT will be done during the transaction advisory stage.

91. **Rationale for public financing.** Private sector involvement will be complemented by public support, which is justified due to the public good nature of transport. For the BRT itself, the use of IDA resources will, however, be limited to bridging the funding gap to make the system financially sustainable. This is conditioned upon the following conclusions of ongoing assessments: (i) the activity is economically viable and fiscally and commercially sustainable, with an appropriate level of public contribution; (ii) it provides value for money; (iii) its risk allocation is transparent; and (iv) it is designed to ensure environmental and social sustainability. The other components also contribute to the public good nature of transport services by directly impacting the operational efficiency of the feeder lines and improving last mile access and safety. The component related to improving the social protection system and capacity of informal operators is also a public service. Finally, the fleet renewal scheme directly contributes to the achievement of the Government's NDC targets; it would not bear fruit without (i) a public financial contribution to enable the scrapping of old and polluting vehicles and (ii) an improvement in financing conditions for private operators made possible by the IDA first loss guarantee supporting the risk sharing facility (RSF) provided by the IFC.

92. Current analysis carried out with GIF funding shows that it is possible to design a PPP with profitability for the operators and a significant contribution to investment, and thus justifies the private investment sought to finance the BRT fleet and ITS equipment and, possibly, part of the infrastructure costs. The duration of the concession will be adjusted to the results of the transaction advisor's due diligence, which will take place after the project's approval by the World Bank Board.

93. **Value added of the World Bank Group.** The involvement of the World Bank Group brings the following value-added: (i) global knowledge on 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 on the public and private aspects of the project. Involvement by the WBG in this project should help steer and attract private sector proposals for BRT infrastructure with a high quality, social and environmental standards.

94. **Technical design.** *The physical design has been optimized to increase accessibility and to prioritize and integrate NMT users while maximizing commercial speed and capacity*. Busways and stations will be median aligned/ inserted at the center of the existing ROW with passing lanes at all 22 stations. All stations are planned

to be closed, with platforms leveled with the buses, allowing at-grade level access and off-board fare collection systems. The size and number of modules will be determined to meet expected demand at each station.

95. *Public Transport Integration***.** There will not be competing formal bus routes along the corridor. All public transport routes will be reorganized to best meet the users' needs. This will imply that some existing public transport routes are terminated or cut or diverted to new routes to complement the BRT and/or serve as feeders, based on the outcomes of a comprehensive assessment. Fare integration is proposed between the BRT and the feeders (at least with SOTRA and the future metro operator). Consultations will be organized in order to agree on the reallocation of feeder routes to the existing operators. Besides the physical and schedule integration, the fare integration will be studied under the Greater Abidjan Port-City Integration Project, and the Government's position on it should be known before the bids are prepared for the BRT.

96. *Mode Integration, Universal Access and Safety***.** The technical design of the BRT infrastructure and other components of the project will include measures to improve physical integration between public transport modes and their access to onward journey modes (for example, walking and cycling). Providing convenient, secure, and safe pedestrian access to the stations will receive specific attention. Rehabilitation of sidewalks along the corridor will improve the environment for pedestrians.

97. Universal access design principles and guidelines will be applied throughout all aspects of the design of the BRT infrastructure and the associated facilities financed by the project. Important features enabling inclusiveness for all, particularly those living with a disability and/or limited mobility, that will be incorporated include those related to (i) urban transport system accessibility; (ii) prioritization of NMT in terms of provision of adequate space and safety; (iii) geometric design as a traffic calming passive measure; and (iv) ITS ensuring that the transport service user information is communicated in a comprehensive manner – i.e. with both visual and audible signals/announcements. The design of access to the stations will be subject to a safety assessment to verify the optimal nature of the infrastructure built; in general, the Safe Systems approach will be used. Specific urban transport system accessibility measures to be incorporated in the project design include: (i) access ramps and/or elevators to negotiate grade separated levels; (ii) enhanced design of the vehicle-station interface, specifically, level boarding throughout the system's infrastructure, and, possibly, low-entry/low-floor fleet (floor height 350 mm); (iii) curb ramps with color and texture differentiation with tactile tiles; and (iv) access control – minimum one meter wide access fare gate per station/terminal.

98. Infrastructure design measures aimed at prioritizing NMT outside of the closed BRT corridor system itself will include traffic lane reduction to maximize sidewalk area/width, and dedicated bicycle lanes. Geometric design features that will contribute to traffic calming will include: (i) maximum turning radii on cross streets of 10 meters; (ii) avoidance of right-turn channelization to prevent multiple pedestrian crossing traffic phases and incidences per junction; (iii) signalized pelican pedestrian crossings with protected shelters every three lanes; and (iv) speed tables when signalized option is not feasible.

99. *Use of e-buses technology*. As of yet, there are no functioning BRTs using electric buses implemented as part of PPPs, even if the use of e-buses has increased quickly, especially in China. Moreover, to ensure that the environmental benefits of deploying electric buses are realized, it will be important to coordinate BRT implementation with energy sector activities, including related to electricity grid enforcement. The due diligence prior to launching the PPP procurement will inform the needs on the supply side and on operational management (for example, with respect to deployment, operation and maintenance of e-bus charging infrastructure) and will

include taking stock of lessons learnt on the large-scale operation of e-buses and on existing other forms of contracts involving e-buses (especially franchising). This will include the development of an e-bus charging strategy jointly with the operations business plan to ensure proper quantification and economical design of station locations and use, as well as inclusion of requirements specific to battery use, recycling and replacement.

100. **PPP structuring**. The PPP structuring process is ongoing with support from the GIF. A complete overview of risk sharing, private, and public roles and liabilities, fiscal risk analysis, the business and financial models, legal issues, and the possible procurement procedure will be completed by the end of July 2019. It will factor in key decisions such as the choice to use e-buses. Subsequently, the procurement process will include at least one other round of market sounding as part of the transaction advisor services. The resulting concession agreement will be carefully reviewed to have a fair and balanced concession and to safeguard the interests of both the GoCI and the private investor. The structure of the PPP as well as the level of public financing and the risk sharing between the private operator and the Government in terms of construction and operation of the infrastructure and equipment is not known yet. It is likely, given the current level of urban transport tariffs paid by the users in Abidjan, that revenues allow to finance at least the BRT rolling stock and equipment capital costs with commercial bank financing. The current GIF study will also determine if local operators may be involved in the shareholder structure of the future operator together with a qualified BRT operator. Finally, some of the risk sharing may call for the use of credit enhancement instruments or government support with backing from international financial institutions such as MIGA or IFC, potentially through the use of the IDA PSW.

B. Fiduciary

(i) Financial Management

101. The FM arrangements for the project have been designed with consideration for the country's post-conflict situation while abiding by the World Bank's minimum requirements under *World Bank Policy and Directive for Investment Project Financing (IPF)*, which describes the overall FM World Bank policies and procedures.

102. A new PCU anchored within the DGTTC at the MoT has been proposed by the Government to manage the project. The FM team of the PCU, to be established under the responsibility of the Coordinator for this project, will manage the overall FM aspects of the project. An assessment of the Directorate of Administration and Finance (DAF) of the DGTTC as well as the FM Unit of the PCU was conducted during the project preparation to verify whether the FM Unit of the PCU could manage the proposed project. The main finding from this assessment conducted in March 2019 was that the Finance and Administrative Director (D*irector Administratif et Financier* – DAF) is not familiar with World Bank-financed projects, including their FM procedures, although the DAF follows the country public expenditure chain for budget execution and financial reporting through SIGFIP and ASTER, the Government budget and accounting software. In addition, various reports on the country's PFM systems highlight similar challenges and weaknesses. None of the staff of the DAF, including the Financial controller (*Contrôleur financier*) and the Public accountant (*Agent comptable*) assigned to the DGTTC, are familiar with World Bank-financed project procedures and requirements. Furthermore, the PCU -- mainly the FM unit – was not created at the time of the assessment. However, some funds of the Greater Abidjan Port-City Integration Project (P159697) managed by the FM team of the CC-PRICI have been allocated to support the creation of the PCU, including the staffing and FM tools. A draft FM procedures manual has already been developed and was reviewed by the World Bank. The overall FM risk for the project is rated Substantial.

103. A designated account (DA) in CFAF managed by the Directorate of Debt (*Direction Générale du Trésor et de la Comptabilité Publique* - DGTCP) will be opened at the central bank (*Banque Centrale des États de l'Afrique de l'Ouest*, or BCEAO). A Project Account (PA), managed by the public accountant assigned to the PCU, will be opened in a commercial bank under terms and conditions acceptable to the World Bank. This PA will be used to pay for all the expenditures related to the components of the project. IDA funds will be transferred through "Convention" or Memorandum of Understanding (MoU) to other agencies such as SOTRA and AGEROUTE involved in the implementation of the project activities for them to make direct payments for expenditures. An FM capacity assessment of these implementing entities will be performed prior to the transfers of funds from the DA/PA to the bank accounts opened in commercial banks of the implementing entities. Interest incomes on the PA will be deposited into a sub-account opened in a commercial bank and used according to the FM procedures manual.

(ii) Procurement

104. **General.** Procurement for the proposed project will be carried out in accordance with *Procurement Regulations for Investment Project Financing (IPF) Borrowers* of July 2016, modified in November 2017 and August 2018, and the "*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 as of July 1, 2016.

105. **Capacity assessment.** The DGTTC is responsible for leading the national policy on transport, road and rail traffic, and coordinating the activities of the Directions and Services under its authority. It will also be the initial contracting authority for the BRT. The PCU established in DGTTC will be in charge of the fiduciary management of the project. An assessment of the PCU's capacity to implement procurement was carried out by World Bank procurement specialists. A key risk identified by the assessment is that the PCU lacks previous experience with implementing World Bank financed projects. The procurement unit within the DGTTC, accustomed to working within the framework of the national procurement code, has never handled procurement under World Bank Regulations. Consequently, DGTTC's capacity in this area needs to be strengthened. More generally, while many audits of single source awarded contracts have been conducted in Côte d'Ivoire in the past years and findings have been published, issues remain and affect the transparency and efficiency of the national procurement system. The procurement risk is assessed as Substantial.

106. **The Procurement Project Strategy for Development (PPSD)** has been developed to analyze the key features of the project and related procurement risks and opportunities, building on the lessons learned from similar projects. Over 75 percent of the total value of the IDA SUF credit (US$300 million) will be used for contracts for road infrastructure works including for the BRT infrastructure and feeder roads. While there is a market with qualified national and international contractors, potential risks include the unavailability of specific expertise required for the BRT infrastructure, delays in receiving imported goods, and delays in national procurement approval channels. For the PPP component, the project will finance a transaction advisor to assist the Client in the selection of an international private operator that is expected to operate the BRT and acquire the bus fleet (estimated at about US$110 million). Several other specialized consultant services requiring highly qualified transport management or sector reform experience will be performed in support of the BRT set up.

C. Safeguards

(i) Environmental Safeguards

107. The proposed project has been classified as a Category "A" project requiring a full environmental assessment according to the World Bank's policy on Environmental Assessment (OP/BP 4.01) as some project physical activities may have potentially significant adverse environmental impacts. Two environmental safeguard policies were triggered: OP 4.01 "Environmental Assessment" and OP 4.11 "Physical cultural resources". A comprehensive Environmental and Social Management Framework (ESMF) was prepared, reviewed, consulted upon, and disclosed in Côte d'Ivoire and on the World Bank website on February 22, 2019.

108. In addition to the ESMF prepared specifically for the project, as the BRT corridor will use the right of way of the 4th bridge financed by AfDB[28] and of the three road interchanges financed by JICA[29] in Cocody, the Environmental and Social Impact Assessment (ESIA) of the 4th bridge[30], which was complemented to incorporate the overall impact of the BRT, and the ESIA related to three interchanges[31] were reviewed, consulted upon, and re-disclosed in Côte d'Ivoire and on the World Bank website on February 22, and on February 28, 2019, respectively.

109. Further ESIAs will be undertaken during the implementation of Components B and C once a prioritization exercise is completed to define precisely the investments that will be undertaken in feeder roads and in last-mile accessibility. The impact of the investment under these two Components is estimated as moderate (corresponding to a Category B if they were a standalone project).

110. Overall, activities financed by the project, such as the construction of feeder roads and last-mile accessibility, are likely to generate both positive and negative impacts on the environment. The positive impacts include reduction of greenhouse gas emissions and improvement of the living environment in the project area (removal of garbage dumps and rehabilitation of stagnant domestic waste water). The negative potential impacts include dust flushes, some loss of vegetation cover, production of waste, noise nuisance, soil erosion due to movement of motorized vehicles, the risk of degradation of aquatic environments by the mismanagement of hydrocarbons, effluents, hazardous materials and waste; and risks of soil pollution and the pollution of the Ebrié Lagoon (in particular in the Banco Bay) by solid and liquid waste resulting from construction site activities. The management of solid and liquid wastes is a key environmental concern, as the current management mode in the area (proliferation of "wild" deposits) does not meet the accepted practices in terms of environmental protection.

[28] Under the Abidjan Urban Transport Project (PTUA, or *Projet de Transport Urbain d'Abidjan),* the AfDB is financing the construction of a 2x3 lane expressway in Yopougon, together with a 1.2 km Bridge to Adjamé. This project is usually known as the 4th bridge project.
[29] JICA is financing the upgrade of three major interchanges on the Francois-Mitterrand boulevard in Cocody, in an area which already features a 2x3 lane carriageway with multiple at-grade signalized intersections.
[30] This ESIA focuses on the construction of Abidjan's 4th bridge and its access roads. It also addresses the environmental and social impacts of the future BRT line as a whole, which is approximately 20 km long and uses the RoW of the PTUA over 7 km. To connect Yopougon to the Plateau, the main element of the PTUA project is a bridge, which will be built over the Banco Bay, and 7.5 km of expressway will be constructed linking the municipalities of Yopougon, Attécoubé, Adjamé and Plateau. The zone of direct or restricted influence of the 4th Bridge project includes these four municipalities.
[31] This ESIA covers the establishment of 2x3 lanes interchanges, at the Ecole de Police, Riviera 3, and Riviera Palmeraie intersections along the Francois-Mitterrand boulevard. That project, under the PTUA, aims at decongesting these major intersections, whose capacity is generally largely exceeded during peak hours. Among the 2x3 lanes, one will be dedicated to the BRT. The direct or restricted area of influence of the three interchange construction works will be limited to the Commune of Cocody.

111. A careful assessment of the existing alternatives when prioritizing investments, the organization of works, and the technical capacity building of the actors will minimize these impacts. In addition to the organization of the sites and the measures identified in the Environmental and Social Management Plans (ESMP), it is necessary to: (a) put in place a monitoring and evaluation system that ensures that the project activities guarantee protection of the physical and social environment; (b) implement a system for collecting, sorting and managing waste for each contract; (c) implement training programs and communication strategies tailored to each level of the service delivery chain for better accountability of actors in order to reduce various types of pollution; (d) implement measures to enhance the positive environmental impacts of the project, such as the use of alternatives to reduce and recycle waste (industrial ecological approach); and (e) incorporate binding clauses in the tender documents.

112. **Occupational, Health and Safety.** Safeguards documents include guidelines on Occupational, Health and Safety (OHS) that clearly mention that Contractor's Environmental and Social Management Plan (C-ESMP) must be approved by the PCU or the other SIAs. Moreover, the tender documents and the contracts for the main contractors and sub-contractors must also include OHS sections.

113. **Institutional responsibilities**. The environmental and social management will be coordinated by the monitoring missions and supervised by the Environmental Safeguards Specialist (ESS) and the Social Safeguards Specialist (SSS) of the PCU. For the activities involving civil works and related to the 4th bridge construction, it will also rely on the ESS and SSS appointed in AGEROUTE under the PTUA project. It will also involve Environmental and Social Respondents (ESR) of technical services, NGOs and local beneficiary communities. The monitoring program will focus on ongoing monitoring, supervision and annual evaluation. External monitoring will be provided by the National Environment Agency (ANDE). Members of the Coordination Committee and the World Bank will also be involved in missions of support for the project implementation. Specialized Implementation Agencies (AGEROUTE mostly for the construction of infrastructure, and DGTTC) will monitor the implementation of the ESMPs that will result from the ESIAs of each project activity.

114. For the BRT contract the implementation of the ESMP will require the recruitment of an Environment Manager by the company in charge of the works and an OHS Expert by the MoT or its delegate (PCU) as part of its due diligence, to ensure compliance with the environmental protection measures, and to respond quickly to resolve any unforeseen circumstances. The Ivorian Anti-Pollution Center (CIAPOL) will ensure that measures to control the impacts and risks associated with atmospheric, noise and vibration pollution, as well as all other types of waste have been taken. The National Agency for Waste Management (ANAGED) will control the management of waste generated during construction work, including rubble, construction waste, inert waste, and domestic waste. When the BRT prepares for operations, the BRT operator will also need to have a full team on OHS, but focusing on hazardous materials handling, as well as health and safety at work.

(ii) Social Development (including Safeguards)

115. Activities under the project are likely to generate both positive and negative social impacts. The positive impacts include improvement in people's access to jobs and basic services, development of commercial activities reduction of number of accidents; reduction of pollution; job creation and poverty reduction. The negative potential impacts include, among others, disruption of traffic during work; risk of accidents during work; exposure of construction workers and of citizens living close to the project's site to accidents and diseases; risks of disruption of economic activities and living conditions of women and vulnerable groups; risk of conflict following the various expropriations; and risks of destruction of infrastructures and cultural heritage (in Adjamé village). The risk of

conflict or gender-based violence is assessed to be low, according to the two ESIAs prepared for the 4th Bridge and the three interchanges projects and the GBV assessment by the World Bank.

116. **Social benefits.** The project is expected to deliver significant social benefits by improving public transport services, not only along the BRT corridor but in GAA more broadly. 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 BRT operation will create other job opportunities, which will include women. About 330,000 passengers are expected to use the BRT daily. 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. Likewise, restructuring of feeder routes and construction of ancillary infrastructure and last mile accessibility will have a positive employment impact in construction.

117. **However, some potential adverse social impacts and risk have been identified**. Potential adverse social effects on the livelihood of existing public transportation providers, including the bus operators, drivers and so on, have been identified. Extensive consultations have been carried out with different stakeholders during project preparation. A detailed census survey will be carried out prior to the BRT start of operations to identify the affected bus operators (bus owners, drivers, conductors and route managers) whose livelihoods will be affected due to the closure or rerouting of their bus routes to avoid competition with the BRT operations. A detailed mitigation plan will be developed based on the census survey of operators including incentives to join new system, leasing or buying existing licenses and buses, complementarity in operations and a labor redeployment services program will be offered to those who will lose their jobs.

118. **Accessibility to healthcare and education opportunities.** In addition to the improved accessibility to employment opportunities described in the Economic Analysis section, the project will also greatly enhance accessibility to healthcare facilities (hospitals) as well as education opportunities (schools). With the implementation of the BRT, 25 percent of the population will be able to access at least one *additional* hospital within 30 minutes of travel by public transport compared to the reference scenario, while 44 percent will be able to reach at least one additional school/lycée. Among the poor population of the GAA, 19 percent would be able to reach at least one additional hospital, and 33 percent - at least one additional school.

119. **Gender.** The project is designed to promote better access and security of transport with the specific aim of improving and easing the mobility of women in the Abidjan agglomeration. The secure mobility of women will be emphasized through specific interventions such as improvements in the quality of the infrastructure and facilities. Women's increased transport access will provide increased access to economic opportunities. Training and employment opportunities created through the proposed BRT and transport sector activities will create additional medium to longer term benefits linked to empowerment and employment for women in the project area (Box 1 summarizes the proposed gender activities and benefits under the project).

Box 1: How investments in urban mobility of Abidjan's East-West corridor will benefit women

Improved and more secure mobility through investments in physical infrastructure and BRT related facilities. Women's travel patterns often require them to make shorter and more frequent journeys with multiple stops, which adds to their commuting time. Yet women also tend to have access to fewer transport choices, including less access to cars, which constrains their ability to travel. This lack of access to private motorized vehicles is reflected in the shorter distances traveled by women than men. Lack of formal transport and integrated fare are additional constraints on the mobility of women. Finally, women are also more likely to be exposed to transport related safety and security risks; for example, fear of harassment in – or while waiting for – public transport can potentially lead to women modifying their routes to get to

their destinations safely, yet further adding to the overall commuting times. Under *Sub-component C1*, project investments will include facilities and equipment necessary for improved service quality and safety and security in stations and along upgraded roads, including pedestrian areas, street lighting, street furniture, etc. Beyond accessibility, security for women will receive strong focus with well-lit and camera monitored stations and buses. In the Results Framework, indicators will measure female BRT ridership and the satisfaction among women who use the BRT and its feeder lines.

Better access to employment opportunities through more accessible transport services. The lack of affordable, accessible, safe and secure transport is one of the factors linked to lower economic participation of women compared to men. In Côte d'Ivoire, women (11.9 percent) tend to be unemployed more than men (7.4 percent) and only 9 percent of employed women are employed in the formal private sector compared to 81 percent of men; four times less women than men work and benefit from wages.[32] The project will seek to increase women's access to job opportunities by providing an accessible mass-transit transport system. The BRT system is designed with specific features tailored to address the needs of women and also children, the elderly, and people with disability. 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 the small-scale informal or SOTRA buses. 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. These measures are expected to increase women's mobility.

Economic empowerment of women through training in the transport sector. Women will have increased opportunities to qualified jobs created by BRT operations and to work in a more professionalized urban transport informal sector. A strong focus will be on gender inclusion and participation in both the formal and informal sectors. It is also proposed that the project will favor women in accessing the qualified jobs created by BRT operations, in line with a long-term target of equal opportunities in the public transport sector. *Under Component D1, investments in human capital development* will include a focus on training skills for women. The project will monitor two indicators to measure the impact of the specific training interventions that will particularly benefit women. It is anticipated that at least 150 women will be among the 500 public transport technicians to be trained as part of the formal new BRT operating requirements; and at least 1,000 women will be trained among the informal workers (among an anticipated 5,000 drivers and 1,000 transport company representatives). In addition, the project aims to achieve a target of 30 percent women employed by the BRT operator.

Promotion of employment opportunities for women in the sector through the development of a cohort of highly technically educated female executives. *Under Component D1, investments in human capital development* will also include a focus on employment creation in the sector to foster a cohort of highly technically educated female executives in the sector. Women will receive trainings in development of skills required for the existing and future needs of the urban formal and informal transport sector. Two specific activities are envisaged: (i) there will be a specific emphasis through the development of the Professional Masters degree in Transport from the Ecole Nationale des Ponts et Chaussées (ENPC) at the INP-HB to develop a pipeline of female executives in particular, by ensuring gender balance in the targeting of the education sponsoring process; and (ii) there will be an emphasis on developing a gender-sensitizing training curriculum for SOTRA and also in bringing female instructors to start recruiting and foster the retaining of female trainees in the future. The gender-sensitization of the training programs will also help reduce gender stereotypes that may affect women's participation and interest in engaging in professional roles in the public transport sector.

120. **The risk of GBV**, in particular Sexual Exploitation and Abuse (SEA) risks, which could be induced by the temporary influx of labor resulting from the project, was assessed and found to be low. About 160 workers are expected to be mobilized during construction and it is expected that most of the labor will be hired from the local population. There is no expectation of a large influx of labor as most of the work could be done by local workers thus limiting inflows of labor among the large agglomeration of 3.5 million inhabitants of Abidjan. As a result, no construction camp is expected. The approach followed to mitigate GBV/SEA risks include: (a) the review of risks

[32] Banque africaine de développement. Profil genre pays : république de la côte d'ivoire. 2015.

for the project areas and availability of prevention and support services as needed; (b) the hiring of a specialized NGO to provide additional support services for GBV prevention and referral of survivors; (c) addressing GBV/SEA risks through the procurement process with the adoption of codes of conduct by any contractor working on the project; (d) the requirement that the contractor, the supervision consultant, and the PCU will each have social safeguards specialists with terms of reference including proactive actions to minimize negative social impacts, particularly GBV; and (e) the setting up of a monitoring framework in coordination with the communities and the specialized NGO in order to monitor GBV/SEA incidents and to ensure access to services by survivors. This will require adapting the project's grievance redress mechanism specifically to respect confidentiality in coordination with local partners. The overall proposed approach includes activities that go beyond what is required by the World Bank's Good Practice Note for a project with a low GBV risk defined by the application of the World Bank's GBV risk assessment tool. Annex 3 provides details of the project's approach.

121. **Poverty and equity.** Household travel surveys and the recent Economic Update for Côte d'Ivoire that focused on mobility in Abidjan[33] suggest that 17 percent of household expenditure is dedicated to daily transport expenses, this figure reaches 30 percent for the lowest income quintile, who are dependent on public transport. Overall, the level of satisfaction with public transport services is low especially in peripheral areas such as Yopougon. The major concerns raised by the public transport users are long transit time and waiting time. 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 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 Annex 2). The proposed tariffs for the BRT will be aligned with the existing fares in Abidjan.

122. **Affected land properties.** The BRT line will use the right-of-way of the 4th Bridge, financed by the AfDB, that is being constructed in some of the most densely populated areas of Abidjan. During construction of the bridge, activities related to the widening and acquisition of new rights-of-way will generate destruction of property including housing, land and commercial or service activities. A total of 6,967 buildings will potentially be affected by the 4th Bridge project. In addition, the construction of the three intersections, financed by JICA, which will take place in built-up urban areas, will affect nine buildings. Land tenure is an important issue that was identified in the ESMF prepared for the project: some of the investments in feeder lines and last-mile accessibility could require land acquisition resulting in expropriations. Thus, these potential expropriations should be done by involving the administrative authorities of the concerned ministries, the district, the municipalities and customary leaders.

123. **Involuntary resettlement**. The Resettlement Action Plans (RAPs) currently disclosed[34] relate to both the 4th Bridge (funded by the AfDB) and three interchanges (funded by JICA) projects that include the right-of-way of the BRT corridor. These RAPs initially concluded that the clearance of land and buildings for the 4th bridge construction will affect a total of 11,508 households, or 31,673 people, most of whom will have to be resettled. The main risks from this associated project include (i) a complete and accurate census of all eligible Project Affected Persons (PAPs) according to the eligibility criteria defined in the RPF; (ii) timely payment of compensation and assistance for the relocation of PAPs and livelihood restoration;[35] (iii) validation of resettlement options and development of sites for relocation of PAPs; (iv) prompt and acceptable handling of complaints received as part of the resettlement process; and (v) failure to take into account all categories of PAPs including squatters and

[33] *Situation économique en Côte d'Ivoire, « Que la route soit bonne », améliorer la mobilité urbaine à Abidjan*, World Bank, 01/2019
[34] The 4th Bridge RAP and the three interchanges RAP
[35] The Government has allocated US$52 million for the RAP.

informal sector workers who are eligible for resettlement assistance. The project will also affect the economic livelihoods of 1,760 households who exercise income-generating activities in the three concerned municipalities: Yopougon (437 households), Attécoubé (222), and Adjamé (1,101). The construction of the interchanges at the three intersections will affect 439 people.

124. The Borrower has reviewed[36] and complemented these RAPs which have been consulted upon, cleared by the World Bank and disclosed in-country and at the World Bank's external website on March 16, and March 22, 2019 respectively. A resettlement policy framework (RPF) was prepared specifically for the proposed project to define the principles applicable to the civil works which will be carried out for all project components including the rehabilitation of feeder roads and last-mile accessibility. It was published by the Government and by the World Bank on their respective website on February 27, 2019.

125. **Mid-term evaluation of the RAP implementation for the Abidjan Urban Transport Project (4th bridge project, funded by AfDB).** At the request of the World Bank, the GoCI is undertaking an audit to assess the implementation of the 4th Bridge RAP. Preliminary assessments have been focused on the following risks: (i) the effectiveness of the compensation of PAPs, which is in progress; (ii) information on the negotiated amount of all lost property (land, housing, economic activities etc.); (iii) reliability and accessibility of the claims and effectiveness of Grievance Redress Mechanism (GRM); and; (iv) monitoring of the RAP's implementation. A detailed mid-term evaluation and a RAP completion evaluation will be undertaken during project implementation with AfDB funding.

126. The preliminary findings of this audit indicate that: (a) there has generally been a strong stakeholder consultation process and outreach/sensitization, but in some areas there have been delays in outreach and negotiating compensation packages because of a lack of staffing resources by the NGO (FERRAD) which has been hired to undertake these activities; (b) the GRM is being actively used by PAPs to resolve complaints/disputes about compensation and other related matters; so far 2,174 complaints were registered of which 700 have been resolved, but the treatment of the grievances is slow; a complaint was addressed and registered[37] by the AfDB's Compliance Review and Mediation Unit (BCRM), and a mediation process is ongoing; (c) the number of Project Affected Households (PAHs) has risen from 11,508 identified by the census undertaken during project preparation to 12,889 (in March 2019, representing more than 35,000 PAPs). This gap comes as a result of the recent update of the census carried out by Egis in October 2018 in Boribana and Yopougon at the contractor base site (which was not taken into account in the RAP) and from some complaints of omitted PAH's; and (d) the compensation process is taking a long time due to staff shortages in FERRAD and lack of monitoring from the PTUA's project coordination unit.

Table 4: 4th Bridge RAP implementation progress based on the audit findings

Number of Project Affected Households (PAHs)	12,889
Number of PAHs who have negotiated (Minutes signed)	9,732
➢ Of which number of PAHs who have been compensated and received the entire negotiated amount (mostly in Attécoubé)	3,167
➢ Of which number of PAHs who are ready to be paid (orders to pay signed, mostly in Adjamé and Yopougon)	4,011
Number of PAHs currently negotiating or waiting for negotiation	3,157

[36] The World Bank has provided comments on these RAPs to the Government, AfDB and JICA, which have been accepted, and thus the RAPs have been revised.
[37] RQ2018/2

127. The GoCI aims to complete the RAP implementation by October 2019.

128. Based on the audit findings, the following actions are recommended to mitigate the risks: (i) completion of a complementary census to include all non-registered households (a firm has been recruited by the PTUA and the census will be completed by end of July, 2019) and preparation and disclosure of an addendum to the RAP; (ii) mobilization of the eventual additional budget required for the compensation of the additional PAPs; (iii) hiring an additional stakeholder engagement specialist and additional consultants to strengthen the capacity of the PTUA to handle sensitization and outreach activities with the PAPs and to facilitate the implementation of the RAP; and (iv) create two additional offices staffed with qualified personnel in charge of the GRM to ensure a presence in all the relevant municipalities impacted by the PTUA. Of these actions, (i) will be an effectiveness condition for the Credit, while (ii) to (iv) will be subject to legal covenants.

129. **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 GRM to receive and manage social and/or environmental concerns and grievances in a prompt and transparent manner.

130. **Institutional responsibilities.** The PCU within the DGTTC – the overall implementing agency of the project – will be recruiting a resettlement expert within their social and environmental team to manage and supervise the implementation of the resettlement activities. The MoT, through the Office of Road Safety (OSER) and the Observatory of Road Fluidity (OFT), is also responsible for the development and implementation of the Government's transport and road safety policy, and as such will be responsible for managing road safety aspects of the project and the BRT operations in liaison with other public entities. The Ministry of Health and Public Hygiene will monitor the implementation of the measures planned in the ESMP for the health of workers and nearby populations.

131. **Consultations and stakeholder engagement.** Project design and preparation are based on consultative processes and stakeholder engagement at several levels. As part of the preparation of the ESMF, consultation sessions were held with stakeholders including administrative managers, technical structures, populations and staff of the Environmental Directorate and Sustainable Development (DESD) of the Autonomous District of Abidjan, Municipalities of Bingerville, Adjamé, Yopougon, Cocody and Attécoubé. 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 (Chiefs of villages and lands, “Notables”, District Chiefs, etc.), and persons affected under OP 4.12 (Involuntary Resettlement).

132. The stakeholder consultations between the population and the project managers concerning the 4th Bridge project, organized during the month of April of 2016, were attended by a total of 2,500 people, including 500 women, representing the different social groups of the affected populations. In relation to the three

interchanges construction, stakeholder meetings were organized during the scoping phase (18 October 2017 and 22 January 2018) and during the preparation of the ESIAs and RAPs (24 May 2018).

133. The challenge of the expected relocation and reorganization of the existing SOTRA and small-scale transport operator bus routes is being addressed through extensive consultations with operators to support the reassignments, which will continue over 2019 and 2020.

134. The project will implement a GRM to receive and facilitate resolution of concerns and grievances and provide financial resources and training to the dedicated persons to the success of the mechanism. A GRM manual will be developed to include Grievance Redress Units, an organizational committee and rules for addressing grievances. Some principles to identify issues and help local transport operators to improve provided services will be set up. The GRM system will be accessible to all concerned parties (transport service providers, Government bodies, SOTRA, private operators). Procedures that record complaints, suggestions, and queries will be put in place to help address in timely manner project concerns and obligations related to complaints (Safeguards, GBV, etc.). A timetable will be disseminated early and widely to various stakeholders, including project affected persons, civil society, and the media. A GRM appropriate for the size and scope of the construction works and involuntary resettlement activities has been included already in the ESMF and RPF and the subsequent ESIAs and RAPs. However, given the population density in Abidjan, the many stakeholders and the large number of passengers that the BRT will serve, a more elaborated technology-based GRM will be developed (call centers, emails, website, telephone, etc.) and some other tools (suggestion boxes, grievance form) and piloted to respond to a wider range of potential queries, feedback, and complaints and to report on them regularly and transparently. One of the objectives of the GRM is also to pilot the approach and to contribute to the social and environmental risk management. 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.

(iii) Other Safeguards

135. **Mitigation co-benefits.** This BRT project is eligible for classification as climate mitigation finance. Urban transport modal shift 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. There are two types of activities in this subcategory: (a) urban mass transit and (b) non-motorized transport (bicycles and pedestrian mobility). The project addresses both activities with a particularly strong emphasis on the first one. The project, as a whole, is an urban mass transit activity. As noted previously, the GHG emissions savings associated with the project's BRT and fleet renewal components will be significant: by 2049, these are estimated to accumulate to approximately 927,500 tCO_2e for the fleet renewal component and to approximately 1,207,400 tCO_2e for the BRT component.

136. **Adaptation co-benefits.** Abidjan's population is increasingly exposed to flood-related material and social losses. The city will be affected by sea level rise, given its low-lying location between the Ébrié Lagoon and the Gulf of Guinea. In addition, Abidjan is expected to see an increase in the number of days with very heavy precipitation (>20mm/day), to 9-10 days per year by 2050. The main natural risks in the city, thus, relate to flooding due to rainstorms, and the insufficient capacity of the existing network to perform stormwater drainage efficiently. The Riviera area in the Cocody municipality, one of the areas that will be served by the BRT, has repeatedly been subject to flooding due to the insufficiency and degradation of the drainage works. According to the forecast models, the increased urbanization of the areas around the BRT corridor is expected to increase the

amount of water runoff and thus exacerbate flooding after intense rainfalls. The heavy rainfall and flooding could damage the BRT infrastructure, namely bus stops, the physical barriers between the BRT lanes and regular traffic lanes and the electrical and mechanical equipment of the BRT system. On the institutional side, the public transport system of Abidjan has until very recently lacked an organizational authority responsible for the long-term vision and has been under-funded, which has resulted in limited capacity to identify and respond to service disruptions due to climate and geophysical hazards.

137. The BRT project will contribute to addressing the flood 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 and bus depots will be designed considering the elevated flooding risk, and the norms and standards used to calculate the drainage system will be adapted accordingly. It is expected that the BRT infrastructure and the urban roads will be resilient to flooding and will help in making the project area less flood-prone.

138. In addition, the project will contribute to the adaptive capacity through its capacity building and professionalization related components. Components B and C feature capacity building initiatives for both the formal and the informal transport sector that can help prepare for and cope with hazards and build longer-term resilience. Component D will address human development needs more broadly which will also contribute to increased adaptive capacity over the long term. The TA that will be provided under Component B to SOTRA, can also include the development of protocols and processes to respond to a natural disaster threatening the normal operation of the system. For example, an emergency protocol can be established, providing clear instructions of bus rerouting in case of a major disruption due to a flood or similar event. Component B will also institutionally reinforce SOTRA, to develop its capacity to mobilize an adequate bus fleet for the daily needs of Abidjan's commuters, while ensuring that there is an available maintenance/repair budget and spare equipment in case of a service disruption due to a hazard.

(iv) Grievance Redress Mechanisms

139. 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*.

V. KEY RISKS

140. The overall risk is High, mainly due to three reasons: (i) technical and capacity challenges related to the management of a complex competitive recruitment, the signing of a satisfactory PPP contract and the supervision of a qualified BRT private operator, for which less than ten examples exist on the continent and would be a first

in Côte d'Ivoire; (ii) the large scale of the required resettlement generated by the associated project of construction of the 4th Bridge; and (iii) involvement and the technical and physical integration of multiple formal and informal operators as feeders to the BRT which may have an employment impact. Other challenges which justify a substantial rating are multiple. They relate to the institutional context of urban transport in Abidjan, ensuring high quality of technical design of an infrastructure that is new in Côte d'Ivoire, and the management of multiple urban roads and infrastructure rehabilitation in an urban setting.

141. **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 and decisions in relation to the selection of the BRT operator and the reorganization of services will test the governance of the system. The Urban Transport Authority is in its infancy, which means that there is not a long history of structured organization and arbitrage between the various classes of public transport operators in Abidjan. This risk will be mitigated by a focused communication campaign and by involving all project stakeholders during all project phases. Decision making processes to restructure services and to choose the connecting infrastructure which will be built under Components B and C and to select beneficiaries for the fleet renewal scheme have been designed with project support and will be transparent. A strong transaction advisor will be recruited under the credit for the selection of the BRT operator, and World Bank implementation support will also benefit from inputs from IFC and MIGA. In the case of SOTRA, legal covenants were introduced in the Credit Agreement to ensure the improvement of contractual relationships with the Government and the publication of audited financial statements.

142. **Macroeconomic (budgetary).** This risk is rated Substantial. The resettlement cost of the 4th Bridge project (financed by AfDB but which is an associated facility to the project) is estimated at about CFAF 30.6 billion (about US$52 million). Another risk during implementation may stem from the fact that SOTRA will still depend partially on government subsidies to compensate for cheaper tariffs for some categories (especially students/pupils and police). Given the budget constraints in Côte d'Ivoire, the Government may not be able to afford to pay the resettlement costs on time or to provide the relevant flow of compensation to the operators. For RAP implementation support, this risk will be mitigated by the fact that the resettlement is underway and around 3,167 households out of 12,889 have already been compensated.

143. For the allocation of budget resources to subsidies, SOTRA already benefits from subsidies so there is a track record of past government commitments for such expenses. The other components are not expected to require government contributions including the fleet renewal scheme, which limits this risk. That said, the main risk from a budget commitment standpoint will derive from the tariff policy, for example if the government decides on a favorable fare integration between modes resulting in discounted rates or extending the free travel or reduced price travel awarded on SOTRA bus to several categories.

144. **Technical design.** This risk is rated Substantial. This is the first time a BRT project has been prepared and implemented in Côte d'Ivoire, and several technical options will be studied prior to the start of the selection process. The BRT infrastructure itself is going to pass through a complex infrastructure with interchanges and involving a bridge. No similar project has been done previously including no completed PPP for a BRT involving e-buses. This risk will be mitigated through the hiring of well-qualified BRT consultants and experts to advise during all project phases, and strong technical consultants are already in place for the infrastructure design aspect. The use of PPP in which a professionally qualified, renowned BRT operator will be involved will also mitigate the technical risks of implementation. Legal covenants have been introduced to reflect the Government's commitment to a competitive and transparent selection process, and to the implementation of a PPP contract

consistent with best practice. Components B, C and D are less complex to design, and their challenges lie mostly in the implementation capacity. AGEROUTE has a long track record of implementing urban road infrastructures.

145. **Institutional capacity for implementation and sustainability**. This risk is rated High. This is the first time a BRT project has been prepared and will be implemented in Côte d'Ivoire. In addition, a Metro (heavy rail) project on the city's North-South axis is also being prepared by the Government. The preparation of two major mass-transit projects in parallel in Greater Abidjan is stressing the institutional capacity. The Abidjan Urban Transport Authority is also only starting its activities while it will have to be decisive on topics such as tariff integration and restructuring of the feeder network. The CNP-PPP, which will oversee the BRT selection process, has substantial experience in PPPs in other infrastructure sectors, but not yet in transport services. One mitigation measure will be the satisfactory set up of a strong PCU, for which full staffing is an effectiveness condition for the credit. But the main mitigation measures lie in the substantial support that the Greater Abidjan Port-City Integration Project will provide to the new Abidjan Urban Transport Authority, including technical assistance and studies for the restructuring of services. For the BRT selection and implementation, the main mitigation will be the recruitment of appropriate advisors.

146. **Fiduciary.** The overall FM risk is rated Substantial. This is due to (i) the lack of experience and familiarity of the Directorate of Administration and Finance (DAF) of the DGTTC with World Bank FM procedures; (ii) the fact that the PCU is not created yet and the FM unit is not operational (no staff has been recruited and the accounting software is not yet installed); and (iii) the design of the project which involves several sub-components and activities as well as the multiplicity of actors (implementing entities) with beneficiaries not familiar with World Bank FM procedures. The project will be supervised using a risk-based approach. It is expected that the PCU in DGTTC will be able to manage World Bank funds once the following measures are implemented prior to and after project effectiveness: (i) appointment, on a competitive basis, of key FM staff including the FM Officer, the accountant, and one assistant accountant; (ii) drafting of the FM procedures manual; and (iii) purchase and installation of the accounting software and the provision of appropriate training to its users.

147. In line with the Use of Country Systems as stipulated in Decree n° 475 governing the modalities of donor-financed project implementation in Côte d'Ivoire: (a) a financial controller and a public accountant (two civil servants from the Ministry of Finance) will be assigned to the new PCU; and (b) the internal audit function of the project will be managed by the General Inspectorate of Finance (*Inspection Générale des Finances* - IGF) in line with the Arretee 106 dated February 20, 2018. Finally, the PCU established within the DGTTC will be required to prepare and submit: (a) an annual work plan and budget (AWPB) not later than on November 30 of the year preceding the year the AWPB should be implemented; (b) interim un-audited financial statements (IFR) on a quarterly basis; and (c) audited annual financial statements (e.g. audit reports prepared by independent external auditors). The project will comply with the World Bank disclosure policy of audit reports and place the information provided on the official website within one month of the report being accepted as final by the team.

148. Technical units in SOTRA and AGEROUTE will also contribute to the technical supervision of the components, contributing to mitigating the fiduciary risk as they will certify the completion of activities and their implementation. AGEROUTE in particular has substantial experience of managing World Bank projects.

149. The procurement risk is assessed as Substantial. The following mitigation measures have been proposed to reduce procurement related risk in the project: (a) a senior procurement specialist familiar with World Bank procurement regulations and with experience in the procurement of works should be recruited in the PCU prior

to project implementation. This specialist should also have knowledge of procurement issues related to PPPs; (b) over the course of project implementation, it may be advisable to hire one or two additional procurement staff to assist the senior procurement specialist; and (c) the procurement staff in the World Bank Côte d'Ivoire Country office will be available to provide Hands-on Extended Implementation Support (HEIS) to the DGTTC.[38]

150. **Environment and social.** The risk is rated High considering the resettlement of over 35,000 individuals caused by the urban expressway and bridge construction, which the BRT will use as a supporting infrastructure. The implementation of the resettlement action plan for this infrastructure is ongoing and the lessons from a mid-term evaluation are being incorporated. The Government has been able to incorporate lessons and processes from recent urban infrastructure in Abidjan, including a third bridge over the Ebrie Laguna and several major intersections. Details on the measures proposed are in the Environmental and Social sections of the appraisal summary.

151. **Stakeholders**. This risk is rated High. This project will reshape the current public transport environment in Abidjan and some of the current operators may oppose it as they will need to operate different services. 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. However, the results of the network restructuring studies are not yet known and given the very high employment figure for the sector (more than 100,000 direct jobs) it is possible that some operators may be impacted by serving lower density areas. In order to mitigate the impact of the BRT on the sector and improve its efficiency, the project is supporting together with IFC the piloting of fleet renewal initiatives for each main categories of artisanal operators including a scrap premium for old vehicles, which will allow an improvement in their quality of service under Component C, while significant trainings are planned under Component D, and will contribute to raise capacity of sector employees. SOTRA, which currently ensures some of the services that will be replaced by the BRT, is also a beneficiary of the project. Finally, as part of the setup of the AMUGA, a stakeholders' forum will be established, to provide an appropriate consultation conduit with the formal and informal sector as well as all urban transport professionals. Close coordination will also be ensured with the Ministry of Finance, in particular on aspects related to the establishment of transport fares and fare integration, due to the possible substantial subsidy requirements.

152. **Others.** This risk is rated Substantial. There are various risks associated with the need to undertake BRT infrastructure construction in a densely populated and congested area. Traffic congestion will be exacerbated during the construction. Thus, it may worsen road users' frustration and lead to opposition to the project especially in the Cocody/Bingerville area. 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 for the general public and road users.

153. Accident risks also exist on construction sites and will be mitigated as per the specific plans which will be developed at the design stage.

154. Another risk is that no qualified private operator will be 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. The recent process in Dakar has seen a strong representation of potential investors, which bodes well for the Abidjan BRT as Abidjan

[38] HEIS will not be involved in the supervision of the project as a member of the World Bank task team or designated procurement specialist

has always had a formal bus company, whose monopoly has been mostly unchallenged for the services for which it has enough supply capacity. Another main risk for investors is the revenue risk. The BRT operator will have to factor in the tariffs proposed by the other complementary modes, including the subsidized tariffs offered to some categories by SOTRA. The main mitigation for that will lie in the contract, the design of the BRT selection process after market sounding, and the credibility of the Government in case it is determined that some subsidies need to be allocated. For this, the fact that the Government was able to set up and then pay a substantial availability payment when it assessed that tariffs for the third bridge should be revised downwards can be considered as a positive indication.

VI. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Cote d'Ivoire

Abidjan Urban Mobility Project

Project Development Objectives(s)

The Project Development Objective is to improve accessibility to economic and social opportunities and to increase efficiency of the public transport system along the Yopougon-Bingerville corridor and its feeder lines in Abidjan.

Project Development Objective Indicators

Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
Improve accessibility to opportunities				
Percentage of the population of GAA able to access the Plateau within 60 minutes during rush hour by public transport (Percentage)		26.00	26.00	64.00
Percentage of the poor residents of Greater Abidjan with access to the city center (Place de la Republique) within 60 minutes commuting period using public transport (Percentage)		27.00	27.00	52.00
Percentage of the population of GAA able to access at least one additional hospital within 30 minutes during rush hour by public transport compared to baseline (Percentage)		0.00	0.00	25.00
Percentage of the poor population of GAA able to access at least one additional hospital within 30 minutes during rush hour by public		0.00	0.00	19.00

Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
transport compared to baseline (Percentage)				
Percentage of population of GAA able to access at least one additional secondary school within 30 minutes during rush hour by public transport compared to baseline (Percentage)		0.00	0.00	44.00
Percentage of the poor population of GAA able to access at least one additional secondary school within 30 minutes during rush hour by public transport compared to baseline (Percentage)		0.00	0.00	33.00
Increase efficiency of the public transport system along the corridor and its feeders line				
Satisfaction rating by public transport users of the BRT and its feeder lines (Percentage)		0.00	0.00	75.00
Satisfaction rating among women who use the BRT and its feeder lines (Percentage)		0.00	0.00	75.00
Satisfaction rating by poor public transport users of the BRT and its feeder lines (Percentage)		0.00	0.00	75.00
Average passenger ridership in the BRT buses per weekday (Number (Thousand))		0.00	0.00	330.00
Average ridership by female passengers in the BRT buses per weekday (Number (Thousand))		0.00	0.00	165.00
Number of transport service providers trained through formal training programs (Number)		0.00	2,000.00	6,000.00
Number of formal transport sector workers trained through the training programs financed by the project (Number)		0.00	150.00	500.00

Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
Number of female formal transport sector workers trained through the training programs financed by the project (Number)		0.00	50.00	150.00
Number of informal transport service providers trained through the training programs financed by the project (Number)		0.00	1,500.00	5,500.00
Number of female informal transport service providers trained through the training programs financed by the project (Number)		0.00	300.00	1,000.00

Intermediate Results Indicators by Components

Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
Implementation of the East-West Bus Rapid Transit (BRT) corridor between Yopougon and Bingerville				
A contract agreement with a private company to invest and operate in the BRT operations is signed (Yes/No)		No	Yes	Yes
Percentage of the BRT infrastructure constructed (Percentage)		0.00	50.00	100.00
Number of operational BRT buses (Number)		0.00	112.00	157.00
Percentage of female staff in the BRT operator (Percentage)		0.00	30.00	30.00
Annual disclosure by MoT of the audited annual financial statements and the operational results of the BRT (Yes/No)		No	No	Yes
A mirror system to monitor the fare collection		No	No	Yes

Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
system is in use at MoT (Yes/No)				
Number of serious injuries and deaths involving a BRT bus (Number)		0.00	0.00	0.00
Road safety assessment carried out on the BRT corridor with focus on pedestrians (Yes/No)		No	No	Yes
A road safety management plan is in place within the BRT operator (Yes/No)		No	Yes	Yes
Strengthening of SOTRA and the restructuring of the feeder system to mass transit lines				
Restructuring Plan of the bus network is implemented (Yes/No)		No	Yes	Yes
Number of SOTRA facilities rehabilitated (Number)		0.00	2.00	4.00
ITS and fare collection system is in use for SOTRA (Yes/No)		No	Yes	Yes
Roads rehabilitated non-rural (Kilometers)		0.00	15.00	30.00
Organizing the artisanal transport sector and last-mile accessibility				
Number of facilities rehabilitated for the informal sector (stations, stops etc..) (Number)		0.00	4.00	10.00
Pedestrian and cycle paths rehabilitated (Kilometers)		0.00	5.00	15.00
Number of urban transport vehicles renewed (Number)		0.00	1,000.00	3,000.00
Human capital development and operational support				
Number of student graduated from the ENPC/INPHB Master (Number)		0.00	10.00	30.00
Number of informal operators benefitting from the social security coverage (Number)		0.00	1,000.00	5,000.00
A GRM (Grievance Redress Mechanism) is in use during construction (Yes/No)		No	Yes	Yes

Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
A GRM (Grievance Redress Mechanism) for the BRT operation is in use (Yes/No)		No	No	Yes

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Percentage of the population of GAA able to access the Plateau within 60 minutes during rush hour by public transport	A GIS-based spatial analysis will be conducted to assess the results on this indicator. Accessibility to the Plateau, defined specifically as the Place de la Republique, (coordinates WGS84 Longitude: 5.3167, Latitude: -4.0195), using public transport services and travel time by poor and nonpoor individual, will be measured using travel and household survey data.	Annual		This methodology requires obtaining data on population density and public transport services speeds as well as data on transfer times between public transport routes. 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 year (excluding weekend and vacation days) at morning peak	MoT BRT operator (for the GPS data)

				hours. For speed of other public transport services, annual on-board speed surveys will be conducted for at least 50% of Greater Abidjan's public transport services on weekdays at morning peak hours. Each survey will have a duration of at least one week to obtain an accurate average. Poverty incidence in each travel zone will be assessed through light survey and rapid poverty measurement models-based proxy mean testing or similar methodologies. The ToR of the survey will be submitted for the World Bank's review.	
Percentage of the poor residents of Greater Abidjan with access to the city center (Place de la Republique) within 60 minutes commuting period using public transport					

Percentage of the population of GAA able to access at least one additional hospital within 30 minutes during rush hour by public transport compared to baseline	A GIS-based spatial analysis will be conducted to assess the results on this indicator. Accessibility to hospitals and secondary schools using public transport services and travel time by poor and nonpoor individual will be measured using travel and household survey data. Walking speeds will be assumed at 3.5 km/h (same as at baseline). Accessibility improvements will be measured only considering the hospitals identified and geo-located at the time of baseline estimation, not including any new ones built during the course of project implementation.	Annual		This methodology requires obtaining data on population density and public transport services speeds as well as on integration/ transfer times between public transport routes. 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 year (excluding weekend and vacation days) at morning peak hours. For speed of other public transport services, annual on-board speed surveys will be conducted for at least 50% of Greater Abidjan's public transport services on weekdays at morning peak hours. Each survey will have a duration of at least one week to obtain an	MoT BRT operator (for the GPS data)

				accurate average. Poverty status of public users will be assessed through light survey and rapid poverty measurement models-based proxy mean testing or similar methodologies.The ToR of the survey will be submitted for the World Bank's review.	
Percentage of the poor population of GAA able to access at least one additional hospital within 30 minutes during rush hour by public transport compared to baseline					
Percentage of population of GAA able to access at least one additional secondary school within 30 minutes during rush hour by public transport compared to baseline	A GIS-based spatial analysis will be conducted to assess the results on this indicator. Accessibility to hospitals and secondary schools using public transport services and travel time by poor and nonpoor individual will be measured using travel and household survey data. Walking speeds will be assumed at 3.5 km/h (same as at baseline). Accessibility improvements will be	Annual		This methodology requires obtaining data on population density and public transport services speeds as well as on integration/ transfer times between public transport routes. The average speeds for BRT services will be obtained through the GPS installed in BRT buses when operational. They will	MoT BRT operator (for the GPS data)

	measured only considering the schools identified and geo-located at the time of baseline estimation, not including any new ones built during the course of project implementation			be measured for an average working day of the year (excluding weekend and vacation days) at morning peak hours. For speed of other public transport services, annual on-board speed surveys will be conducted for at least 50% of Greater Abidjan's public transport services on weekdays at morning peak hours. Each survey will have a duration of at least one week to obtain an accurate average. Poverty status of public users will be assessed through light survey and rapid poverty measurement models-based proxy mean testing or similar methodologies.The ToR of the survey will be submitted for the World Bank's review..	

Percentage of the poor population of GAA able to access at least one additional secondary school within 30 minutes during rush hour by public transport compared to baseline					
Satisfaction rating by public transport users of the BRT and its feeder lines		Annual		MoT will commission public transport user surveys on an annual basis 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. A 5-level satisfactory scale (1: unsatisfied; 2: moderately unsatisfied; 3: neutral; 4: moderately satisfied; 5: satisfied) will be used. A sub-indicator will report women's answers and another one – for the answers of individuals under the official poverty line. The survey will be undertaken by a specialized consulting firm.	MoT BRT operator Consulting firm

Satisfaction rating among women who use the BRT and its feeder lines					
Satisfaction rating by poor public transport users of the BRT and its feeder lines					
Average passenger ridership in the BRT buses per weekday		Biannual		MoT will collect the number of passengers per day during hours of operations (6:00 am to 10:00 pm) using BRT buses. It 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.	MoT BRT operator
Average ridership by female passengers in the BRT buses per weekday					
Number of transport service providers trained through formal training programs		Annual		This indicator will be using data collected regularly by DGTTC.	DGTTC
Number of formal transport sector workers trained through the training					

programs financed by the project					
Number of female formal transport sector workers trained through the training programs financed by the project					
Number of informal transport service providers trained through the training programs financed by the project					
Number of female informal transport service providers trained through the training programs financed by the project					

Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
A contract agreement with a private company to invest and operate in the BRT operations is signed	The YES value will be reached when the concession agreement between the private operator and the GoCI is signed meaning that the deal is closed.	once			MoT
Percentage of the BRT infrastructure constructed	It will be the aggregation of the physical progress of each works contract (roads, stations, terminals, depots, and so on). MoT will collect the information from the	Biannual			MoT

	supervision firms.				
Number of operational BRT buses	MoT 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	Biannual			MoT
Percentage of female staff in the BRT operator				The data will be collected by MoT that supervises the BRT operator.	MoT
Annual disclosure by MoT of the audited annual financial statements and the operational results of the BRT	The audited annual financial statements as well as the operational results will come from the BRT operator under the supervision of MoT and will be published on MoT's website for transparency purposes	Annual			MoT
A mirror system to monitor the fare collection system is in use at MoT	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 MoT. It will allow MoT to monitor in real time the flow of revenues from fares in the BRT system.	Biannual			MoT

Number of serious injuries and deaths involving a BRT bus					
Road safety assessment carried out on the BRT corridor with focus on pedestrians	Before the implementation of the project, most of the pedestrian crossings are 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 equivalent assessment).	To be rated after the completion of the BRT infrastructure			MoT
A road safety management plan is in place within the BRT operator	MoT 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).	Annual			MoT
Restructuring Plan of the bus network is implemented		Annual		SOTRA and MoT will provide the value.	SOTRA and MOT

Number of SOTRA facilities rehabilitated		Annual		SOTRA and MoT will provide the value.	MoT and SOTRA
ITS and fare collection system is in use for SOTRA		Annual		SOTRA and MoT will provide the value.	SOTRA and MoT
Roads rehabilitated non-rural	This core indicator will measure the number of km of road works financed under components B. This indicator will monitor the progress of the road works outside of the BRT infrastructure, which are key physical outputs of component B.	Annual		MoT will collect the information from the supervision firms via AGEROUTE. The information can be easily assessed on site.	AGEROUTE and MoT
Number of facilities rehabilitated for the informal sector (stations, stops etc..)		Annual		Municipalities and MoT will provide the value.	Municipalities and MoT
Pedestrian and cycle paths rehabilitated		Annual		AGEROUTE and MoT will provide the value.	AGEROUTE and MoT
Number of urban transport vehicles renewed		Annual		FDTR and MoT will provide the value	FDTR and MoT
Number of student graduated from the ENPC/INPHB Master		Annual		INPHB and MoT will provide the value	INPHB and MoT
Number of informal operators benefitting from the social security coverage		Annual			CNPS and MoT

A GRM (Grievance Redress Mechanism) is in use during construction	MoT with the support of the World Bank will ensure that a GRM is permanently operational	Biannual			MoT
A GRM (Grievance Redress Mechanism) for the BRT operation is in use	MoT with the support of the World Bank will ensure that a GRM is permanently operational	Biannual			MoT

ANNEX 1: Implementation Arrangements and Support Plan

COUNTRY: Côte d'Ivoire
Abidjan Urban Mobility Project

A. Project Institutional and Implementation Arrangements

1. The Ministry of Transport will be the main implementing agency and will have overall responsibility for all project related activities. The project management responsibility is intended to eventually be transferred to the recently created Greater Abidjan Urban Mobility Authority (AMUGA)[39]. Support for the operationalization of AMUGA is planned within the framework of the Greater Abidjan Port-City Integration Project, with capacity-building activities for its staff and technical support for the development of planning tools. The transfer of management activities to the AMUGA is however not expected before early 2020 and would be accepted only after completion of a thorough assessment of fiduciary aspects and staff capacity to manage the project management and to ensure a smooth transition.

2. The overall institutional structure for the project will be composed of: (i) a steering committee that ensures the coherence of activities with the sectoral strategy and intersectoral coordination for sub-components under the responsibility of other ministerial departments, companies, specialized agencies and local authorities and (ii) the PCU within the MoT to ensure coordination of project implementation. Due to the diversity of components and activities, this complex project requires good coordination among various structures in charge of the implementation. For this purpose, the capacity of the PCU will be strengthened accordingly. Roles and responsibilities will be further detailed in the PIM, to be adopted no later than three months after the Credit effectiveness. These arrangements consider capacity limitations in the Government and relevant agencies.

3. **The Steering Committee** will be created specifically for the project. Given the dominant transport component of the project, this Committee will be chaired by the Minister of Transport or his/her representative, and will include the following ministers or their representatives: the Minister of Economy and Finance, the Secretary of State to the Prime Minister in charge of Budget and State Portfolio; the Minister of Equipment and Road Maintenance; the Minister of Construction and Urban Planning; the Minister of Employment and Social Protection; the President of the District of Abidjan; the Mayors of Yopougon, Attécoubé, Plateau, Adjamé, Cocody and Bingerville; and the Head of the Transport Union (*Haut Conseil des Transporteurs*). The Steering Committee's role will provide overall supervision of the project, ensure coherence of activities with the sector strategy and convene inter-sectoral coordination. The Committee will also validate the Annual Budgeted Work Plans. The Steering Committee will aim at intersectoral coordination, but it is proposed as part of the AMUGA set up to create a larger stakeholders' committee which will serve as the main consultation and debating place for urban transport policy issues beyond the project.

4. **The PCU** will be responsible for fiduciary management, communications, monitoring and evaluation activities. As the DGTTC does not have comparable activities to the project in its current portfolio as it currently has mostly a regulatory and study management function, the PCU will need to be strengthened in terms of its fiduciary skills (FM and procurement) and technical skills needed to manage the project, including its ability to

[39] Decree 2019-100, January 30, 2019

monitor the implementation of environmental and social safeguards. The Director General of the DGTTC will be the PCU coordinator. A full-time deputy coordinator will be appointed, and the team will be complemented with a procurement specialist, FM staff including: one FM Officer, an accountant, and one assistant accountant; an environmental specialist and a social specialist. The team will be supported by various short-term/long-term technical experts/consultants as needed. The PCU will also be able to rely on the National Bureau of Technical Studies and Development (BNEDT), if necessary under a formal agreement.

5. The two following figures summarize the organization of the PCU and the positioning of the Steering Committee within GoCI.

Figure 1.1. Overall organization

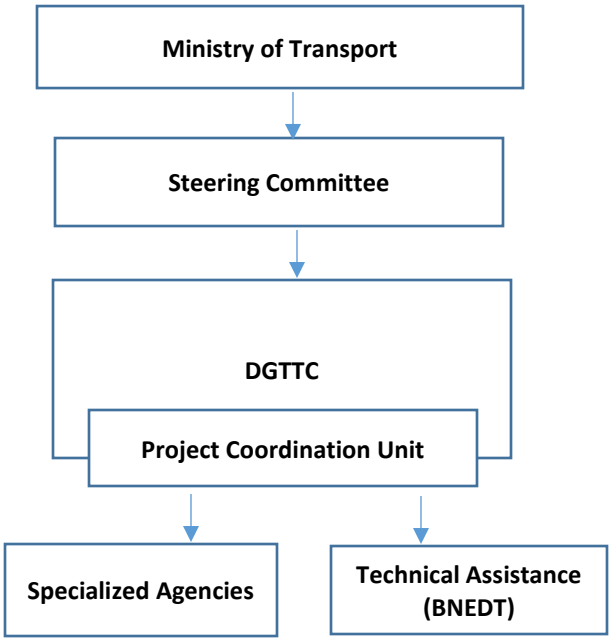
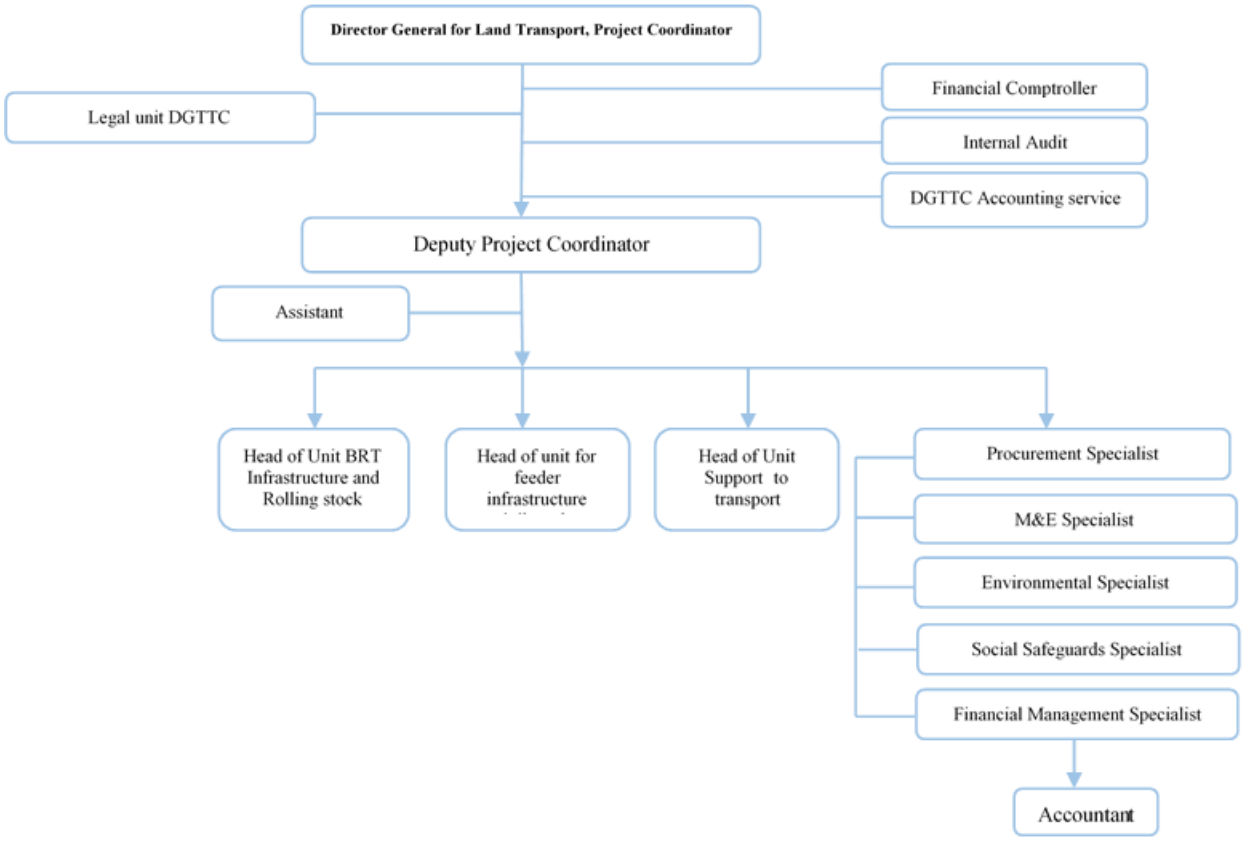


Figure 1.2. PCU Organization



6. **Specialized Implementing Agencies (SIAs)**, such as the AGEROUTE, CNP-PPP[40], MEPS, FDTR, MCLAU, SOTRA, and the DGTTC itself, will implement the various project activities which fall within their respective institutional mandate. Thus, although the PCU will retain overall fiduciary responsibility for the project, it will sign a delegated management contract with all identified SIAs. The contracts will define the scope of roles and responsibilities for the agencies involved in the project implementation. Overall responsibilities for implementation components are defined above and summarized as follows:

Table 1.1. Distribution of Specialized Implementing Agencies Per Project Activity

Project Components/ Activities	Specialized Implementing Agencies
Component A: Implementation of the East-West BRT corridor between Yopougon and Bingerville	
Sub-component A1. Implementation and operationalization of a BRT system along the corridor between Yopougon and Bingerville	- The CNP-PPP will manage sub-component A1 during the transaction preparation - AGEROUTE will manage the construction of the infrastructure

[40] *Comité National de Pilotage des PPP* (CNP-PPP), which has a full PIU set up and has managed several major PPPs in Côte d'Ivoire.

	- For the BRT operations, once selection is completed, the MoT/DGTTC will supervise the private operator under a PPP-type contract
Sub-component A2: Integration of the BRT with the existing public transport network and in the urban environment	- Ministry of Construction and Urban Development (oversight) - AGEROUTE (on behalf of GoCI and municipalities) – technical implementation
Sub-component A3: Modifying Abidjan's fourth bridge built as part of the PTUA	- AGEROUTE (PTUA unit)
Component B. Strengthening of SOTRA and the restructuring of the feeder system to mass transit lines	
Sub-component B1. Restructuring the public bus network and strengthening SOTRA	- SOTRA
Sub-component B2: Improvement of feeder roads and street furniture and investments for public transport	- AGEROUTE (by delegation from GoCI and municipalities)
Component C. Organizing the artisanal transport sector and last-mile accessibility	
Sub-component C1: Support for the organization of artisanal public transport service and last-mile accessibility	- DGTTC/PCU - AGEROUTE (by delegation from Municipalities)
Sub-component C2: Renewal of the taxi and minibus fleet	- FDTR (scrap premium) - IFC (risk sharing facility)
Component D. Human capital development and operational support	
Sub-component D1: Skills development in the urban transport sector	- DGTTC/PCU
Sub-component D2: Implementation of a social protection scheme for workers of the artisanal public transport sector	- Ministry of Social Protection
Sub-component D3: Project management	- PCU

7. **Risk Sharing Facility**: The Risk Sharing Facility under component C2 will be implemented through IFC in accordance with the provisions of several basic documents: (a) the Risk Sharing Facility Framework Agreement (between IDA, IFC and the GoCI); and (b) Partial Credit Guarantee Agreements (between the participating commercial banks and IFC). In addition, GoCI will entrust IFC to open and maintain on its behalf an account (the Risk Sharing Facility Account) that will receive part of the proceeds of the credit and will be used to make payments under the RSF (in accordance with the terms and conditions established in the Risk Sharing Facility Framework Agreement).

8. **Management of the scrap premium**. The management of the Scrap premium scheme has been defined under a specific manual in the PAMOSET Project (P156900) and is managed by the FDTR. As part of the project oversight, an audit of all the premiums paid will be done every fiscal year and the project will reimburse paid premiums corresponding to the target operators on the basis of the audit results.

9. **Environmental and Social.** The institutional framework for the implementation of the project's ESMF involves several actors and technical structures, the most significant of which are:

- Project Steering Committee (PSC): The Project Steering Committee will ensure the registration and budgeting of environmental and social due diligence in Annual Work Plans and Budgets (AWPB);
- The Project Coordination Unit (PCU): The PCU will ensure that environmental and social aspects and issues are considered in the implementation of project activities. That body will include an Environmental Safeguard Specialist (ESS) and a Social Safeguard Specialist (SSS);
- The National Environment Agency (NEA – "ANDE" in French): The ANDE will proceed with the examination and approval of the environmental classification of sub-projects, as well as the approval of environmental and social impact assessments (ESIAs). It will also provide external monitoring;
- The National Agency for Waste Management (ANAGED in French): ANAGED must ensure the monitoring of the hygiene on the work sites;
- The District of Abidjan and the Communes: they will participate in environmental and social monitoring through their services or technical directions;
- Executing agencies (AGEROUTE): they will monitor the implementation of the ESMPs that will result from the ESIAs of each project activity;
- NGOs and community associations: in addition to social mobilization, they will participate in the awareness building among the populations concerned and the monitoring of the implementation of the ESMF by interpellation of the principal actors of the project.

B. Financial Management

10. The FM arrangements for the project have been designed with consideration for the country's post-conflict situation while taking into account the World Bank's minimum requirements under the World Bank Policy and Directive for IPF which describes the overall FM World Bank policies and procedures. The FM system of the project must be capable of (i) correctly and completely recording all transactions related to the project; (ii) facilitating the preparation of regular, timely and reliable financial statements; (iii) safeguarding the project's assets; and (iv) can be subject to auditing diligences as required by the World Bank. The arrangements also aim to facilitate disbursements and ensure effective use of project resources while using the country's own systems to the extent possible.

11. **In 2018, the Government adopted a new strategic framework for reforming public financial management (PFM) based on the progress made during the implementation of the 2014-2017 PFM reform actions plan and the findings of the 2017 PEFA**: Côte d'Ivoire's PFM emphasizes in particular a strong legal and institutional framework; an effective PFM planning and budget system; and a strong internal control system with clear and relevant segregations of duties at each step of the budget execution. Budget execution and internal control systems are computerized and inter-linked with procurement and treasury systems. There is an adequate legal and institutional framework for fraud and anti-corruption in line with international standards. Côte d'Ivoire also adopted West African Economic and Monetary Union (WAEMU) PFM and procurement directives, whose implementation is on-going.[41]

12. **However, there are opportunities to strengthen the internal and external audit, procurement, and anti-corruption mechanisms.** The internal audit functions need to adopt international standards and increase the number of staff and capacity; reforms are on-going for this purpose. While the Court of Accounts (SAI) created in 2014 is operational, it is affected by human and financial resources challenges to comply with SAI international

[41] 2017 Public Expenditure and Financial Accountability (PEFA) Assessment for Côte d'Ivoire.

standards and the ability to conduct performance audits. Procurement timeliness could be improved by streamlining processes, and enforcement of sanctions could be enhanced, particularly in the infrastructure sector. Finally, the level of enforcement of anticorruption mechanisms could be enhanced.

13. **Thus, at this point the World Bank cannot fully rely on the public expenditure framework for this project.** The Government requested a ring-fenced financing mechanism for the fiduciary aspects of the project. A new PCU including a FM Unit anchored within the DGTTC at the MoT, has been proposed by the Government to manage the project. The FM team of the PCU to be established under the responsibility of the Coordinator for this project, will manage the overall FM aspects of the project.

14. **An assessment of the DAF of the DGTTC including the FM Unit of the PCU, was conducted during the project preparation to confirm whether this directorate and the FM team of the PCU could manage the proposed project**. The main finding arising from this assessment conducted in April / May 2019 was that the DAF of the DGTTC is not familiar with the World Bank-financed projects including FM procedures. Furthermore, the PCU including the FM Unit was not created yet. However, the assessment revealed that the DAF follows the country public expenditure chain for budget execution and financial reporting through SIGFIP and ASTER, the government budget and accounting software. None of the staff of the DAF including the Financial controller (*Controleur financier*) and the Public accountant (*Agent comptable*) assigned to the DGTTC is familiar with World Bank-financed project procedures and requirements. However, a draft FM procedures manual has been already developed by the DGTTC. Some funds from the Greater Abidjan Port-City Integration Project (P159697) have been allocated to the establishment and operationalization of the PCU of the new project.

Risk assessment and mitigation

15. The World Bank's principal concern is to ensure that project funds are used economically and efficiently for the intended purpose. Assessment of the risks that the project funds will not be so used is an important part of the FM assessment work. The risk features are determined over two elements: (i) the risk associated to the project as a whole (inherent risk); and (ii) the risk linked to a weak control environment of the project implementation (control risk). The content of these risks is described below.

16. The overall FM risk for the project is rated Substantial because of: (i) the lack of experience and familiarity of DAF with World Bank-FM procedures; (ii) the PCU with a dedicated FM staff and FM tools (manual of procedures, accounting software etc.) has not been established yet; and (iii) the design of the project which involves several sub-components and activities combined with the multiplicity of actors lacking familiarity with WB-financed project procedures. Consequently, additional mitigation measures will be incorporated into the design of the project FM arrangements as described in the below table:

Table 1.2. Risk assessment and mitigation measures

Risk	Risk Rating	Risk Mitigating Measures Incorporated into Project Design	Conditions for Effectiveness (Y/N)	Residual Risk
Inherent risk	H			**H**
Country level The PEFA and PIMA	H	Beyond the control of the project. The Government is committed to a reform	N	H

Risk	Risk Rating	Risk Mitigating Measures Incorporated into Project Design	Conditions for Effectiveness (Y/N)	Residual Risk
undertaken respectively in 2018 and 2016 have highlighted some strengthens but also some areas of weaknesses in PFM that the Government needs to address (see above)		program that includes the preparation of a Strategic Framework for PFM reforms in Côte d'Ivoire. However, there are still weaknesses. Use of IDA FM procedures supported by the Decree 475 is required for this project		
Entity level MoT and the DAF are not familiar with World Bank-financed FM procedures. A new PCU will be created; hence the FM team is not established and operationalized yet.	H	Internal control and financial reporting weaknesses will be mitigated by (i) the recruitment of one FM Officer; one accountant and (ii) the adoption of a FM procedures manual will mitigate.	Y N	H
Project level The resources of the project may not be used for the intended purposes; Complex design. Delays in the reporting system and auditing due to the lack of familiarity of DAF and the new PCU with the World Bank FM procedures. The numerous stakeholders would possibly impact negatively the implementation of the project;	S	For efficiency purposes, the DAF (FM team of the PCU) will strengthen ex-ante and ex-post control of activities implemented by SIA. The scope of audit will include review of expenditures incurred by implementing entities as well as physical inspections of works completed.	N	**S**
Control Risk	**S**			**S**
Budgeting: (i) weak capacity at the PCU and implementing entities to prepare and submit accurate work program and budget; (ii) weak consolidation of budgets; and (iii) weak budgetary execution and control; (iv) cost overrun or under run and reasons not detected / justifications not provided in a timely manner.	S	Annual work plan and budget required each year. AWP reviewed and approved by the Steering Committee. The project Financial Procedures Manual will define the arrangements for budgeting, budgetary control and the requirements for budgeting revisions. IFR will provide information on budgetary execution and analysis of variances between actual and budget.	N	S
Accounting: poor policies and procedures, lack of qualified accountant staff (capacity staff) and no familiarity with SYSCOAHADA system and World Bank requirements Delays in recruitment of FM team	H	FM aspects handled by the FM team of the PCU to be set up within DAF: (i) the project will adopt the SYSCOAHADA accounting system. Accounting procedures will be documented in the procedure's manual. (ii) The FM team headed by a RAF recruited on competitive basis. (iii) Training on IDA FM procedures	N Y	S

Risk	Risk Rating	Risk Mitigating Measures Incorporated into Project Design	Conditions for Effectiveness (Y/N)	Residual Risk
		will be provided to the staff.	N	
Internal Control: Internal control system may be weak due to weak FM capacity of the team. The lack of procedures manual may lead to inappropriate use of the funds and delays in financial report. The Steering Committee may not be effective; the manual may not be available at project effectiveness.	H	(i) Preparation of the FM procedures manual and training on the use of the manual will be a condition of effectiveness. (ii) IGF will play the internal audit function and report to the Coordinator of the PCU, who will in turn, share the report with the Steering Committee and IDA.	N	S
Funds Flow: (i)Risk of misuse of funds and delays in payment of invoices/expenditures of activities implemented by various actors. (ii) Delays in transfers of funds from DA to PA by IE. (iii) Ineffectiveness of public accountant and financial controller functions leading to payment of ineligible expenditures or works not completed.	S	(i) Payment requests, per the PCU manual, will be approved by the Coordinator prior to payment of funds to contractors or consultants and implementing entities. (ii) Compliance with Decree 475 by all actors (financial controller and project public accountant). (iii) Scope of work of IGF as well as the external auditors include regular field visits (physical controls of works, goods and services acquired). (iv) Adequate budget allocated to IGF to conduct periodic controls and training of Financial Controller and public accountant on World Bank FM procedures.	N	S
Financial Reporting Inaccurate and delay in submission of IFR due to delays from IAs and weak capacity of actors. Lack of familiarity of PCU team leading to some delays in recording of expenditures as well as preparation of periodic financial reports.	S	(i) A computerized accounting system will be used; (ii) IFR and financial statements formats have been agreed on at project negotiations; (iii) FM team of the PCU recruited on competitive basis and capacity building planed before project effectiveness (hands on support and training of the preparation team of DGTTC).	N	S
Auditing: Delays in submission of audit report. The scope of the mission may not cover expenditures incurred by implementing entities.	S	The project's institutional arrangements allow for the appointment of adequate external auditors and the ToRs (to be reviewed by IDA) will include field visits and specific report on findings of physical controls of goods, services and works acquired by IE.	N	S
Fraud and Corruption Possibility of circumventing the internal control system with	S	(i) The ToR of the external auditor will comprise a specific chapter on corruption auditing. (ii) The IGF will report to the	N	S

Risk	Risk Rating	Risk Mitigating Measures Incorporated into Project Design	Conditions for Effectiveness (Y/N)	Residual Risk
colluding practices as bribes, abuse of administrative positions, mis-procurement, etc., are critical issues; lack of demand-side for accountability		Coordinator of the PCU and the Head of IGF, who in turn will report directly to the Steering Committee. (iii) Copy of IGF reports will be submitted to the World Bank. (iv) FM procedures manual prepared no later than 3 months after project effectiveness and quarterly IFR including budget execution and monitoring and physical progress. (v) Technical auditing if required. (vi) Measures to improve transparency such as providing information on the project status to the public, and to encourage participation of civil society and other stakeholders have been built into the project design.		
OVERALL FM RISK				**S**

17. The design of the project follows existing FM arrangements to implement World Bank-financed projects in Côte d'Ivoire which include partial use of country systems for the following FM components (e.g. planning, budgeting, accounting, disbursement, procurement, financing reporting, internal control).

18. The country political situation has impacted governance and affected corruption environment. In the context of the project, the main weaknesses include the lack of familiarity and lack of past experiences of the MoT, DGTCC in World Bank FM procedures. Furthermore, the PCU including the FM Unit has not been created yet. However, effective implementation of FM mitigation measures as well as strengthened and effective oversight by the Steering Committee and the involvement of the country institutions of control (e.g. IGF) would contribute to mitigate the weaknesses identified at country, project and control levels.

19. The FM Action Plan described below has been developed to mitigate the overall FM risks.

Table 1.3. Action plan

Issue/Topic	Remedial action recommended	Responsible body/ person	Completion date	FM Effectiveness Conditions
Staffing	Recruit/appoint the FM Officer (RAF)	PCU within DGTTC	**By effectiveness**	**YES**
	Recruit one accountant and one assistant accountant	PCU within DGTTC	**By effectiveness**	**YES**
	Appoint the financial controller, public accountant (*Agent comptable du Projet*) in accordance with the national Decree 475	PCU within DGTTC	At project effectiveness	NO
Information	Acquisition and installation of an accounting	PCU within	Two months	NO

Issue/Topic	Remedial action recommended	Responsible body/ person	Completion date	FM Effectiveness Conditions
system accounting software	software for the project and training of the users	DGTTC	after effectiveness	
Administrative Accounting & financial Manual	Finalize the FM and procurement procedures manual and training of the users	PCU within DGTTC	Three months after effectiveness	NO
Internal auditing	Discuss with IGF, the government institution in charge of the internal audit function in World Bank-financed operations to agree on the modalities of its interventions, including allocation of adequate resources to fulfill its mandate.	PCU within DGTTC	Three months after effectiveness	NO
External auditing	Appointment of the external auditor completed and contract signed	PCU within DGTTC	Five months after effectiveness	NO

20. **Internal control system and internal audit**: The internal control system is aimed to ensure (i) the effectiveness and efficiency of operations; (ii) the reliability of financial reporting; and (iii) the compliance with applicable laws and regulations. A draft FM procedures manual has been already developed by the DGTTC. The accounting, financial and administrative procedures manual including the procurement document, explain and describe work processes, information flow, authorization and delegation of authority, timing, job segregations, auto and sequential controls, compliance with project objectives, and micro and macro rules and regulations. In line with the new Decree No. 475 governing the modalities of donors-financed project implementation in Côte d'Ivoire, and the Arretee No 106, the IGF will oversee the internal audit function of the project managed by the PCU. Once the IGF has been appointed, the PCU of the DGTTC and IGF will discuss and agree on the modalities of IGF interventions including the necessary resources to fulfil its mandate.

21. **Planning and budgeting**: The PCU within DGTTC will prepare a detailed consolidated annual work plan and budget (AWPB) for implementing the activities of the project. The AWPB will be submitted to the project Steering Committee for approval and thereafter to IDA for no-objection, not later than November 30 of the year preceding the year the work plan should be implemented.

22. **Accounting policies**: The prevailing accounting policies and procedures in line with the West African Francophone countries accounting standards—SYSCOHADA—in use in Côte d'Ivoire for ongoing World Bank-financed operations will apply. The accounting systems and policies and financial procedures used by the new project will be documented in the project's administrative, accounting, and financial manual. The PCU within DGTTC will acquire and install a project accounting software to meet the project requirements.

23. **Interim financial reporting**: The unaudited IFRs will be prepared every quarter and submitted to the World Bank regularly (for example, 45 days after the end of each quarter) and on time. The consolidated quarterly IFR for the project includes the following financial statements: (a) Statement of Sources of Funds and Project Revenues and Uses of funds; (b) Statement of Expenditures (SoE) classified by project components and/or disbursement category (with additional information on expenditure types and implementing agencies as

appropriate), showing comparisons with budgets for the reporting quarter, the year, and cumulatively for the project life; (c) cash forecast; (d) explanatory notes; and (e) DA activity statements.

24. **Annual financial reporting**: In compliance with International Accounting Standards and IDA requirements, the PCU within DGTTC will produce annual financial statements. These include (a) a Balance Sheet that shows assets and liabilities; (b) a Statement of Sources and Uses of Funds showing all the sources of project funds and expenditures analyzed by project component and/or category; (c) a DA Activity Statement; (d) a Summary of Withdrawals using SoEs, listing individual withdrawal applications by reference number, date, and amount; and (e) notes related to significant accounting policies and accounting standards adopted by management and underlying the preparation of financial statements.

25. **External auditing**: the PCU within DGTTC will submit audited project financial statements satisfactory to the World Bank every year within six months after closure of the fiscal year (see Table 1.4). The audit will be conducted by an independent auditor with qualifications and experience acceptable to the World Bank. A single opinion on the audited project financial statements in compliance with the International Federation of Accountants will be required. In addition, a Management Letter will be required. The Management Letter will contain auditor observations and comments and recommendations for improvements in accounting records, systems, controls, and compliance with financial covenants in the Financial Agreement. The report will also include specific controls such as compliance with procurement procedures and financial reporting requirements and consistency between financial statements and management reports as well as findings of field visits (for example, physical controls and works completed). The audit report will thus refer to any incidence of noncompliance and ineligible expenditures and misprocurement identified during the audit mission. The project will comply with the World Bank disclosure policy of audit reports and place the information provided on the official website within two months of the report being accepted as final by the team and the World Bank.

Table 1.4. Due dates of the audit report

Audit Report	Due Date	Responsible Party
Audited financial statements including audit report and Management Letter	(a) Not later than June 30 (2000 + N) if effectiveness has occurred before June 30 (2000 + N-1). (b) Not later than June 30 (2000 + N+1) if effectiveness has occurred after June 30, (2000 + N-1)	PCU

C. Disbursements

26. Upon credit effectiveness, transaction-based disbursements will be used. The project will finance 100 percent of eligible expenditures inclusive of taxes. A DA will be opened at the central bank (BCEAO) and a PA in a commercial bank under terms and conditions acceptable to IDA. The PA will be managed by the public accountant (*Agent Comptable du Projet*) assigned to the PCU by the Minister of Finance. The ceiling of the DA will be stated in the disbursement and financial information letter (DFIL). An initial advance up to the ceiling of the DA will be made and subsequent disbursements will be made against submission of SoE reporting on the use of the initial/previous advance. The option to disburse against submission of quarterly unaudited IFRs (also known as report-based disbursements) could be considered, as soon as the project meets the criteria. Other methods of disbursing the funds (reimbursement, direct payment, and special commitment) will also be available to the project. The minimum value of applications for these methods is 20 percent of the DA ceiling. The project will sign

and submit Withdrawal Applications electronically using the eSignatures module accessible from the World Bank's Client Connection website.

Table 1.5. Disbursement Categories

Category	Amount of the Credit Allocated (expressed in EUR)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) Goods, works, Operating Costs, non-consulting services, and consulting services for Parts A.1, A.2, A.3, B.1, B.2, C.1, D.1(a),(c),(d), D.2(a),(c),(d), and D.3 of the Project	238,400,000	Such percentage of Eligible Expenditures as the Association may determine for each calendar year, starting in calendar year 2019, covered by the respective Annual Work Plan and Budget in accordance with the provisions set forth in Section D of the Financing Agreement.
(2) Risk Sharing Facility under Part C.2(a) of the Project	17,800,000	100% of amounts disbursed
(3) Premiums under Part C.2(b) of the Project	9,000,000	Such percentage of Eligible Expenditures as the Association may determine for each calendar year, starting in calendar year 2019, covered by the respective Annual Work Plan and Budget in accordance with the provisions set forth in Section D of the Financing Agreement.
(4) Scholarships under Part D.1(b) of the Project	400,000	Such percentage of Eligible Expenditures as the Association may determine for each calendar year, starting in calendar year 2019, covered by the respective Annual Work Plan and Budget in accordance with the provisions set forth in Section D of the Financing Agreement.
(5) Social security coverage under Part D.2(b) of the Project	1,300,000	Such percentage of Eligible Expenditures as the Association may determine for each calendar year, starting in calendar year 2019, covered by the respective Annual Work Plan and Budget in accordance with the provisions set forth in Section D of the Financing Agreement.
(6) Front-end Fee	700,000	Amount payable pursuant to Section 2.03 of this Agreement in accordance with Section 3.08 (b) of the General Conditions
(7) Interest Rate Cap or Interest Rate Collar premium	0	Amount due pursuant to Section 4.06 (c) of the General Conditions
TOTAL AMOUNT	267,600,000	

27. **Payments to Implementation Agencies and services providers**: The PCU within DGTTC under the responsibility of the *Agent Comptable du Projet*, will make payments to contractors, services providers and Implementing Agencies (e.g. AGEROUTE, SOTRA) in regard to the specified activities in the components of the project. Payments will be made in accordance with the payment modalities, as specified in the respective contracts/conventions. In addition to these supporting documents, the PCU within DGTTC will consider the findings of the IGF while approving the payments. The PCU within DGTTC will reserve the right to verify the expenditures ex-post, and refunds might be requested for non-respect of contractual/convention clauses. Misappropriated activities could result in the suspension of financing for a given entity. All payments will be made by the PCU within DGTTC, or implementing agencies (e.g. SOTRA, AGEROUTE), as agreed with the DGTTC, for some

activities directly related to specific Components. Therefore, in line with the country PFM system, a Finance Controller and a Public Accountant have been appointed. In line with the Use of Country Systems as stipulated in the new Decree n° 475 governing the modalities of donors-financed project implementation in Côte d'Ivoire, the two civil servants should be involved in the management of the project funds mainly undertaking prior review and checking effectiveness of physical delivery of goods, work and services and payments based on supporting documents (contracts, invoices).

28. **Local taxes**: Funds will be disbursed in accordance with project categories of expenditures and components, as shown in the Financing Agreement. Financing of each category of expenditure/component will be authorized as indicated in the Financing Agreement and will be inclusive of taxes according to the current country financing parameters approved for Côte d'Ivoire. However, the Government will allocate some budgets to support the operating costs of civil servants involved in the implementation of the project. The use of such budget should comply with the FM procedures approved by the World Bank.

29. **Support to the implementation plan**: FM supervisions will be conducted over the project's lifetime. The project will be supervised on a risk-based approach. Based on the outcome of the FM risk assessment, the following implementation support plan is proposed. The objective of the implementation support plan is to ensure the project maintains a satisfactory FM system throughout its life.

Table 1.6. FM Implementation Support Plan

FM Activity	Frequency
Desk reviews	
IFRs' review	Quarterly
Audit report review of the program	Annually
Review of other relevant information such as interim internal control systems reports, IGF reports…	Continuous, as they become available
On-site visits	
Review of overall operation of the FM system (Implementation Support Mission)	Every six months for Substantial risk
Monitoring of actions taken on issues highlighted in audit reports, auditors' Management Letters, internal audits, and other reports	As needed
Transaction reviews	As needed
Capacity-building support	
FM training sessions	Before project effectiveness and during implementation as needed

D. Procurement

30. A new Procurement Code (Decree N°2009-259 dated August 6, 2009) has been adopted in Côte d'Ivoire, in line with the WAEMU procurement Directives and international good practices, along with key implementing regulations and documentation. This Procurement Code was amended and modified in July 2015 through the Decree N°2015-525 dated July 15, 2015, also with implementing regulations thereunder. A national procurement capacity building program exists and is being implemented at the central level and among relevant decentralized entities. An electronic system for collecting and disseminating procurement information and for monitoring procurement statistics has been set up and needs to be mainstreamed in the work of all contracting authorities.

31. **The Procurement Plan and PPSD:** A PPSD has been developed to analyze the key features of the project and related procurement risks and opportunities, building on the lessons learned from similar projects. Over 75 percent of the total value of the IDA SUF credit (US$300 million) will be used for contracts for road infrastructure works including for the BRT infrastructure and feeder roads. While there is a market with qualified national and international contractors, potential risks include the unavailability of specific expertise required for the BRT infrastructure, delays in receiving imported goods, and delays in national procurement approval channels. For the PPP component, the project will finance a transaction advisor to assist the Client in the selection of an international private operator that is expected to operate the BRT and acquire the bus fleet (estimated at about US$110 million). Several other specialized consultant services requiring highly qualified transport management or sector reform experience will be performed in support of the BRT set up. A Procurement Plan detailing the first 18 months activities was agreed upon during the credit 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.

Market Approach Options

Goods, Works and Non-consulting Services

32. **Open Competition – International Competitive Bidding (ICB):** Approaching the international market will be appropriate when the participation of foreign firms will increase competition and may assure the achievement of best Value-for-Money (VfM) and fit-for-purpose results. The time allowed for the preparation and submission of Bids/Proposals shall be determined with due consideration of the particular circumstances of the project and the magnitude, risk, and complexity of the procurement. The minimum period allowed for preparation of Bids/Proposals shall be thirty business days for open ICB, unless otherwise agreed with the World Bank. For complex procurement, the Borrower may arrange a pre-Bid/pre-Proposal conference in which potential Bidders/ Proposers/Consultants may meet with Borrower representatives to seek clarifications. The Borrower should also provide reasonable access to project sites for prospective Bidders/Proposers/Consultants.

33. Open ICBs for which international advertisement is required (in accordance with Procurement Regulations dated July 1st, 2016, updated November 2017 and August 2018), is the preferred approach for complex, high-risk, and/or high-value contracts. The World Bank has set specific thresholds for this purpose (see Table 1.7 below).

34. The deadline and place for the receipt of Bids/Proposals shall be specified in the Specific Procurement Notice (SPN) and the request for bids/request for proposal document.

35. **Open Competition – National Competitive Bidding (NCB):** Approaching the national market may be appropriate when the procurement is unlikely to attract foreign competition because of:

a) The size and conditions of the market;
b) The value of the contract;
c) Activities that are scattered geographically, spread over time, or are labor- intensive; or
d) The Goods, Works, or Non-consulting Services are available locally at prices below the international market.

36. If foreign firms wish to participate in open national competitive procurement, they can do so on the terms and conditions that apply to national firms.

37. **Limited Competition – Direct Contracting:** A limited competitive approach to market is by invitation only, without advertisement. It may be an appropriate method of selection where there are only a limited number of firms or there are other exceptional reasons that justify departure from open competitive procurement approaches.

38. The above explained procurement features, procedures and approaches are applicable to the following:

a) Competitive Dialogue;
b) Public Private Partnerships;
c) Commercial Practices;
d) UN Agencies;
e) e-Reverse Auctions;
f) Imports;
g) Commodities;
h) Community Driven Development; and
i) Force Accounts.

39. **Particular Type of Contractual Arrangements:** During project implementation, particular types of contractual arrangements may be used: (i) Framework Agreements and (ii) Performance-based Contracts.

Consulting Services

40. During project implementation, firms and individual consultants can be selected. The following are approved selection methods for consulting firms:

a) Quality Cost Based Selection (QCBS);
b) Fixed Budget Based Selection (FBS);
c) Least Cost Based Selection (LCS);
d) Quality Based Selection (QBS);
e) Consultant's Qualifications Based Selection (CQS);
f) Direct Selection; and
g) Commercial Practices.

41. Individual Consultants (IC) are selected for an assignment for which: (i) a team of experts is not required; (ii) no additional home office professional support is required; and (iii) the experience and qualifications of the individual are of paramount importance.

42. **Open Competition – Consulting Firms:** An open competitive approach to market provides all eligible prospective firms or ICs with timely and adequate advertisement of the Borrower's requirements and an equal opportunity to provide the required consulting services. Open and competitive procurement approaches, including the advertisement for Expression of Interest, is the preferred approach for World Bank-financed selection of consultants.

43. An open international competitive bidding/selection market approach, with mandatory international advertisement in accordance with Procurement Regulations (July 1st, 2016, updated November 2017 and August 2018), is used when the participation of foreign firms is most likely to achieve the best fit-for-purpose and VfM.

44. As agreed in the Procurement Plan, national selection through advertisement in the national media/press may be used when the nature, scope, and/or value of the consulting services is unlikely to attract foreign competition and there are adequate qualified national consultants to carry out the assignments. If foreign consultants wish to participate in national selection, they may do so. When approaching the national market, the country's own procurement procedures may be used as specified in Paragraphs 5.3 to 5.6 of the Procurement Regulations.

45. **Limited Competition – Consulting Firms:** The Limited Competition approach exists when the Borrower prepares a Shortlist without advertising. It may be appropriate when there are only a limited number of qualified Consultants that can carry out the subject assignment, or other justifiable exceptional reasons. Borrowers shall seek EoIs from a list of potential consultants that is broad enough to ensure adequate competition.

46. **Project Implementation Support Personnel:** Project implementation staff, individuals contracted by the Borrower to support project implementation, other than individual consulting positions identified in the Legal Agreement, may be selected by the Borrower according to its personnel hiring procedures for such activities, as reviewed and found acceptable by the World Bank.

47. **Particular Type of Contractual Arrangements – Framework Agreements**: During the project, implementation Framework Agreements (FA) may be used. FA is an agreement established with firms or individual consultants (panel of consultants), as required, over a specified period of time. The FA sets out terms and conditions under which specific consulting services (call-off contracts), can be provided directly or competitively throughout the term of the agreement. FAs may be appropriate for the recurring selection of consulting services or to consolidate requirements when different entities of the Borrower procure the same types of consulting services.

Consulting Individuals

48. **Open Competitive:** Advertisement through Requests of Expression of Interest (REoIs) is encouraged, particularly when the Borrower does not have knowledge of experienced and qualified individuals, or of their availability, the services are complex, there is potential benefit from wider advertising, or advertising is mandatory under national law. REoIs shall include a complete TOR. Individual consultants are selected from those that expressed interest in response to a REoI.

49. **Limited Competitive – Direct Selection:** When the Borrower has knowledge of experienced and qualified individuals and their availability, instead of issuing a REoI, it may invite those individual consultants that it deems qualified to provide the required Consulting Services. The complete TOR shall be sent with the invitation. Individual consultants shall be selected from those that expressed interest in response to the invitation.

50. Direct selection can be mobilized under the following circumstances:

a) Tasks that are a continuation of previous work that the individual consultant has carried out after being selected competitively;

b) Assignments with a total expected duration of less than six months;
c) Urgent situations; or
d) When an individual consultant has relevant experience and qualifications of exceptional worth to the assignment.

Table 1.7. Thresholds for Procurement Methods and Prior Review

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

51. **Procurement of consulting services other than consulting services covered**: Eventually, those might include designing, editing and printing project promotion supports; providing logistic support such as car rental for field visits, travel services and logistic support for workshop and the like, LCS or shopping will be used.

52. **Training, Workshops and Conferences:** Training (including training material and support), workshops and conference attendance, will be carried out based on an approved annual training and workshop/conference plan. A detailed plan specifying the nature of training/workshop, number of trainees/participants, duration, staff months, timing and estimated cost will be submitted to IDA for review and approval prior to initiating the process. The appropriate methods of selection will be derived from the detailed schedule. After the training, the beneficiaries will be requested to submit a brief report indicating which skills have been acquired and how these skills will contribute to enhance his/her performance and contribute to the attainment of the project objective.

53. **Operating Costs**: Operating costs financed by the project are incremental expenses, including office supplies, vehicles operation and maintenance, maintenance of equipment, communication costs, supervision costs (i.e. transport, accommodation and per diem), and salaries of locally contracted staff. They will be procured using the procurement procedures specified in the Project Financial and Accounting Manual.

54. **Procurement Documents:** For international competitive bidding, the Borrower shall use the World Bank's Standard Procurement Documents (SPDs), available on its external website.[42] For Procurement involving NCB, the Borrower may use its own Procurement Documents, acceptable to the World Bank. The Recipient will develop standard documents based on the Bank's SBDs for National Competitive Bidding (NCB) for goods and works and the Bank's RFP for the selection of consultants through methods other than Quality and Cost Based Selection (QCBS), with modifications that will be submitted to the IDA for prior approval.

55. The different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time frame are agreed between the Recipient and the World Bank in the Procurement Plan.

E. Monitoring and Evaluation

56. The PCU will be in charge of M&E and will be 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); number of accidents, injuries, and eventually deaths along the BRT line; greenhouse gas emissions.

57. The PCU/DGTTC 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: EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization); Debt Service Coverage Ratio (DSCR); net income; gross profit; and net profit. SOTRA will also supply its financial statements.

58. Besides the M&E system required to monitor all the project's indicator, the PCU may support the establishment of an M&E system to oversee the Key Performance Indicators (KPIs) of the BRT operator (s) and, if need be, monitor the social impacts of the project, and organize consultant services when needed including surveys in collaboration with Academia.

F. Role of Partners

59. In addition to donors' interventions stated in Figure 3, the AFD will provide co-financing to the Project for a total US$100 million. A request for financing from AFD signed by MEF was received on March 15, 2019. This co-financing is planned on a pari-passu basis for the entire project, with delegation of implementation to the World Bank and AFD's financial contribution to the World Bank's supervision costs. The European Investment Bank (EIB) has also expressed interest in co-financing the project with an expected budget of EUR 50 million.

[42] www.worldbank.org/procurement/standarddocuments

G. Strategy and Approach for Implementation Support

60. The strategy for implementation support describes how the World Bank Group and other development partners will support the implementation (see Table 1.8) of the risk mitigation measures and provide the technical advice necessary to achieve the PDO. It was developed based on the nature of the project and its risk profile. Supervision and field visits will be carried out semi-annually, led by a team of one Task Team Leader (TTL), based in Abidjan, and one co-Task Team Leader (co-TTL), based in Washington DC, and focus on the following:

(a) **Close coordination between the World Bank Group, the implementing agencies, and development partners.** The World Bank Group task team will bring a comprehensive set of instruments and expertise to advise on project activities and implementation including as needed from IFC and MIGA. The team will also manage the supervision of the project on behalf of the AFD. It will work closely with the implementing agencies to ensure project success. Coordination with AfDB and JICA will also be enhanced by regular meetings for the 4th bridge construction and the three interchanges. Once the construction of the metro starts, the team will also interact with the technical consortium currently undertaking it.

(b) **Technical.** There will be close coordination with each entity implementing the various components during the implementation phase to preserve the synergies and complementarity between the project and partners' interventions, particularly when amendments to plans are made, requiring adjustments to the design and the procurement plan to mitigate any risks to the PDO achievement. Specific focus will be on the interface with the metro, and on all the studies done under the Greater Abidjan Port-City Integration Project in terms of network restructuring and setting up of the AMUGA. The continuous M&E will be the guiding tool for monitoring progress toward the achievement of the PDO and a trigger for amendments when necessary.

(c) **Fiduciary.** While the PRICI-PCU, which has led the past projects in Côte d'Ivoire, is well familiar and has a good track record of using the World Bank rules and procedures on ongoing World Bank projects, the PCU inside the DGTTC does not have such experience and will also recruit staff for technical assistance at the beginning of the project. The FM and procurement specialists will (a) support the PCU in its familiarization with any amendments to World Bank Guidelines and Procedures; (b) train the PCU staff to work with any updates to the Procurement Guidelines; (c) ensure the PCU's capacity to manage flow of funds and accounting procedures in line with FM guidelines; and (d) work with the PCU in scaling up its overall FM and procurement capacity to deal with the additional activities generated from the implementation of this project.

Supervision of the project's fiduciary arrangements will be conducted semi-annually over the project's lifetime. Implementation support will focus primarily on contract management and in improving proficiency and efficiency in implementation, according to the World Bank Guidelines; reviewing procurement documents; and monitoring procurement progress against the detailed Procurement Plan. The objective of the implementation support plan is to ensure the project maintains a satisfactory FM.

(d) **M&E.** The World Bank Group will review the updated Results Framework submitted quarterly by the PCU during the supervision mission or as a desk review. The Leaders (TTLs and co-TTLs) will discuss the progress and deviations, if any, with the PCU to identify any areas where additional help from the World Bank Group is needed. The TTL and co-TTLs will facilitate the use of the M&E data to promote awareness of the project results and strengthen both the World Bank's and the PCU's ability to monitor project progress and assess the impact of interventions.

(e) **Client relations.** The TTLs and the team will (a) coordinate World Bank supervision to ensure consistent project implementation, as specified in the Financing Agreement and (b) maintain regular liaison with the

client and PCU to gauge project progress in achieving the PDO and troubleshoot implementation bottlenecks as they may arise.

(f) **Safeguards.** World Bank implementation support missions will also include the review of environmental and social safeguards to ensure that all issues are addressed properly on time. They will work with the PCU in the implementation of the ESMP and RAPs, and the implementation of the ESMF and RPF for the investments which have not yet been decided. They will (a) support the PCU and stakeholders with familiarization of the World Bank's instruments; (b) ensure the PCU capacity to develop and implement mitigation measures; and (c) ensure regular and close supervision of progress in implementing the plans.

Implementation Support Plan and Resource Requirements

Table 1.8. Implementation Support Plan

Time	Focus	Skills Needed	Number of Trips	Resource Estimate (Staff Weeks)
First 12 months	Project management, coordination, and supervision	TTL and co TTL (Transport)	2	12 total
	FM experience, knowledge of World Bank FM norms, and training	FM Specialist	0	4
	Procurement experience, World Bank's procurement norms knowledge, and training	Procurement Specialist	0	4
	Environmental and social safeguards, World Bank norms knowledge	Environmental and social /Safeguards Specialist	1	8
	Implementation support and monitoring	Analyst or operations officer	1	3
		Local analyst	0	5
12–90 months	Project management, supervision, and coordination	TTL and co TTL	2 per year	10 per year
	FM (FM reviews and supervision, training, and monitoring)	FM Specialist	0	4 per year
	Procurement management (reviews and supervision, training as needed)	Procurement Specialist	0	4 per year
	Environmental safeguards, supervision and monitoring, training as needed	Environmental and social /Safeguards Specialist	0	4 per year
	Implementation support and monitoring	Analyst		3 per year
		Local analyst	1 per year	5 per year

Table 1.9. Skills Mix Required over the seven and a half years of project implementation period

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
TTL and co-TTL	70	15	(TTL in Abidjan, Co TTL in DC) co-TTL specialized urban transport
Environmental and Social Safeguards Specialists	35	0	Based in Côte d'Ivoire
FM Specialist	30	0	Based in Côte d'Ivoire
Procurement Specialist	30	0	Based in Côte d'Ivoire

ANNEX 2: Poverty and Accessibility Analyses

Transport network assumptions

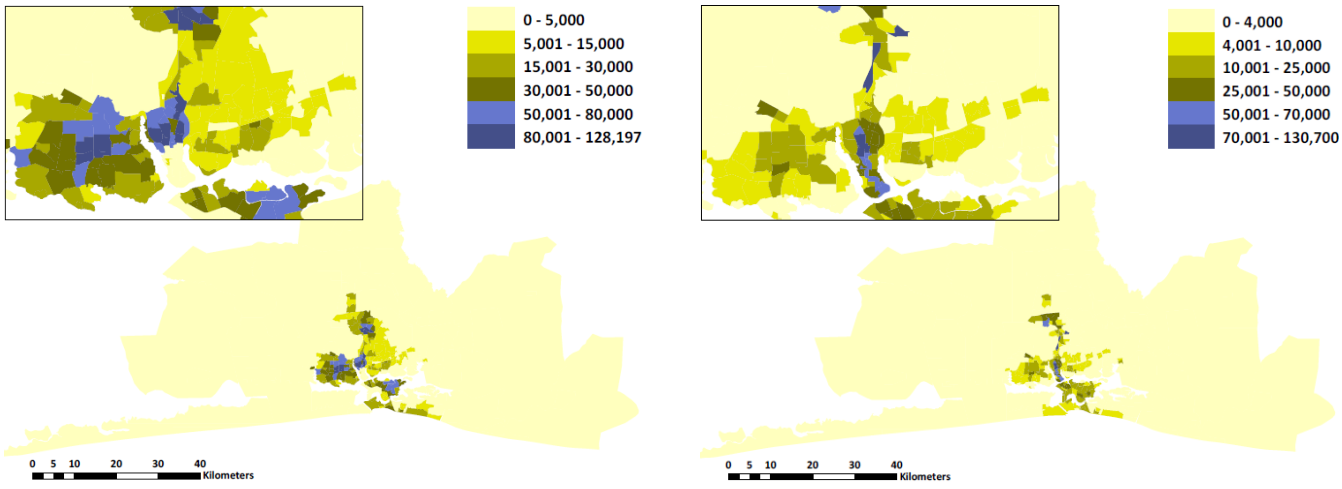
1. The transport network considered in the analysis consists of the 80 or so routes operated by SOTRA, in addition to the informal Gbaka bus network. The analysis does not cover Woro-woro services, due to the lack of data on the spatial location of the routes.

2. Exact data for the travel speeds and headways for each of the existing SOTRA and Gbaka bus lines is not available. They are assumed at 10 km/h in the downtown (within about 15 km of the Plateau) and at 20 km/h in the rest of the travel zones. Headways are assumed at 10 minutes in the downtown and 20 minutes in the periphery. The average speed of the Metro 1 line is assumed at 40 km/h (predicted to vary somewhat depending on the section). This means that for a large stretch of the routes heading from the Plateau northwards, the speeds increase two to four times compared to the current situation. The headways are assumed at about 3 minutes. For the BRT line, the average speed is assumed to be 28 km/h on the *4e point* portion of the route and at 25 km/h for the *Francois Mitterand* portion – this is about twice the current bus speed observed on the same route. The average headways are assumed at 3 minutes for the *4e point* and at 5 minutes for the *Francois Mitterand* portions, respectively. The speeds of the feeder lines serving Phase 1 vary from 15 to 24 km/h, and headways range from 5 to 15 minutes.

Distribution of population and opportunities

3. The total population across the 307 travel zones for which the estimates are available from SDUGA increases from about 5.9 million in 2020 to about 7.7 million in 2030. The greatest growth in population is assumed to take place in the zones to the west of the central business district (Plateau). This also corresponds to the area where the western segment of the East-West BRT line will be constructed.

Figure 2.1. Density of population and jobs



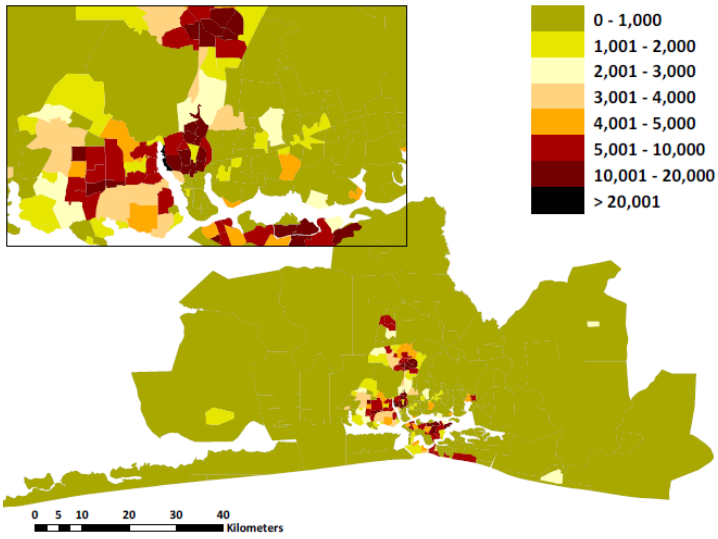
Population (per km²) *Jobs (per km²)*

Sources: SUGA, Greater Abidjan Port-City Integration Project

4. The number of jobs in Greater Abidjan is expected to increase from 2.3 million in 2020 to 3.7 million in 2030. The Plateau peninsula will continue to have overwhelming importance in terms of employment generation; the greatest growth in job density is expected to take place near the Plateau, especially to the West and to the North.

5. As part of the project preparation, a poverty map was developed for the GAA (Figure 2.2.). The poverty mapping methodology produces estimators of welfare at geographic levels not represented in household surveys. The poverty map produced for GAA at the municipality level builds on the standard Small-Area Estimation (SAE) methodology developed by Elbers and others (2000 and 2003), which uses survey data to impute welfare variables into census records. As illustrated by the map, the density of the poor (individuals living below the poverty line) per land area is much higher in the Abidjan district compared to the rest of the GAA, with Yopougon and Adjamé representing two of the poverty "hotspots".

Figure 2.2. Poverty density in GAA (per km^2)



Source: Team estimates based on RGPH 2014 and ENV 2015

6. Data on the distribution of education and health facilities is obtained from Open Street Maps (OSM) and Ouma *et al*. (2017).[43] Information on the locations of hospitals in Adjamé and Cocody has also been verified through an ongoing World Bank health sector activity.[44] Due to lack of information on precise future plans for the construction of new hospitals or schools, throughout project supervision and at Implementation Completion and Results Report (ICR) stage accessibility impacts will be measured considering only the presently mapped facilities.

Accessibility Impacts

7. City-wide accessibility to employment opportunities and services is estimated under two scenarios:

Reference: includes the existing bus network (without BRT)
BRT: includes the existing bus network and BRT with feeders

[43] Ouma, P.; Okiro, E.A; Snow, R.W. (2017). "Sub-Saharan Public Hospitals Geo-coded database".
[44] Health Systems Strengthening and Ebola Preparedness Project (P147740).

PDO-level Indicators

(a) Health and Education opportunities

8. Accessibility to health and education opportunities will be measured as part of the project's M&E framework, with improvements in accessibility separately to hospitals and to schools established as PDO-level indicators. The targets for accessibility improvements to hospitals and schools were established based on the assumed changes in travel speeds on the East-West axis (BRT line) compared to present, and on the tentative location and speed assumptions of feeder lines (see para. 2 above). The target values were obtained by applying these speed assumptions in a travel zone-to-travel zone accessibility calculation in ArcGIS software. The walking and transfer times have been considered in the estimation of the target values. Walking speeds are assumed at 3.5 km/h. While exact transfer times between the various existing public transport routes are not known, they are assumed at around 5-10 minutes in the central areas and around 10-15 minutes in the outlying areas of the GAA. More precise data on this will be collected in the coming months and will be considered at the ICR stage. During project implementation and at the ICR stage, changes in accessibility to hospitals and schools will be measured using travel speeds assessed on the network at that time.

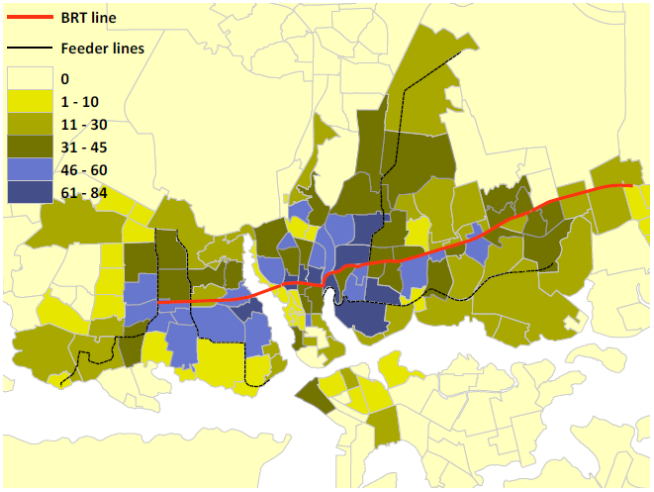
9. In the Reference scenario, two hospitals are reachable to the average Abidjan resident within 30 minutes of travel during rush hour by public transport. About 83 percent of Abidjan's residents are estimated to be able to reach at least one hospital within 30 minutes by public transport. With the implementation of the BRT, the average number of hospitals reachable within 30 minutes increases to three both for the overall population and specifically for the poor.

10. Approximately 32 secondary schools are estimated to be accessible by public transport, on average, within a 30-minute commute in the Reference scenario for the overall population of the GAA, while 29 schools/lycées are accessible specifically for the poor. About 655,000 people are not able to reach even a single school, of whom approximately 130,000 are in the school age (5-19) group. With the implementation of the BRT, the average number of schools and lycées accessible within 30 minutes increases to 48 and 39 for the overall population and the poor, respectively.

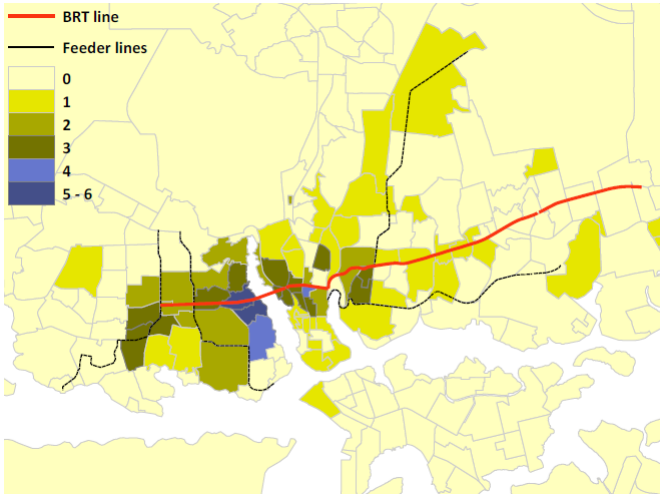
11. **Compared to the Reference scenario, in the BRT scenario, 25 percent of the population will be able to access at least one *additional* hospital; among the poor, the respective figure is 19 percent. About 44 percent of the overall GAA population will be able to reach at least one *additional* secondary school, with the respective share estimated at 33 percent among the poor specifically.** In addition, the BRT will also significantly improve accessibility to higher education institutions: 43 percent of GAA residents will be able to reach at least one additional college or university within 30 minutes of travel during rush hour.

12. The largest impact of the BRT on expanding access to neighborhoods previously not served at all is expected in the case of hospitals: the share of the population able to reach *at least one* hospital within 30 minutes is estimated to increase by 3.5 percentage points in the BRT compared to the Reference scenario: in other words, over 272,000 GAA residents that otherwise would not have been able to reach even a single hospital within 30 minutes will be able to reach at least one hospital with the implementation of the BRT.

Figure 2.3. Increase in the number of facilities accessible in 30 minutes of travel in public transport during rush hour in "BRT" scenario compared to "Reference"



Increase in the number of schools accessible

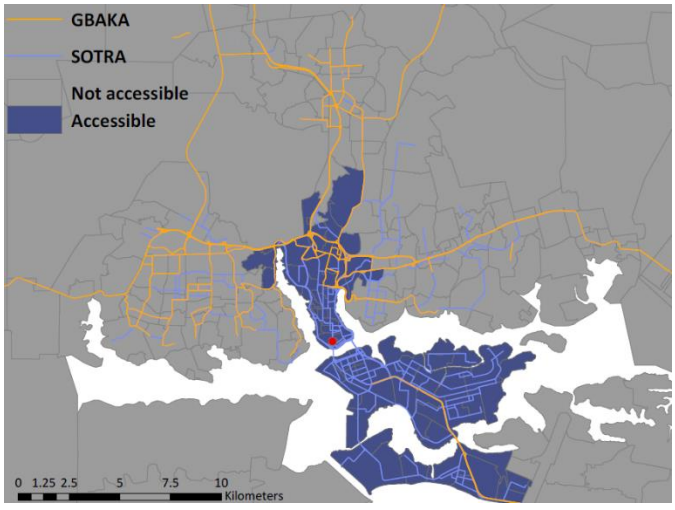


Increase in the number of hospitals accessible

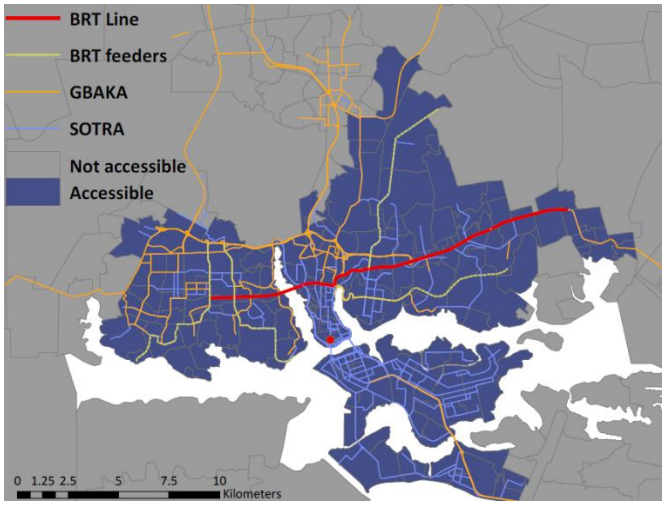
(b) Central Business District

13. Accessibility to Abidjan's Central Business District (CBD), a proxy of employment and income generation opportunities, will be measured as part of the project's M&E framework. Similarly to the health and education facilities, the baseline measurements for accessibility to the CBD, denoted here by the Place de la Republique in the Plateau (travel zone # 301), were conducted using estimated current speeds on the public transport network (see para. 2 above) and population distribution obtained from the SDUGA masterplan (shown in Figure 2.1), using ArcGIS software. At the ICR stage, accessibility will be measured using travel speeds assessed on the network at that time.

Figure 2.4. Accessibility to the CBD in one hour of travel in public transport during rush hour



Reference



BRT

14. With the introduction of the BRT, Place de la Republique is expected to be reachable for about 64 percent of Abidjan's residents within an hour during rush hour using public transport, compared to only 26 percent in the Reference scenario. Among the poor, the share able to reach the CBD within an hour will increase from 27 percent (Reference) to 52 percent (BRT). The additional access to the CBD of the BRT system as compared to the Reference scenario is largely for communities located in the extreme East and West ends of the BRT line (Figure 2.4).

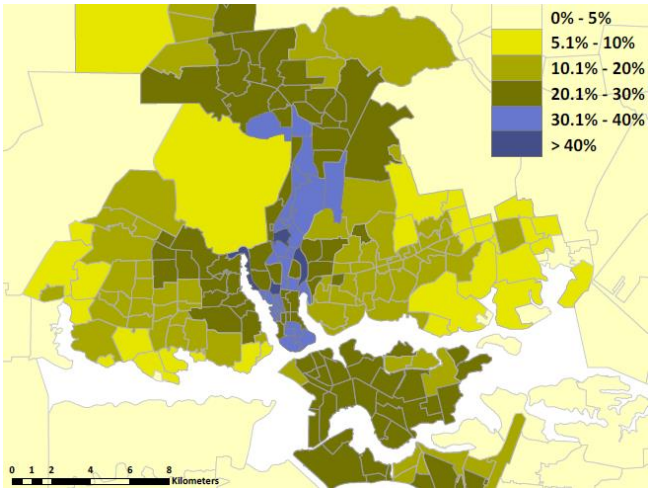
Other accessibility impacts

15. The share of jobs accessible, on average, within an hour using public transit is predicted to increase from about 18 percent in the Reference scenario to over 34 percent in a scenario under which the BRT line is in place (Table 2.1). *An additional* 600,000 jobs will thus become available within an hour's travel time, on average. For the poor population, the respective increases are from 18 percent to 31 percent. As illustrated in Figure 2.5, the largest increase in accessibility is estimated to occur in Yopougon and in the neighborhoods near the Eastern-most part of the BRT line.

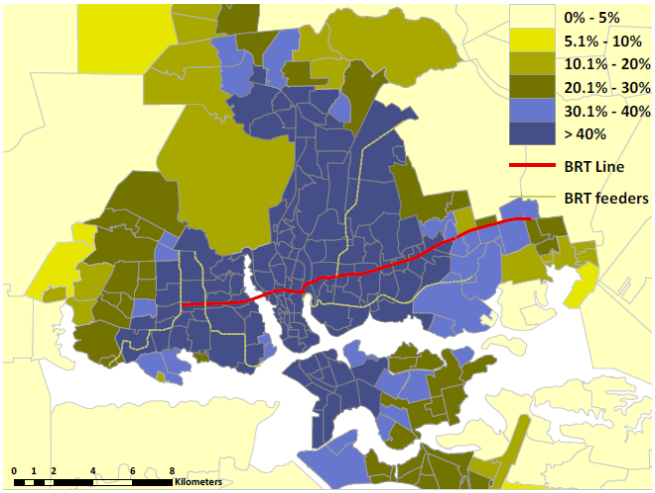
Table 2.1. Estimated accessibility to jobs within 1 h of travel by public transport during rush hour (2030)

	Reference	BRT
Overall population		
Average number of jobs accessible	670,000	1,270,000
Average % of jobs accessible	18	34
Mean increase in jobs accessible	**90% or 16 percentage points**	
Population below poverty line		
Average number of jobs accessible	663,000	1,137,000
Average % of jobs accessible	18	31
Mean increase in jobs accessible	**72% or 13 percentage points**	

Figure 2.5. Accessibility to employment opportunities in one hour of travel on public transport during rush hour



Reference



BRT

ANNEX 3: Mitigating and Responding to GBV, including SEA

1. The project's approach to mitigate GBV risks, including SEA risks, follows the guidance of the World Bank's "Good Practice Note for Addressing Gender-Based Violence in Investment Project Financing involving Major Civil Works" (September 2018)[45] and "Labor Influx Guidance Note" (December 2016)[46]. While the GBV risk for the project is considered low, a specialized NGO will nonetheless be recruited to implement GBV and SEA prevention measures identified for the project. The measures, roles, and responsibilities for addressing GBV risks under the project's phases are described in the Table 3.1 below.

Risk assessment

Country context

2. **Violence against women remains common and worrisome in Côte d'Ivoire**. Recent official estimates on GBV are scarce and in most reports on perpetrated violence in Côte d'Ivoire, a gender perspective is limited to the mentioning of rape and other forms of sexual violence, such as female genital mutilation (FGM) or forced marriage. GBV prevalence is anticipated to be high and it was reported that the rate of women survivors of violence and sexual abuse was around 41 percent in Man and 35 percent in Duekoué, in the west of the country and 26 percent in Korhogo in north.[47] The majority of survivors are girls and women. Between 2011 and 2013, 97-99 percent of assisted survivors were female. The analysis of all cases of GBV attended to since 2011 shows that most victims are adult women, but that minors are the most vulnerable group to sexual violence.

3. **Pressure on GBV survivors not to denounce or report acts of violence makes it difficult to collect official data**. In the case of domestic violence, it is often the case that women are urged not to file a complaint in order not to harm the "well-being" of the family. In the case of physical violence, out-of-court settlements are often preferred to any other sanction (including in case of rape). Certain topics are still considered taboo. Even if women begin to freely speak out about sexual violence, many women remain reluctant to mention such acts. Fear of being rejected by their husbands or their community, fear of not being able to get married, shame, willingness to forgive, and community pressure are some reasons why women remain silent about sexual violence in the country.

GBV risks identified under the project

4. **GBV risks, including SEA risks were reviewed during project preparation, including the fact that these risks may be incurred because of the influx of workers under contract or due to the interface of these workers with local communities**. The project's GBV risk was assessed as a low risk through the World Bank's GBV risk assessment tool, which serves as a basis for identifying GBV risks and make recommendations as part of the World Bank's Safeguard Policies. The risk is considered low based on the experience of other road infrastructure works financed by the World Bank. The total number of workers expected on the construction site of the civil works of the project is anticipated not to exceed 160 people, including less than 40 foreign staff. This anticipated number of workers is considered low for an infrastructure project in an urban agglomeration the size of Abidjan where

[45] http://pubdocs.worldbank.org/en/399881538336159607/Good-Practice-Note-Addressing-Gender-Based-Violence.pdf
[46] http://pubdocs.worldbank.org/en/497851495202591233/Managing-Risk-of-Adverse-impact-from-project-labor-influx.pdf
[47] Institut national de statistique, Enquête démographique et de santé aux indicateurs multiples (EDSICI), 2012.

there are about 3.5 million inhabitants. In addition, these workers will not reside in a camp and will work on construction sites during the day only.

Legal framework for addressing GBV

5. **Côte d'Ivoire has adopted laws and a national strategy against GBV**. Côte d'Ivoire has ratified most of the instruments recognizing women and men equality in rights and duties and prohibiting any discrimination against women. The Constitution of August 1, 2000 states equality for all and prohibits all discrimination based on sex regarding access to employment or the exercise of employment, in political, religious opinions or philosophical. The country has also passed laws favorable to women's family inheritance and access to property as well as laws punishing mutilation of female genitalia and early marriages.

6. The national strategy against GBV was launched in September 2014 to promote a harmonized holistic and multisectoral approach to GBV at both the national and regional level. The Institutional Framework for Implementing the National Strategy GBV (SNLVBG) comprises five essential bodies (*Le Comité National de Lutte contre les VBG - CNLVBG*; *Le Comité Central de Supervision*; *La Cellule de Lutte contre les VBG*; *Les Comités Régionaux*; and *Les plates formes VBG*). The National Committee for the Control of GBV (CNLVBG) is the decision-making body of the institutional framework for implementing the SNLVBG and is a multisectoral committee in charge of coordinating the fight against violence based on gender and chaired by the Minister of Solidarity, Family, Women and Children (*Ministère de la Solidarité, de la Famille, de la Femme et de l'Enfant*,MSFFE). All other Ministries have the responsibility, through their focal points, to support implementation of the GBV strategy and vigilance committees have also been established in certain regions.

7. **Despite the existence of national legislation, women still face cultural stereotypes and tend to be blamed for GBV**. It has been reported that local authority figures such as community leaders and religious leaders may not have enough leverage to protect or help in enforcing the national legislation or remain passive. Often, GBV survivors lack information on the possibility of appeal to the courts; lack knowledge of and have a mistrust of justice; and sociocultural constraints and economic factors such as poverty also play a role. It is also reported that ignorance from the police and gendarmerie agents on GBV issues pushes them to demand the medical certificate of the victim who files a complaint. The high cost of the certificate and the refusal of doctors to issue it free of charge are among the many factors that hinder denunciation of GBV survivors.

Stakeholder engagement and capacity to respond to GBV

8. **United Nations agencies provide financial and technical support to the Government for implementing its policy against GBV**. The United Nations Population Fund (UNFPA) intervenes in gender and GBV actions as well as sexual violence, early marriages and FGM / excision; the United Nations Children's Fund (UNICEF) collaborates in actions related to the human rights of children; the United Nations Entity for Gender Equality and the Empowerment of Women (UN Women, or *UN Femmes*) and the United Nations Development Programme (UNDP) cooperate with the Ministry of Solidarity, Family, Women and Children (*Ministère de la Solidarité de la Famille, de la Femme et de l'Enfant*, or MSFFE) in actions to support institutional strengthening and development; the World Health Organization (WHO) works in the fight against FGM and sexual violence; the United Nations High Commissioner for Refugees (UNHCR) is working on the management of GBV in situations of emergency; the United Nations Operation in Côte d'Ivoire (UNOCI) works to improve survivors' access to justice and strengthen the protection of civilian populations; the Joint United Nations Programme on HIV/AIDS (UNAIDS) supports the

Government in the prevention of HIV / AIDS, gender mainstreaming, the fight against GBV and the fight against feminization of HIV.

9. **Multisectoral services at the national level are also provided to GBV survivors**. There are 43 platforms to fight against GBV that have been established across the national territory. These platforms are coordination mechanisms at the local level between all actors involved in the prevention and management of GBV, including administrative and political authorities. They are the center of multisectoral care provision and provide individual case management at the local level. In addition to these platforms, more than 1,720 platform agents have been formed to support the platforms' management and coordination mechanisms. Survivors of GBV are directed and supported through the 'reference system' (*Système de Référence et de Contre Référence* - SRCR) which dispatches survivors to the relevant services provided by the social centers, health services, the court, the police and gendarmerie services. Legal clinics have also been created by the Association of Women Lawyers of Ivory Coast (*l'Association des Femmes Juristes de Côte d'Ivoire* - AFJCI) which aim to bring advice and legal support for GBV survivors. In addition, offices managed by the National Committee Against Violence toward Women and Children (*Comité national de Lutte Contre les Violences faites aux Femmes et aux Enfants* - CNLVFE) have been set up in Abidjan and through the centers in the country to provide psychosocial support as well as health and legal assistance to survivors. A Center for the Care of the Victims of Sexual Violence (*Le Centre de Prise en Charge des Victimes de Violences Sexuelles* -PAVVIOS) was opened in 2008 by the Directorate of Equality and Gender Promotion (*Direction de l'Egalité et de la Promotion du Genre* - DEPG) of the MSFFE and ensures the holistic (psychosocial, medical, security and legal) care of survivors of sexual violence in the commune Attécoubé in Abidjan.

10. **GBV survivors may still not have access to the necessary services despite availability of GBV related resources.** Important measures taken by the Government and the presence of organizations and associations within civil society that are also active in the field of GBV prevention do not guarantee that women can easily and willingly access GBV prevention and case services. Medical assistance is not free in Côte d'Ivoire and there is a lack of training of health providers. It is reported that most GBV survivors do not have access to emergency care within 72 hours necessary in the event of rape[48].

Mitigation, reporting and monitoring measures

11. *Safeguards*. The safeguards documents prepared for the project, including the ESIA and ESMF, indicate a low GBV risk. The project's ESMPs and the Contractor's Environmental and Social Management Plan ESMP (C-ESMP) will be reviewed to provide mitigations measures for addressing GBV and SEA risks as well as other environmental, social, health and safety (ESHS) and occupational health and safety (OHS) risks.

12. *Procurement process and contractor's responsibilities.* GBV risks will be addressed through the procurement process by setting specific requirements for the contracts of the works contractor and the supervision consultant. In practice, the bidding documents will reflect the findings of the ESIA and the requirements of the ESMP to address GBV risks and other ESHS and OHS risks. It is anticipated that labor influx will be minimized and the contract documents for works and supervision will require that all workers adhere to a code of conduct. Bidding documents will clearly define GBV mitigation measure requirements and expectations, as well as the staffing requirements to ensure close and sustained attention to the mitigation of risks.

[48] Document de Stratégie Nationale de Lutte contre les Violence Basée sur le Genre. Ministère de la Solidarité, De La Famille, De La Femme et de L'enfant. République de Côte d'Ivoire. 2015

13. *GBV support services*. A specialized NGO will be recruited to support GBV prevention and risk reduction of the project; to sensitize communities in the areas of the project; and to contribute to the strengthening of the complaints' mechanism (GRM) so that specific procedures for GBV include confidential notification with safe and ethical documentation of GBV cases as well as access to adequate services by GBV victims GBV.

14. In addition, it is anticipated that the consultant / NGO specializing in GBV risk mitigation will: (i) prepare or revise the contractor's code of conduct to minimize GBV risks and review GBV prevention documents required by the project; (ii) train workers in the project; monitor regularly that provisions and responses to GBV are put in place by the contractor and that the workplace strategies are effective; (iii) coordinate with local stakeholders involved in the national GBV response protocol and delivery of services; (iv) coordinate with the Executing Agency on these issues; and (v) support the reporting system linked to the GRM of the project; and recommend additional corrective measures.

15. Establishing GBV-specific protocols in the Grievance Redress Mechanism (GRM) and community participation. The proposed project's GRM will have multiple channels to ensure that GBV-related complaints are registered in a safe and confidential manner. The GBV dimensions of the GRM will be handled by the specialized NGO recruited for the project in coordination with the PCU to ensure that any GBV complaint receives immediate care and appropriate referral in a confidential and survivor-centered approach.

16. *Capacity building and awareness raising.* The project will finance capacity building of the PCU and raise awareness of workers of the project on GBV issues. The project will seek to promote behavioral change by organizing sensitization activities to raise GBV awareness in the project areas. In particular, it is anticipated that a Focal Point among workers of the project will be designated to support and sustain GBV sensitization information and serve as a link with the specialized NGO that will be hired to provide GBV support services under the project. In addition, BRT staff will receive training on GBV and SEA risks as well as good worker behavior ahead of operationalization of the transport system.

Table 3.1: Actions to address project-induced GBV risks

No.	Action to Address GBV Risks	Timing for Action	Who is Responsible for Action	Status at appraisal
Identification/Appraisal				
1.	**Sensitize the Ministry of Transport (MOT) and the PCU** as to the importance of addressing GBV on the project, and the mechanisms that will be implemented.	• Preparation • Implementation	• Task Team	• Completed • A workshop was organized on April 18, 2019 with MoT and local stakeholders (including MSFFE, UNFPA, Compendium des Femmes de Côte d'Ivoire, Ministère de la Santé) on GBV risks, especially SEA risks, and on the need to set up a strong grievance mechanism with the involvement of one specialized NGO for addressing GBV-related grievances and with the capacity to coordinate the provision of services to survivors if needed. • It is expected that a GBV Focal Point will also be nominated to serve as an additional mechanism for monitoring and sustaining worker behavior on GBV risk awareness and coordination with the NGO.
2.	The **project's social assessment** to include assessment of the underlying GBV risks and social situation, using the GBV risk assessment tool to provide guidance and keeping to safety and ethical considerations related to GBV data collection. No prevalence data or baseline data should be collected as part of risk assessments.	• Preparation	• PCU for social assessment and ESMP. • Task Team for GBV Risk Assessment Tool.	• The task team used the GBV risk assessment tool in October 2018 which rated the project risk as low. • ESIA/ESMF disclosed in February 2019 assessed GBV risks as low.
3.	**Map out** GBV prevention and response actors in project adjoining communities. This should incorporate an assessment of the capabilities of the service providers to provide quality survivor centered services including GBV case management, acting as a victim advocate, providing referral services to link to other services not provided by the organization itself.	• Preparation • Implementation	• PCU	• In February 2019, the Bank organized a round table with local stakeholders to assess GBV response capacity and national framework. A specialized NGO hired for the project will support the design of a GBV prevention response and coordination with necessary stakeholders in the project area.

No.	Action to Address GBV Risks	Timing for Action	Who is Responsible for Action	Status at appraisal
4.	Have GBV risks adequately reflected in all **safeguards instruments** (i.e., Project ESMP, C-ESMP)—particularly as part of the assessment in the ESIA. Include the GBV mapping in these instruments.	• Preparation • Implementation (before civil works commence)	• PCU for social assessment and ESMP. • Contractor for C-ESMP.	• GBV risks and possible mitigation measures will be reflected in bidding documents so that contractor reflects GBV risks and mitigation measures in their own ESMP (C-ESMP), which will have to be cleared before civil works can start.
5.	Develop a **GBV Action plan** including the **Accountability and Response Framework** as part of the ESMP. The contractor/consultant's response to these requirements will be required to be reflected in their C-ESMP.	• Preparation • Implementation (before civil works commence)	• PCU	• The ESMP for the project will include GBV risk mitigation measures. The procurement process will ensure that a GBV action plan is defined for the project, reflected in the C-ESMP, and adhered to by contractors and supervision consultants.
6.	Review the **PCU's capacity** to prevent and respond to GBV as part of **Safeguard Preparation**.	• Preparation. • Implementation.	• Task Team	• PCU will be trained and assisted by a specialized local NGO to reinforce its capacity to prevent and respond to GBV
7.	As part of the **project's stakeholder consultations, those affected by the project should be properly informed of GBV risks** and project activities to get their feedback on project design and safeguard issues. Consultations need to engage with a variety of stakeholders (political, cultural or religious leaders, health teams, local councils, social workers, women's organizations and groups working with children) and should occur at the start and continuously throughout the implementation of the project.	• Consultations need to be continuous throughout the project cycle, not just during preparation.	• PCU	• GBV risks and project activities were discussed during a stakeholder workshop. • During implementation, a specialized NGO will carry out awareness raising campaigns with project workers and local population to sensitize them on GBV risks, project GRM, and referral pathways in case of GBV incidents.
8.	Make certain the availability of an **effective grievance redress mechanism (GRM)** with multiple channels to initiate a complaint. It should have specific procedures for GBV including confidential reporting with safe and ethical documenting of GBV cases.	Prior to contractor mobilizing.	PCU, but discussed and agreed upon with the Task Team.	• The specialized NGO selected to provide GBV support services will train a focal point for workers to sustain awareness on good behavior, GBV and SEA risks, and facilitate reporting of GBV incidents and adequate referral of GBV survivors in a swift and confidential manner.

No.	Action to Address GBV Risks	Timing for Action	Who is Responsible for Action	Status at appraisal
Procurement				
9.	Clearly define the GBV requirements and expectations in the **bid documents.**	Procurement	PCU	• The project will use the latest version (October 2017) of the World Bank's standard procurement documents for international competitive procurement, which will clearly define GBV requirements and expectations, as well as staffing requirements. These documents will be used to procure both the works' contractor and the supervision consultants. The TOR of the supervision consultant will have specific requirements on GBV, along with the broader supervision requirements. • Draft bid documents and TOR will be reviewed by task team
10.	Based on the project's needs, the Bank's Standard Procurement Documents (SPDs), and the PCU's policies and goals, define the requirements to be included in the bidding documents for a **Code of Conduct (CoC) which addresses GBV**.	Procurement	PCU	• GBV Codes of Conduct have been proposed for adoption by the project. They will be included in the bid documents and presented as requirements to be met by bidders.
11.	The procurement documents should set out clearly how adequate GBV costs will be paid for in the contract. This could be, for example, by including: (i) line items in bill of quantities for clearly defined GBV activities (such as preparation of relevant plans) or (ii) specified provisional sums for activities that cannot be defined in advance (such as for implementation of relevant plan/s, engaging GBV service providers, if necessary)	Procurement	PCU	• Draft bid documents will be reviewed by task team
12.	Clearly explain and define the requirements of the bidders **CoC** to bidders before submission of the bids.	Procurement.	PCU	• A special note to bidders will be issued with the bid documents to highlight the requirements of the codes of conduct
13.	**Review C-ESMP** to verify that appropriate mitigation actions are included.	• Implementation.	• PCU	• The specialized NGO and Task team will assist the PCU in the review

No.	Action to Address GBV Risks	Timing for Action	Who is Responsible for Action	Status at appraisal
14.	**Review that the GRM receives and processes complaints** to ensure that the protocols are being followed in a timely manner, referring complaints to an established mechanism to review and address GBV complaints.	• Implementation.	• Task Team. • PCU	• The review of the GRM will be done with the support of the specialized NGO • Public consultations will be carried out to ensure design of GRM is culturally appropriate and follows a survivor centered approach. A worker focal point will be trained to support reporting mechanism of the GRM.
15.	**Codes of Conduct signed and understood** • Ensure requirements in CoCs are clearly understood by those signing. • Have CoCs signed by all those with a physical presence at the project site. • Train project-related staff on the behavior obligations under the CoCs. • Disseminate CoCs (including visual illustrations) and discuss with employees and surrounding communities.	• Initiated prior to contractor mobilization and continued during implementation.	Contractor, Consultant, PCU	• The specialized NGO will ensure proper dissemination and explanation of codes of conduct to all workers with physical presence on site. NGO will also inform surrounding communities of existence of codes of conduct • Supervision consultants will monitor that workers have signed codes of conduct and been trained. Monthly supervision reports will be provided to PCU and task team.
Implementation				
16.	Have project workers and local community undergo **training** on SEA and SH.	• Implementation.	• PCU, Contractors, Consultants	• The specialized NGO will provide this training on SEA and SH at the same time as training on codes of conduct
17.	Undertake regular **M&E** of progress on GBV activities, including reassessment of risks as appropriate.	• Implementation.	• PCU, Contractors, Consultants.	• M&E will be carried out through monthly reports of supervision consultant and continuous monitoring of GRM by PCU supported by the specialized NGO

ANNEX 4: Economic Appraisal

Methodology

1. To ensure that the Project generates sufficient economic benefits that would warrant an investment, a Cost Benefit Analysis was conducted. The economic benefit was calculated by aggregating Vehicle Operating Cost (VOC) savings, monetized Travel Time (TT) cost savings, monetized benefits of improved safety, and monetized reductions in CO_2 emissions as a result of the implementation of BRT. The BRT system is assumed to become fully operational by 2023. An economic model was developed to analyze "without" and "with" BRT project scenarios. To determine OPEX per unit cost, the analysis relied on the information gathered and calculated by previous and ongoing studies.[49] To determine total cost savings, Vehicle Kilometers Travelled (VKT) were calculated using demand modelling platforms Emme and Cube[50] for the "without" and "with" BRT scenario. The VKT were used to determine VOC and TT savings.

2. **Estimation of VOC savings:** The VOC was calculated by multiplying the respective VKT with per-unit operating cost for vehicles. The total VOC savings were determined by subtracting the total without BRT VOC from the total VOC with the implementation of the BRT.

3. **Estimation of TT savings:** Data from the traffic study conducted by Setec International and the technical design developed by LOGIT were used to estimate the per-passenger-km TT savings associated with the implementation of the BRT. The total value of TT savings was determined by subtracting the total monetized TT in the "with" BRT scenario from the total monetized TT in the "without" BRT scenario.

4. **Estimation of Road Safety improvements:** The value of statistical life and the cost of a serious injury were multiplied by the number of fatal and serious injury crashes, respectively, to determine the total "without" project and "with" project cost of crashes. The value of statistical life and the cost of a serious injury were assumed at the levels specified by OSER (*Office de Sécurité Routière*). The difference between the total costs of road accidents in the "without" project versus the "with" project scenarios represents the net road safety improvement.

5. **Estimation of GHG emissions reductions:** To estimate the GHG emissions savings associated with the project, the "without" project average emissions per passenger-km are compared with the per passenger-km emissions in the "with" project scenario.

- In the absence of the BRT system, Abidjan's residents are assumed to use the existing modes, including Gbaka, woro-woro, taxis, and private vehicles. Using WSP's estimates on the expected composition of future BRT ridership (whereby 38 percent are expected to come from woro-woro, 6 percent from taxis, 17 percent from private vehicles, 26 percent from Gbaka, and 14 percent from SOTRA buses), as well as reference vehicles and occupation rates for each mode (also from WSP), the "without" project average emissions per passenger-km can be calculated for the those Abidjan residents who would be expected to shift to the BRT if it were operational.
- With the implementation of the BRT system, a number of users will shift to the new system as explained above. Their new emissions profile can be calculated using the average BRT vehicle and occupation rate as well as the per passenger-km emissions factor of the BRT, which is assumed to be operated using

[49] (LOGIT, SPEA, BPL, 2019), (WSP, 2018), and (Setec International, 2019)
[50] Transportation Planning Softwares.

electric buses. The BRT emissions factor takes into account not only tailpipe emissions (which in the case of electric buses would be 0) but also the emissions associated with the generation of the electricity.

6. After calculating the two emissions profiles, the difference between them is multiplied with the projected passenger-km per year of the BRT system, in order to calculate the total savings. Vehicle occupancy rates in Abidjan are assumed to stay stable before and after the implementation of the project.

7. To evaluate the electricity production emissions associated with the BRT operation, the per-vkt electricity consumption of the model electric BRT bus (an 18-meter Irizarie bus) is multiplied with the electricity emissions factor of Cote d'Ivoire:

1.88 kWh/km x 0.426 EF kgCO_2/kWh

8. The energy mix of Cote d'Ivoire is assumed to become progressively cleaner over time: the GoCI has announced that they expect a -7.81 percent decrease of electricity production-related emissions until 2030, according to the Intended Nationally Determined Contribution (INDC) of GHG emission reduction targets. It is assumed that the same rate applies until the end of the project economic lifetime.

9. The BRT emissions savings are also adjusted considering that the parallel fleet renewal component (renewing a total of 2,000 taxis and 1,000 gbakas) will render BRT alternatives cleaner. The fleet renewal is assumed to take place between 2020 and 2024 for five consecutive years, at an annual rate of 400 taxis and 200 gbakas. To evaluate the GHG savings of this component, the difference in emissions per passenger-km between the old and the new model vehicles has been estimated and then multiplied by the average annual activity of the respective fleets.

10. Finally, the GHG emissions savings of the BRT component and the fleet renewal component were added up to estimate the total emissions savings of the project for every year between 2019 and the end of the project lifetime. A detailed analysis of CO, NO_x and PM savings of the different alternatives, as well as an estimate of the gross GHG emissions from the BRT operations was also conducted.

11. To monetize the benefits of the GHG emissions savings associated with the project, the estimated net GHG emissions were multiplied by the shadow price of carbon, (based on low and high-price scenarios, respectively), in accordance with official World Bank guidance.[51]

Input Data and Assumptions

12. The following assumptions were applied when conducting the analysis :

- The economic analysis is for trunk service only.
- A discount rate of 10 percent and an evaluation period of 30 years.
- A conversion factor of 0.84 to convert financial costs into economic costs (netting out taxes).
- The road works will commence in 2020 and construction will be carried out in three years. It is assumed that the project will start full scale bus service in 2023.
- The Annual Average Daily Traffic (AADT) increases at 2.3 percent per year.

[51] World Bank. (2017). *Guidance note on shadow price of carbon in economic analysis.*

- A modal shift from existing modes to BRT will occur[52] along the catchment areas of the BRT corridor, as follows:
  - 6 percent of future BRT passengers will shift from metered taxi
  - 38 percent from woro-woro
  - 26 percent from gbaka
  - 14 percent from SOTRA
  - 17 percent from private cars.
- No private commercial bus operation besides the BRT will be allowed on the trunk corridor.

13. The analysis assumes the following when determining the road safety cost savings:

Table 4.1: Road safety cost savings assumptions

GDP/Capita (current USD)	$1,614
Annual GDP Growth	7.4%
Annual AADT Growth	2.3%
Fatality/GDP per capita ratio	10
Baseline Fatal Crash/year (3-year average)	211
Serious Injury Crashes/Fatal Crash Ratio	23
Value of Statistical Life	$16,285
Value of Serious Injury	$1,198

Source: World Bank/OSER

- The social cost of carbon was assumed at US$57.5 per metric ton in 2018, increasing to US$114.5 per metric ton in 2049, calculated as the average between the low and the high social cost of carbon presented in the 2017 World Bank guidance note.
- The road user cost due to the construction disruption is not included in the economic analysis. It is assumed that the road width of the BRT corridor will allow for sufficient lane shifting and thus prevent increases in traffic congestion above the current levels.

14. The table below presents the basic characteristics of the BRT vehicle fleet. This input data is used to calculate the vehicle operating costs per vkt, travel time per vkt, and CO_2 emission per vkt by vehicle type, road condition and speed.

Table 4.2: Vehicle Fleet Information

	BRT
New Vehicle Cost (US$)	704,400
New Tire Cost (US$/year)	2,487
Energy Cost (US$/KWh)	0.12
Crew Cost (US$/year)	32,146
Spare parts and accessories (US$/year)	10,900
Annual Utilization (km)	95,000
Service Life (years)	10

[52] (WSP, 2018)

15. Taxes and duties, financial charges during construction, and price contingencies were excluded from the calculation of economic costs. Financial costs were converted to economic costs in line with World Bank Guidelines. The total financial capital cost for the construction of the BRT (including design, supervision, and provision for the 4th bridge amendment) is estimated at US$240 million.

Results

16. The total TT savings in the first year of the BRT operation are estimated to reach US$46.9 million. The TT savings are mostly due to the modal shift to the BRT from existing modes.

Table 4.3: Projected Monetized Travel Time (TT) savings along the Proposed BRT Corridor (US $)

	2022	2024	2030	2040
Savings	46,888,556	49,089,422	56,331,473	70,135,737

17. The total VOC savings in year one of BRT operations are estimated at US$9.9 million.

Table 4.4: Projected Vehicle Operating Cost (VOC) savings along the Proposed BRT Corridor (US$)

	2022	2024	2030	2040
VOC Base Case	43,968,643	46,032,454	52,823,517	65,684,582
VOC Project Case	33,311,988.	34,913,168	40,193,456	49,979,450
Savings	**9,924,087**	**11,830,999**	**11,411,832**	**20,978,415**

18. The total CO_2 emissions savings until year 2049 are about 2,082,621 tons, or 69,421 tons per year, considering emissions generated in the production of electricity used to power the BRT buses, as well as the fleet renewal component. This result is likely conservative as the computation does not account for the GHG savings related to improved traffic flow for the general traffic.

19. The project is estimated to significantly reduce the number of fatal and serious injuries as a result of enhanced safety for motorcyclists and pedestrians (i.e., vulnerable road users) along the corridor. This estimated improvement in road safety can be attributed to the planned separation of traffic modes and the modernization of traffic management.

Table 1.5: Projected economic benefits associated with improved road safety along the Proposed BRT Corridor (US $)

	2022	2024	2030	2040
Road Safety Cost – Base Case	6,712,661	6,440,331	5,693,092	4,649,999
Road Safety Cost – Project Case	4,027,596	3,864,198	3,415,855	2,789,999
Savings	**2,685,064**	**2,576,132**	**2,277,236**	**1,859,999**

20. The stream of project costs and benefits is given in the table below. The net economic benefit increases from US$23.13 one year after the planned start of the BRT operations to US$82.14 million in 2049.

Table 4.6 Stream of Project Costs and Benefits (US$ million)

Year	VOC Savings	TT Savings	Safety Savings	CO_2 Saving	Total Econ. Benefit	OPEX	CAPEX	Total Econ. Cost	Net Econ Benefit
2019	0	0	0	0	0	0	12.16	12.16	-12.16
2020	0	0	0	0	0	0	36.48	36.48	-36.21
2021	0	0	0	0	0	0	109.45	109.45	-108.92
2022	9.92	46.89	2.69	0.77	60.27	9.92	164.03	173.95	-113.68
2024	11.83	49.09	2.58	2.73	62.68	11.40	31.70	43.10	23.13
2030	11.41	56.33	2.28	3.16	73.18	15.53	6.34	21.87	51.31
2040	14.19	70.14	1.86	3.97	90.16	63.74	3.25	21.96	68.20
2049	17.25	85.23	1.55	4.80	108.83	95.41	3.95	26.69	82.14

21. The project socio-economic analysis (EIRR, NPV) uses two values of time (545 and 606 CFAF) corresponding to the different income levels of the socio-economic groups in the city, as per the WSP-conducted project feasibility study (dated May 2018). The results are summarized in the table below:

Table 4.7: EIRR and NPV for Electric BRT

Electric BRT	Value of time (CFAF)	EIRR	NPV (CFAF, billion)	NPV (US$, million)
Social cost of carbon (Low)				
Results	545	**15%**	**68.408**	**117.586**
	606	**16%**	**94.117**	**161.777**
Social cost of carbon (High)				
Results	545	**16%**	**81.796**	**140.599**
	606	**17%**	**107.504**	**184.788**

22. This is well above the minimum EIRR of 12 percent required for a World Bank financed project.

23. The sensitivity analysis shows that the project is economically justified even if construction or operation costs are 10 percent higher or if the annual ridership growth rate is lowered by 20 percent. If the construction cost were to increase by 58 percent, the EIRR would be 10 percent.

Table 4.8 Results of the Sensitivity Analysis

	Base (VOC, TT, Safety and CO_2)	CAPEX @+10%	OPEX @+10%	Ridership @ -20%
Social cost of carbon (Low)				
Value of time = 545 CFAF				
EIRR	15%	13%	14%	14%
NPV ($ million)	117.586	87.633	106.399	98.527
Benefit Cost Ratio	1.39	1.28	1.27	1.31
Value of time = 606 CFAF				
EIRR	16%	15%	16%	16%
NPV ($ million)	**161.777**	131.824	150.590	142.718
Benefit Cost Ratio	1.59	1.47	1.46	1.51
Social cost of carbon (High)				
Value of time = 545 CFAF				
EIRR	16%	14%	15%	15%
NPV ($ million)	**140.599**	110.645	129.412	121.539
Benefit Cost Ratio	1.50	1.39	1.37	1.41
Value of time = 606 CFAF				
EIRR	17%	16%	17%	16%
NPV ($ million)	**184.788**	154.834	173.603	165.729
Benefit Cost Ratio	1.70	1.58	1.57	1.62