OFFICIAL USE ONLY
IDA/R2016-0108/1

May 18, 2016

Closing Date: Friday, June 3, 2016 at 6 p.m.

FROM: Vice President and Corporate Secretary

Ethiopia - Transport Systems Improvemnt Project

Project Appraisal Document

Attached is the Project Appraisal Document regarding a proposed credit to Ethiopia for a Transport Systems Improvement Project (IDA/R2016-0108), which is being processed on an absence-of-objection basis.

Distribution:

Executive Directors and Alternates
President
Bank Group Senior Management
Vice Presidents, Bank, IFC and MIGA
Directors and Department Heads, Bank, IFC and MIGA

Document of
The World Bank

FOR OFFICIAL USE ONLY

Report No: PAD1293

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR213 MILLION

(US$300 MILLION EQUIVALENT)

TO THE

THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

FOR A

TRANSPORT SYSTEMS IMPROVEMENT PROJECT

May 5, 2016

Transport and ICT Global Practice
Africa Region

CURRENCY EQUIVALENTS

Exchange Rate Effective March 31, 2016

Currency Unit	=	Ethiopian Birr (ETB)
ETB 21.54	=	US$1
1 US$	=	SDR 0.70981389

FISCAL YEAR

July 7 – June 30

ABBREVIATIONS AND ACRONYMS

AACRA	Addis Ababa City Roads Authority
AAOAG	Addis Ababa Office of Auditor General
AARTB	Addis Ababa Road and Transport Bureau
AALDMB	Addis Ababa Land Development and Management Bureau
ACBE	Anbessa City Bus Enterprise
BoFED	Addis Ababa City Administration Finance and Economic Development Bureau
BP	Bank Procedure
BRT	Bus Rapid Transit
CIP	Capital Investment Plan
CPS	Country Partnership Strategy
CSRP	Civil Service Reform Program
CQS	Consultant's Qualification Selection
EMCP	Expenditure Management and Control sub-program
DA	Designated Account
DL	Driver's License
DP	Development Partners
EIA	Environmental Impact Assessments
EMP	Environmental Management Plan
ERC	Ethiopia Railway Corporation
ESMF	Environmental and Social Management Framework
FDI	Foreign Direct Investment
FM	Financial Management
FTA	Federal Transport Authority
FY	Financial Year
GAP	Gender Action Plan
Gbps	Gigabits per second
GDP	Gross Domestic Product
GoE	Government of Ethiopia
GPN	General Procurement Notice
GRM	Grievance Redress Mechanism

GRS	Grievance Redress Service
GTP(I, II)	Growth and Transformational Plan (First, Second)
IBEX	Integrated Budget and Expenditure
ICB	International Competitive Bidding
ICT	Information Communications and Technology
IDA	International Development Association
IFAC	International Federation of Accountants
IFR	Interim Un-audited Financial Reports
IMF	International Monetary Fund
Kbps	Kilobit per second
ISA	International Standards of Auditing
ISR	Implementation Status and Results Report
IT	Information Technology
ITS	Intelligent Transport Systems
LDP	Local Development Plans
LRT	Light Rail Transit
M&E	Monitoring and Evaluation
Mbps	Megabits per second
MoC	Ministry of Construction
MoFEC	Ministry of Finance and Economic Cooperation
MoT	Ministry of Transport
NCB	National Competitive Bidding
NCSC	National Complete Streets Coalition
OFAG	Office of the Federal Auditor General
OP	Bank Operational Policy
PBS	Promoting Basic Services
PDO	Project Development Objective
PFM	Public Financial Management
PFTA	Public and Freight Transport Authority
PIM	Project Implementation Manual
PIT	Project Implementing Teams
PIU	Project Implementing Units
PPA	Project Preparation Advance
PRIMA	Portfolio and Risk Management
PSCAP	Public Sector Capacity Building Support Program
PSETSE	Public Service Employees Transport Service Enterprise
QCBS	Quality and Cost Based Selection
RAC	Real Application Cluster
RAP	Resettlement Action Plan
RoW	Right of Way
RPF	Resettlement Policy Framework
SBD	Standard Bidding Document
SC	Steering Committee
SIA	Social Impact Assessment
SOP	Series of Projects

SORT	Systematic Operations Risk Rating
STEP	Systemic Tracking of Exchanges in Procurement
TMA	Traffic Management Agency
TOD	Transit-Oriented Developments
TPMO	Transport Programs Management Office
UNDB	United Nations Development Business
VKT	Vehicle Kilometers of Travel
WB	World Bank

Regional Vice President:	Makhtar Diop
Country Manager:	Carolyn Turk
Senior Global Practice Director:	Pierre Guislain
Practice Manager:	Supee Teravaninthorn
Task Team Leader:	Josphat O. Sasia
Co-Task Team Leader:	Haileyesus Adamtei

ETHIOPIA

Transport Systems Improvement Project

Table of Contents

TABLES

PAD DATA SHEET

Ethiopia

Ethiopia: Transport Systems Improvement Project (TRANSIP) (P151819)

PROJECT APPRAISAL DOCUMENT

AFRICA

Transport and ICT Global Practice

Report No.: PAD1293

Basic Information			
Project ID P151819	EA Category B - Partial Assessment		Team Leader(s) Josphat O. Sasia Haileyesus Adamtei
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [ ]		
Project Implementation Start Date 26-May-2016	Project Implementation End Date 30-Jun-2023		
Expected Effectiveness Date 30-Nov-2016	Expected Closing Date 31-Dec-2023		
Joint IFC No			
Practice Manager/Manager Supee Teravaninthorn	Senior Global Practice Director Pierre Guislain	Country Director Carolyn Turk	Regional Vice President Makhtar Diop

Borrower: Ministry of Finance and Economic Cooperation (MoFEC)
Contact: Fisseha Aberra Title: Director, International Financial Institutions Cooperation Directorate
E-mail: faberrak@gmail.com or faberra@mofed.gov.net; Tel +251 011 113247

Responsible Agency: Addis Ababa Road and Transport Bureau

Contact:	Yabebal Addis	Title:	Bureau Head, Addis Ababa Road and Transport Bureau
Telephone No.:	+251 011 5513320	Email:	ydsr66@gmaill.com

Responsible Agency: Federal Transport Authority

Contact:	Kasahun Hailmariam	Title:	Director General, Federal Transport Authority
Telephone No.:	+251 011 5515842	Email:	kasahun_khmariam@yahoo.com

Project Financing Data(in USD Million)							
[ ]	Loan	[ ]	IDA Grant	[ ]	Guarantee		
[X]	Credit	[ ]	Grant	[ ]	Other		
Total Project Cost:		300.00		Total Bank Financing:		300.00	
Financing Gap:		0.00					

Financing Source	Amount
BORROWER/RECIPIENT	0.00
International Development Association (IDA)	300.00
Total	300.00

Expected Disbursements (in USD Million)

Fiscal Year	2017	2018	2019	2020	2021	2022	2023	0000	0000	0000
Annual	3.00	15.00	20.00	50.00	70.00	80.00	62.00	0.00	0.00	0.00
Cumulative	3.00	18.00	38.00	88.00	158.00	238.00	300.00	0.00	0.00	0.00

Institutional Data

Practice Area (Lead)

Transport and ICT

Contributing Practice Areas

Social, Urban, Rural and Resilience Global Practice

Cross Cutting Topics

[X] Climate Change
[ ] Fragile, Conflict & Violence
[X] Gender
[X] Jobs
[X] Public Private Partnership

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Transportation	Urban Transport	60		
Water, sanitation and flood protection	Wastewater Collection and Transportation	10		
Public Administration, Law, and Justice	Public administration-Transportation	30		
Total		100		

☐ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%
Urban development	City-wide Infrastructure and Service Delivery	50
Urban development	Urban planning and housing policy	35
Urban development	Urban Economic Development	15
Total		100

Proposed Development Objective(s)

The proposed Project Development Objective (PDO) is to improve mobility along selected corridors in Addis Ababa and the effectiveness of road safety compliance systems throughout Ethiopia.

Components

Component Name	**Cost (USD Millions)**
Component A: Traffic Management and Road Safety in the City of Addis Ababa	190.10
Component B: Improvement of Integrated Urban Planning and Transport System	2.80
Component C: Road Safety Interventions and Institutional Strengthening of Selected Federal Transport Institutions	107.10

Systematic Operations Risk- Rating Tool (SORT)

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

Compliance

Policy

Does the project depart from the CAS in content or in other significant respects?	Yes [ ] No [X]
Does the project require any waivers of Bank policies?	Yes [ ] No [X]
Have these been approved by Bank management?	Yes [ ] No [ ]
Is approval for any policy waiver sought from the Board?	Yes [ ] No [X]
Explanation:	
Does the project meet the Regional criteria for readiness for implementation?	Yes [X] No [ ]

Safeguard Policies Triggered by the Project	**Yes**	**No**
Environmental Assessment OP/BP 4.01	**X**	
Natural Habitats OP/BP 4.04		**X**
Forests OP/BP 4.36		**X**
Pest Management OP 4.09		**X**
Physical Cultural Resources OP/BP 4.11	**X**	
Indigenous Peoples OP/BP 4.10		**X**
Involuntary Resettlement OP/BP 4.12	**X**	
Safety of Dams OP/BP 4.37		**X**
Projects on International Waterways OP/BP 7.50		**X**
Projects in Disputed Areas OP/BP 7.60		**X**

Legal Covenants

Name	**Recurrent**	**Due Date**	**Frequency**
Project Execution (FA Schedule 2 Section 1 I.1)		30-Jun-2017	

Description of Covenant

Not later than June 30, 2017, the Recipient shall, through FTA, sign a memorandum of understanding (MoU) with each Region and each Chartered City on effective management of operations and maintenance of driver licensing, vehicle registration and inspection, and penalty system.

Name	**Recurrent**	**Due Date**	**Frequency**
Project Execution (FA Schedule 2 Section 1 I.2)		30-Jun-2017	

Description of Covenant

Not later than June 30, 2017, the Recipient shall, through FTA, sign a MoU with each of the National Data Center and Regional Data Centers on hosting the databases for the transport systems under their respective jurisdictions.

Name	**Recurrent**	**Due Date**	**Frequency**

Project Execution (FA Schedule 2 Section 1 I.3)		30-Mar-2017	

Description of Covenant

No later than March 30, 2017, the Recipient shall, through FTA, issue national information security guidelines on the usage of driver licensing, vehicle registration and penalty management systems as well as national standards for ensuring information security.

Name	Recurrent	Due Date	Frequency
Project Execution (FA Schedule 2 Section 1 I.4)		30-Jun-2019	

Description of Covenant

No later than June 30, 2019, the Recipient shall, through FTA , install and maintain reliable power supply to its regional and zonal offices hosting databases for its information systems to enable uninterrupted provision of services to drivers and vehicle owners.

Name	Recurrent	Due Date	Frequency
Project Execution (FA Schedule 2 Section 1 I.5)		30-Jun-2018	

Description of Covenant

Not later than June 30, 2018, the Recipient shall: (a) through TMA recruit and maintain staff in adequate numbers with qualifications and experience required for managing traffic signaling for the City of Addis Ababa; and (b) through FTA, recruit and maintain staff in adequate numbers with qualifications and experience required for managing driver licensing, vehicle registration, inspection and penalty management systems.

Name	Recurrent	Due Date	Frequency
Project Execution (FA Schedule 2 Section 1 I.6)		30-Jun-2018	

Description of Covenant

Not later than June 30, 2018, the Recipient shall, through TMA and FTA, each provide adequate funds for the operations and maintenance of their respective transport systems supported under the Project.

Name	Recurrent	Due Date	Frequency
Project Execution (FA Schedule 2 Section 1 D.1)	**X**		Continuous

Description of Covenant

Recipient shall through AARTB cause AACRA to be responsible for managing procurement and financial management aspects of AARTB's Respective Parts of the Project.

Conditions

Source Of Fund	Name	Type
IDA	Effectiveness (FA Article IV 4.01)	Effectiveness

Description of Condition

Recipient through both AARTB and FTA, has each adopted its respective Project Implementation Manual.

Team Composition				
Bank Staff				
Name	**Role**	**Title**	**Specialization**	**Unit**
Josphat O. Sasia	Team Leader (ADM Responsible)	Lead Transport Specialist	Economist	GTI01
Haileyesus Adamtei	Team Leader	Senior Highway Specialist	Engineering	GTI01
Pascal Tegwa	Procurement Specialist (ADM Responsible)	Senior Procurement Specialist	Procurement	GGO01
Binyam Bedelu	Procurement Specialist	Senior Procurement Specialist	Procurement	GGO01
Abiy Demissie Belay	Financial Management Specialist	Senior Financial Management Specialist	Financial Management	GGO25
Abebaw Alemayehu	Team Member	Senior Urban Development Specialist	Urban	GSU19
Asferachew Abate Abebe	Environmental Specialist	Senior Environmental Specialist	Environment	GEN01
Azeb Afework	Team Member	Team Assistant	Operations	AFCE3
Benqing Jennifer Gui	Team Member	Senior ICT Policy Specialist	ICT	GTI11
Chukwudi H. Okafor	Safeguards Specialist	Senior Social Development Specialist	Social Development	GSU07
Damon C. Luciano	Team Member	Temporary	Operations	GTI01
Dinkneh Tefera	Team Member	Urban Development Specialist	Urban	GSU19
James Markland	Team Member	Senior Transport. Specialist	Engineering	GTI01
Jose C. Janeiro	Team Member	Senior Finance Officer	Disbursement	WFALA
Mei Wang	Counsel	Senior Counsel	Legal	LEGAM
Ming-Kuen Lin	Team Member	IT Officer, Engineering II	ICT	ITSEI
Mugambi Mugisha Mwendia	Team Member	Finance Analyst	Disbursement	WFALA

Rahel Lulu	Team Member	Program Assistant	Operations	AFCE3
Raman V. Krishnan	Team Member	Senior ICT Policy Specialist	ITS	GTI09
Roger Gorham	Team Member	Transport. Economist	Urban/Climate Change	GTI04
Rosemary Ngesa Otieno	Team Member	Program Assistant	Operations	AFCE2

Extended Team

Name	Title	Office Phone	Location
Amare Assefa	Consultant, Procurement		Addis Ababa
Brendan Finn	Consultant Bus Operations Specialist		Dublin
Mats Arvesten	Consultant, Driver Testing and Road Safety		Degerhamn
Richard Podolske	Consultant Urban Transport Specialist		Washington DC
Yalemwzewud Simachew Tiruneh	Consultant, Social		Addis Ababa

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Ethiopia	Adis Abeba	Adis Abeba Astedader	X		Project will be implemented in nine Regions, seventy four Zones and two chartered cities
Ethiopia	Afar	Afar Region	X		Project will be implemented in nine Regions, seventy four Zones and two chartered cities
Ethiopia	Amhara	Amhara Region	X		Project will be implemented in nine Regions, seventy four Zones and two chartered cities
Ethiopia	Binshangul Gumuz	Benishangul-Gumuz Region	X		Project will be implemented in nine Regions, seventy four Zones and two chartered cities

Ethiopia	Dire Dawa	Dire Dawa Region	**X**		Project will be implemented in nine Regions, seventy four Zones and two chartered cities
Ethiopia	Gambela	Gambela Region	**X**		Project will be implemented in nine Regions, seventy four Zones and two chartered cities
Ethiopia	Harari	Harari Region	**X**		Project will be implemented in nine Regions, seventy four Zones and two chartered cities
Ethiopia	Oromiya	Oromiya Region	**X**		Project will be implemented in nine Regions, seventy four Zones and two chartered cities
Ethiopia	Somali	Somali Region	**X**		Project will be implemented in nine Regions, seventy four Zones and two chartered cities
Ethiopia	Tigray	Tigray Region	**X**		Project will be implemented in nine Regions, seventy four Zones and two chartered cities
Ethiopia	Southern Nations, Nationalities, and People's Region	Southern Nations, Nationalities, and People's Region	**X**		Project will be implemented in nine Regions, seventy four Zones and two chartered cities

I. STRATEGIC CONTEXT

A. Country Context

1. Ethiopia is a large and geographically diverse country, with a representation of 98 nationalities who speak 93 languages, a total population of about 90 million, and a population growth rate of 2.6 percent (2013). At that rate, the United Nations estimates that the population will reach 130 million by 2025. Ethiopia is projected to be among the world's ten largest countries by population in 2050. IDA commitments to Ethiopia in recent years have been over US$1 billion per year. Making progress in Ethiopia on the two goals of the World Bank Group of eliminating extreme poverty and boosting shared prosperity is therefore important, both for global progress and for the country itself.

2. Ethiopia remains one of the world's poorest countries but has achieved high levels of economic growth and made substantial progress on social and human development over the past decade. The country's per capita income of US$550 (Atlas gross national income, 2014) is substantially lower than the regional average of US$1,257 and the eleventh lowest worldwide. Ethiopia is ranked 173 out of 187 countries on the Human Development Index (2014) of the United Nations Development Program. However, economic growth has helped reduce poverty in both urban and rural areas. Since 2005, about 2.5 million people have been lifted out of poverty and the share of population below the poverty line has fallen from 38.7 percent in 2004/05 to 29.6 percent in 2010/11 (using a poverty line close to US$1.25/day). Ethiopia is among the countries that have made the fastest progress on the Millennium Development Goals (MDGs) and Human Development Index ranking over the past decade. In particular Ethiopia has made substantive gains in the areas of universal primary education, gender parity in education, child mortality, maternal mortality, HIV/AIDS, and malaria.

3. Ethiopia has a federal, democratic system. Ethiopia's current Government system was established in the early 1990s by the Ethiopian People's Revolutionary Democratic Front, which took over the country in 1991 after militarily defeating the previous regime. Since 2003, the country has actively pursued decentralization of governance to the regional and woreda levels—a woreda is a district with an average population of 100,000. Ethiopia marked an important milestone in August 2012 with the first peaceful and constitutional transition of power in the country's modern history and subsequent tranquil general elections in May 2015.

4. The Government of Ethiopia (GoE) has completed its Growth and Transformation Plan (GTP) (2010/11–2014/15), which set a long-term goal for Ethiopia to become a middle-income country by 2025, with a growth rate of at least 11.2 percent per year during the plan period. A second phase of the GTP is under implementation covering the period 2015-2020. To achieve the GTP goals and objectives, the GoE has followed a 'developmental state' model, with a strong role for the Government in certain aspects of the economy. It has prioritized key sectors such as industry and agriculture as drivers of sustained economic growth and job creation. A strategic pillar of GTP II is to "proactively manage the ongoing rapid urbanization to unlock its potential for sustained rapid growth and structural transformation of the economy". The programs of development partners (DPs) are broadly aligned with the GTP priorities.

5. One of the biggest challenges to Ethiopia's achievement of its GTP goals is the effective management of urbanization, which is taking place rapidly throughout the country and particularly in Addis Ababa. The urban share of the population has more than doubled in 35 years, from 8.5 percent of the national population in 1967 to 17.4 percent in 2012. The UN estimates that the rate of urban growth between 2010 and 2015 in Ethiopia averaged 3.6 percent per year, placing Ethiopia among the fastest urbanizing countries in sub-Saharan Africa. As with many fast-growing economies, much economic growth is driven from urban areas; thus, 17 percent of the population produce over 58 percent of Ethiopia's Gross Domestic Product (GDP) [1], mostly in Addis Ababa.

B. Sectoral and Institutional Context

Urban Transport and Related Systems in Addis Ababa

6. Addis Ababa is the principal commercial center of Ethiopia and is experiencing rapid urban growth. The population of Addis Ababa more than doubled every decade since the 1980s. According to the 2007 National Census, the city of Addis Ababa had a population of 2.7 million, though the Central Statistical Agency estimates the current population as 3.3 million, and extrapolation of similar growth rates push the population to about 3.7 million by 2020. The poverty rate in Addis Ababa[2] at 28.1 percent is close to the national average, and has not fallen as fast as in rural areas or smaller urban centers. Between 2005 and 2011, growth in consumption was negative for the majority of households in Addis Ababa as wages did not increase to compensate households for rising food prices. Even though Addis Ababa currently manifests low motorization rates by global standards (130 vehicles per 1,000 people, with a total registered vehicle fleet of about 426,500 in 2015), the rapid economic growth in recent years is expected to lead to a strong increase in vehicle ownership (further detail is provided in Annexes 2 and 6).

7. The city's approach to address urban transport problems over the past twenty years—predominantly by expanding the transport infrastructure – but this has not made the desired improvements in accessibility for pedestrians and many public transport users. Daily time spent traveling in the city has increased, and the city is facing high levels of road traffic accidents, frequent congestion, and high levels of air pollution [3]. These challenges are manifest even though motorization in Addis is quite low by world standards; investments in expansion of the road network has not been accompanied by improvements in traffic management or the development of public transport services. Mobility for the poor, such as it is, is effected primarily through walking and bus services provided by Anbessa City Bus Service Enterprise (ACBE), the city's public bus operator.

8. Pedestrians remain the most poorly-served of travelers, with more than 65 percent of the road network lacking pedestrian walkways, even though a study in 2011 estimated walking accounted for about 54 percent of all trips. Sidewalks, where they exist, are often obstructed with parking, utility installations, or other discontinuities; busy arterials, even those designed and built within the last few years, have few and poorly designed pedestrian crossings. As a result,

[1] World Bank, Ethiopia Country Economic Update, 2012.
[2] 2015, Ministry of Urban Development and Housing.
[3] No long-term, scientific studies of air quality in Addis Ababa have yet been carried out although short-term sampling shows 24 hour average concentrations of 2.5 micron particulate matter at over 100 micro grams per cubic meter at heavily trafficked junctions.

pedestrians, who tend to be poor, bear a disproportionate share of the burden from road traffic crashes; statistics from the Federal Road Transport Authority show that 60 percent of all serious crashes and 73 percent of all road traffic crash-related fatalities, affect pedestrians.

9. ACBE provides affordable bus transport services for the city's low income earners. It operates a fleet of about 700 buses and moves 600,000 passengers per day, with fares set by the Federal Road Transport Authority. However, the operation has suffered from underinvestment for years and struggles to meet demand; buses are managed, dispatched, and repaired, and fares are collected and reconciled each day, using manual systems. There is no strategy or approach to improve bus-based public transport services generally, and all ACBE services operate in mixed traffic with no measures to improve bus operations. Depot facilities require major rehabilitation. As a result, ACBE services are slow, unreliable, uncomfortable, seen by all travelers as a social service for the poor, and costly for the city Government to maintain. Furthermore, these services are not coordinated with regard to network, fares, schedules, or facilities, with other bus services in the city provided by private sector operators.

10. Mass transport systems are however in the process of being developed. Two Light Rail Transit (LRT)[4] lines, totaling 32 km with 32 stations, have been constructed and are currently operational under the jurisdiction of the Federal Government through the Ethiopia Railway Corporation (ERC). A pilot Bus Rapid Transit (BRT) line[5] of around 16 km has been designed and is in the final stages of planning. This line, as well as the rest of the planned BRT network will be developed and overseen by the Addis Ababa City Government, under the newly created Public and Freight Transport Authority (PFTA). The division of the oversight of these new mass transport services between two different levels of government creates substantial challenges with regard to coordination of services, fares, and subsidies, and is one of the challenges that the PTFA will need to address.

11. Land use and transport developments are poorly coordinated. Housing and land-use decisions are taken on the basis of the location of available land, with almost no assessment of transport impacts while road transport investment decisions are made on the basis of criteria often unrelated to land-use patterns. For example, new condominium housing has been developed on the (current) outskirts of the metropolitan area, with no coordination with transport services, rendering them largely inaccessible not only to employment locations, but also to social services and interaction. As a result, the emerging transport and land-use disconnect is particularly burdensome to women, who need to devote more time each day using transport to meet their household obligations.

Federal Transport Systems

12. Road safety challenges throughout the country are exacerbated by weak federal transport systems which lead to low compliance rates and poor road safety enforcement particularly in cities.

[4] The LRT lines have been developed by the Federal Government through the Ethiopian Railway Corporation. ERC has also taken responsibility for operations and maintenance, and has engaged Shenzhen Metro Corporation for this purpose.

[5] A pilot BRT line is at the detailed design stage, and will be constructed with financial assistance from the French Government, through the French Development Agency (AFD).

Information compiled in one study[6] indicates that about 64 people per 10,000 vehicles die annually on Ethiopian roads, making Ethiopia the eighth worst country in Africa for road traffic fatalities by this metric (African Development Bank 2013). Nationwide, about 85 percent of fatal accidents are attributed to driver error, while six percent are due to vehicle defects.[7] This means that ninety-one percent of fatalities relate to conditions that should be controlled by the drivers' licensing and/or vehicle permitting processes.

13. The poor bear a disproportionate share of the burden of these road injuries. In Addis Ababa, police records show that 73 percent of all road crashes resulting in death involve pedestrians, a figure which is extremely high by international standards.[8] According to the 2014 Household travel survey, the poor comprise over 70 percent of pedestrians, and are therefore disproportionately vulnerable to these high accident rates, which result not only in death, but also substantial injury and disability, as well as loss and destruction of property. Accidents also cause delay to road traffic.

14. The institutional relationships between the regions and the Federal Government to coordinate issues of transport regulation, licensing and compliance are weak. Under Ethiopian law, the Federal Transport Authority (FTA) regulates transport services (both freight and passenger) throughout the country, yet Drivers' Licenses and Vehicle Registrations are managed and issued by the nine regions and two chartered cities, through 74 zonal offices. Although there are common procedures, standards and criteria for the issuance of licenses and permits, no means to effectively enforce them within regions, and particularly across regional boundaries. The most common means of enforcing fines on drivers committing offenses is for police to confiscate their drivers' license pending payment of the fines, since there is no other reliable way of ensuring law enforcement can follow-up with the offending driver once he or she leaves the scene. This situation not only facilitates petty corruption, but it also incentivizes a high proportion of drivers to obtain fraudulent duplicate licenses. A recent FTA study found that about 38 percent of all licenses in the country are fraudulent. This rate of fraudulence disproportionately affects Addis Ababa, as over 83 percent of licensed drivers are located there.

15. Improving compliance rates with road traffic laws, regulations, and requirements, is a necessary condition to improving road safety performance throughout Ethiopia, and particularly in Addis Ababa. To improve compliance rates, upgrades and improvements to key road traffic governance systems are needed. At present, the system is characterized by a lack of adequate driver and vehicle registry, record management and information exchange platforms resulting in an inability to share information between the institutions responsible for regulation, enforcement and the application of penalties. This gives rise to multiple opportunities for fraud and corruption, and weak enforcement of traffic laws, stemming from inadequately equipped and trained traffic police and absence of effective information sharing system for monitoring driver behavior. A lack of comprehensiveness in driver training programs, resulting from poor oversight and regulation, and, inadequate and highly variable driver testing requirements also contribute to a low standard of driver behavior.

[6] Developing Integrated Transport and Traffic Management Information Systems (2014) for the Federal Government, FTA.
[7] Based on FTA-compiled statistics provide to the Bank team.
[8] Population-weighted data for 138 countries from the World Health Organization show pedestrians account for an average of 21 percent of all road crash-related fatalities.

C. Higher Level Objectives to which the Project Contributes

16. The proposed project will support Ethiopia's economic development including the implementation of the GTP-II which emphasizes the improvement in the provision of infrastructure and services, poverty reduction, and attainment of middle income status by the middle of the next decade. The project will support urban transport performance and governance in Addis Ababa, which is critical for the city to function as the engine of economic development for the country, and modernize key national-level vehicle, licensing and driver training systems upon which transport operations rely.

17. In doing so, the project will also help the Ethiopian Government meet the objectives of its Clean and Resilient Green Economy initiative (CRGE) which seeks to "follow a green growth path that fosters development and sustainability." In this respect, though the project's primary orientation is toward enhancing mobility and safety along major corridors in Addis Ababa, particularly for the poor, and improving the effectiveness of national systems to ensure compliance with road traffic laws; the activities supported by the project are consistent with and advance climate change mitigation and resilience objectives in substantial ways, by promoting the use of public transport, improving conditions for pedestrians, supporting integrated transport and land-use planning and development (to increase resilience and reduce the need for motorized travel), preparing a drainage masterplan for the city, and implementing an asset management system, among other things to better manage resources in the aftermath of shock events.

18. The World Bank Group's Country Partnership Strategy (CPS) for FY13–FY16 (Report 71884-ET) sets out the principles for engagement within this framework, as recently reviewed in the 2014 CPS Progress Report. The CPS supports the GoE in implementing the GTP. It includes two primary pillars and seven strategic objectives. Pillar One (Fostering Competitiveness and Employment) aims to support Ethiopia in achieving the following strategic objectives: (a) a stable macroeconomic environment; (b) increased competitiveness and productivity (a particular area of focus for the IFC); (c) increased and improved delivery of infrastructure and related services; and (d) enhanced regional integration. Pillar Two (Enhancing Resilience and Reducing Vulnerabilities) aims to support Ethiopia through: (e) improved delivery of social services and (f) comprehensive social protection (SP) and risk management. The CPS also has a foundation of good governance and state building. In line with the GTP, gender and climate change have been included as crosscutting issues in the CPS. The CPS Progress Report reconfirmed these strategic objectives while noting that the Bank Group will place renewed emphasis on a stable macroeconomic environment, increased competitiveness and productivity, regional integration, and the urbanization process.

19. The project is also aligned well with the Bank's own priorities, globally, for the region and country, and for the transport global practice. The project aligns with the World Bank Group's twin goals of ending extreme poverty and boosting shared prosperity, particularly by enhancing bus service for the poor, improving pedestrian conditions, and creating conditions to reduce road crashes. It also aligns with the Africa Strategy,[9] mainly the competitiveness and employment pillar, by improving the business environment in Addis Ababa through improved accessibility and passenger flow, as well as directly and indirectly creating jobs and reducing material losses in the

[9] Africa's Future and the World Bank's Support to it, The World Bank, March 2011

transport industry due to crashes. It is consistent with the World Bank Group's CPS (Report No. 71884-ET, August 29, 2012) pillar on increased and improved delivery of infrastructure. It supports planning and capacity development activities that will lead to improved conditions for women, by enhancing coordination of land-use and transport so that women will have better accessibility to activities necessary for social reproduction. Finally, it addresses three priorities of the transport global practice, namely improvements in road safety, climate change mitigation and resilience, and support for attainment of the sustainable development goals, in particular, targets 9.1 (resilient infrastructure) and 11.2 (transport systems).

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

20. The proposed Project Development Objective (PDO) is to improve mobility along selected corridors in Addis Ababa and the effectiveness of road safety compliance systems throughout Ethiopia.

B. Project Beneficiaries

21. The main beneficiaries of the project will include the traveling public in Addis Ababa such as the 600,000 passengers moved by the ACBE daily, communities in the project area, and all Ethiopian citizens who need to obtain or renew a driver's license currently numbering two million and expected to increase to three million at the end of the project or vehicle registration permit currently at 1.2 million and expected to increase to 1.7 million as at the end of the project. Female and male pedestrians in Addis Ababa will particularly benefit from an improved focus on safety and better planning for pedestrian accessibility, safety and comfort.

C. PDO Level Results Indicators

22. The proposed PDO results indicators are as follows:

(a) Passenger traffic flow per day along selected corridors;
(b) Pedestrian fatalities on prescribed corridors per 1,000 vehicles;
(c) In-service bus-km (ACBE) per bus per day;
(d) Direct project beneficiaries in Addis Ababa (millions, of which percentage women), and
(e) Kilometers of roads (non-rural) rehabilitated (core indicator).

III. PROJECT DESCRIPTION

A. Project Components

23. The proposed project will comprise of the following components (details are presented in Annex 2).

Component A: Traffic Management and Road Safety in the City of Addis Ababa (Cost Estimate US$190.10 million).

24. This component will include four subcomponents.

Subcomponent 1: Improving the Traffic and Safety Management Practices in the City Addis Ababa (Cost Estimates: US$82.50 million of which US$62.50 million toward Traffic Management Agency [TMA] and US$20.0 million for Addis Ababa Traffic Police).

25. This subcomponent will involve support to TMA and Addis Ababa Traffic Police to improve management of traffic and road safety. The subcomponent will include:

(a) Preparing an intelligent transport system (ITS) for the City of Addis Ababa, including expansion of existing traffic signal and control systems; improvement of traffic operations centers; enforcement of traffic lights and associated penalty management system; improvement of associated civil works at intersections for selected streets to improve traffic flow and pedestrian safety;

(b) Developing a city-wide parking strategy and implementing a targeted paid on-street and off-street parking program to better manage current parking conditions;

(c) Undertaking traffic management studies in order to improve traffic conditions;

(d) Strengthening the capacity of TMA to carry out its assigned responsibilities, including, inter alia, designing and implementing appropriate traffic management measures and related training; and

(e) Improving traffic enforcement and traffic safety measures through the provision of appropriate equipment and traffic enforcement training for Addis Ababa traffic police.

Subcomponent 2: Improving Road and Pedestrians Safety Interventions of Selected Corridors at Identified Locations and Strengthening the Capacity of Addis Ababa City Roads Authority (AACRA) (Cost Estimate US$65.80 million).

26. This subcomponent will involve:

(a) Implementing comprehensive improvements to selected streets in order to enhance traffic conditions and pedestrian amenities and safety, including, inter-alia: improving pavement and drainage; developing traffic management measures; providing or upgrading sidewalks; providing street lighting; bus stops and bus bays; and developing parking management measures within right of way;

(b) Developing and implementing pedestrian safety and community connectivity plans at selected locations;

(c) Developing a citywide drainage master plan; and

(d) Strengthening institutional capacity of AACRA for, inter alia: (i) implementing improved asset management and pavement management systems; (ii) developing an improved maintenance and funding strategy; (iii) supporting the restructuring of AACRA and providing related capacity building activities; (iv) developing an

improved road design manual and a road maintenance manual; and (v) improving contract management.

Subcomponent 3: Improving Traffic Oversight, Public Transport Services and Systems and Strengthening the Capacity of Public Freight and Transport Authority (PFTA) and the Anbessa City Bus Enterprise (ACBE) (Cost Estimate US$33.50 million of which US$29.00 million toward ACBE and US$4.50 million for PFTA).

27. This subcomponent will involve:

(a) Strengthening the capacity of PFTA for undertaking tasks related to public transport planning, regulation, management, and service contracting;

(b) Assisting in planning and establishing an integrated public transport system, including, including, inter alia: implementing related regulatory reforms to rationalize the provision of public transport services and strengthen the management of public transport operations;

(c) Assisting in modernizing bus operations of ACBE to improve management, business and operational information systems, including, inter alia: designing and implementing an ITS and management systems for electronic fare collection, automatic vehicle location, depot, crew and bus scheduling, inventory and spares and bus network systems;

(d) Supporting the rehabilitation and improvement of ACBE's operational conditions, including, inter alia, improvement of its vehicle maintenance workshops, depots and system control center; and

(e) Strengthening the capacity of ACBE to enable it to deliver its mandate and services effectively.

Subcomponent 4: Supporting AARTB and the Transport Programs Management Office (TPMO) to improve their business planning and implementation (Cost Estimate US$8.30 million)

28. This subcomponent will involve:

(a) Strengthening the capacity of AARTB and TPMO in planning and overseeing the implementation of urban transport reforms in the City of Addis Ababa;

(b) Strengthening the capacity of TPMO staff to carry out their responsibilities, including monitoring and evaluation of the Project, and preparing future development initiatives; and

(c) Strengthening the capacity of TPMO in Project management.

Component B: Improvement of Integrated Urban Planning and Transport System (Cost Estimate US$2.80 million).

29. This component will involve:

(a) Supporting the Addis Ababa Land Development and Management Bureau (AALDMB) to develop land use and transport plans for the City of Addis Ababa;

(b) Carrying out studies on transit-oriented developments and preparing plans and strategies to implement strategic transit-oriented developments initiatives, and the provision of advisory and technical assistance to enhance the capacity of AALDMB in these activities and in light- rail master planning; and

(c) Strengthening the capacity of AALDMB in carrying out its business functions.

Component C: Road Safety Interventions and Institutional Strengthening of Selected Federal Transport Institutions (Cost Estimate US$107.10 million of which US$101.60 million to support the Federal Transport Authority [FTA] and Federal Traffic Police, US$1.5 million for Ministry of Transport [MoT] and US$ 4.00 million for Ministry of Construction [MoC]).

30. The component includes three subcomponents as follows:

Subcomponent 1: Improving Compliance with Road Transport Rules and Regulations Nationally, through Improved Driver Training, Developing an Integrated Driver Licensing and Vehicle Registration System, and Strengthening FTA's Capacity (Cost Estimate US$92.80 million).

31. This subcomponent will involve:

(a) Setting up a system for re-registration of new and current drivers[10] using modern security enhanced driver's license documents;

(b) Setting up a system for re-registration of vehicles[11] with vehicle chassis numbers and replacement of the existing vehicle registry documents by secure unified vehicle registration documents;

(c) Improving the quality of driver training and testing;

(d) Designing and implementing solutions for issues related to driving school management, vehicle inspection management; driver's penalty management; accident data management and power interruptions in the transport system;

(e) Establishing a central help desk support system;

(f) Strengthening the capacity of FTA in undertaking its business functions; and

(g) Supporting integrating the driver licensing and vehicle registration and accident databases.

[10] This includes operators of construction machineries and special purposes vehicles
[11] This includes construction machineries and special purpose vehicles

Subcomponent 2: Improving Federal Traffic Enforcement Capability and Strengthening the Capacity of Federal Traffic Police (Cost Estimate US$8.80 million)

32. This subcomponent will involve:

(a) Supporting the enhancement of road safety compliance through training, capacity building and institutional strengthening for the Federal traffic police countrywide;

(b) Installing police mobile applications for driver and vehicle verification, inspection as well as penalty management.

Subcomponent 3: Improving Oversight Capacity of MOT and MOC (Cost Estimate US$5.50 million)

33. This subcomponent will involve:

(a) Supporting MOT in: (i) developing a long-term program to improve its capacity for urban transport management, through engaging with local universities to develop corresponding curriculum, and supporting students in these programs on a pilot basis; (ii) developing an urban transport policy and investment program; and (iii) supporting the implementation of institutional and policy reform in the provision of public transport; and

(b) Supporting MOC in developing regulation and procedures for managing construction sites and enhancing its oversight responsibilities through training, capacity building and technical assistance.

B. Project Financing

34. Most of the project preparatory activities are funded under a Project Preparation Advance in the amount of US$4.5 million. It is expected that any land acquisition and other costs related to the implementation of the Resettlement Action Plan (RAP) will be covered entirely by the GoE. The rest of the activities of the project will be financed by IDA (100 percent) as summarized in Table 1 and detailed in Annex 2, Table 2.1.

C. Project Cost and Financing

35. The lending instrument chosen for this project is an Investment Project Financing (IPF). The duration of the project is seven years, reflecting the complexity of the urban setting for implementation, the need for sequencing the project activities, and the long-term nature of the institutional and policy reforms supported through this project.

Table 1. Project Cost and Financing (Cost Estimates)

Project Components	Estimated Project Cost (US$, millions)	IDA Financing (US$, millions)	% of Financing
A. **Traffic Management and Road Safety in the city of Addis Ababa**			
A1. Improving the traffic and safety management practices in the City of Addis Ababa	82.50	82.50	28.00
A2 Improving road and pedestrians safety interventions of selected corridors at identified locations and strengthening the capacity of AACRA	65.80	65.80	22.00
A3. Improving traffic oversight, public transport services and systems and strengthening the capacity of PFTA and ACBE	33.50	33.50	11.00
A4. Supporting AARTB and the Transport Programs Management Office (TPMO) to improve their business planning and implementation	8.30	8.30	3.00
Sub-total for Component A	**190.10**	**190.10**	**63.00**
B. Improvement of Integrated Urban Planning and Transport System			
Sub-Total for Component B	**2.80**	**2.80**	**1.00**
C. Road Safety Interventions and Institutional Strengthening of Selected Federal Transport Institutions			
C1. Improving compliance with road transport rules and regulations nationally, through improved driver training, developing an integrated driver licensing and vehicle registration system, and strengthening FTA's capacity	92.80	92.80	31.00
C2. Improving federal traffic enforcement capability and strengthening the capacity of Federal traffic police	8.80	8.80	3.00
C3. Improving oversight capacity of MOT and MOC	5.50	5.50	2.00
Sub-Total for Component C	**107.10**	**107.10**	**36.00**
Total Project Costs	**300.00**	**300.00**	**100.00**
Total Financing Required	**300.00***	**300.00***	

* The costs exclude expenditures associated with implementation of the RAPs and relocation of services on road corridors to be expanded and or rehabilitated which the GoE will cover fully.

D. Lessons Learned and Reflected in the Project Design

36. This is the first urban transport and traffic management systems project that the World Bank will finance in Ethiopia. The project design takes into account lessons from urban projects that have been undertaken in Africa, Asia and Latin America. The multiple project components reflect the division of institutional responsibilities concerning planning and transportation within the City administration, a common feature in urban governance. Land use planning, transportation, traffic management, road safety and emissions reduction are all closely interdependent, and the successful achievement of results in one area requires a coordinated series of activities that covers all of the other areas. Analytical work on urban transport and development in Addis Ababa has been carried out under the Korea Green Growth Trust Fund. This work informed the Bank's dialogue with City authorities on urban transport and planning, serving to introduce best practices in the areas of traffic management, public transport management, and transport and land-use planning in the formulation of Components A and B. It also helped the city administration to revisit institutional arrangement for urban transport. Lessons learned during the design and implementation of the Transport Information Management System, part of the Kenya

Transparency and Communications Infrastructure Project (IDA Credit 42840), have been instrumental in the preparation of Component C of the project. Best practices in driver testing procedures were shared with the client and have been used to improve testing methods.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

37. Project execution will be carried out by two implementing agencies (Annex 3, Figure 3.1 for a schematic illustration), namely, AARTB and FTA, on behalf of themselves and several beneficiary entities, including AACRA, TMA, ACBE, Addis Ababa Traffic Police, MoT, MoC, Federal Traffic Police and AALMB. With regard to overall coordination of the project, MoT will be responsible while the two implementing agencies will be responsible for the implementation of its respective components or subcomponents of the project, as follows:

(a) **Component A and B**: AARTB; and

(b) **Component C**: FTA.

38. AARTB on its part has delegated the administration of procurement and financial management responsibilities to AACRA, while beneficiary entities will be responsible for initiating the preparation of terms of reference as well as specifications of their respective activities and submit them to the Project Implementation Unit (PIU) for finalizing and submission to the World Bank for review. None of the two implementing agencies have working experience on Bank-funded operations.

39. **Project Implementation Units (PIUs).** There will be two PIUs, one associated with each implementing agency. AARTB has established a PIU under the TPMO and appointed a team for the preparation and implementation of the city activities under the project. The PIU is headed by a Team Leader who reports directly to the General Manager, TPMO. FTA has similarly established a PIU and appointed a Team Leader who reports directly to the Director General of the FTA. The PIUs, comprising regular staff supported by specialist consultants with the appropriate skills, experience and qualifications, are empowered to manage the day-to-day activities of their respective components of the project. Capacity building and training in managing World Bank financed projects, as well as managing and operating transport related information systems and databases, will be provided to the PIUs and the beneficiary agencies as described in Annex 2. Team members drawn from the permanent staff have already been appointed, while recruitment of the few remaining specialists is ongoing. PIU duties and responsibilities are elaborated in their respective Project Implementation Manuals (PIM). The World Bank (WB) will be consulted and agreement sought for major changes in the composition of the PIUs including key staffing, structure, manuals and procedures. These arrangements reflect experience from other WB financed projects in Ethiopia**.**

B. Results Monitoring and Evaluation

40. Monitoring of project performance will be carried out by a monitoring and evaluation (M&E) consultant who will report on the progress toward achieving the objectives of the project against the indicators provided in the results framework and monitoring arrangements in Annex 1.

The M&E consultant will also monitor the impacts of the risks identified in the Systematic Operations Risk Rating (SORT) Framework. To link academia with the transport sector, an opportunity will be given to local universities with capacity and experience to participate in project M&E. FTA will use a competitive selection process to select the responsible university. The selected university will sign a contract with FTA and will work in close collaboration with the implementing agencies and beneficiary entities. The selected university will assign a team of experts and will provide both semi and annual reports.

41. The Coordinator for the project will regularly monitor progress on implementation and effectiveness of the strategy, and work with the inter-agency oversight committee in addressing critical issues identified in the course of the project implementation. The committee will regularly brief all the agencies involved in the project.

C. Sustainability

42. The activities of the project will be mainstreamed into the operations of the implementing agencies and beneficiary entities. As documented in Annex 2, the Bank is working with the client to ensure sustainable sources of finance to maintain and upkeep the systems developed under the project. These actions will reinforce the Government's ownership of the project, and strengthen the proposed institutional and policy reforms in the urban transport sector in the city of Addis Ababa. Improved capacity, created through both investments in systems and training of personnel, will further support the sustainability of the project.

V. KEY RISKS

A. Risk Ratings Summary Table

	Risk Categories	Rating
1	Political and governance	Moderate
2	Macroeconomic	Moderate
3	Sector strategies and policies	Moderate
4	Technical design of project	High
5	Institutional capacity for implementation and sustainability	High
6	Fiduciary	High
7	Environment and social	Substantial
8	Stakeholders	High
	Overall	**High**

B. Overall Risk Rating Explanation

43. The risk rating for implementation of the Project is High. As identified in the SORT Matrix, the risks are directly related to implementation capacity, a lack of prior experience in managing Bank-financed projects and proposed reforms that are likely to change the manner business has been conducted and services provided not only in the city of Addis Ababa but also countrywide with the roll-out of the new FTA systems. The key risks and the proposed corresponding mitigation measures are discussed in Annex 8.

VI. APPRAISAL SUMMARY

A. Economic Analysis

44. Though the project is structured in three components, for the purpose of economic analysis, eleven groupings of interventions were identified with internally coherent sets of costs and benefits as follows: (a) integrated urban corridor development based on a "complete streets" approach; (b) traffic management improvement through intersection design, signalization, and centralized traffic control; (c) pedestrian safety improvements; (d) improvements in traffic enforcement; (e) equipment and software for electronic fare collection and ITS for ACBE; (f) modernizing and improving ACBE's operational facilities (workshops and depots); (g) development of asset management and related systems in Addis Ababa; (h) capacity improvement for AARTB and related agencies; (i) improved capacity for planning and development control to ensure better coordination and integration of transport and land-use; (j) improvements to system for managing substantive and procedural compliance with driver licensing and vehicle permitting requirements in Ethiopia; and (k) long-term capacity development for the country on urban transport through development of a Masters' program in urban transport. These intervention sets were assessed against development impact, rationale for public sector finance, and value-added of WB engagement.

Development Impact

45. The economic analysis of the project's development impact is a mix of cost-benefit analysis, cost-effectiveness analysis, and qualitative assessment, for different interventions, depending on their nature and the information available. Development impacts were gauged with respect to three broad categories of development benefits: (a) efficiency gains – reductions in the costs to agencies to deliver key transport-related services; (b) effectiveness gains – improvements in real world outcomes for the traveling public; and (c) know-how (capacity) gains – improvement in the quality or range of transport and land-use-related services provided by relevant agencies.

46. For each of the eleven intervention clusters, the investments, and likely timing and opportunity costs to the economy are described. For the above three categories of benefits, direct and indirect benefits for the eleven intervention clusters are enumerated, and, where possible, quantified and monetized. For some of the clusters, quantification and monetization of the benefits is anticipated, but not available now because planned design studies will be undertaken during project implementation. In these cases, the economic analysis describes the detailed economic process and criteria that will be used for corridor selection. However, the economic analysis has also examined the outcomes of comparator projects with similar components and found them to be quantifiably economically justified. The team has used Economic Rate of Return (ERR) of these comparator projects to inform the expected costs and benefits. In addition, the team has developed specific cost-effectiveness numbers and ERRs for specific intervention clusters where the data are sufficient to do so. Specifically, the improvements in traffic enforcement are likely to result in a cost of between US$300 and US$500 per death averted; ITS and electronic fare collection for ACBE were estimated conservatively to generate an ERR of 9.6 percent, and all of Component C (Improve compliance with road transport rules and regulations nationally, through improved driver training, developing an Integrated Driver Licensing and Vehicle Registration Systems and

Institutional Strengthening of FTA) was assessed using conservative assumptions as having an ERR of 16.5 percent. Details are included in Annex 5.

Rationale for Public Finance

47. Project activities were assessed with respect to four well-recognized justifications for public finance: (a) Public goods (non-excludable); (b) Non-inclusion of full costs/benefits (externalities); (c) Asymmetric information; and (d) Assurance of shared prosperity (equity). For all project activities, it was found that at least one and in many cases several of these conditions apply. Details are presented in Annex 5.

Value Added of World Bank Involvement

48. The Bank's value added is in four key areas. First, it will provide technical guidance on a number of urban transport planning and management concepts that are new in Addis Ababa. Among these are Complete Streets design, integration of public transport services, parking policy and management as a planning and traffic demand management tool, asset management and maintenance, road safety and traffic impact assessment.

49. Second, the Bank, through this and potentially other operations later, will provide support and guidance for long-term institutional development of the urban transport sector, not only in Addis Ababa, but also in Ethiopia generally, guiding priorities with respect to urban development and transport. At present, capacity to manage and develop urban transport facilities and services is undeveloped in Ethiopia, often resulting in unintended outcomes. Third, the Bank's involvement will help provide guidance on fiduciary processes, including procurement, resettlement, and environmental and financial management, that can help strengthen public confidence in institutions in Addis Ababa and the Federal Government.

50. Finally, the Bank's engagement through this and prospective operations, could influence political priorities with regard to urban transport, particularly matters pertaining to integrating land-use planning and development control and management as well as with transport planning for Transit Oriented Development, and deepening a culture of road and asset management and maintenance, strengthening commitment to pedestrian safety and ensuring environmental sustainability.

B. Technical

51. *Activities proposed under Component A* will focus on the improvement of the urban transport environment by improving road design, traffic management and road safety practices in Addis Ababa. The project will support the design of five pilot corridors which will demonstrate the 'Complete Street' approach, applying best practice in urban design and making use of the Bank's expertise in urban development[12]. Improvements to road and sidewalk infrastructure are accompanied by expansion and coordination of the traffic control and monitoring system using

[12] The Complete Streets concept is a policy-based approach that specifies that roads and streets should be routinely designed and operated to provide the safest achievable access for all users, including motorists, bicyclists, pedestrians and public transport riders (Institute of Transportation Engineers 2010). It also seeks to incorporate concepts of green infrastructure design into urban streetscapes.

context appropriate ITS technology. The designs will incorporate the needs of women. Technical assistance and training will also assist in the establishment and capacitation of a newly established TMA and AACRA's capacity to plan new road infrastructure, manage assets, and improve maintenance, drainage and resilience to climate change.

52. In addition, activities under this component will support the newly-established PFTA to plan and regulate public transport, as well as improve operations of ACBE, the publicly owned bus company charged with providing transport services for the poor, through the improvement of management methods, systems for reporting passenger abuse and violence, automation of systems, the upgrading of bus maintenance facilities, and training. The design of these activities has benefitted from Bank support and expertise through the Korea Green Growth Trust Fund.

53. Component B will assist the City in efforts to have better coordination between transport and land-use development, thereby helping to reduce the need for motorized travel and increasing opportunities for public transport use. Guidance and training will focus on integration of transport and land-use, and technical assistance will develop a Transit-Oriented Development (TOD) program for the city, including concept / schematic designs for two TOD areas.

54. Component C will support the development of national level licensing and vehicle permitting systems, including improvement to driver training and testing regimes, to improve compliance with traffic regulations and foster a safer transport environment throughout Ethiopia. A secure, unified and national system to issue licenses, vehicle registration and inspection certificates and record driver history will minimize the opportunities for fraudulent and corrupt practices among drivers, thereby facilitating law enforcement of dangerous traffic behavior, while improved training and testing regimes will improve the quality of drivers. Gender-disaggregation of data will allow future measures to be designed to promote the participation of women in the transport sector.

C. Financial Management

55. A financial management (FM) assessment was conducted at AACRA and FTA, the project entities responsible for FM, in accordance with the Financial Management Manual issued by the Bank's Financial Management Sector Board on March 2010, revised on February 4, 2015. The assessment included the identification of key perceived financial management risks that may affect project implementation and proceeded to develop mitigation measures against such risks.

56. The detailed FM arrangements of the project are described in Annex 3. AACRA and FTA will follow Government procedures in regard to the project, adjusting them to meet the Bank's specific requirements. Financial management manuals will be prepared as part of the Project Implementation Manuals (PIM) for each entity in line with overall Government procedures and will clarify project specific requirements. Neither AACRA nor FTA have previous experience in managing or working on Bank financed projects and hence there is a need for close support, including to address weaknesses noted in their respective entity audit reports and the understaffed finance and internal audit units. Financial management specialists have been recruited and assigned for AACRA. Further recruitments will continue to be made by FTA and AACRA to strengthen their capacity.

57. The project will prepare and submit two quarterly unaudited Interim Financial reports (IFRs), one by AACRA and the other by FTA, for the respective parts of the project they implement. In regard to disbursement, the transaction based disbursement method using statements of expenditure will be used for both implementing entities when disbursing project funds to the Designated Accounts (DA) and for reimbursements. All disbursement methods are available to the project including advances to the designated accounts, reimbursements, direct payments and special commitments. Further details about disbursements to the project will be included in the disbursement letter.

58. Based on the assessment conducted, the proposed FM arrangements meet the IDA's requirements according to OP/BP 10.00. They are adequate to provide, with reasonable assurance, the accurate and timely information on the status of the project required by IDA. The residual FM risk, after implementation of mitigation measures, is rated as **Substantial**. Action plans have been agreed upon to address the weaknesses identified, as documented in the FM assessment report, with the key aspects detailed in Annex 3.

D. Procurement

59. A procurement risk assessment of the implementation arrangement for the project has been undertaken. The key findings of the assessment are included in Annex 3. The main risks identified include: (a) lack of accountability and unclarified roles for different parties; (b) poor record keeping; (c) inadequate number of procurement staff; (d) limitations in bidding processes; (e) limitation during bid evaluation stage; and (f) limitations in contract administration. The responsibilities of each party in the procurement process has been discussed and agreed and will be detailed in the PIM. Based on the outcome of the procurement risk assessment of the implementation arrangement involving AACRA and FTA, the assessment concluded that the residual procurement risk, after implementation of mitigation measures, is rated as High.

60. The mitigation measures for the identified risks include that implementing agencies will: (a) prepare procurement manuals as part of the PIMs that clearly describe the procurement process, roles and responsibilities, and business standard for different steps; (b) keep records in a way that can be retrieved easily and allocate sufficient space and facilities for procurement functions; (c) use Bank's evaluation report template; (d) provide training to all involved in procurement decisions; (e) establish strong contract administration and monitoring systems; prepare and agree on the format for regular reporting of status; (f) undertake detailed design reviews and clear rights of way before signing works contracts; and (g) effectively coordinate inputs from beneficiary organizations.

61. Procurement under the project to be financed through IDA would be carried out in accordance with: (a) *"Guidelines: Procurement of Goods, Works, and non-Consulting Services Under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" dated January 2011 revised July 2014; (b) "Guidelines: Selection and Employment of Consultants Under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" dated January 2011 revised July 2014; (c) "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; (d) introduction of Exceptions to National Competitive Bidding Procedures; and (e) the provisions stipulated in the Legal Agreements. Bank standard documents shall be used for procurement of*

goods and works through International Competitive Bidding (ICB) and for all consultants exceeding US$200,000. National competitive bidding will use Government standard bidding documents and procedures subject to the exceptions spelt out in the procurement section in Annex 3.

62. A Procurement Plan dated March 24, 2016, acceptable to the Bank covering the first eighteen months has been prepared and included in Annex 3. For each contract to be financed by the Credit, the different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time frame will be agreed between the Borrower and World Bank task team in the Procurement Plan. Procurement Plans will be submitted and approved though a Bank system named Systemic Tracking of Exchanges in Procurement (STEP). The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

63. A General Procurement Notice (GPN) was prepared and published in United Nations Development Business (UNDB), on the Bank's external website on October 22, 2015. Specific Procurement Notices for all goods and works to be procured under International Competitive Bidding (ICB) and Expressions of Interest for all consulting services to cost the equivalent of US$200,000 and above will also be published in the UNDB and the national press of wide circulation.

64. **Training.** Each of the implementing agencies will prepare and endorse their respective annual training program for financing under the project and submit it to the Bank for review and clearance. The program will identify: (a) the training envisaged; (b) the personnel to be trained; (c) the selection methods of institutions or individuals conducting such training; (d) the institutions conducting the training (if already selected); (e) the duration of the proposed training; and (f) the cost estimate of the training. Reports by each trainee upon completion of training would be mandatory.

E. Social (including Safeguards)

65. The project will generate significant social and environmental benefits and also negative impacts requiring mitigation. The social benefits will accrue from opportunities for short-term employment during construction, but there will also be long-term benefits from increases in road safety and time saved. The travel time along selected streets contained in the project is expected to fall and vehicle operating costs are expected to be reduced with the proposed improvements; and the provision of road-side amenities, including pedestrian walkways and crossings, and improvement of junctions and traffic signalling system will enhance road safety and benefit mainly the poor echelon of the society. Meanwhile the time for processing and issuance of driver licences and registration of vehicles will reduced drastically. The details on social aspects of the project are in Annex 3.

66. However, the construction of sidewalks, drainage, foot crossings, streetlights and other development activities may negatively affect the health and safety of the community unless appropriate mitigation measures are taken to address the impacts. In some of the corridors the street vendors (Informal Traders) who use the existing sidewalks to sell brewed coffee, tea, readymade clothes and other consumable goods as a means of earning their livelihood (particularly

on Ummer Semetar street and Arat Kilo-Piazza- Abune Petros) are likely to be affected. In some instances, a few of the road corridors are used as open markets in the late afternoon with a large number of people coming to buy and sell items. Thus the upgrading of sidewalks and other physical construction in such areas will affect these people's livelihood activities. Finally, some shops and vendors along the road corridors may be impacted during the construction of proposed activities. Hence appropriate precautions will be taken under the project to minimize non-land based economic displacement of the people working along the road corridors.

67. Road safety issues are a major problem with high death rates recorded on the Ethiopian roads. Nearly 3,000 lives are lost annually.[13] This project will support the efforts by the AARTB and FTA in addressing these challenges by increasing awareness of road safety through information provision and education. Selected existing streets in Addis Ababa will be widened in critical places to allow for pedestrian sidewalks to enhance safety.

68. In managing potential and social risks and impacts arising from the project's investments, Bank Operational Policy (OP/BP) 4.12 is triggered. Accordingly, the Borrower has prepared a Resettlement Policy Framework (RPF) and conducted a Social Impact Assessment (SIA) to explore any potential social consequences. The findings of the SIA have been incorporated in the design of this Project.

69. **Gender and Citizen's Engagement.** As part of project preparation, the client carried out an SIA and community consultations, which identified key gender mainstreaming and citizen engagement issues in the transport sector. The SIA highlighted the need to prepare a Gender Action Plan (GAP) that will focus on: (a) ensuring women's equitable participation in project-related public consultations; (b) incorporating gender-responsive design features in urban transport infrastructure and services; (c) promoting increased employment opportunities for women; and (d) strengthening the implementing agencies' institutional capacities for gender mainstreaming.

70. The project recognizes the multiple roles and unique patterns of urban mobility for women and their particular transport needs for personal safety whether using public transport or walking. The project will improve transport infrastructure and services to make travel easier and safer for women, thus increasing their access to employment opportunities in new transport-related jobs in construction, urban greenery, and operation and maintenance, as well as industrial jobs, by reducing travel time from residential areas to workplaces.

71. The project includes components that will address gender issues through the provision of pedestrian infrastructure including sidewalks, lighting, pedestrian crossings and the improvement of public transport by modernizing the operations of ACBE, and improving the coordination between all public transport services in Addis Ababa. Benefits for women will include reduced waiting times for transport due to improved traffic flows on corridors, the improvement of pedestrian facilities, and addressing overcrowding and the lack of safety. The project has prepared a draft GAP which will be refined during implementation, informed by a study on the different constraints men and women face in the transport sector with proposed actions that need to be put in place and the necessary mitigating measures. A more detailed treatment of mainstreaming

[13] Federal Police Commission Central Information& Crime Intelligence Directorate , Annual report, 2014

gender together with the proposed activities and areas for action by the respective project beneficiaries and the draft GAP are presented in Annex 9.

72. To provide equitable benefits and opportunities, the project will ensure active participation of women in the PIUs and in the project Steering Committees; there will be technical assistance for the FTA and Bureau of Women Affairs Directorate to enable the FTA and Bureau to: (a) monitor the implementation of gender mainstreaming guideline; (b) conduct a study on the different constraints that men and women face in the transport sector; and (c) propose actions that need to be put in place such as gender training of transport staff, contractors, and consultants to ensure an understanding of women's issues. The project will also consult women groups in the participating regions and cities to ensure that men and women have access to information on road safety, project related business opportunities, and public transport planning and management. Gender-disaggregated information will be collected as part of the routine tracking and monitoring system of the project. Also, the project will support all implementing agencies in the application of the gender budgeting guidelines developed by MoFEC. To reduce abuse and violence against women when using public transport, the project will establish a hotline telephone service where abuse can be reported. The project will proactively facilitate income restoration and employment opportunities for women, particularly those directly affected by the project. In the wider transport and haulage sectors, gender-disaggregation of data on drivers and vehicle ownership will allow FTA and MoT to design actions to increase the involvement of women in these traditionally male-dominated areas.

73. The project will further facilitate citizen's empowerment by conducting social monitoring and evaluation surveys with beneficiaries before the Midterm Review (that is, after the first year's activities are carried out) and post implementation (after all subprojects are carried out) to evaluate the impact on the ground. Given the higher level of vulnerability among women in urban areas, the surveys will use gender-disaggregated data to measure and verify citizens' perceptions of the project's activities and will serve as a tool to define gender or social issues and recommendations for further improvements in the transport sector.

74. **Grievance Redress Mechanism (GRM).** The project will set up a GRM for people to report concerns or complaints, if they feel unfairly treated or are affected by any of the subprojects. Citizens can register complaints about the construction of sidewalks, drainage, foot crossings, streetlights and other development activities, resettlement, and any other perceived abuses of the project. The grievance committee at the various levels will address such complaints, including logging, tracking, and resolving grievances promptly during and after the implementation of the Project, a social monitoring and evaluation survey will be conducted to evaluate the impact on vulnerable groups among women. The surveys will use gender-disaggregated data to determine and verify citizen's perceptions of the project's activities and will serve as a tool to define gender or social issues. The recommendations will be used to deepen improvements in the transport sector.

F. Environment (including Safeguards)

75. The project's anticipated environmental impacts have triggered Bank Operational Policy OP/BP 4.01 (Environmental Assessment), as well as OP/BP 4.12 (Involuntary Resettlement) and OP/BP4.11 (Physical Cultural Resources). The environment category of the project is B, as the proposed activities, which for the most part involve rehabilitation/expansion of existing roads

within the current right of way, will have moderate and reversible impacts. Detailed descriptions of environmental and social compliance measures are provided in Annex 3.

76. Potential environmental impacts may include soil erosion and disturbance of water flows, water pollution, traffic disruption, noise, gaseous and dust pollution and temporary disturbance of flora (mainly during the construction phase). In the case of the improvement of selected streets some mature trees (though not indigenous species) will be lost as a result of widening pedestrian walkways. The magnitude of tree cutting in these urban areas is not sufficient to necessitate the preparation of a Forest Management Plan, or to trigger the Bank's Operational Policy on Forests, OP 4.36. Nevertheless, it is important to undertake replacement tree planting liaising with the department of the city administration with responsibility for maintaining roadside verges and vegetation.

Table 2. Safeguard Policies Triggered by the Project

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP 4.01)	X	
Natural Habitats (OP/BP 4.04)		X
Pest Management (OP 4.09)		X
Indigenous Peoples (OP/BP 4.10)		X
Physical Cultural Resources (OP/BP 4.11)	X	
Involuntary Resettlement (OP/BP 4.12)	X	
Forests (OP/BP 4.36)		X
Safety of Dams (OP/BP 4.37)		X
Projects on International Waterways (OP/BP 7.50)		X
Projects in Disputed Areas (OP/BP 7.60)		X

G. Climate and Disaster Risk Screening

77. The screening assessment has been carried out on exposure to climate and geophysical hazards, and the potential risks identified. The assessment of the proposed physical components of the project, particularly corridor improvements, will need to consider more variable precipitation conditions, and the potential for higher risk of flooding, flash flooding, and soil destabilization as a result. Surface flooding has been identified as a high risk on the physical components of the project, and appropriate designs and standards used for these physical components, including the use of green infrastructure methods, will be incorporated. In addition, key project activities, namely the development of a drainage master plan and asset management system, will also support improved management generally to reduce risks associated with potential climate and geophysical hazards.

H. World Bank Grievance Redress

78. Communities and individuals who believe that they are adversely affected by a 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 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 WB's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the WB's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the WB Inspection Panel, please visit www.inspectionpanel.org.

Annex 1: Results Framework and Monitoring

COUNTRY: Ethiopia

Project Name: Ethiopia: Transport Systems Improvement Project (TRANSIP) (P151819)

Results Framework

Project Development Objectives

PDO Statement

The proposed Project Development Objective (PDO) is to improve mobility along selected corridors in Addis Ababa and the effectiveness of road safety compliance systems throughout Ethiopia.

These results are at	Project Level

Project Development Objective Indicators

Indicator Name	Baseline	Cumulative Target Values									
		YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	End Target
Roads Rehabilitated non-rural (Kilometers) - (Core)	0.00	0.00	0.00	0.00	5.00	10.00	15.00	21.00	-	-	21.00
Passenger traffic flow per day along five selected project road corridors (thousands) (Number)	396.00	396.00	396.00	396.00	407.00	420.00	432.00	455.00	-	-	455.00
Corridor 1: British Embassy to Africa Avenue (Number - Sub-	11.00	11.00	11.00	11.00	11.00	12.00	12.00	13.00	-	-	13.00

Type: Breakdown)											
Corridor 2: Arat Kilo to Degol to Abune Petros (Number - Sub-Type: Breakdown)	151.00	151.00	151.00	151.00	155.00	159.00	164.00	173.00	-	-	173.00
Corridor 3: St George Cathedral to Dil Ber (Number - Sub-Type: Breakdown)	90.00	90.00	90.00	90.00	93.00	96.00	99.00	104.00	-	-	104.00
Corridor 4: Arat Kilo to Brass Hospital (Number - Sub-Type: Breakdown)	130.00	130.00	130.00	130.00	134.00	138.00	142.00	149.00	-	-	149.00
Corridor 5: Ummer Sumeter to Grand Palace (Number - Sub-Type: Breakdown)	14.00	14.00	14.00	14.00	14.00	15.00	15.00	16.00	-	-	16.00
Pedestrian fatalities on prescribed corridors per 1,000 vehicles (Number)	25.00	25.00	25.00	25.00	25.00	25.00	20.00	19.00	-	-	19.00
Corridor 1: British Embassy to Africa Avenue (Number - Sub-	3.00	3.00	3.00	3.00	3.00	3.00	2.00	2.00	-	-	2.00

Type: Breakdown)											
Corridor 2: Arat Kilo to Degol to Abune Petros (Number - Sub-Type: Breakdown)	5.00	5.00	5.00	5.00	5.00	5.00	4.00	4.00	-	-	4.00
Corridor 3: St George Cathedral to Dil Ber (Number - Sub-Type: Breakdown)	10.00	10.00	10.00	10.00	10.00	10.00	9.00	8.00	-	-	8.00
Corridor 4: Arat Kilo to Brass Hospital (Number - Sub-Type: Breakdown)	5.00	5.00	5.00	5.00	5.00	5.00	4.00	4.00	-	-	4.00
Corridor 5: Ummer Sumetar to Grand Palace (Number - Sub-Type: Breakdown)	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	-	-	1.00
In-service Bus-km per bus per day (Number)	130.00	130.00	130.00	130.00	134.00	138.00	142.00	143.00	-	-	143.00
Direct project beneficiaries (Number) - (Core)	0.00	0.00	0.00	0.00	0.00	3.70	3.80	3.90	-	-	3.90
Female beneficiaries (Percentage - Sub-Type:	50.00	0.00	0.00	0.00	0.00	50.00	50.00	50.00	-	-	50.00

Supplemental) - (Core)											

Intermediate Results Indicators

Indicator Name	Baseline	Cumulative Target Values									
		YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	End Target
Number of Manpower Trained under the Project (number of people) (Number) - (Core)	0.00	0.00	50.00	80.00	500.00	900.00	1200.00	1500.00	-	-	1500.00
Percentage of vehicles registered using the new system (Percentage)	0.00	0.00	0.00	0.00	20.00	40.00	60.00	80.00	-	-	80.00
Percentage of driver licenses issued using the new system (Percentage)	0.00	0.00	0.00	0.00	20.00	40.00	60.00	80.00	-	-	80.00
Average processing time for citizen to register a vehicle. (Days)	20.00	20.00	20.00	20.00	10.00	8.00	6.00	4.00	-	-	4.00
Average processing time for citizen to obtain a driving license. (Days)	45.00	45.00	45.00	45.00	30.00	25.00	15.00	8.00	-	-	8.00
Number of intersections with	0.00	0.00	0.00	0.00	30.00	80.00	130.00	158.00	-	-	158.00

traffic signals installed under the project. (Number)											
Percentage of buses installed with an electronic fare collection system (Percentage)	0.00	0.00	0.00	0.00	20.00	40.00	60.00	100.00	-	-	100.00
Deployment of a new Penalty Management System (Yes/No)	No	No	No	No	No	No	No	Yes	-	-	Yes
Number of TODs designed (Number)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	-	-	2.00
Number of pedestrian crossings constructed in Addis Ababa (Number)	0.00	0.00	0.00	0.00	0.00	0.00	2.00	5.00	-	-	5.00
Proportion of registered grievances related to construction and implementation of the project in Addis Ababa addressed to the satisfaction of the complainant within 30 days (Percentage)	0.00	0.00	0.00	0.00	70.00	80.00	95.00	95.00	-	-	95.00

Indicator Description

Project Development Objective Indicators				
Indicator Name	**Description (indicator definition and so on)**	**Frequency**	**Data Source/Methodology**	**Responsibility for Data Collection**
Roads rehabilitated, Non-rural (Kilometers) - (Core)	Length of the five corridors selected for rehabilitation, installation of street lighting and drainage systems (about 21km), namely, Corridor 1: British Embassy to Africa Avenue; Corridor 2: Arat Kilo to Degol to Abune Petros; Corridor 3:St George Cathedral to Dil Ber; Corridor 4:Arat Kilo to Brass Hospital; and Corridor 5:Ummer Sumetar to Grand Palace; the number of pedestrian crossing to be constructed; number of bus stops and bus bays to be provided, and implementation of a new parking strategy to improve pedestrian safety, traffic flow and reduce road accidents.	Quarterly progress reports.	This indicator will be measured from progress reports produced by the contractor and verified by the supervisor on the progress of physical work in the five selected corridors. This will be complemented by the reports by the M&E consultant (public university). The scope (in km) to be financed under the project will be determined once the design studies are completed and costs known.	AARTB/AACRA
Passenger traffic flow per day along five selected project road corridors (Number, 000)	Average number of daily passengers travelling by ACBE on each of the five selected corridors to be constructed under the project will be collected. Target values are to be measured one to two years after rehabilitation and construction of intersections and installation of traffic signals.	Annually	Transport data collected and regularly updated by the City of Addis Ababa, Road and Transport Bureau through surveys for each of the five selected streets and verified by the M&E consultant.	AARTB/TMA
Pedestrian fatalities along the five selected corridors per 1,000 vehicles in Addis Ababa (Number)	The number of fatal accidents reduced through enforcement of traffic rules to improve traffic safety through purchase of appropriate equipment and training traffic enforcement officers, construction of pedestrian walkways and crossings, and installation of an ITS for Addis Ababa alongside modernizing driver licensing and vehicle registration systems	Annually	Road accident data collected by traffic police and FTA as part of road transport data and regularly updated. The project will support the establishment of accident database and enhancement of the capacity of traffic police and FTA to manage it (database).	AARTB/TMA/FTA
In-service Bus-km per bus per	Enhancing the number of hours per day the	Annually	Data will be based on	AARTB/TMA/FTA

day (Number: bus-km/bus/day)	buses of ACBE will be in operation rendering services to passengers by modernizing its operations; by designing and implementing an Information Technology and management systems for electronic fare collection, automatic vehicle location, depot, crew and bus scheduling, inventory and spares and bus network for.		automated fare collection data that will be collected by ACBE and progress reports by the contractor and confirmed by the supervision consultant.	
Direct project beneficiaries in Addis Ababa (Number, million) - (Core)	The main beneficiaries will include female and male traveling public in Addis Ababa, communities in the project area, and all Ethiopian citizens who need to obtain or renew a driver's license or vehicle registration permit. Female and male pedestrians in Addis Ababa will particularly benefit from an improved focus on safety and better planning for pedestrian accessibility, safety and comfort.	Annually	M&E consultant reports; ACBE annual reports; FTA annual reports; Traffic Police accident reports	AARTB; FTA and Addis Ababa Traffic Police
Female beneficiaries (Percentage - Sub-Type: Supplemental) - (Core)	Direct beneficiaries are people or groups who directly derive benefits from an intervention (i.e., children who benefit from an immunization program; families that have a new piped water connection). Please note that this indicator requires supplemental information. Supplemental Value: Female beneficiaries (percentage). Based on the assessment and definition of direct project beneficiaries, specify what proportion of the direct project beneficiaries are female. This indicator is calculated as a percentage.	Annually	M&E consultant reports	AARTB

Intermediate Results Indicators				
Indicator Name	Description (indicator definition and so on)	Frequency	Data Source/Methodology	Responsibility for Data Collection
Number of Manpower Trained under the Project (number of staff)	Number of staff trained either through study tours (national and international) in project management, public transport operation, urban	Bi-annually	M&E monitoring reports	AARTB/AALDMB/FTA

(Number) - (Core)	transport planning, ITS, and smart mobility.			
Percentage of vehicles registered using the new system (percentage)	Information on all vehicles registered through the current manual system will be rolled over into an ICT based system. This will introduce security paper based document with key security features and also for vehicle registration documents including owner and vehicle data. Currently vehicle registration documents are not adequately protected against adulteration and counterfeiting, hence doctored or counterfeit vehicle registration documents may be used for trafficking stolen vehicles, evading taxes, or keeping un-roadworthy vehicles.	Annually	Transport data collected and regularly from the database on driver licensing and vehicle registration system to be installed for FTA under the project	FTA
Percentage of driver licenses issued using the new system (percentage)	Information on all driver licenses issued through the current manual system will be rolled over into an ICT based system. Currently, driving license registration documents are not adequately protected against adulteration and counterfeiting. This opens avenues to the use of doctored or counterfeit license documents or driving without valid permits, or dodging fines and license suspensions	Annually	Transport data collected and regularly updated from the database on driver licensing and vehicle registration system to be installed for FTA under the project	FTA
Average processing time for citizen to register a vehicle reduced. (Days)	Replacing the current manual systems with an ICT based vehicle processing and management system. A secure, clean and universally accessible database for vehicle registration will be established which will be implemented to provide various web applications and services for driver's license registry and management, vehicle registration and inspection, penalty management at Federal, regional and zonal levels	Annually	A Central Help Desk Ticket System will be established and will provide information to monitor service delivery. The central help desk ticket system will provide online customer services to ensure a smooth operation of the systems across federal, regional, and zonal levels. The key functions of the Help Desk include knowledge base, register issues, case routing, and automated email	FTA/AARTB

			communications	
Average processing time for citizen to obtain a driving license. (Days)	Information on current driver licenses issued through the current manual system will be rolled over into an ICT based system. A secure, clean and universally accessible database for driver licenses will be established	Annually	Same as above	FTA
Number of intersections with traffic signals installed under the Project. (Number)	Preparation of an Intelligent Transport System (ITS) for the city of Addis Ababa, expansion of the existing traffic signal system, central control of this system including a Traffic Operations Center, red light enforcement and associated penalty management system, and associated civil works improvements at intersections to improve traffic flow and enhance pedestrian safety.	Annually	Progress reports produced by the contractor and verified by the supervisor on the progress of physical work. This will be complemented by the reports by the M&E consultant (public university). The scope (in km) to be financed under the project will be determined once the design studies are completed and costs known.	AACRA/AARTB
Percentage of buses installed with an electronic fare collection systems	The current manual system will be replaced with a modern ICT based system through designing and implementing an ITS and management systems for electronic fare collection, automatic vehicle location, depot, crew and bus scheduling, inventory and spares and bus network systems.	Quarterly	Once the ICT system is installed, information data will be based on automated fare collection data that will be collected by the System Manager. The targets provided are based on the ICT study for modernizing ACBE operations	ACBE/M&E Consultant
Deployment of a new Penalty Management System (Yes/No)	Installation of an ICT based system for effective coordination between the FTA, the road users, vehicle owners, driving school and police to deal with the current situation which is prone to fraudulent practices such that offenders breaking the law go unabated repeatedly.	Annually	Transport data collected and regularly from the database on driver licensing and vehicle registration system to be installed for FTA under the project.	FTA
Number of TODs designed (Number)	Carry out studies on Transit-Oriented Developments (TOD) and preparing detailed plans for selected strategic TOD(s) as well as formulating the operation and management strategies and implementation plan for these	Annually	Progress reports by the Addis Ababa Land Development and Management Bureau (AALDMB) and M&E reports	AALDMB

	TOD(s);			
Number of pedestrian crossings constructed in Addis Ababa (Number)	Developing and implementing a pedestrian safety and community connectivity at selected locations. Locations and specific interventions will be selected through detailed study. Overpasses may be considered where at-grade pedestrian crossings are not appropriate.	Annually	Progress reports produced by the contractor and verified by the supervisor on the progress of physical work. This will be complemented by the reports by the M&E consultant (public university). The scope (in km) to be financed under the project will be determined once the design studies are completed and costs known.	AACRA/AARTB
Proportion of registered grievances related to construction and implementation of the project in Addis Ababa addressed to the satisfaction of the complainant within 30 days (Percentage)	The project will set up a Grievance Redress Mechanism (GRM) for people to report concerns or complaints, if they feel unfairly treated or are affected by any of the subprojects. Citizens will have an opportunity to register complaints about the construction of sidewalk ways, drainages, foot crossings, streetlights and other development activities, resettlement, and any other perceived abuses of the project.	Quarterly	The grievance committees at the various levels will address such complaints, including logging, tracking, and resolving grievances promptly. This will be included in implementation progress reports by supervision consultants.	AARTB

Annex 2: Detailed Project Description

ETHIOPIA: Transport Systems Improvement Project (TRANSIP)

1. **Background.** Ethiopia is beginning a period of rapid urbanization, and its capital city, Addis Ababa, is already experiencing major road safety and traffic congestion problems due to inadequate planning for, poor management of, and weak compliance with, land-use and transport measures to enhance accessibility and mobility of its day-time and night-time residents. Land-use and transportation infrastructure integration is insufficient manpower resources to plan them are limited, with development, delivery, and management of transport infrastructure and services severely challenged as a result. Travel in the city has become increasingly risky, especially for pedestrians, because of inadequate and inappropriate facilities and infrastructure, and lack of protected pedestrian crossings, both at mid-blocks and at intersections.

2. In case of system users, both public transportation and non-motorized transport on city streets is challenging and increasingly time consuming, not only because traffic congestion slows movement down, but also because it makes travel times highly unpredictable, even for car users. Travelers need to allot more time for travel through the city because they are uncertain where and when they will become delayed. The city's major intersections and corridors are facing heavy traffic conflicts due to lack of advance planning and proper traffic management.

3. Reflecting inadequate traffic management, Addis Ababa traffic manifests lower-than-expected vehicle throughput at many intersections, often with high risk of traffic accidents because of severe pedestrian and vehicle conflicts at major roundabout and intersections traffic operation. On numerous corridors, multiple conflicts between pedestrians and moving and stationary vehicles can be observed, often exacerbated by minibus encroachment of traveling lanes while loading/unloading of passengers, inadequate parking management which cause to park on sidewalks, especially at key attraction points. Motorists often make U-turn movements at major and minor streets, causing bottlenecks while maneuvering. Often, these turns are illegal, but equally as often, they are legally sanctioned or at least tolerated by traffic police, because poor road design has necessitated their use. There are numerous pedestrian zebra crossing at locations that are not appropriate. The heavy congestion and system inefficiencies that result from all these factors are noteworthy because of their likely impact on overall economic growth and the environment, even though motorization rates are very low in Ethiopia by world standards.

4. Public transport services currently consist of bus services, provided by a multiplicity of operators, including a city-owned bus operator, many small-scale enterprises providing mini-bus and some midi-bus services, as well as several operations managed by the Federal Government for Federal and city commuting transport. New mass transport systems are being developed in the city, including a 32-kilometer light rail system (implemented by the Federal Government), which has been completed and a 16-kilometer pilot Bus Rapid Transit line (implemented by the city of Addis Ababa, slated to begin operations in 2017). There is a strong need to integrate these hierarchical services, with regard to fares, services, and facilities, even though none of the existing services are currently integrated, and there is minimal ongoing work to ensure this integration.

5. Recently, however, the Administration of the City of Addis Ababa has restructured the governance structure of the transport system in an effort to improve on the delivery of transport

infrastructure, services and oversight. The Addis Ababa Road and Transport Bureau (AARTB) has been restructured, and new institutions within it have been created, including the Traffic Management Agency (TMA) and the Public and Freight Transport Authority (PFTA) for clarifying responsibilities, accountability, and delivery of services. There is thus new potential for addressing some of the key traffic management and public transport management and integration issues that have burdened urban transport in Addis for a number of years.

6. The challenges go even beyond these traffic institutions, however, because a key source of current and future growth in transport-related problems will be lack of coordination of urban development and land-use with the transport system. The newly revised urban master plan for Addis Ababa calls for increased articulated density – that is, creation of high-density pockets of activity around key nodes in the transportation network, particularly the emerging mass transport network. Redirecting urban growth around these nodes will help contain growth of motorized vehicle travel in the future. But coordinating urban growth around the transport network will also require increased efforts to improve the way urban development is planned, controlled, and implemented, and improve coordination between land development and transport functions in the city administration.

Support to the City of Addis Ababa

7. Significant investments are underway or planned in the urban transport and land use sectors in the city of Addis Ababa and the country as a whole. The benefits from these investments require consolidation given a number of gaps that have been identified. The key gaps include the need to improve: (a) transport systems management; (b) public transport; (c) integration between urban planning and transport; and (d) the capacity of the institutions in the urban sub-sector. Addressing these gaps is critical at this opportune time while urbanization and motorization rates are still relatively low and large-scale mass transport infrastructure investments are being planned and implemented.

Transport Systems

8. Transport systems management encompasses a number of inter-related actions in the management of the transport network, on both the supply and demand sides. These include traffic management, parking management, special event management, incident management, travel demand management, traffic impact assessment, road asset management, road safety, and compliance with vehicular and traffic laws and regulations. Key objectives of these interrelated aspects of transport systems management are improving reliability of the system, minimizing vehicular conflicts, enhancing safety (particularly for vulnerable road users like pedestrians and cyclists), and prioritizing movement of high-capacity vehicles.

9. In the context of Addis Ababa an appropriately instituted transport systems management program would increase the carrying capacity of the existing road infrastructure, reduce the number of congestion-causing road accidents or impromptu mini-bus taxi stops, and improve the reliability of the transport network.

10. Effective traffic management should facilitate the movements of the trip making public to their destinations within the existing network. Therefore any traffic management program has to

overcome the historic under-resourcing of traffic management in the past, both with regard to investment and with regard to developing qualified staff to plan and manage this investment. It is anticipated that under TMA the traffic signaling system will be expanded alongside traffic control and operation centers. The traffic control center will become the key function for collaboration with different Government entities. An Intelligent Transport System (ITS) Master Plan will be prepared for the entire city consistent with the national one. The traffic control centre could be used to monitor traffic conditions via cameras and other technology, providing traveler information on road conditions and coordinating congestion management and incident response with different agencies.

Public Transport

11. At present, public transport services are conceived, planned, and delivered in a fragmented way, by three key players, ACBE, the well-established public bus operator, the mini-bus taxi operators, and the Ethiopia Railway Corporation, who plans and operates the light-rail transit (LRT) system. The quality of services they deliver are based primarily on the efficiency of the operator that is, helping the operator minimize costs. Both of these players provide critical services to the people, which need to be built upon. However, their services need to be better coordinated – both with each other and the emerging mass transport network that is developing – and they need to be reoriented toward more effectiveness of the offer (increasing the share of motorized trips made by high-capacity vehicles).

12. Transforming the manner in which public transport services are delivered, however, will depend among others, on strengthening new and existing institutions. For instance, ACBE is a well-established public bus operator, but is in substantial need of modernizing its operations. The mini-bus taxi operators provide a service which has tremendous value and which needs to be built upon, but requires a strong regulatory body to manage.

Integration of Transport and Urban Planning

13. There is an urgent need to better articulate and integrate the land use and transport network (and the necessary accompanying policies and regulations) of Addis Ababa. Urban development and land-use decisions and actions are generally still taken without adequate integration with related transport functions. Improvements can be made through developing a hierarchical system of urban development nodes (Transit Oriented Developments or TODs) which concentrate urban activities and transport intermodal services, matching appropriate development densities with the necessary transport infrastructure and service capacities.

14. While the draft Master Plan of Addis Ababa is proposing such a hierarchical system of TODs with a fully-equipped and distinguishable high density main city center and a set of sub-centers (some ten TODs), these remain largely broad concepts with no clear concrete mechanisms for implementation. In addition, the various tasks associated with preparing, analyzing and rolling out implementation solutions are not fully financed yet.

15. There is a strong need to develop a TOD implementation program in earnest, which can help guide the implementation of TOD solutions around specific nodes in the transport network, and that assembles a group of professionals who become expert in all aspects of TOD development.

Likewise, there is also a strong need to strengthen current capacity and institutional arrangements for urban planning and development, particularly as related to ongoing monitoring and implementation of the master plan revision.

16. Thus, the proposed project is therefore intended to help the city address these challenges, which, to summarize, include: (a) limited institutional capacity and ineffective traffic management; (b) pedestrian safety concerns and high accident rates; (c) lack of traffic control at major intersections, including poor geometry and channelization, lack of signs and pavement markings, and few signalized junctions; (d) no centralized traffic control system; (e) lack of a systematic, strategic approach to parking, leading to poor management of on-street parking and a noticeable dearth of off-street parking facilities; (f) poor integration (fares, services, facilities) of increasingly hierarchically distinguished public transport services; (g) poor management and control of public transport vehicles operating on the road network, leading to poorly enforced and managed mini-bus and taxi stands, and poor discipline in loading and unloading public transport passengers; and (h) complexity of coordinating in time and space the land-development process with the mass transport development process.

17. This will help to: (a) increase capacity of the selected city corridors, improve pedestrian infrastructure, rationalize the use of scarce road space, and improve traffic flows and reduce traffic accidents along these corridors; (b) promote the development of Addis Ababa's economy, focusing on satisfying the transportation demands going in and out of the city; (c) connect efficiently with the other urban traffic infrastructure systems currently under construction; (d) build the operational and managerial capacity and efficiency of urban transport agencies in dealing with urbanization and transportation; and (e) improve and modernize the driver licensing, motor vehicle registration and inspection systems.

Federal Transport Authority

18. The project will also assist the Federal Government establish a state-of-the-art distributed database system with guaranteed accessibility, integrity and security of the data as well as a robust Information Technology (IT) infrastructure. The system is expected to provide various web applications and services for driver's license registry and management, vehicle registration and inspection, and penalty management at Federal, regional and zonal levels.

19. Specifically the proposed project will finance: (a) the establishment of a secure database for driver licenses and vehicle registration which is the foundation for a modern transport management system; (b) the introduction of a highly secure driving license card and vehicle registration documents that would make it difficult to falsify; and (c) the establishment of regional site serves to ensure a reliable and robust system to allow regional governments to maintain and manage their data while guaranteeing the highest reliability, operational and integrity. This will allow a mass re-registration of existing driver licensing and vehicle registration registry documents and replace them with those that are modern beside have high security features.

20. The proposed project is also expected to significantly improve road safety and promote economic and business development within the road transportation sector through: (a) developing a comprehensive IT infrastructure system with unified management systems across the areas of driver and vehicle registry for all type of vehicles including construction equipment and operators,

vehicle inspection and regulation, driver training quality control centers, accident data management and penalty management across the country; (b) laying an IT infrastructure for supporting a robust and ubiquitous foundation of the introduction of phase two modern transport management system; (c) setting up a management framework that can be leveraged by other Government functional areas; (d) developing a management system to support a reduction in the number of fatal traffic accidents; (e) reducing the economic loss as a result of high number of traffic accidents; and (f) introducing transparency across the transportation sector as the robust databases enable establishing a management system that will prevent bribery and fraud which would result into honest and innovative business people encouraged to invest in transportation sector.

21. The current situation in Ethiopia is that training and testing of driver trainees is carried out off-road in building complexes countrywide. Experience elsewhere shows that the quality of driver training, testing and enforcement are key factors in reducing road accident rates. This is fundamental in case of Ethiopia where available information indicates that a large share of the accidents are caused by driver error. Hence, since the objective of the Ethiopian authorities is to tackle the road safety challenges, the Government has decided to focus on these three key areas.

22. During the preparation of the project, on request by the Government, the Bank at a national workshop organized from October 12-13, 2015 in Addis Ababa, shared with key stakeholders international experience on the various approaches adopted by a number of countries in carrying out training and testing of driver trainees. Key lessons shared with the stakeholders included the following:

(a) The driver training should be done in the same environment as where the new driver will start driving by him/herself;

(b) The driver training and testing must include situations known to be relevant for creating serious road accidents. This includes driving at higher speed and to interact with other road users in complicated situations;

(c) The driving test should cover those areas where we want the driver to be trained (the driving school will teach what we test);

(d) The training and test should focus on the skills needed to avoid serious road accidents;

(e) Centralized Driving License data information system, as well as for training of Driving Examiners, is mandatory; and

(f) Learner Driver´s Handbooks for different types of vehicles should be available.

Support to the Traffic Police

23. Strengthening the capacities of the traffic enforcement agencies has been identified as one of the key areas that need to be addressed in the efforts to resolve road safety challenges facing the country. Traffic enforcement capacities of the Addis Ababa Traffic Police and Federal Traffic Police were assessed and two key areas were identified that need urgent attention for effective enforcement of traffic rules and regulations:

(a) Training of the traffic police on road safety and enforcement mechanisms; and

(b) Acquisition of basic enforcement equipment which the traffic police currently lack.

24. **Training.** It was found that most of the traffic police have only basic training on traffic rules and regulations, and their enforcement. Supporting the traffic police through basic and advanced enforcement training will help reduce road accidents with severe injuries and fatalities. The training will give the Traffic Police knowledge about why/how road accidents happen and focus on how to conduct efficient road safety oriented enforcement as well as how to follow up and measure quality of works. While the detailed training programs will be developed during implementation, experiences from other countries show that enforcement should focus on areas where risks to road safety are potentially high, such as: (a) traffic rules, where failure to comply will lead to severe road accidents; (b) rules that focus on safety of vulnerable road users; pedestrians, cyclists, and so on; and (c) speed limits, alcohol and other drugs, and so on. The training will focus as how traffic police can effectively enforce these basic rules.

25. **Acquisition of basic traffic enforcement equipment.** Addis Ababa traffic police lack traffic enforcement equipment to help address challenges such as speeding, drink- driving, poor communication among traffic police on site and their head quarter, and traffic police responsiveness in case of accidents. Some of the critical enforcement equipment which is lacking include: Police patrol vehicles; laser speed guns and speed cameras for vehicle speed detection; red light detection cameras; alcohol breathalyzers; reflective vests, helmets, warning signs, cameras, measuring tapes; ambulances, rescue tools and first aid equipment.

26. All equipment and training financed by the project in respect of the Addis Ababa and Federal Traffic Police is directly related to improving road safety, by reducing fatalities and severe injuries through improved enforcement, and does not include weapons, lethal equipment or any other police or military equipment of such nature or support for activities not related to road safety[14]. The risk of using the equipment for other purposes by traffic police is low. The equipment is for enforcing road safety and supporting the implementation of information technology based systems aimed at improving transparency in enforcing traffic rules and verification of information, thereby reducing the opportunities for bribe demands or fraud. A central help desk for the citizens to report any concerns and monitoring will be established under the project. The procurement and usage of how the equipment will be used will be documented in annual reports produced by FTA and AARTB as will detailed in the Project Implementation Manual.

27. Thus the proposed project intends to support the Government in enhancing the quality of training and testing of driver trainees and will include these attributes. The proposed project will comprise the following components (with detailed activities in table 2.1) and will comprise the following components:

Component A: Traffic Management and Road Safety in the City of Addis Ababa (Cost Estimate US$190.10 million).

[14] 46 World Bank (2012b) Staff Guidance Note: World Bank Support for Criminal Justice Activities, A note prepared by the Justice Reform Unit of the Legal Vice Presidency.

28. This component will include four subcomponents.

Subcomponent 1: Improving the Traffic and Safety Management Practices in the City Addis Ababa (Cost Estimates: US$82.50 million of which US$62.50 million toward Traffic Management Agency [TMA] and US$20.0 million for Addis Ababa Traffic Police).

29. This subcomponent will involve support to TMA and Addis Ababa Traffic Police to improve management of traffic and road safety. The subcomponent will include:

(a) Preparing an intelligent transport system (ITS) for the City of Addis Ababa, including expansion of existing traffic signal and control systems; improvement of traffic operations centers; enforcement of traffic lights and associated penalty management system; improvement of associated civil works at intersections for selected streets to improve traffic flow and pedestrian safety;

(b) Developing a city-wide parking strategy and implementing a targeted paid on-street and off-street parking program to better manage current parking conditions;

(c) Undertaking traffic management studies in order to improve traffic conditions;

(d) Strengthening the capacity of TMA to carry out its assigned responsibilities, including, inter alia, designing and implementing appropriate traffic management measures and related training; and

(e) Improving traffic enforcement and traffic safety measures through the provision of appropriate equipment and traffic enforcement training for Addis Ababa traffic police.

Subcomponent 2: Improving Road and Pedestrians Safety Interventions of Selected Corridors at Identified Locations and Strengthening the Capacity of Addis Ababa City Roads Authority (AACRA) (Cost Estimate US$65.80 million).

30. This subcomponent will involve:

(a) Implementing comprehensive improvements to selected streets in order to enhance traffic conditions and pedestrian amenities and safety, including, inter-alia: improving pavement and drainage; developing traffic management measures; providing or upgrading sidewalks; providing street lighting; bus stops and bus bays; and developing parking management measures within right of way;

(b) Developing and implementing pedestrian safety and community connectivity plans at selected locations;

(c) Developing a citywide drainage master plan; and

(d) Strengthening institutional capacity of AACRA for, inter alia: (i) implementing improved asset management and pavement management systems, (ii) developing an improved maintenance and funding strategy, (iii) supporting the restructuring of AACRA and providing related capacity building activities, (iv) developing an

improved road design manual and a road maintenance manual, and (v) improving contract management.

Subcomponent 3: Improving Traffic Oversight, Public Transport Services and Systems and Strengthening the Capacity of Public Freight and Transport Authority (PFTA) and the Anbessa City Bus Enterprise (ACBE) (Cost Estimate US$33.50 million of which US$29.00 million toward ACBE and US$4.50 million for PFTA).

31. This subcomponent will involve:

(a) Strengthening the capacity of PFTA for undertaking tasks related to public transport planning, regulation, management, and service contracting;

(b) Assisting in planning and establishing an integrated public transport system, including, including, inter alia: implementing related regulatory reforms to rationalize the provision of public transport services and strengthen the management of public transport operations;

(c) Assisting in modernizing bus operations of ACBE to improve management, business and operational information systems, including, inter alia: designing and implementing an ITS and management systems for electronic fare collection, automatic vehicle location, depot, crew and bus scheduling, inventory and spares and bus network systems;

(d) Supporting the rehabilitation and improvement of ACBE's operational conditions, including, inter alia, improvement of its vehicle maintenance workshops, depots and system control center; and

(e) Strengthening the capacity of ACBE to enable it to deliver its mandate and services effectively.

Subcomponent 4: Supporting AARTB and the Transport Programs Management Office (TPMO) to improve their business planning and implementation (Cost Estimate US$8.30 million)

32. This subcomponent will involve:

(a) Strengthening the capacity of AARTB and TPMO in planning and overseeing the implementation of urban transport reforms in the City of Addis Ababa;

(b) Strengthening the capacity of TPMO staff to carry out their responsibilities, including monitoring and evaluation of the Project, and preparing future development initiatives; and

(c) Strengthening the capacity of TPMO in Project management.

Component B: Improvement of Integrated Urban Planning and Transport System (Cost Estimate US$2.80 million).

33. This component will involve:

(a) Supporting the Addis Ababa Land Development and Management Bureau (AALDMB) to develop land use and transport plans for the City of Addis Ababa;

(b) Carrying out studies on transit-oriented developments and preparing plans and strategies to implement strategic transit-oriented developments initiatives, and the provision of advisory and technical assistance to enhance the capacity of AALDMB in these activities and in light- rail master planning; and

(c) Strengthening the capacity of AALDMB in carrying out its business functions.

Component C: Road Safety Interventions and Institutional Strengthening of Selected Federal Transport Institutions (Cost Estimate US$107.10 million of which US$101.60 million to support the Federal Transport Authority [FTA] and Federal Traffic Police, US$1.5 million for Ministry of Transport [MoT] and US$ 4.00 million for Ministry of Construction [MoC]).

34. The component includes three subcomponents as follows:

Subcomponent 1: Improving Compliance with Road Transport Rules and Regulations Nationally, through Improved Driver Training, Developing an Integrated Driver Licensing and Vehicle Registration System, and Strengthening FTA's Capacity (Cost Estimate US$92.80 million).

35. This subcomponent will involve:

(a) Setting up a system for re-registration of new and current drivers[15] using modern security enhanced driver's license documents;

(b) Setting up a system for re-registration of vehicles[16] with vehicle chassis numbers and replacement of the existing vehicle registry documents by secure unified vehicle registration documents;

(c) Improving the quality of driver training and testing;

(d) Designing and implementing solutions for issues related to driving school management, vehicle inspection management; driver's penalty management; accident data management and power interruptions in the transport system;

(e) Establishing a central help desk support system;

(f) Strengthening the capacity of FTA in undertaking its business functions; and

(g) Supporting integrating the driver licensing and vehicle registration and accident databases.

[15] This includes operators of construction machineries and special purposes vehicles
[16] This includes construction machineries and special purpose vehicles

Subcomponent 2: Improving Federal Traffic Enforcement Capability and Strengthening the Capacity of Federal Traffic Police (Cost Estimate US$8.80 million)

36. This subcomponent will involve:

(a) Supporting the enhancement of road safety compliance through training, capacity building and institutional strengthening for the Federal traffic police countrywide;

(b) Installing police mobile applications for driver and vehicle verification, inspection as well as penalty management.

Subcomponent 3: Improving Oversight Capacity of MOT and MOC (Cost Estimate US$5.50 million)

37. This subcomponent will involve:

(a) Supporting MOT in: (i) developing a long-term program to improve its capacity for urban transport management, through engaging with local universities to develop corresponding curriculum, and supporting students in these programs on a pilot basis; (ii) developing an urban transport policy and investment program; and (iii) supporting the implementation of institutional and policy reform in the provision of public transport; and

(b) Supporting MOC in developing regulation and procedures for managing construction sites and enhancing its oversight responsibilities through training, capacity building and technical assistance.

Table 2.1. Preliminary Cost Estimates (US$, millions)

Component/Activity	Category	Costs
Component A: Traffic Management and Road Safety in the City of Addis Ababa.		
Subcomponent 1: Improving the Traffic and Safety Management Practices in the City of Addis Ababa		
1. Traffic study, design and construction supervision of intersections and comprehensive Corridor improvements with complete street concept; and Design and Construction Supervision of citywide Traffic Signal/ITS system including preparing an ITS master plan for the city and design of Traffic control center	Consultancy	6.00
2. Advisory Services in Operationalizing the TMA	Consultancy	1.00
3. Prepare Parking Strategy and Implementation Program	Consultancy	1.00
4. Future Traffic Planning Studies	Consultancy	0.70
5. Road Safety Awareness and Public Education Program and training	Consultancy	0.20
6. Preparing a detailed plan for improving pedestrian conditions, parking and motor vehicle circulation and public transport access in the Merkato market area	Consultancy	0.30
Consultancy Services		**9.20**
7. Supply and Install Traffic Signal System including traffic control center system	Goods	35.00
8. Software, Documents, and Office Equipment for TMA	Goods	0.50
Goods		**35.50**
9. Constructing a building for the Traffic Control center	Works	5.00
10. Intersection Improvements at Signalized Intersections	Works	12.00
Works		**17.00**
11. Training	**Training**	**0.30**
(TMA)		**62.00**
12. **Support to the Traffic Enforcement/Compliance and Safety Unit (AA Traffic Police)**		
(a) Advisory Services and Training	Consultancy	1.00
(b) Traffic Enforcement Equipment	Goods	19.00
(Traffic Police)		**20.00**
Sub-total (TMA and Traffic Police) – (1)		**82.00**
Subcomponent 2: Improving Road and Pedestrians Safety Interventions of Selected Corridors at Identified Locations and Strengthening the Capacity of Addis Ababa City Roads Authority (AACRA)		
1. Design and supervision of installing Pedestrian footbridges	Consultancy	1.00
2. TA to establish Comprehensive Road Asset Management System and developing a Road Maintenance Manual	Consultancy	2.50
3. Advisory Services in updating road design manual, improving contract management and associated capacity building	Consultancy	1.00
4. Advisory Services on developing an improved road maintenance and associated funding strategy	Consultancy	0.50
5. Advisory Services on restructuring of AACRA and reestablishing its functional units; and establishing quality assurance systems	Consultancy	0.50
6. Development of a drainage masterplan for Addis Ababa	Consultancy	0.80
Consultancy Services		**6.30**

Component/Activity	Category	Costs
7. Implementation of Comprehensive Corridor Improvements	Works	49.00
8. Construction of Pedestrian Footbridges	Works	10.00
Works		**59.00**
9. Training	Training	0.50
Sub-total (AACRA) – (2)		**65.80**
Subcomponent 3: Improving Traffic Oversight, Public Transport Services and Systems and Strengthening the Capacity of PFTA and ACBE		
3(a) Support to PFTA		
1. Advisory Services in Operationalization of PFTA	Consultancy	1.00
2. Support the implementation of institutional and policy reform in the provision of public transport services	Consultancy	1.00
3. Assistance in Planning/Establishing Integrated Public Transport Systems for all modes	Consultancy	2.00
Consultancy Services		**4.00**
Support to PFTA (Institution)		**4.00**
3(b) ACBE		
4.Design and Supervision of the Installation of the IT Infrastructure and Systems for ACBE Operations	Consultancy	2.00
5. Advice on Optimization of ACBE Management	Consultancy	1.00
6. Design and supervision of Modernizing and Improving selected ACBS's operational facilities (workshops and depots)	Consultancy	0.50
Consultancy Services		**3.50**
7. Equipment and Software for electronic fare collection, automatic vehicle location, depot, crew and bus scheduling, inventory and spares and bus network systems	Goods	12.30
8. Modernization and Rehabilitation of selected ACBE's operational facilities (workshops and depots)	Works	10.70
9. Institutional Strengthening, capacity building and Training	Training	2.00
Works/Goods		25.00
Support to ACBE		**28.50**
Support to PFTA and ACBE - (3)		**32.50**
Subcomponent 4: Supporting AARTB and the TPMO to Improve their Business Planning and Implementation		
1. Miscellaneous Goods and Equipment	Goods	0.20
2. Project Implementation Support	Consultancy	0.80
3. Development of Strategic transport master plan for the city of Addis Ababa	Consultancy	4.00
4. Community Development Initiatives	Consultancy	1.50
5. Preparation of future activities	Consultancy	3.00
6. Training	Training	0.30
Sub-total (TPMO)- (4)		**9.80**
Total (AARTB – Component A)		**190.10**
Component B: Improvement of Integrated Urban Planning and Transport System		
Support to Addis Ababa Land Development and Management Bureua (AALDMB)		
1. Advisory Services for Preparing a Strategy and Program for Implementing Transit Oriented development	Consultancy	2.50
2. Training	Training	0.30
Sub-total (AALMDB – Component B)		**2.80**

Component/Activity	Category	Costs
Total AARTB and AALMDB (City of Addis Ababa)		**192.90**
Component C: Road Safety Interventions and Institutional Strengthening of Selected Federal Transport Institutions		
Subcomponent 1: Improving Compliance with Road Transport Rules and Regulations Nationally, through Improved Driver Training, Developing an Integrated Driver Licensing and Vehicle Registration System, and Strengthening FTA's Capacity		
1. Card Bodies and breeding documents including consumables	Goods	2.30
2. Central Personalization machines	Goods	1.22
3. Regional Office installations	Goods	0.77
4. Automated Fingerprint Identification System (AFIS) Solution Installation and Licenses	Goods	3.50
5. Federal Road Transport Data Center Installation and Licenses	Goods	6.80
6. Zone Offices installation and Licenses	Goods	7.30
7. Driving Schools Systems for 450 DS	Goods	3.00
8. Improving driver training and Testing in Ethiopia	Goods/Cons.	6.00
9. Vehicle Inspection Systems-Integrating vehicles inspection data system with the center	Goods	2.20
10. Road Accident Data Management Database.	Goods	3.00
11. Mobile replacement Enrollment Stations	Goods	0.12
12. Network and Data Center Infrastructure (Communication Infrastructure)	Goods	3.30
13. Penalty Management System	Goods	2.90
14. System for Porting Legacy Data	Goods	1.22
15. Central Help Desk Support Ticket System	Goods	1.37
Sub-total of IT components above, which will be procured in packages		**45.00**
16. Individual consultant for initial EA (6 months + time based)	Consultancy	0.50
17. Design and Supervision of the Installation of the IT Infrastructure and Systems	Consultancy	7.05
18. Develop, and deployment the IT infrastructure and Systems (included in item 1-17)	Consultancy	0.00
19. Business sustainability model and Access to information consultancy	Consultancy	0.50
20. Vehicle Inspection Systems-Reviewing the country's inspections system, developing guidelines/manuals and information sharing with the center.	Consultancy	0.25
21 Three Year Maintenance of the System (Service Level Agreements)	Cons./Goods	16.90
22. Project Management and Capacity Building (including purchase of 5 Vehicles)	Cons./ Goods	5.00
23. Change Management and Adoption Services	Cons./Goods	1.60
24. Training at Various Levels including Regional and Zonal Staff	Training	1.00
25. Institutional Strengthening to improve operational efficiency-ERP	Consultancy/Goods	2.50
26. Power interruption solution for Regional and Zonal offices.	Goods	5.00
27. Last mile connectivity establishment from each operational office to Government Network (WoredaNET)	Goods	6.00
28. One year connectivity cost from Zonal office to Regional Data Centers, or Regional Transport Offices	Services	1.00
4. Community Development Initiatives	Consultancy	0.50
Subtotal		**47.80**
Sub-total to FTA: Goods and Consultancy		**92.80**

Component/Activity	Category	Costs
Subcomponent 2: Improving Federal Traffic Enforcement Capability and Strengthening the Capacity of Federal Traffic police		
1.Road side Vehicles Inspection (Training Vans)	Goods	2.00
2.Strengthening the capacity of the Federal Traffic Police		
2(a) Consultancy/Training	Consultancy	0.50
2(b)Equipment		
2(b)(i) Portable Verification (Inside Police Car)	Goods	1.00
2(b)(ii) Mobile Application for Police	Goods	5.30
Sub-Total to Federal Police		**8.80**
Total to FTA		**101.60**
Subcomponent 3: Improving Oversight Capacity of MoT and MoC		
1. Support to MoT in developing long term program to improve skills for urban transport in collaboration with local universities	Consultancy/Goods	1.50
2. Support to MoC to Develop Construction Zone Safety Regulations and implementation Guideline		
2a. Technical Advisor to the MoC: Project Manger	Consultancy	0.20
2b.Consutancy service to develop construction zone safety regulation, legal framework and implementation guideline	Consultancy	2.40
2c. Capacity Building/Training and implementation support to MoC	Consultancy	1.40
Support to MoT/MoC		**5.50**
Total (FTA+MoT+MoC)		**107.10**
TRANSIP Grand Total		**300.00**

Annex 3: Implementation Arrangements

ETHIOPIA: Transport Systems Improvement Project

Project Institutional and Implementation Arrangements

Project Administration Mechanisms

1. The Addis Ababa Road and Transport Bureau (AARTB) will be responsible for the implementation of Components A and B of the project which involves the activities for the city of Addis Ababa. AARTB has in turn delegated the administration of procurement and financial management to the Addis Ababa City Roads Authority (AACRA). In addition to AARTB and AACRA there are number of beneficiary entities including: Transport Management Agency (TMA); Addis Ababa Traffic Police; Anbessa City Bus Enterprise (ACBE); Public and Freight Transport Authority (PFTA); Transport Programs Management Office (TPMO); and Addis Ababa Land Development and Management Bureau (AALDMB). In the meantime, the Federal Transport Authority (FTA) will be responsible for implementing the federal related activities under Component C of the project which includes subcomponents to support three beneficiary entities namely, Ministry of Transport (MoT); Ministry of Construction (MoC); and Federal Traffic Police. The schematic illustration of the implementation arrangements is provided in figures 3.1 (for city activities) and 3.2 (for federal activities). Overall coordination of the project will be the responsibility of MoT.

2. Neither AARTB nor FTA have previous working experience on the execution of Bank financed projects. Thus the capacity of the project implementation teams (PITs) will be enhanced through engaging relevant technical experts financed under the project. The implementing agencies will prepare Project Implementation Manuals with details of the operational work flow and procedures, approval steps and responsibilities of all the parties that will be involved in the project implementation.

3. The key features of the implementation arrangements will include the following:

Activities to Support the City of Addis Ababa (Components A and B)

4. **A Steering Committee (SC).** The SC has been established and is chaired by the Head of the AARTB. Other members of the SC include the Head of AALMDB; General Managers of AACRA, ACBE, TMA, TPMO; Public and PFTA; and Addis Ababa Traffic Police. The General Manager, TPMO will co-chair the SC. The functions of the SC will be to: (a) provide strategic and policy guidance for project preparation and implementation; (b) resolve any project preparation, coordination, and implementation bottlenecks that may arise; and (c) ensure that the PIU is staffed adequately as well as provided with adequate resources to perform its responsibilities.

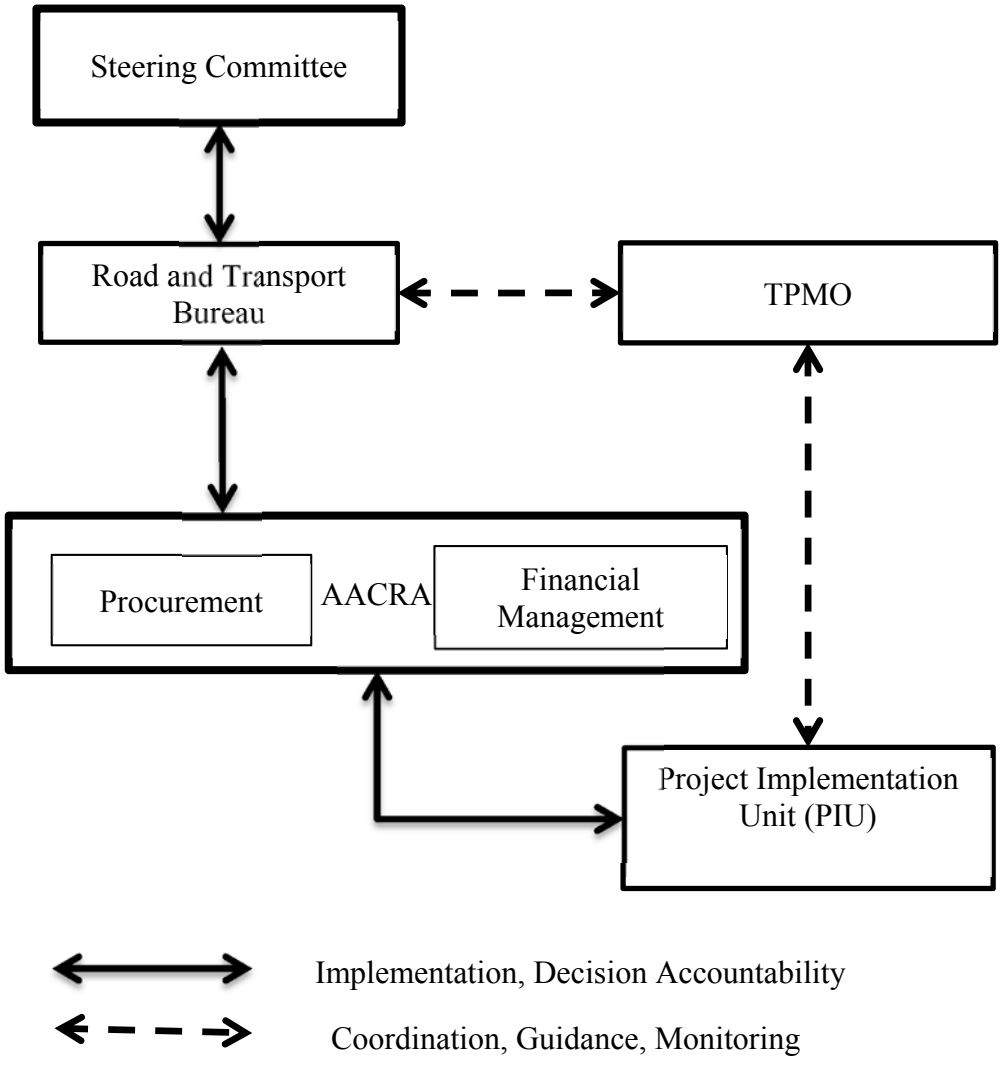
5. **AARTB.** The Head of AARTB which will chair the SC; ensure that the Project Implementation Unit (PIU) is adequately staffed at all times during the life of the project as well as handle high level communication with the Bank and other stakeholders.

6. **TPMO under AARTB.** The General Manager TPMO will co-chair the SC and be responsible for coordination; providing the necessary facilitation including adequate office space and a conducive working environment, technical support and advice for the preparation and implementation of the project. The PIU will be domiciled in the TPMO.

7. **City of Addis Ababa Project Implementation Unit (PIU).** The PIU will comprise representatives from the principal beneficiary entities. The PIU is empowered to manage day-to-day activities of the project in close collaboration with the TPMO and all the beneficiary entities and responsible for technical aspects of the project as well. Specifically, the PIU will review the reference and specifications initialed by the beneficiary entities as important first steps in preparing Request for Proposals for the selection of consultants, and bidding documents for the procurement of contractors, and suppliers.

8. **Beneficiary entities** will be responsible for initiating the preparation of terms of reference for consulting services contracts and specifications for works and goods.

Figure 3.1. Implementation Arrangements, City of Addis Ababa Components



9. **Head of PIU.** The Head of PIU has been appointed and will be the Secretary to the SC and is responsible for overall coordination of project preparation and implementation. The Head of the PIU reports to the General Manager, TPMO. Other functions of the office are to: (a) provide overall project coordination and reporting; (b) communicate with the Bank on project progress and problems and copies all correspondence beneficiary organizations; (c) ensure timely production of joint overall project implementation progress reports and dissemination of necessary information; (d) report to the SC all projects related matters, any difficulties/bottlenecks and policy matters that may hinder smooth project preparation and implementation; and (e) ensure that adequate coordination exists with the Implementation Agency and all other beneficiary entities as required.

10. **Project Officer** will be appointed to support the office of the Head of PIU in the overall coordination of the project.

Activities under the Federal Transport Authority

11. **Steering Committee (SC).** A separate Steering Committee will be chaired by the Hon. Minister of Transport. The members will comprise Director General, FTA; Regional State Presidents/Mayors; Federal Head of Traffic Police; Representative of MoFEC; Representative of the Ministry of Communications and Information Technology; and representative of the Ministry of Construction. The Director of FTA will be the Secretary of the SC. The Committee will meet quarterly.

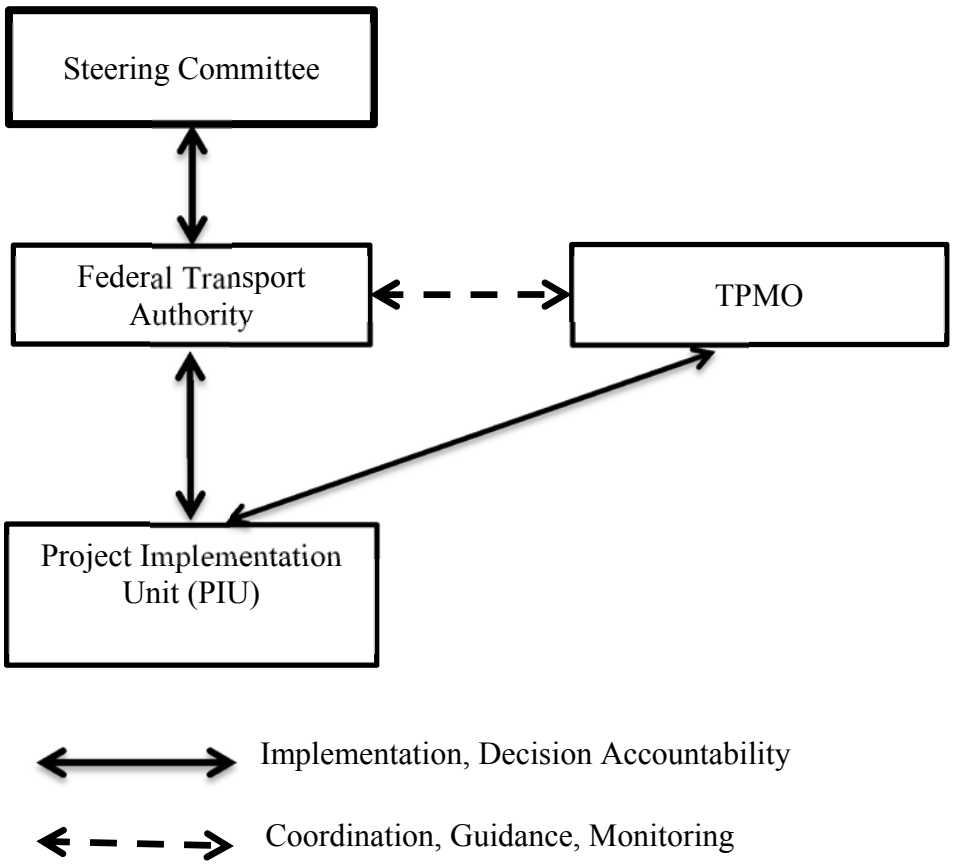
12. The committee will provide strategic guidance at the federal level and resolve any high level issues including those beyond the mandate of the technical steering committee; and resolve any non-technical stakeholder related issues.

13. **Technical Steering Committee.** The Committee chaired by the Director General, FTA will comprise, the Heads of Transport Bureaus in the Regions and Chartered Cities; Project Manager; representative of Federal Police (preferably Head of Traffic Police) and Directors from the affected department of FTA. The Project Manager will be the Secretary. The Committee will be responsible for: (a) the approval of bidding documents, request for proposals, evaluation reports, contractual agreements and overall steering, coordinate, and providing strategic direction and guidance to the Project Implementation Team; (b) updating the Federal Steering Committee on the status of preparation, implementation of the project and escalating any non-technical issues impeding progress of the project for resolution; (c) review project progress, identify and foresee challenges, suggest and recommend remedial measures, and resolve any conflict or issues of a technical nature related to the project; and (d) ensuring that the PIU is staffed adequately as well as provided with adequate resources to perform its responsibilities. The Committee will meet monthly.

14. **Project Implementation Unit (PIU).** FTA will establish a Project Implementation Unit comprising staff with the right skill mix and adequate qualifications and experience for the day-to-day management of its activities under the project during preparation and implementation. The PIU will be headed by a Project Manager. The PIU will be responsible for: (a) the preparation of bidding documents, request for proposals, contractual agreements, provide strategic and policy guidance for project preparation and implementation; (b) resolving any project preparation, coordination, and implementation bottlenecks that may arise during execution of the project, (c)

overseeing and coordinating all day to day operational activities of the project; (d) identify any challenges and bring them to the attention of the technical Steering Committee; and (e) preparing bidding documents, specifications, terms of reference, request for proposals, contract documents, procurement plans, financial management reports and accounts and submit them to the technical Steering Committee for approval.

Figure 3.2. Implementation Arrangements, Federal Transport Authority Components



Financial Management, Disbursements and Procurement

15. A financial management assessment was conducted at AACRA which is legally delegated to administer the financial management of the project for the part implemented by AARTB. The other implementing entity of the project, FTA has also been assessed. The assessment was conducted in accordance with the Financial Management Manual issued by the Financial Management Sector Board on March 2010, and as reissued on February 4, 2015. The objective of the assessment was to determine whether the participating institutions have adequate financial management systems and related capacity in place which satisfies the Bank's Operation Policy/ Bank Procedure (OP/BP) 10.00.

16. The financial management assessment considers the degree to which: (a) the budgeted expenditures are realistic, prepared with due regard to relevant policies, and executed in an orderly and predictable manner; (b) reasonable records are maintained and financial reports produced and

disseminated for decision-making, management, and reporting; (c) adequate funds are available to finance the Project; (d) there are reasonable controls over Project funds; and (e) independent and competent audit arrangements are in place. The assessment also included the identification of key perceived financial management risks that may affect program implementation and proceeded to develop mitigation measures against such risks.

17. Based on the assessment conducted, it is the conclusion of the Bank's FM assessment that the FM arrangements meet the IDA's requirements according to OP/BP 10. However, action plans were agreed to address challenges and weaknesses observed.

Country Issues

18. GoE has been implementing a comprehensive Public and Financial Management (PFM) reform with support from Development Partners (DPs), including the Bank, for the last twelve years through the Expenditure Management and Control sub-program (EMCP) of the Government's civil service reform program (CSRP). This has been supported by the closed IDA financed Public Sector Capacity building Support Program (PSCAP), the ongoing Promoting Basic Services (PBS) program and other donor financing as well as Government own financing. These programs have focused on strengthening the basics of PFM systems: budget preparation, revenue administration, budget execution, internal controls, cash management, accounting, reporting, and auditing.

19. The 2014 Ethiopia Public Expenditure and Financial Accountability (PEFA) Public Financial Management (PFM) performance measurement framework assessment is finalized which notes major improvement in the PFM. Improvements in the area of budget credibility and execution as well as on internal controls were noted. The tax audit function is gradually increasing focus on risk assessment but capacity constraints still remain. External audit coverage and timeliness are also improving. Performance of the internal audit function, legislative scrutiny of audit reports, oversight of fiscal risk from public sector entities, public access to key fiscal information effectiveness in collection of tax payments, predictability of funds for commitment of funds and quality of in year budget execution reports can be further improved. The assessment also revealed that staff turnover and capacity constraints continue to exist in procurement and internal audit areas.

Financial Management Implementing Entities

20. Project financial arrangements will be coordinated and managed by both AACRA-PIU and FTA-PIU. The finance units of AACRA and FTA, apart from assuming overall financial management responsibility for project funds they implement, will at least ensure that: (a) the project financial management activities are carried out efficiently and in accordance with acceptable accounting standards; (b) the project financial affairs and administration are carried out according to the Financing Agreement; (c) qualified accountants are recruited/ assigned to handle the project funds; (d) adequate internal controls are in place and internal auditors provide regular support to the project; and (e) the project financial transactions are audited by independent external auditor in accordance with international standards on auditing. AACRA will be responsible for Component A and B and FTA will be responsible for Component C of the project. No funds will be transferred to other entities. Should a need arise in future to transfer resources to other entities,

then an FM assessment will be conducted to ensure that adequate FM capacity exists and to mitigate risks.

Budgeting

21. **Budget process.** AACRA's budgeting process follows the budgeting procedure and calendar of the City Government of Addis Ababa[17]. The working units of AACRA prepare and submit their individual budget proposal to the planning unit of AACRA where preliminary review and consolidation is performed. After review and comment by management, the consolidated annual budget[18] is submitted to the Addis Ababa City Administration Finance and Economic Development Bureau (BoFED) for review and comment. BoFED subsequently invites AACRA management for the budget hearing. BoFED gives its recommendation, consolidate the AACRA's budget into the city Government budget, and submits to the City Cabinet where the budget is reviewed and forwarded to the City Council for approval and subsequent inclusion in to the Addis Negarit Gazeta.

22. It is envisaged that the annual budget preparation process of the Project (the part which will be implemented by AARTB) will be aligned to the AACRA's budgeting process and the Project budget will be included and proclaimed as part of AACRA's budget. The Project will notify the annual plan and budget to the Bank and is expected to obtain "No Objection" from the Bank. Once the budget is approved and proclaimed, the Project will notify the beneficiaries of the approved budget on time. Details will be documented in the FM manual.

23. FTA budgeting process follows the Federal Government of Ethiopia's budgeting procedure and calendar. Budget procedures are documented in the Federal Government of Ethiopia Budget manual. The core and support functions in FTA prepare individual budget and submit to the Policy and Plan directorate where consolidation is performed. The consolidated budget will pass through internal approval processes. After the budget is internally approved by management, it will be submitted to MoFEC for recommendation and submission to Parliament for approval. The approved consolidated budget will then be proclaimed as part of the federal budget. The consolidated budget of FTA only includes sources from the Government.

24. The project (the part which will be implemented by FTA) will follow the same framework and will be proclaimed at the federal level as part of FTA budget. The Project will notify the annual plan and budget to the Bank and is expected to obtain "No Objection" from the Bank. Details will be documented in the FM manual as part of the PIM.

25. **Budget monitoring.** AACRA uses the budget administration manuals[19] of the City Government of Addis Ababa to monitor/control implementation of planned actions and budget utilization. It was noted during the assessment that payment documents are signed for budget check however registering commitments and payments in IBEX are not done on timely basis which casts

[17] The City of Addis Ababa budget classification is similar to the classification of the FDRE and follow the budgetary principle of the Federal Government.
[18] The annual budget is expected to be prepared on the basis of the three year program budget of the Authority (AACRA prepares a three year rolling Medium Term Expenditure Framework which is rolled out every year and approved by the City Council) and with consideration of the budget ceiling from BoFED.
[19] Budget Administration Manual No. 3/2003 and Plan Preparation, Follow up and Review Manual Megabit 2006EC

doubt on the reliability of the budget check (accountants are expected to check budget availability for payment requests from IBEX and if the accounts in Integrated Budget and Expenditure (IBEX) are not updated in real-time, it will be difficult to ascertain the validity of the budget check). Thus, the system should be updated to allow for real-time and verification for budget availability should be performed on the basis of updated balances to exercise the intended control. AACRA reports budget utilization on monthly basis to management and on quarterly basis to BoFED. The expenditures are compared with budget and the variances are analyzed and budget reallocation/ readjustment/ variation requests are made (at least twice per year) to adjust the approved budget. The reports are produced by using spreadsheet instead of directly by automated accounting systems.

26. At FTA, there are some weaknesses in budget monitoring and control aspects. Although comparisons of expenditure with the budget are performed on quarterly basis, there is a lack of adequate systematic process of budget monitoring including comparison of payments and expenditure with the available budget before authorization. Verification of availability of funds is not done at the budget control and disbursement unit under finance during payment processing mainly as a result of inadequate number of staff. Therefore, there is a need to improve budget monitoring such that a systematic comparison of expenditure with budget before approval of transactions is made, and regular analysis of variances between actual and budgeted expenditure is done including explaining major variances to management for necessary corrective actions. This will be followed up during implementation.

27. The project will follow the established budget process and implement it as foreseen in the project document and/or the Financing Agreement. Expenditures will be authorized on the basis of the budget in the project document and approved annual budgets. Budget tracking system will be established to monitor and report budget utilization by components, category and line items. Actual expenditure will be compared to the budget on a regular basis and explanations and remedial actions should be sought for significant variations as appropriate. Financial reports including IFRs will include a variance analysis, notes on financial management performances and explanations on material variances. The FM Manuals for both entities will depict in detail procedures on budget monitoring and variance analysis. Training will be conducted on the FM Manual within two months after FM Manual is approved by the Bank.

Accounting

28. **FM manual.** AACRA follows the City Government of Addis Ababa's accounting policies and procedures for accounting for its day to day transactions. The City Government follows a double entry bookkeeping system and modified cash basis of accounting. This is documented in the City Government's accounting manual. FTA uses the accrual basis of accounting to report to its management; and the modified cash basis for reporting to the MoFEC. It also follows the Federal Government accounting policies and procedures for accounting its day to day transactions. This is documented in the Government's accounting manual.

29. The project at both implementing entities will have its own financial management manual which will largely follow the Government accounting manual depicting all accounting policies, procedures, internal control issues, financial reporting, fund flow arrangements, budget and external audit. Project financial management manuals for each entity are expected to be developed

from the PPA and submitted to the Bank one month after project effectiveness. Training will be conducted on the FM Manual within two months after an FM Manual is approved by the Bank.

30. **Accounting software.** AACRA uses IBEX accounting system to process its accounting transactions and for financial reporting for treasury funds. For this Project, AACRA may use IBEX or other software for accounting Project funds. The existing City Government chart of accounts will be mapped with the project needs to meet the project activities. The use of accounting software such as IBEX is important but at the same time system capabilities should be carefully understood and a way forward should be proposed and agreed in the FM Manual.

31. FTA on the other hand uses an internally developed computerized accounting system to process and journalize its financial transactions. The entity financial statements extracted from this system are used for reporting to management and for external audit. In addition, FTA uses IBEX for reporting to MoFEC. FTA uses an accrual basis of accounting while the project will need to use the Government system of modified cash basis of accounting. To address the reporting requirements of the project, FTA through the PIU will maintain full sets of accounts on modified cash basis. FTA will then translate the transactions into accrual basis to record in its own system. The existing chart of accounts will be mapped with the project needs to meet the project activities. The FTA-PIU will use IBEX software or other computerized system to account for Project funds. The FM manual of the project will need to clearly document the nature of each transaction and how it appears in both books of accounts.

32. **Accounting staff.** AACRA has a Finance Administration Support Process which is currently staffed with 52 personnel according to the structure. The overall assessment of staffing arrangement in AACRA indicates that the existing accountants are adequately managing the existing funds. For the project, AACRA has assigned one senior financial specialist to be a member of the PIU to follow up on FM functions of the project under the oversight of AACRA Finance. In addition, one financial management specialist/expert has been recruited. Furthermore, looking at its capacity and the needs of the project, AACRA is in the process of recruiting two finance experts/ accountants with experience in managing Bank financed projects using the resources of the PPA. The recruitment will be completed soon but no later than one month after effectiveness of the Project.

33. FTA has a Finance Procurement and Property administration process which is currently staffed with 46 personnel from the structure that needed 72 personnel. Staffing is an issue for the FTA with a notable level of staff turnover in the recent past. The overall assessment of staffing arrangement in the FTA revealed that the existing accountants are overstretched in managing the existing funds let alone new project/donor funds. Thus it was agreed that FTA will recruit two personnel for this project (one senior financial management specialist and one accountant) from the PPA funds. The recruitment will be completed no later than one month after effectiveness of the Project. The number and capacity of the accounting staff of the project will be reviewed and increased as appropriate. Capacity building interventions will be provided as needed.

Internal Control and Internal Auditing

34. Internal control comprises the entire system of control, financial or otherwise, established by management to: (a) carry out the project activities in an orderly and efficient manner; (b) assure

adherence to policies and procedures; and (c) safeguard the assets of the project and secure as far as possible the completeness and accuracy of the financial and other records. AACRA and FTA are using those control procedures prescribed by the Government which are adequate to ensure authorization, recording and custody control. In addition, the internal control procedures over project funds will be detailed in the financial management manual(s), which is expected to be developed by PPA.

35. It was noted that at AACRA there are proper authorization and approval procedures, clear segregation of duties in the payment approval cycle, and bank reconciliations are prepared and approved by the responsible officials on a monthly basis. We also noted that there is adequate control on property management. Bin card and stock cards are maintained to track movements of inventory items with regard to quantity and value. Fixed asset register card is maintained for each assets and summary of fixed asset is maintained in excel spread sheet for all categories of fixed assets. Fixed asset and Inventory physical counts are done on annual basis and comparison is done with the record balances. However, it is important to note that the last available entity audit report for AACRA[20] revealed a number of internal control weaknesses.

36. The FTA has committed to resolve these issues and confirmed this understanding in a letter dated April 8 2016[21] (enclosing an action plan) to the Bank. FTA will engage a consulting firm or experts with financing under the project to resolve these issues. Recruitment will be completed within six months of effectiveness of the project.

37. FTA uses the Federal Government's procedures and these are adequate to ensure authorization, recording and custody controls. However, it was noted there are delays in performing monthly bank reconciliation as a result of lack of adequate personnel in the finance unit. The management letter for the entity audit also discloses weakness in fixed asset and inventory control. The weaknesses include: Existence of differences between ledger and fixed asset register; Fixed assets are not counted at the end of the fiscal year and reconciled with the register; and Failure to conduct a complete inventory count at year end. These will need the attention and action of management.

38. **Internal audit.** The internal audit units of both entities will include this Project in their work programs and conduct the audits accordingly and also share the reports with the Bank. The managements will take the necessary action on the internal audit findings. In regards to capacity at each of the entities, AACRA has an internal audit support process that reports to the General Manager. The unit performs financial, performance, compliance and special audits and uses the City Government of Addis Ababa's audit manuals for conducting the audit and for reporting. The number of staff in the unit are currently seven, excluding the head, with BA degree and modest experience. The structure of the internal audit process requires a total of eleven staff and the remaining three vacant posts are under process to be filled. The unit suffers with staff turnover which affects its performance. AACRA will strengthen the internal audit process by recruiting personnel to fill open posts.

[20] This is the audit for the year ended EFY 2004
[21] letter reference no TA/DG/275/2016 dated April 8 2016

39. FTA also has an internal audit service process which reports to the Director General of FTA. The audit unit has a financial and performance audit teams comprising a total of six professionals including the head from the structure that required seven professionals. We were informed that the remaining one vacant post is related to the IT professional required for the performance audit team and FTA had tried to recruit but failed to find a professional with the required level of expertise to join the authority. This has affected the internal audit unit performance with regard to its ability to perform IT related audits while majority of the authority's income is collected using IT infrastructure. FTA will need to strengthen the internal audit unit by recruiting the required professional.

Financial Reporting

40. AACRA and FTA will each prepare quarterly un-audited Interim Financial Reports (IFRs) for the project in form and content satisfactory to the Bank, which will be submitted to the Bank within 45 days after the end of each quarter to which they relate. The format and content of the IFR has to be agreed between the Bank and each entity at negotiation.

41. The contents of the IFRs will include: (a) Executive Summary; (b) Statement of Sources and Uses of Fund stating summary statement of funds received from IDA, expenditures incurred on the project appropriately classified and fund balances including opening and closing balances and the movements there of; (c) Statement of Use of Funds by Project Activity/Component comparing budgets with actual expenditures for the quarter and cumulative; (d) Statement of Designated account; and (e) Notes to the IFR, advance and retention statements, supporting schedules, for example, aging analysis, bank statements, trial balances. The Bank will provide trainings on IFR preparation to the Project Accountants within three months of effectiveness.

42. The project will also prepare the project's annual accounts/financial statements within three months after the end of the accounting year. AACRA and FTA will prepare their accounts in accordance with accounting standards acceptable to the Bank.

43. In relation to internal reports both AACRA and FTA prepare and submit reports to internal management, as well as BoFED and MoFEC respectively. Reports are extracted from IBEX/other software and some amendments are done in excel spreadsheets. These reports are submitted on time for AACRA but there are delays on the part of FTA. In addition, AACRA closes its accounts on time but there is considerable delay in closing the entity accounts at FTA. During the Appraisal Mission, FTA was in the process of closing EFY 2006 accounts disclosing two years account closing backlog. The EFY 2006 accounts was later on closed in April 2016 but EFY 2007 accounts are yet to be closed[22]. The key justifications provided for the delay include inadequate number of staff in the finance unit as a result of high turnover and maintenance of two parallel systems (IBEX for reporting to MoFEC and an internally developed computerized system for management) to address the reporting requirement of the authority and the Government. This requires urgent attention and action by management. FTA has confirmed that this is a priority and will be accorded highest attention to ensure the outstanding accounts are closed and backlogs audit cleared.

[22] Letter reference no TA/DG/275/2016 dated April 8 2016 submitted to the World Bank discloses that EFY 2006 accounts were closed and financial statements were submitted to auditors with the final audit report being expected by end June 2016. The same letter notes that EFY 2007 accounts are planned to be closed by end June 2016

Auditing

44. Annual audited financial statements and audit reports (including Management Letters) for the project will be submitted to the World Bank by each implementing entity within six months from the end of the fiscal year using auditors acceptable to the Bank. The project will submit two project audited financial statements to IDA in a form and content satisfactory to the Bank, one by AACRA and the other by FTA for their respective components of the project that they manage/implement. In consultation with the Office of the Federal Auditor General (OFAG), the project auditor(s) will be appointed within three months of Effectiveness by each entity. In line with good practice, the project will rotate auditors as appropriate.

45. In accordance with the World Bank's Policy on Access to Information, the World Bank requires that the borrower disclose the audited financial statements in a manner acceptable to the Bank. Following the Bank's formal receipt of these statements from the borrower, the Bank makes them available to the public according to the policy.

46. The annual financial statements prepared in accordance with acceptable standards will be produced by AACRA and FTA within three months of the end of fiscal year and provided to the auditors to enable them to carry out and complete their audit on time. The auditor would express an opinion on the project financial statements. The audit will be carried out in accordance with the International Standards of Auditing (ISA) issued by the International Federation of Accountants (IFAC). The auditor will also provide a Management Letter which will among other things outline deficiencies or weakness in systems and controls, recommendations for their improvement, and report on compliance with key financial covenants. The audit Terms of Reference (ToRs) for the project audit prepared by AACRA and FTA will be agreed with the Bank during negotiations.

47. In regard to the entity audits—AACRA financial statements has been audited by the City Government of Addis Ababa Office of the Auditor General (AAOAG) on an irregular basis[23]. AAOAG is currently auditing the entity accounts of AACRA for the EFY 2006 and EFY 2007 which is expected to be completed by the end of May 2016. The last available audit report for AACRA[24] includes internal control weaknesses related to poor cash management (existence of long outstanding deposit in transit and checks in the bank reconciliation, unresolved bank errors, differences between cash count and ledger balance), failure to raise cash receipts for miscellaneous revenues, outstanding receivable balances for which the auditors could not establish the age of the receivable, an unidentified payable balances, discrepancies between expenditures and supporting documents (instances of payments in excess of supporting documents), unsubstantiated expenditures and the existence of vehicles that do not have ownership certificates. In addition, in regards to AACRA- Road Fund accounts, the last available audit report[25] on the AACRA Road Fund accounts is for the EFY 2006 with a qualified opinion (similar to past years). The EFY2007 audit report is outstanding and AACRA has undertaken to submit it to the Bank by the end of May 2016. In regard to the EFY 2006 audit, the issues highlighted in the qualification include: existence of long outstanding advance payments and abnormal debtor balances; long outstanding tax payable

[23] We were provided with the entity audit reports issued by AAOAG for the EFY 2002 and EFY 2004. We noted from our discussion with the auditors that the EFY 2003 and EFY 2005 entity accounts of AACRA were not audited. However, AAOAG is currently auditing the entity accounts of AACRA for the EFY 2006 and EFY 2007.
[24] This is the audit for the year ended EFY 2004
[25] This is the audit for the year ended EFY 2006-Audited by Audit Services Corporation

accounts; long outstanding sundry creditors balances; expenditure of the funds were mixed up with the AACRA's expenditure leading to over and understatement of the Fund's expenditure and as a result the auditors could not ascertain the accuracy of the expenditures included in the statement of sources and uses of funds; and expenditures not substantiated with Goods receiving reports. The issues raised in the audit reports for both the entity AACRA and the Road Fund are significant and AACRA agrees to resolve the issues stated by preparing a comprehensive time bounded action plan. As such an action plan was submitted to the Bank on April 8, 2016[26]indicating actions taken and planned to be taken to address them as highlighted in the EFY 2004 and EFY 2006 audit reports relating to expenditures matters between AACRA and the Road Fund respectively. The Bank will follow up on the implementation of the action plan during project implementation.

48. FTA entity accounts has been audited by the Audit Services Corporation for the past number of years. The recent audit performed on the entity accounts is for the year ended July 7, 2013 disclosing a two years audit backlog[27]. The accounts of EFY 2006 (year ended July 7 2014) was closed and financial statements were prepared and submitted to auditors. The final audit report is expected by end June 2016. The EFY 2007 accounts are also planned to be closed by end June 2016. FTA has submitted an action plan as to how this will be achieved. In regards to the entity audit report for the year ended July 7, 2012 (which was qualified similar to the previous years). However the recent audit report for the year ended July 7, 2013 (EFY2005) was clean manifests an improvement. The management letter identified internal control weaknesses similar to those in the previous years' audits. Key issues raised include: differences between ledger and fixed asset register; failure to count fixed asset at the end of the fiscal year and reconcile with the register; failure to conduct a complete inventory count at year end; long outstanding receivable and goods in transit balances; and existence of abnormal cash balances for which appropriate action were not taken. FTA has prepared an action plan to address the weaknesses and submitted it to the Bank April 8 2016 -Letter reference no TA/DG/275/2016. The Bank will follow up on the implementation of the action plan in dealing with these challenges.

Financial Management Risk Assessment, Strengths, Weaknesses, Lessons Learned, Action Plan

49. **Risk assessment.** The residual financial management risk of the project is **Substantial**. The mitigating measures proposed in the action plan will help to reduce the risk of the project once implemented and applied during project implementation.

50. **Strengths and weaknesses.** The main strength of the project is that AACRA and FTA have internal control system that provides sufficiently for the separation of responsibilities, powers and duties, and each entity will have a financial management manual which will largely follow the Government's procedures and also provides for the peculiarity of the project. The main weakness for the FM arrangements at AACRA are lack of adequate staff in internal audit directorate and significant internal control weaknesses as reported in the AACRA's audit reports including the report on the use of the Road Fund audited by Audit Service Corporation. The weaknesses include

[26] Letter reference no 19140/F/M/16 dated April 8 2016

[27] Letter reference no TA/DG/275/2016 dated April 8 2016 submitted to the World Bank discloses that EFY 2006 accounts were closed and financial statements were submitted to auditors with the final audit report being expected by end June 2016. The same letter notes that EFY 2007 accounts are planned to be closed by end June 2016

cash management issues, property management issues, reconciliation issues, long outstanding receivable/ payables, and poor supporting documentation for expenditures.

51. The main weaknesses at FTA include: high staff turnover and inadequate staffing; poor reconciliations; system issues; weak budget monitoring; poor internal audit oversight; delays in recording the closure of accounts, and delays in getting the entity accounts audited. The entity audit reports for the past number of years have all been qualified on similar grounds and the management letter discloses recurrent internal control weaknesses in cash management, property management and debtor and creditor balances.

52. **Financial management action plan.** The following actions that encompass the mitigation measures for the risks and weaknesses are prepared, agreed and documented in Table 3.1 below.

Table 3.1. Financial Management Action Plan

	Action	Date Due By	Responsible
1	Improve budget monitoring: (a) Authorize payments on the basis of approved budget; (b) Maintain budget tracking mechanism in a system or excel spreadsheet; (c) Produce regular budget monitoring reports and explaining major variances.	During Implementation	AACRA/FTA
2	Improve accounting arrangement (a) Develop project FM manual using the PPA; (b) Provide training on the FM Manual; (c) Recruit two finance experts for AACRA and two for FTA and review the number and capacity of FM staff of the project; (d) Address staffing vacant posts for both FTA and AACRA. This is particularly important for FTA as there are serious challenges in staffing	(a) One month after project effectiveness (b) Within two months after FM Manual is approved by the Bank (c) One month after effectiveness (d) Regularly	AACRA/FTA
3	Address internal control issues according to the letter of FTA submitted on April 8, 2016, letter reference no TA/DG/275/2016. A consulting firm or experts will be recruited to resolve these issues with financing under the project	No later than six months after effectiveness	FTA
4	Improve on Internal Audit (a) Recruit internal auditors to fill the vacant posts in the internal audit unit; (b) Internal auditor will include the project in their annual plans and will perform an audit on an ongoing basis and share the report to the Bank	During implementation	AACRA/FTA
5	IFR/Report issues (a) Trainings will be provided by the Bank (b) IFRs will be submitted to the Bank within 45 days from the quarter	(a) Within two months of effectiveness (b) Within 45 days of the end of quarter	a. WB b. AACRA/FTA
6	Audit issues (a) Recruitment of external Auditors at early stages of the project; (b) Project annual financial statements will be prepared on time and strict follow up on timely closure of accounts will be made and	(a) Within three months of effectiveness (b) Within three months of year end (c) Within six months of the end of each fiscal year	a.-c. AACRA/FTA d. AACRA/FTA and WB e. AACRA/FTA

	(c) Submission of annual audited financial statements and audit report including the management letter; (d) Disclosure-In accordance with Bank Policy, the Bank requires that the borrower disclose the audited financial statements in a manner acceptable to the Bank following; formal receipt of these statements from the borrower, the Bank makes them available to the public in accordance with The World Bank Policy on Access to Information; and (e) Resolve the issues being reported in the entity audit reports and follow up of the issues at all levels. (i) AACRA should submit the outstanding audit report of EFY 2006 and EFY 2007 of AACRA, including the Road Fund (for the EFY 2007) by end May 2016 (ii) FTA should discuss with the Auditors and submit to the Bank by end of June 2016 the audit report of EFY 2006. In addition by end of June 2016 FTA will close its EFY 2007 accounts and start the audit process culminating in submitting the report by end of July 2016. (iii) Provide quarterly progress update on the implementation of the action plans to address the issues raised in the recent entity audit reports along with quarterly IFRs	(d) Annually (e) According to dates mentioned	

Financial Management Covenants

(a) Maintenance of satisfactory FM systems for the program;

(b) Submission by AACRA and FTA of IFRs for the project for each fiscal quarter within 45 days of the end of the quarter; and

(c) Submission by AACRA and FTA of annual audited financial statements and Audit Reports within six months of the end of each fiscal year.

FM Supervision Plan

53. The project will be subject to full on site supervision, at least twice per year on the basis of the current FM risk assessment after mitigation measures. After each supervision visit, the risk will be measured and recalibrated accordingly. Additional supervision activities will include: partial supervision on the follow up of the compliance with the agreed FM arrangements, as well as timely follow-up of issues arising from reviews and field visits; desk review of quarterly IFRs; desk review of internal audit reports; desk review of annual audited financial statements; transaction review; and updating the FM rating in the Implementation Status and Results Report (ISR) and the Portfolio and Risk management (PRIMA) system.

Fund Flow and Disbursements

54. **Disbursements arrangements.** All disbursement methods are available to the project. This include advance to the designated account, reimbursements, direct payments, and special commitments. The transaction based disbursement method using statements of expenditure will be used when disbursing funds to the Designated Accounts and for reimbursement for the projects implemented by AARTB (the FM function of which is delegated to AACRA) and FTA. Further details about disbursements to the project will be included in the Disbursement Letter and Disbursement Hand Book. If ineligible expenditures are found to have been made from the Designated Account, the Borrower will be obligated to refund the same. If the Designated Account remains inactive for more than six months, the Borrower may be requested to refund to IDA amounts advanced to DA. Table 3.2 specifies the categories of Eligible Expenditure that may be financed out of the proceeds of the financing from the Bank, the allocations of the financing to each category.

Table 3.2. Eligible Expenditures per Category

Category	Amount of the Financing Allocated (expressed in SDR)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) Goods, works, non-consulting services, consultants' services, Training and Operating Costs under AARTB's Respective Parts of the Project	134,500,000.00	100%
(2) Goods, works, non-consulting services, consultants' services, Training and Operating Costs under FTA's Respective Part of the Project	75,000,000.00	100%
(3) Refund of Preparation Advance	3,500,000.00	Amount payable pursuant to Section 2.07 of the General Conditions
TOTAL AMOUNT	213,000,000.00	

55. IDA will have the right, as reflected in the Financing Agreement, to suspend disbursement of the funds if reporting requirements are not complied with. Generally all these disbursement

arrangements and policies are detailed in the World Bank disbursement guidelines for projects dated May 2006.

56. **Banking arrangements for AACRA and FTA.** AACRA and FTA will open a new Designated Account denominated in United States Dollars (US$) at the National Bank of Ethiopia. Each will also open local Account in Birr to receive transfer from the US$ account. The details of both accounts (the designated and project account) along with the details of account signatories will be communicated to the Bank within one month after effectiveness by AACRA and FTA. These accounts will finance all eligible project expenditures according to the Financing Agreement. The banking details of the PPA will be used for the main project.

57. For the project implemented by AARTB, the administration of financial management has legally been delegated to AACRA. Thus the AACRA- PIU will now manage all funds. No funds will be transferred to other entities. Should a need arise in future to transfer resources to other entities, then a FM assessment for them will be conducted to ensure that adequate FM capacity exists and to mitigate risks.

58. **Funds flow arrangements using designated account advance method.** Funds flow arrangements for the project (through the designated and project bank accounts above) are as follows and illustrated in figures 3.3 and 3.4 for AACRA and FTA respectively. IDA will make an initial advance disbursement into the designated account for the project managed by AACRA and FTA in US Dollars upon receiving a withdrawal application from the respective entities. Subsequent replenishment of funds from IDA to the two Designated Accounts will be made upon evidence of satisfactory utilization of the advance, reflected in SOEs and/or on full documentation for payments above SOE thresholds. Replenishment applications would be required to be submitted regularly (preferably on a monthly basis). Funds can be transferred from the designated accounts to the project local currency account where payments in relation to project eligible expenditure can be made. In addition, payments could also be effected from the designated account for eligible expenditure.

Figure 3.3. Funds Flow Diagram for AACRA

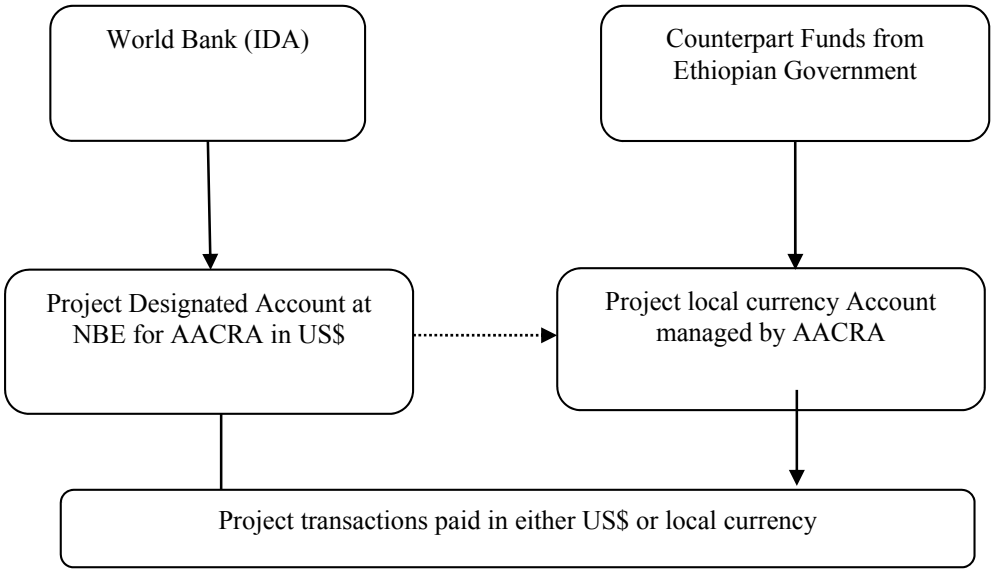
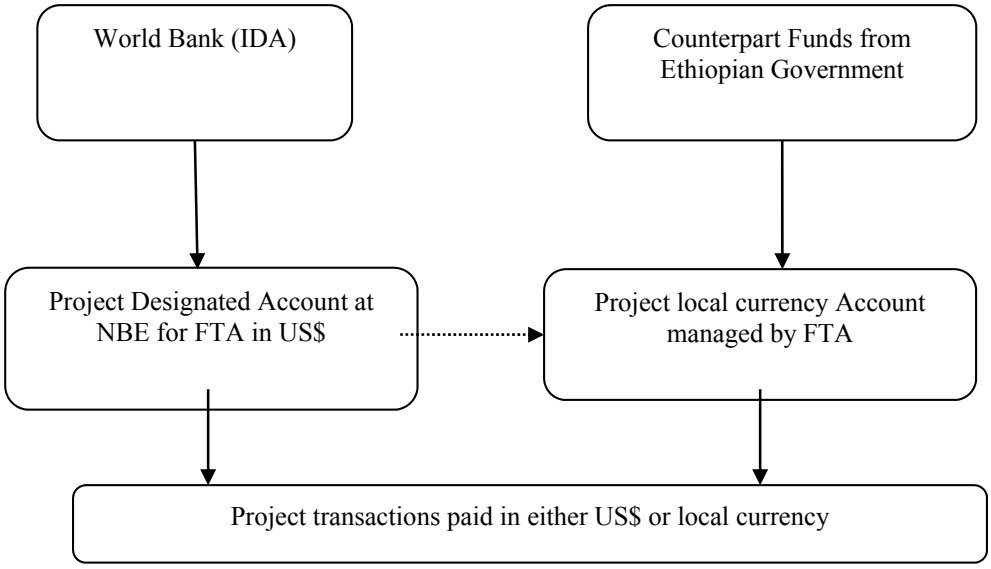


Figure 3.4. Funds Flow Diagram for FTA



59. Counterpart funds from the Federal Government of Ethiopia can be deposited in the Project local currency account to pay local currency project transactions. Alternatively, counterpart contributions can also be made from each payment (at transaction level) from Treasury accounts of both AACRA and FTA and accounting recording will be carefully made at each transaction of the Project accounts.

Procurement Arrangements

General

60. Procurement under the project to be financed through IDA would be carried out in accordance with: (a) "Guidelines: Procurement of Goods, Works, and non-Consulting Services Under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" dated January 2011 revised July 2014; (b) "Guidelines: Selection and Employment of Consultants Under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" dated January 2011 revised July 2014; (c) "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; (d) introduction of Exceptions to National Competitive Bidding Procedures; and (e) the provisions stipulated in the Legal Agreements. Bank standard documents shall be used for procurement of goods and works through International Competitive Bidding (ICB) and for all consultants exceeding US$200,000. National competitive bidding will use Government standard bidding documents and procedures subject to the exceptions discussed below.

61. A Procurement Plan acceptable to the Bank covering at least the first 18 months was discussed and agreed to as detailed in Table 3.4. For each contract to be financed by the part of the proceeds of the Credit, the different procurement methods or consultant selection methods, the need for prequalification if any, estimated costs, prior review requirements, and time frame would be agreed between the Borrower and IDA task team in the Procurement Plan. Procurement Plans will be submitted and approved though a Bank system named Systemic Tracking of Exchanges in Procurement (STEP). The Procurement Plan would be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

62. A General Procurement Notice (GPN) was published in United Nations Development Business (UNDB) and the Bank's external website on October 22, 2015. The Specific Procurement Notices for all goods and works to be procured under International Competitive Bidding (ICB) and Expressions of Interest for all consulting services to cost the equivalent of US$200,000 and above will also be published in the United Nations Development Business (UNDB), Bank's external website and the national press.

Procurement Risk Assessment

63. **Overall.** Procurable items under the project will include Civil Works contracts related to road corridors and intersections improvements; Supply and Installation of Intelligent Transport Systems (ITS); Supply and Installation of national database system for drivers' license and vehicles registry; Goods required for road and traffic management and enforcement systems and capacity building; and various Consultancy services for ITS system, traffic engineering, design and supervision of infrastructure works, preparation of parking strategy, preparation of public transport strategy, road traffic enforcement and for other urban transport related studies. Procurement under the project will be carried out by two entities: AACRA and FTA. All procurement under Components A and B (assistance to the City of Addis Ababa to improve Traffic and Safety Management) will be undertaken by AACRA while procurement under Component C (support to the Federal Transport Authority (FTA) to Improve Road Safety and Institutional Strengthening) will be undertaken by FTA.

64. Procurement risk assessment of AACRA and FTA has been conducted and the following summarizes the outcome. Both AACRA and FTA have no previous working experience on World Bank financed projects, and on the basis of the outcome of the assessment the project procurement risk rating is **High**.

(a) AACRA

65. AARTB is established under the Addis Ababa City Administration with mandate to regulate and coordinate all city transport service delivery functions. Different autonomous organizations that deal with various aspects of city transport report to AARTB. AACRA is among the autonomous organizations that report to the AARTB, and it has a mandate to construct and manage city roads and associated infrastructure. Since AACRA has more operational experience in procurement and contract management of civil works and goods contracts, the AARTB has legally delegated AACRA to take procurement implementation responsibility for Components A and B activities.

66. A Project Implementation Unit (PIU) is established within the AARTB under the TPMO for purpose of project coordination and technical management of Components A and B. The PIU is currently composed of core staff pooled from organizations and units that are direct beneficiary of the project component. The PIU will be strengthened with additional technical specialists that will be hired on individual consultancy basis. AACRA shall assign a Procurement Coordinator that would be the focal person for Components A and B procurement. The Procurement Coordinator will link the PIU with AACRA for procurement matters. To support the procurement demand of the project, a Senior Procurement Specialist shall be hired that will work as team member of the PIU but reporting and being accountable to AACRA. The Procurement Coordinator supported by the Senior Procurement Specialist will coordinate procurement activities and shall ensure proper implementation of procurement procedures for Components A and B.

67. AACRA has a Force Account construction unit and hence a large annual demand for procurement of goods including construction materials, equipment rentals and purchase, spare parts and so on to feed the requirements of the various construction sites. At the same time AACRA engages Contractors through works contracts to carry out various road, bridge and drainage construction activities. It also involves design and supervision consultants to provide engineering services to the various works contracts.

68. Based on its business needs, AACRA has organized its procurement function into two separate units. Goods and equipment rental procurement responsibility is assigned to *Finance, Procurement and Property Administration Sub Process*, and Works and Consultancy procurement responsibilities are assigned to *Design Evaluation and Approval Team*. These two units will take the project procurement process responsibility. The Procurement Coordinator shall closely work with the units and shall facilitate timely decision making at each steps of the procurement process. In addition, a procurement Technical Assistance shall be availed for AACRA to help improve its overall procurement system.

(b) FTA

69. The FTA PIU will be responsible for procurement administration of Component C. The main expected procurement under Component C contract for supply and installation of integrated IT system for Driver Licensing, Vehicle Registration and Inspection, and Penalty Payment for the country; supply of goods for road traffic enforcement and for capacity building. This component will also involve other goods procurement relevant for institutional strengthening and for traffic regulation. A Procurement Specialist will be hired by FTA to deal with the procurement requirement of the component. Given the size and technical complexity of the IT system, the FTA will also hire a qualified specialist with experience and competence in dealing with similar systems.

70. FTA, on the other hand, does not deal with large and complex procurement as part of its core business. However, it regularly procures limited goods and non-consultancy services. The responsible unit for procurement is the Procurement Team under Finance, Procurement and Property Administration Process.

71. **Accountability, internal manual of the procurement process.** AACRA does not have procurement manual and hence decision making process is not formalized and described in a manual. Currently, the General Manager controls procurement decisions on all works and consultancy service contracts irrespective of the contract amount, while procurement decisions on goods procurement are delegated to Finance, Procurement and Property Administration Sub Process Owner for contracts below a predefined threshold. Given the high procurement transaction AACRA faces yearly to meet its core objectives, it is critical that the strategic importance of procurement function is recognized and a structured, organized procurement system is developed and implemented.

72. AACRA needs to also develop its own procurement manual and formalize the procurement processes decision-making, an accountability framework that assigns clear roles and responsibilities in the procurement process. The assessment recognizes AACRA's division of procurement responsibility into separate units given the need specific expertise. It is good practice that engineering procurement involving civil works and consultancies that require technical engineering background are handled by a unit composed of technical professionals, and goods and equipment procurement is handled by a separate unit with expertise in the area.

73. The project procurement implementation arrangement for Components A and B has a unique feature. The beneficiary entities are responsible to prepare TORs and Technical documents while the PIU coordinates the preparation and finalizes these technical aspects. Upon completion of this stage, this is then passed on to AACRA to initiate and implement the procurement process. Because of this arrangement, there is risk that procurement process will be delayed for lack of timely decision making as well as disagreements between parties.

74. To mitigate the risk of accountability and unclarified roles for different parties, a procurement manual as part of the PIM shall be prepared that clearly describes the procurement process that will be applicable for the project. Particularly, the manual should describe the operational work flow, roles and responsibilities of the different units, the business standard, and the linkages of the project procurement activity with the AACRA procurement system.

Accountability of each involved players shall be clearly described and agreed, and will be the basis for project procurement decision making process.

75. FTA conducts procurement based on the Federal Procurement and Property Administration Proclamation 649/2009; and the Federal Public Procurement Directive, June 2010. Most of its past procurement experience is limited to small scale purchases using Government finance. The accountability procedure under the national directive is applicable within FTA's current procurement activity. For the project, a procurement section of the PIM shall describe clearly the required procedure and processes.

76. **Record management system.** Procurement record keeping system at AACRA has two distinct features. Record keeping for Works and Consultancy contracts is poor, whereas record keeping system for Goods procurement is good. The assessment noted procurement documents for works and consultancy contracts are placed in disorganized manner in different locations, without control from loss and unauthorized access. This constitutes a great risk for the project. Hence, it is important to establish a reliable and safe record keeping system for all procurements that will be carried out under the project. The procurement manual shall clearly describe the type of records that will be kept that span the whole cycle of the procurement process. AACRA shall avail adequate space that is protected from loss and unauthorized access, and the Procurement Coordinator will ensure that required records for each procurement undertaken out of the project funds are kept systematically and can be accessible for auditing.

77. FTA maintains written records of procurement transaction, however the assessment found it is difficult to get complete documents for sample procurement done in the past. It is also noted office space is a serious problem for maintaining procurement records properly. FTA shall allocate adequate space and facilities for maintaining procurement records for Component C procurement.

78. **Staffing and organization.** AACRA does not have adequate number of qualified and experienced key staff in procurement, design, and contract management functions. Particularly, the Design Evaluation and Approval Team that is responsible for Works and Consultancy procurement as well as for review and approval of design documents lacks the required number of experienced personnel. Most of its staff have less than two year experience with the exception of the team leader, and none have taken proper procurement training. Its dual responsibility means that the existing few staff are overstretched and limited in capacity to meet the ever increasing demand.

79. Works contract management responsibility falls under a separate team named Road Contract Administration Sub-process. Experts are assigned from the team for different projects as counterpart engineers and handle client responsibilities related to quality of works and contractual cases according to the contract agreement. However, the contracts recording, tracking and monitoring system for quality and timely delivery of contracts is not well organized and effective, as exhibited by the high cost and time overruns affecting most contracts. The team that is responsible for Goods procurement appears relatively better organized and is staffed with people that took training in Government procurement.

80. Overall, because procurement is not handled by a dedicated unit, and because staff do not have experience in donor funded procurement, a qualified and experienced Senior Procurement

Specialist will be hired under the project and will be accountable to AACRA and operate from the PIU. A Procurement Coordinator from AACRA has been appointed and will be the focal person for procurement and will coordinate all procurement activities. The procurement coordinator and the senior Procurement Specialists shall use the AACRA's procurement system to process procurement steps, and shall be responsible for the overall procurement coordination and implementation for the project. Moreover, as indicated above, a separate Technical Assistance to assist improvement of AACRA's procurement system is recommended to be availed by the project.

81. Likewise, since FTA had never received financing from the Bank or other donors, the procurement staff do not have experience with Bank's procurement procedures. Likewise, a senior procurement specialist will be hired with financing under the project to manage the procurement activities of Component C.

82. **Procurement planning.** The assessment noted that AACRA is familiar with Procurement Planning, albeit with limitations. At each fiscal year, the agency prepares its annual physical work plan based on the available budget and priority of roads in the city. Design and Approval Team initiates Procurement processes of the works and consultancy contracts following the annual procurement plan. AACRA does not update and utilize the procurement plan for monitoring and follow up of activities. The assessment also noted there is practice of slicing works into small contracts. Similarly, the FTA does not prepare realist procurement plan based on realistic market prices and timing of delivery that is formally approved and that is used as monitoring tool for the procurement process.

83. For the project, it is mandatory to prepare a procurement plan and reach agreement with the Bank before procurement activities are initiated. To avoid the risk that the project may not produce realistic procurement plans that will be the basis for project interventions, detail of activities for financing under the project will be worked out in advance and specific contracts needs identified. The identified contracts were included in a procurement plan with appropriate packaging, estimates, and sequencing of procurement activities. The Bank has provided the initial hands on assistance and subsequent training will be extended as required during the implementation phase.

84. **Bidding documents and evaluation criteria.** The assessment noted, bidding documents and Request for Proposals prepared for works and consultancy contracts are generally not up to the required standards. The bidding documents and Request for Proposals do not appear to give adequate information to prospective bidders and consultants, and the formats of the documents appear to have limitations. Contract specific bidding documents are not produced. Because of work load and absence of qualified experts in preparation of bidding documents, the design team is forced to use the same bidding documents and RFPs with similar technical and financial requirements irrespective of the volume of the contracts.

85. AACRA conducts consultancy service selection process using similar procedure for goods and works contract without issuing request for expression of interest (REoI), and conducting short listing process. AACRA applies merit point bid evaluation system, and two envelope system for goods and works contracts. For works contracts, bidders that score more than 70 percent out of 100 percent in technical evaluation are selected and invited for financial bid evaluation and the

lowest evaluated bidder is recommended for award without doing combined evaluation. On the other hand, for Goods contract, combined score evaluation is carried out by applying 70 percent weight for technical and 30 percent weight for financial, and a bidder who scores maximum combined score is recommended for award.

86. However, when AACRA uses restrictive bidding process, award recommendations are made on the basis of lowest price as bidders are selected based on their pervious performance. The technical evaluation criteria are mostly based on qualification requirements, and are not set based on objective technical considerations that are shared to bidders in the Bidding Documents. These practices are against the Bank's Guidelines. AACRA has no recent experience in preparation and administration of ICB procurements in Goods and Works. As a result, there is high risk that AACRA may use procedures that are not compliant with Bank procedures.

87. The FTA Procurement Team has never been exposed to procurement of Consulting Services, as such consultancy services are awarded to Government enterprises on direct contracting basis, and the documents for such services are prepared by the relevant Directorate who require the service.

88. When procurements for the project are undertaken, care should be taken to perform procurement activities in accordance to the Bank's guidelines. To ensure the procurement processes will be in compliance with Bank's procedures, one of the selection criteria of the Procurement Specialists should be prior experience in Bank financed projects. The Procurement Specialists that will be hired for Components A and B shall be responsible to prepare bidding document and Request for Proposals for all procurement under the project.

89. **Evaluations and award decisions.** Evaluation and award decision making at AACRA has two features. Evaluation and decision making for Works and Consultancy is different from Goods evaluation and decision making. For works and consultancy bids, ad-hoc technical evaluation committee first undertakes evaluation, and then the civil works tender committee endorses the technical evaluation and submits a recommendation for the General Manager; the General Manager finally approves the award recommendation. Similarly, evaluation report and recommendation prepared by Goods Tender Committee is approved either by the General Manager or the Process Owner depending on predefined threshold limit.

90. Regarding quality of reports, the assessment noted bid evaluation reports are not self-explanatory. Reviewed evaluation reports do not give a clear picture why bidders are responsive or non-responsive in respect to the bidding document requirement. Likewise at FTA, evaluation reports are not complete to provide all the required information; rather the reports are being prepared in a form of a meeting minute with additional attachment of comparison of bids without having a report structure.

91. For the project, evaluation reports shall be prepared based on the Bank's evaluation template with description of adequate reasons for bidders' rejection and other pertinent information. For Component A, the PIU team members shall be assigned as member of ad-hoc technical evaluation committee depending on type of procurement and their representation of beneficiary organization. The procurement specialists for Component A and B shall be responsible to prepare the evaluation reports using the Bank's format.

92. **Contract management.** Contract management is challenging given that AACRA administers a large contract portfolio. Road Contract Administration Sub-process is the responsible unit to administer construction contracts signed with contractors, while the Design Evaluation and Approval Team is responsible to administer consultancy contracts. The units continuously face challenges in recruiting and retaining experienced and qualified staff to properly manage contracts. The units also face high staff turnover. There is substantial time and cost overruns on most construction contracts.

93. Most of the time AACRA is not in a position to take contractual measures on delayed contracts. Two main reasons contribute to delayed completions and cost overruns. The first is that contracts are entered without clearing right of ways. Right of Way clearing activities are carried out within the contract period and as a result contractors do not possess working areas according to the construction schedule. The second reason is that major design amendments are undertaken during the construction periods. Because of limited design review capacity of the responsible unit, contracts are signed with inadequate designs that are not accurate with the ground conditions. These limitations on the part of AACRA, prohibits it to take proper contractual measures as a result of challenge to assign clear accountability for failure to perform. It is important that AACRA strengthens its design review capacity as well as its contract management capacity, and create a robust system.

94. FTA's procurement team is mostly engaged in procurement of small scale goods and non-consulting services, where the contract administration either is relatively simple or the time to complete delivery of services is short. It does not seem that there is enough capacity for administering the proposed Component C procurement as there is no established contract management system. The Procurement Specialist together with the Technical consultant will provide contract management assistance to FTA.

95. For the project, it is recommended that works contracts shall not be signed unless right of ways are cleared to enable contractors to possess sites based on project schedules. All works contracts under the project shall be managed by AACRA's existing contract management system. However, consultancy and goods contract management will have a different feature under the project. The project envisages different beneficiary institutions, like ACBE, Traffic Police, Bureau of Transport, AACRA and so on, which have direct stake in the planned consultancy and goods contracts. The PIU shall play a critical role in coordinating inputs from the beneficiary institutions and ensuring that deliverables under the contracts are according to the expected quality and need of the beneficiaries.

96. Consultancy service deliverables shall be reviewed and approved by taking input from the beneficiary institutions. Goods and IT system supplies shall be finalized when the goods are delivered to the beneficiary institutions, and required systems are installed satisfactorily at the premises of beneficiary institutions. Contractual payment shall be released by AACRA, when it receives certificate of satisfactory performances of contracts. The PIU shall continuously asses its contract follow-up and implementation capacity, and shall strengthen its staffing need as and when necessary.

97. The assessment identified a number of risks as well as the mitigation measures tabulated in an action plan in Table 3.3.

Table 3.3. Action Plan for Procurement

Issue/Risk	Severity and Impact on Project	Mitigation Measure	Responsible
Lack of accountability and unclarified roles for different parties	High. Delay in implementation, and occurrence of non-compliant procedures	• Prepare procurement manual as part of the PIM that clearly describes the procurement process, roles and responsibilities, business standard for different steps	AACRA / PIU / FTA
Poor record keeping	High. Difficult to audit, review, resolve disputes. Facilitates abuse and corruption	• Keep records in a way that can be retrieved easily • Allocate sufficient space and facilities for procurement functions	AACRA / PIU / FTA
Inadequate procurement staff	High. Delay, poor project performance, poor quality, implementation problems, non-compliance	• Assign Procurement Coordinator for Components A and B • Recruit Senior Procurement Specialist for Components A and B • Recruit Senior Procurement Specialist for Component C	AACRA / PIU / FTA
Limitations in bidding processes	High. Poor quality documents, problems in contract stages, non-compliance practices, poor bid competition,	• Involve qualified procurement specialist for each step of the procurement process • Establish quality assurance systems	AACRA / PIU / FTA
Limitation during bid evaluation stage	High. Delays in procurement decisions, non-compliant practices	• Training to all involved in procurement decisions • Use Bank's evaluation report template	AACRA / PIU / FTA
Contract Administration	High. Delays, increased cost, project not meeting target	• Establish strong contract administration and monitoring system • Prepare and agree on format for regular reporting of status • Undertake detailed design reviews • Clear right of ways before signing works contracts • Effectively coordinate inputs from beneficiary organizations	AACRA / PIU / FTA

Applicable Procurement Methods and Thresholds

98. **Applicable procurement methods.** Procurement for goods and works under International Competitive Bidding (ICB) contracts will be undertaken using the Bank's latest Standard Bidding Documents (SBD). Procurement of Goods and Non-Consulting Services which are below the ICB threshold indicated in table 3.4 below can be procured through the National Competitive Bidding Procedure. Procurement of off the shelf goods and commodities of small value contracts of less than US$50,000 may be procured using Shopping procedures in accordance with paragraph 3.5 of

Bank Guidelines. Procurement of simple works contracts with value up to US$100,000 may be procured using shopping method. Where it has been determined to be to the advantage of the operation, Procurement of Goods and non-Consulting services under Direct Contracting shall be procured in accordance with paragraph 3.7 of the Bank's Guidelines.

99. Selection of Consultant's shall be carried out using Bank's latest Standard Request for Proposal. Consulting firms for services estimated to cost more than US$150,000 equivalents would be selected through Quality and Cost Based Selection (QCBS) method. Contracts with consulting firms services estimated to cost less than US$150,000 equivalent may be selected using Selection Based on Consultants' Qualification (CQS) method as well as QCBS method. Individual consultants' will be selected on the basis of their qualification and in accordance with Section V of the Bank's Guideline for Selection and Employment of Consultants. Consulting services for audits and other services of a standard or routine nature may be procured using the Least Cost Selection Method while Single Source Selection may be used when justified in accordance with paragraph 3.8 of the Bank's Guideline. For consulting services of value less than US$200,000 equivalent, shortlists may comprise entirely of national consultants in accordance with paragraph 2.7 of the guideline. However if the consultancy service is for Engineering and Contract Supervision, shortlists may comprise entirely of national consultants for values up to US$300,000.

100. **Prior review threshold.** The thresholds for Bank's Prior Review, and for International Competitive Bidding (ICB) including the maximum contract value for which the short list may comprise exclusively Ethiopian firms in the selection of consultants, are presented in the table below for purposes of guiding the preparation of the initial procurement plan. The procurement capacity of implementing agencies would be reviewed annually and the threshold will be revised according to the improvements or deterioration in the procurement capacity. Additionally, each procurement plan will indicate the number of contracts procured through National Competitive Bidding procedures or selection of consultants having a short list of exclusively Ethiopian firms that will be subject to prior review as part of risk mitigation irrespective of the below thresholds.

Table 3.4. Applicable Procurement Methods and Thresholds

Category	Prior Review Threshold (US$)	ICB Threshold (US$)	National Short-List Max Value (US$)
Works	≥ 5,000,000	≥ 7,000,000	n.a.
Goods, IT Systems, and Non-consultancy Services	≥ 500,000	≥ 1,000,000	n.a.
Consultants (Firms)	≥ 200,000	n.a.	≤ 200,000; ≤ 300,000 (for Engineering and Contract Supervision)
Consultants (Individuals)	≥ 100,000	n.a.	n.a.

101. **National competitive bidding procedures**. National Competitive Bidding (NCB) shall follow the Open and Competitive Bidding procedure set forth in the Ethiopian Federal Government and Procurement and Property Administration Proclamation No. 649/2009 and Federal Public Procurement Directive issued by the Ministry of Finance and Economic Development dated June 10, 2010, provided, that such procedure shall be subject to the provisions of Section I and Paragraphs 3.3 and 3.4 of the "Guidelines for Procurement of Goods, Works, and Non-Consulting

Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" (January 2011, revised July 2014) (the "Procurement Guidelines") and the following additional provisions:

(a) The Recipient's standard bidding documents for procurement of goods and works acceptable to the Bank shall be used. At the request of the Borrower, the introduction of requirements for bidders to sign an Anti-Bribery pledge and/or statement of undertaking to observe Ethiopian Law against Fraud and Corruption and other forms that ought to be completed and signed by him/her may be included in bidding documents if the arrangements governing such undertakings are acceptable to the Bank.

(b) If pre-qualification is used, the Association's standard prequalification document shall be used.

(c) No margin of preference shall be granted in bid evaluation on the basis of bidder's nationality, origin of goods or services, and/or preferential programs such as but not limited to small and medium enterprises.

(d) Mandatory registration in a Supplier List shall not be used to assess bidders' qualifications. A foreign bidder shall not be required to register as a condition for submitting its bid and if recommended for contract award shall be given a reasonable opportunity to register with the reasonable cooperation of the Recipient, prior to contract signing. Invitations to bids shall be advertised in at least one newspaper of national circulation or the official gazette, or on a widely used website or electronic portal with free national and international access.

(e) Bidders shall be given a minimum of thirty (30) days to submit bids from the date of availability of the bidding documents.

(f) All bidding for goods and works shall be carried out through a one-envelope procedure.

(g) Evaluation of bids shall be made in strict adherence to the evaluation criteria specified in the bidding documents. Evaluation criteria other than price shall be quantified in monetary terms. Merit points shall not be used, and no minimum point or percentage value shall be assigned to the significance of price, in bid evaluation.

(h) The results of evaluation and award of contract shall be made public. All bids shall not be rejected and the procurement process shall not be cancelled, a failure of bidding declared, or new bids shall not be solicited, without the Bank's prior written concurrence. No bids shall be rejected on the basis of comparison with the cost estimates without the Bank's prior written concurrence.

(i) In accordance with para.1.16(e) of the Procurement Guidelines, each bidding document and contract financed out of the proceeds of the Financing shall provide that: (i) the bidders, contractors and subcontractors, agents, personnel, consultants, service providers, or suppliers shall permit the Association, at its request, to inspect all accounts, records and documents relating to the bid submission and performance

of the contract, and to have them audited by auditors appointed by the Association; and (ii) Acts intended to materially impede the exercise of the Bank's audit and inspection rights constitutes an obstructive practice as defined in the para. 1.16 a (v) of the Procurement Guidelines.

102. **SBDs for NCB.** Standard Bidding Documents (SBDs) will be revised to consider the above exceptions and the revised documents will be agreed with the Bank. The project's procurement manual will include as an annex revised SBDs that will be applicable for the project. As an alternative the Bank's standard bidding documents can also be used.

Table 3.5. Procurement Plan for the first 18 months

S.N	Description	Estimated Amount (US$)	Method	Type	Review Type	Procuring Entity	Procurement Process Start Date
Works							
1	Construction of Pedestrian Footbridges in Addis Ababa City	10,000,000	ICB	Works	Prior	AACRA	25-May-17
2	Modernizing and Improving selected ACBE's operational facilities (workshops and depots)	10,700,000	ICB	Works	Prior	AACRA	26-Jun-17
3	Constructing a building for the Traffic Control center for TMA	5,000,000	NCB	Works	Prior	AACRA	22-Nov-17
Goods and Nonconsultancy Service							
1	Supply and Install Traffic Signal System including traffic control center system for TMA	35,000,000	ICB	Goods	Prior	AACRA	25-Jan-18
2	Traffic Enforcement Equipment for AA Traffic Police	19,000,000	ICB	Goods	Prior	AACRA	30-Sep-16
3	Supply and installation of Equipment and Software for electronic fare collection and ITS to support ACBE Operations and Management ACBE	12,300,000	ICB	Goods	Prior	AACRA	10-Aug-17
4	Portable traffic signals and Other equipment for interim traffic management for TMA	500,000	ICB	Goods	Prior	AACRA	15-Feb-18
5	Software, Documents, and Office Equipment for TMA	450,000	NCB	Goods	Post	AACRA	15-Oct-15
Consultancy Service							

S.N	Description	Estimated Amount (US$)	Method	Type	Review Type	Procuring Entity	Procurement Process Start Date
1	Traffic study, design and construction supervision of comprehensive Corridor improvements; and Design and Construction Supervision of citywide Traffic Signal/ITS system including preparing an ITS master plan for the city	6,000,000	QCBS	Consultancy	Prior	AACRA	15-Apr-16
2	Development of Strategic transport master plan for the city of Addis Ababa	4,000,000	QCBS	Consultancy	Prior	AACRA	15-Dec-16
3	Assistance in planning /establishing an integrated Public Transport Systems for all modes.	2,500,000	QCBS	Consultancy	Prior	AACRA	28-May-16
4	Design and supervision of the installation of the IT infrastructure and systems for ACBE operation.	2,000,000	QCBS	Consultancy	Prior	AACRA	28-May-16
5	Technical Assistance to establish comprehensive road asset management system and developing a road maintenance manual (includes IT Equipment and Software)	2,500,000	QCBS	Consultancy	Prior	AACRA	15-Jun-16
6	Advisory Services in Establishing and Operating the Public and Freight Transport Authority (PFTA)	1,000,000	QCBS	Consultancy	Prior	AACRA	25-Sep-16
7	Support the implementation of Institutional and Policy reform in the Provision of public Transport Service.	1,000,000	QCBS	Consultancy	Prior	AACRA	15-Mar-17
8	Advice on Optimization of ACBE Management	1,000,000	QCBS	Consultancy	Prior	AACRA	28-May-16
9	Advisory Services in Improving Metro Area Master Plan and preparing Local Development Plans	1,000,000	QCBS	Consultancy	Prior	AACRA	6-Feb-17
10	Advisory Services in updating road design manual, improving contract management and associated capacity building	1,000,000	QCBS	Consultancy	Prior	AACRA	2-April-17

S.N	Description	Estimated Amount (US$)	Method	Type	Review Type	Procuring Entity	Procurement Process Start Date
11	Development of a drainage master plan for Addis Ababa	800,000	QCBS	Consultancy	Prior	AACRA	15-Jul-16
12	Prepare Parking Strategy and Implementation Program for Addis Ababa City	750,000	QCBS	Consultancy	Prior	AACRA	25-Dec-15
13	Future Traffic Planning Studies for Addis Ababa City.	700,000	QCBS	Consultancy	Prior	AACRA	15-Jul-16
14	Design and supervision of Pedestrian footbridges construction	750,000	QCBS	Consultancy	Prior	AACRA	15-Mar-16
15	Advisory Services on developing an improved road maintenance and associated funding strategy	500,000	QCBS	Consultancy	Prior	AACRA	15-Oct-16
16	Advisory Services on restructuring of AACRA and re-establishing its functional units, and establishing quality assurance systems	500,000	QCBS	Consultancy	Prior	AACRA	10-Mar-17
17	TA to ACCRA to develop technical requirement for various consultancy services and to advise on technical deliverables from consultants	500,000	IC	Consultancy	Post	AACRA	10-Jun-16
18	Design and supervision of Modernizing and Improving selected ACBE's operational facilities (workshops and depots)	500,000	QCBS	Consultancy	Prior	AACRA	30-Apr-16
19	Development of transit oriented development (TOD) program for the city of AA.	500,000	QCBS	Consultancy	Prior	AACRA	11-Oct-16
20	Advisory Services in Establishing and Operating the Traffic Management Agency (TMA)	500,000	IC	Consultancy	Prior	AACRA	10-Feb-16
21	Preparing a detailed plan for improving pedestrian conditions, parking and motor vehicle circulation and public transport access in the Merkato market area	300,000	QCBS	Consultancy	Prior	AACRA	15-Nov-16

S.N	Description	Estimated Amount (US$)	Method	Type	Review Type	Procuring Entity	Procurement Process Start Date
22	Advisory Services and Training need assessment on traffic enforcement for Addis Ababa Traffic Police	180,000	IC	Consultancy	Post	AACRA	10-Dec-16
23	Design and Supervision of the Installation of the IT Infrastructure and Systems	7,050,000	QCBS	Consultancy	Prior	FTA	06-Sept-16
24	Institutional Strengthening to improve operational efficiency of FTA (ERP)	3,000,000	QCBS	Consultancy	Prior	FTA	20-Jun-16
25	Change Management and Adoption Services	1,600,000	QCBS	Consultancy	Prior	FTA	20-Dec-16
26	Vehicle Inspection Systems-Reviewing the country's inspections system, developing guidelines/manuals and information sharing with the center	250,000	IC	Consultancy	Prior	FTA	06-Mar-17
27	Enterprise Architect for FTA	500,000	IC	Consultancy	Prior	FTA	04-Mar-16

Environmental and Social (including safeguards)

103. The Project's anticipated social and environmental impacts have triggered Bank Operational Policy (OP/BP) 4.01 (Environmental Assessment), as well as OP/BP 4.12 (Involuntary Resettlement), and OP/BP 4.11 (Physical Cultural Resources). The environment category of the project is B Partial Assessment, as proposed activities, which for the most part involve rehabilitation/expansion of existing roads within the right of way (and will not traverse natural habitats) will have moderate and reversible impacts. Junction improvements will be constructed largely within the existing right of way.

Table 3.6. Safeguard Policies Triggered by the Project

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP 4.01)	X	
Natural Habitats (OP/BP 4.04)		X
Pest Management (OP 4.09)		X
Indigenous Peoples (OP/BP 4.10)		X
Physical Cultural Resources (OP/BP 4.11)	X	
Involuntary Resettlement (OP/BP 4.12)	X	
Forests (OP/BP 4.36)		X
Safety of Dams (OP/BP 4.37)		X
Projects on International Waterways (OP/BP 7.50)		X
Projects in Disputed Areas (OP/BP 7.60)		X

104. The Borrower has prepared (a) Resettlement Policy Framework (RPF) /Resettlement Action Plan (RAP); (b) conducted a Social Impact Assessment (SIA); and Environmental and Social Management Plan (ESMP). These documents have been reviewed, cleared and disclosed both in-country and in the Bank's InfoShop. The details are provided in Table 3.7. The specific investment location has not been identified and captured in the project detail design drawing at this stage. The RPF has been prepared for the purpose of establishing the principles and procedures to be applied in the event that involuntary resettlement, loss of land or other fixed asset, disturbance affecting livelihood or resources, limitation leading to nonphysical displacement would arise as a result of the project implementation.

105. **Managing social risk and impacts.** To preclude and manage any potential social safeguards risk arising from the project's investments, OP4.12 is triggered and the project have prepared, and consulted upon RPF to address any issues which might arise from potential land acquisition and or restriction of access under the Project. Further, the project has conducted Social Impact Assessment (SIA) to explore the potential impact of the different processes involved in delivering the project and any potential negative social consequences; and the findings of the SIA and the outcome of several consultations undertaken with potential beneficiaries have been incorporated in the design of this Project.

Table 3.7. Environmental and Social Safeguards Reports

No.	Document	Date of Clearance by Bank	Date of Disclosure in InfoShop	Date of Disclosure in-country
1	Resettlement Policy Framework	February 18, 2016	February 23, 2016	February 24, 2016
2	Environmental and Social Management Framework	February 22, 2016	February 23, 2016	February 24, 2016
3	Social Impact Assessment	February 18, 2016	April 13, 2016	May 5, 2016

Social (including Safeguards)

106. The project will be implemented in urban settings with associated social development challenges of rapid population growth, shortage of decent housing, lack of basic infrastructure and public facilities such as water, electricity, sewerage and drainage, traffic congestion, increasing crime rate, street children and homeless persons and increasing inequality, and deprivation. The project aims to increase the mobility of the city's population by improving public transport, introducing measures that will make roads safer for pedestrians and other road users, and reducing

traffic congestion. The project will include a range of institutional activities and physical improvements to existing road infrastructure rather than the construction of major new roads. The footprints of the interventions will in most cases be confined to the existing road corridor, though there will be situations where additional space will be required to construct new junctions and footbridges or to improve highway drainage. The civil works will cause additional delays at junctions, but these will be temporary.

107. The Borrower has identified five potential road corridors for improvement and given the available financing, not all of them are likely to be improved with Bank financing. The specific corridors for improvement will be determined upon completion of detailed design at which stage the financing requirements will be known and a decision made on those to be financed using Bank financing. The improvement of the corridors will involve the construction of sidewalk ways, drainages, foot crossings, streetlights and other development activities that may negatively affect the health and safety of the community unless appropriate mitigation measures are taken to address the problem. The streets that are likely to be affected include Ummer Semetar, and Arat Kilo-Piazza- Abune Petros where vendors (informal traders) are using the existing side walkways as open markets to sell brewed coffee, tea, readymade clothes and other consumable goods as a means of earning their livelihood. Improvement of the side walkways and other physical construction in such areas will therefore affect these people's livelihood activities. Also, activities for some shops along the selected road corridors for improvement may be impacted during the construction. Hence appropriate precaution will be taken under the project to minimize non-land based Economic displacement of the people working along the road corridors.

108. **Scope of impacts.** Potential direct negative social impacts associated with planned physical works under the proposed project will be along existing road corridors with limited land acquisition, from the right of way of the road. The project is therefore not expected to have any large scale, significant and/or irreversible impacts. The principal social safeguards concern under the proposed project include road safety issues that claims a total of nearly 3,000 lives annually in Ethiopia. This project will complement the efforts by the FTA where a Federal Road Safety program has been developed and approved by the GoE. Under the project, attention will be given to increasing awareness of road safety through information provision and education of adults as well as children along the selected road corridors. The project will include widening of selected existing streets in critical places to allow for pedestrian sidewalks to enhance safety. The reduction in traffic congestion along the selected streets will reduce the current practice of motorists taking shortcuts. Smooth traffic flow also has strong greenhouse gas reduction benefits and reduces local air pollution.

109. **Gender and citizen's engagement.** As explained elsewhere, the approach Ethiopia has adopted in the recent past to address urban transport has largely been by expanding transport infrastructure. This seems not to have improved accessibility for either the poor or rich. In urban areas, studies[28] indicate that men and women exhibit different travel patterns and transport needs. For instance, women are likely to have diverse travel destinations, ranging to various degrees from travelling to earn an income to accessing social services and paying visits to their relatives. Women stop more for running household errands than do men, on both inward and outward commutes and

[28] Root, A, L. Schintler and K.J. Button (2000), Women, travel and the idea of sustainable transport.

irrespective of the number of persons in a household. To minimize travel time and balance the overlapping schedules of work and household responsibilities, women also seek to minimize their travel time and to choose work opportunities at shorter distances from home.

110. Thus, identifying and addressing gaps in gender equality that will influence sector policies as well as the design, planning, and provision of infrastructure and services is critical. Attention has to be paid to the needs of all transport users distinguished by gender since they face different transport constraints. This requires that any proposed interventions should be targeted not just to improve the physical infrastructure but also to improve the means of transport, including the non-motorized transport modes as well as the quality of services. To do this, the travel behaviors of both women and men with regard to frequency of trips, travel time and mode choice must be examined to ensure that both men and women can equally afford and safely access and use transport.

111. These studies conclude that women have more limited access to available means of transport and tend to have access to fewer transport choices, thereby limiting the number and purposes of trips they make. Yet women have to fulfill their roles as workers; mothers taking care of children, handle household responsibilities and are often responsible for maintaining community and social networks. However, transportation costs can make transportation and public transport in particular fairly prohibitive, with women having to spending a higher share of their income on average than men. Given these circumstances, walking remains the main mode of travel for many women in developing countries as the other transport modes are either not available due to their high cost or not within reach due to poor location.

112. Available literature shows[29] further that pedestrian environment plays a major role in improving accessibility to transport services. Except in specific urban contexts with large supply of reliable and affordable public transportation, for most poor people, particularly women, often rising rates of crime and the lack of safe and easily accessible pedestrian environments combined with the tasks related to women's travel journeys (which range from carrying children to household goods) can lessen or limit the attractiveness of walking.

113. Unless the above issues are taken into account in designing operations, gender-based inequalities in transport could slow economic growth and poverty reduction advances. Not addressing men and women travel differences can have a negative impact on the economic and social development of economies since heavy demands on women's time restrict their ability to increase productivity and incomes, keeping them isolated and perpetuating a cycle of poverty. As a result, the studies conclude that constraints on the mobility patterns of women not only affect their household but also the development and productivity of economies as a whole.

114. The proposed project includes components that will address gender issues. In particular through the provision of pedestrian infrastructure including walkways, pedestrian crossings and improvement of public transport passengers by modernizing the operations of ACBE. The installation of an intelligent transport system will contribute to the smooth movement of vehicles and travel time thereby enabling the easy flow of passenger traffic. For women, this also means

[29] World Bank, Transport, Mainstreaming Gender in Road Transport: Operational Guidance for World Bank Staff (TP-28, March 2010); Odufuwa, B. O. 2007. Women's Participation in Household Automobile Decision Making in a Developing Economy – Nigeria. Pakistan Journal of Social Sciences, Vol. 4, No. 6 pp. 379–345

reducing long periods of time waiting for transport, the improvement of adequate facilities, and addressing over-crowding and the lack of safety.

115. The project will also facilitate citizen's empowerment by conducting social monitoring and evaluation surveys with beneficiaries before the Midterm Review (that is, after the first year's activities are carried out) and post implementation (after all subprojects are carried out) to evaluate the impact on the ground. Given the higher level of vulnerability among women in urban areas, the surveys will use gender-disaggregated data to measure and verify citizens' perceptions of the project's activities and will serve as a tool to define gender or social issues and recommendations for further improvements in the transport sector.

116. **Grievance Redress Mechanism (GRM).** The SIA and RPF have provided for the establishment of a GRM for people to report any complaints or concerns in case they feel unfairly treated or are affected by the implementation of any of the activities of the project. The grievance committees will be set up at various levels to address such complaints, including logging, tracking, and resolving grievances promptly. Citizens will have an opportunity to record complaints about the construction of sidewalk ways, drainages, foot crossings, streetlights and other development activities, resettlement, and any other perceived abuses of the project.

Environment (including Safeguards)

117. The project's anticipated environmental impacts have triggered Bank Operational Policy OP/BP 4.01 (Environmental Assessment). Potential environmental impacts may include soil erosion and disturbance of water flows, water pollution, traffic disruption, noise, gaseous and dust pollution and temporary disturbance of flora (mainly during the construction phase). In the case of the improvement of selected streets some mature trees may be lost as a result of widening pedestrians walkways. The magnitude of tree cutting in these urban areas is not sufficient to necessitate the preparation of a Forest Management Plan, or to trigger the Bank's Operational Policy on Forests, OP/BP 4.36. Nevertheless, in the event it occurs, it would be important to undertake replacement tree planting liaising with the department of city administration with responsibility for maintaining roadside verges and vegetation.

118. The Borrower prepared an Environmental and Social Management Framework (ESMF) which was reviewed, cleared and disclosed in-country and at the Bank's InfoShop. The purpose of the ESMF is to provide the Addis Ababa City Administration and the implementing agencies a framework that will facilitate compliance with relevant National, the World Bank and other safeguard requirements for sub-projects under the project in a coherent manner. The ESMF is prepared to serve as a safeguard framework to examine the environmental and social impacts of the project.

119. Apart from the proposed five road corridors selected for development under this project, the specific sites of the sub-projects to be implemented within the selected five road corridors and the other infrastructure sites are not identified at this stage and its potential impacts cannot be fully determined until such details as specific design, location, size and activities of the sub-projects are determined. Thus, the ESMF outlines the principles and procedures to be followed to screen the sub-projects against any potential environmental and social impacts at specific site and city level. The ESMF document also provides guidance in designing appropriate measures and plans to

reduce, mitigate and/or offset adverse impacts and enhance positive outcomes. The ESMF is complemented by an RPF that establishes the Project resettlement and compensation principles and implementation arrangements.

Borrower's Capacity to Implement Safeguards

120. **Safeguards management capacity.** Although the Borrower lacks experience in implementing World Bank projects, it has assigned qualified and experienced social development officer and environmental officer to be responsible for social and environmental safeguards matters .The Bank will provide the required support and capacity strengthening for the designated counterpart staff during project implementation. Therefore the project will support by enhancing this capacity through training, recruitment of additional staff complemented by consultants.

Annex 4: Implementation Support Plan

ETHIOPIA: Transport Systems Improvement Project

Strategy and Approach for Implementation Support

1. Implementation support will focus on actions that are critical for project success. In particular, emphasis will be placed on execution of reforms, progress on setting up new entities, quality of works; technical compliance; timely payment to contractors, suppliers and consultants; timely award of contracts; and adherence to implementation schedules. Continuous supervision will be encouraged given that most of the Bank's task team members are based in the Ethiopia Country Office. This will therefore enable continuous and cost-effective supervision of the project.

2. Upstream reporting, auditing and accountability, and technical compliance measures to ensure early detection and remedy of problems through ongoing oversight of the project implementation activities will be emphasized. For civil works contracts, there will ad hoc site visits, and speedy review of project implementation progress reports prepared by the engineering supervision firms that will perform the day-to-day independent certification of the quality of work, payment certificates and compliance with contract terms.

3. In case of procurement documents subject to prior review, these will be carefully reviewed by both the technical expert(s) and the Senior Procurement Specialist on the team to ensure that they comply with the project's technical requirements and the Bank's procurement and consultants guidelines.

4. The Financial Management Specialist will carry out periodic reviews of the project's two implementing agencies' financial management systems and controls and where necessary will conduct reviews of statements of expenditure and monitor the availability and adequacy of the counterpart funds as reported in the quarterly Financial Monitoring Reports/Interim Financial Reports. These reviews will be utilized for improving the implementing agencies' systems and performance in these areas.

5. Before each supervision mission, the project implementing agencies will submit to the Bank, a detailed consolidated project implementation progress report which will provide the status of the project activities and identify all implementation issues facing the project. These reports combined with site visits will be the basis for reaching agreement with the client on the activities for the upcoming period and resolution of implementation issues facing the project.

6. The Task Team will undertake supervision as follows:

   (a) Where necessary, provide technical, procurement and financial management support to the project's implementing agencies from the country based team;

   (b) Quarterly supervision reviews of the project, including visits to the project sites. The review teams will comprise an engineer, procurement specialist, financial management specialist, communications specialist, environmental specialist,

transport specialists (public transport), urban transport specialist, enterprise architect, business IT specialist, social development specialist and the task team leader;

(c) Annual fully fledged supervision missions involving all the key task team members; and

(d) The communications specialist on the team will prepare a brief on the implementation status of the project and post it on the external country office website semi-annually.

Implementation Support Plan

7. On the side of the GoE, the capacity of the implementation agencies is augmented by technical assistance and consultant services, particularly in the areas of designs, supervision, project coordination, monitoring and evaluation, and user surveys. The annual Monitoring and Evaluation (M&E) reports produced by the M&E consultants (an accredited university in Ethiopia) will be discussed at workshops with stakeholders, both during their preparation and on finalization. This will be particularly important for engaging the mini-taxis and bus operators and other private bus operators regarding the proposed reforms in the urban public transport systems.

Budget

8. The above activities would require both the Bank and the GoE's management to allocate adequate resources for their staff to be able to carry out comprehensive project supervision. Inadequate resources will hamper the implementation of the proposed intensive follow up and monitoring required for mitigating the potential risks identified.

Table 4.1. Resource Estimate

Time	Focus	Skills Needed	Resource Estimate	Partner Role
First twelve months	Technical review of bidding documents, terms of reference, proposals and bid and technical evaluation reports and review of technical reports (feasibility and design study reports)	Civil engineering, urban transport, institutional, urban transport, ICT/ITS, financial management, procurement, an independent technical/procurement and communication specialists	45 staff-weeks of Bank staff plus 26 staff-weeks of Short Term Consultant (STC). Approx.US$250,000	No partner involved but the information will be shared with other development partners involved in urban transport in Ethiopia
12-48 months	Technical review of bidding documents, proposals and supervision of works, and technical reports	Civil engineering, urban transport, institutional, urban transport, ICT/ITS, financial management, procurement, an independent technical/procurement specialist and communication	Annually, 30 staff-weeks of Bank staff plus 18 staff-weeks of STC. Approx. US$190,000 per annum	
Other	Technical review of bidding documents, proposals and supervision of	Civil engineering, urban transport, institutional, urban transport, ICT/ITS, financial management,	Annually, 30 staff-weeks of Bank staff plus 18 staff-weeks of STC.	

Time	Focus	Skills Needed	Resource Estimate	Partner Role
	works, and technical reports	procurement, an independent technical/procurement specialist and communication	Approx. US$190,000 per annum	

Table 4.2. Skills Mix Required

Skills Needed	Number of Staff Weeks/annum	Number of Trips/annum	Comments
Team Leadership	10	4 site visits	Kenya Country Office (CO) staff
Co-Team Leadership	26	4 site visits (local)	Country Office (CO) staff
Civil engineering	10	4 site visits (local)	CO staff
Urban transport	8	2 site visits	STC (International)
Enterprise Architect	10	4 site visits	STC (International)
Intelligent Transport systems (ITS)	10	4 site visits	Washington staff
ITS Business processes	5	4 site visits	Washington staff
Procurement	5	2 site visits	CO staff
Social Development	2	2 site visits	CO staff
M&E	2	2 site visits	STC (local)
Financial management	5	2 site visits	CO staff
Environmental	3	2 site visits	CO staff
Urban Planning	6	2 site visits	STC (International)
Communications	2	4 site visits	CO staff

Annex 5: Economic Analysis

ETHIOPIA: Transport Systems Improvement Project

A. Introduction

1. This annex outlines the key economic value of the proposed project for Ethiopia. Overall economic value of the project is composed of the developmental impact (understood as benefits against costs), the value of (need for) public sector involvement in this area, and the value added of World Bank support for the interventions proposed in the project. These will be discussed in turn.

B. Development Impact

2. The proposed Project Development Objectives (PDO) is to improve mobility along selected corridors in Addis Ababa and the effectiveness of road safety compliance systems throughout Ethiopia. This objective will be delivered through focus on the following key intervention areas, categorized according to the kind of investment / interventions contemplated and the types of benefits produced:

(a) Traffic safety and management improvements in Addis Ababa, specifically through:
   (i) Integrated urban corridor development based on a complete streets approach;
   (ii) Traffic management improvement through intersection design, signalization, and centralized traffic control;
   (iii) Pedestrian safety improvements; and
   (iv) Improvements in traffic enforcement.

(b) Public transport provision in Addis Ababa:
   (i) Equipment and Software for electronic fare collection and ITS for ACBE; and
   (ii) Modernizing and Improving ACBE's operational facilities (workshops and depots).

(c) Development of asset management and related systems in Addis Ababa;

(d) Capacity improvement for AARTB and related agencies;

(e) Improved capacity for planning and development control to ensure better coordination and integration of transport and land-use;

(f) Improvements to system for managing substantive and procedural compliance with driver licensing and vehicle permitting requirements in Ethiopia; and

(g) Long-term capacity development for the country on urban transport through development of a Masters' program in urban transport.

3. These intervention areas constitute eleven discrete activities around which the development impact analysis is structured. The benefits in the above system can be decomposed into three broad categories of benefits, including:

(a) Efficiency gains—reductions in the costs to agencies to deliver key transport-related services;

(b) Effectiveness gains—improvements in real world outcomes for the traveling public; and

(c) Know-how (capacity) gains—improvement in the quality or range of transport and land-use-related services provided by relevant agencies.

4. Though theoretically, each of these benefit types could be used describe each of the four intervention areas above, resulting in a 3 x 7 matrix, not all of these apply equally to each intervention. Consequently, a more straightforward way of systematizing the benefits is shown in Table 5.1. In addition to the categories of clear benefits above, there are also a number of changes induced by the interventions, the net social effects of which cannot be determined *a priori*, but would require detailed impact assessment during project implementation to ascertain.

Table 5.1. The Systematization of Costs and Quantifiable Benefits

Intervention Area	Component	Capex (US$, millions)	Enumerated Benefits
1(a). Traffic management in Addis Ababa—complete streets corridors	Implementation of Comprehensive Corridor Improvements based on context-sensitive design principles (complete streets)	52**	*Effectiveness benefits* • Reduction in delays from vehicle movement conflicts and side friction • Reduction in serious and fatal injuries from vehicle movement conflicts • Reduction in serious and fatal injuries from vehicle / pedestrian conflicts • Reduction in day-to-day variability in travel time along intervened corridor(s) • Improvement in public transport vehicle utilization / service capacity • Improvement in quality of experience for pedestrians. *Changes of indeterminate net benefit** • Total fuel consumption of vehicles on affected corridors • Total GHG emissions of vehicles on affected corridors •Contribution to air pollution by vehicles on affected corridors.

Intervention Area	Component	Capex (US$, millions)	Enumerated Benefits
1(b). Traffic management in Addis Ababa—traffic control	Intersection improvements at signalized intersections; Supply and Installation of Traffic Signal System; Construction of building for traffic control center[30]	56**	*Efficiency benefits* •Reduction in traffic police labor hours required to manage intersections *Effectiveness benefits* • Reduction in left turn / right angle crashes • Reduction in serious and fatal injuries • Reduction in average person trip travel time through intervened intersections • Reduction in day-to-day variability of person trip travel time through intervened intersections • Reduction in incident clearance time *Changes of indeterminate net benefit** • Total fuel consumption by vehicles using improved intersections • Total GHG emissions by vehicles using improved intersections •Contribution to air pollution by vehicles using improved intersections
1(c). Traffic management in Addis Ababa—Pedestrian safety	Installation of pedestrian crossings at key locations	11	*Effectiveness benefits:* • Decrease in pedestrian fatalities • Decrease in Disability Adjusted Life Years (DALYs) associated with traffic fatalities involving pedestrians • Decreased variability of walking time • Improvement in quality of experience for pedestrians
1(d). Traffic management in Addis Ababa—enforcement	Traffic Enforcement Equipment	20	*Efficiency benefits:* • Increase in ratio of cases recorded and violations/offenses • Reduction in processing time for violations/offenses *Effectiveness benefits:* • Reduction in infraction rate

[30] Variability of travel time (reliability improvements) included here, but may be hard to quantify. Distinction of signalization from ITS effects is probably not feasible, but likely along the lines of 80 percent of benefit to signal system, 10 percent to adaptive signal control, 10 percent to central traffic control (Consultant expert estimation)

Intervention Area	Component	Capex (US$, millions)	Enumerated Benefits
2. Public transport provision in Addis Ababa	Equipment and Software for electronic fare collection and ITS for ACBE	10.8	*Electronic Fare Collection:* • Improved transit travel time (from reduced dwell time at stops / stations) • Improved fare collection ratio / reduced fare evasion • Increased opportunity to contextualize fare and subsidy structure • Improved data on ridership (for service planning and other purposes) *ITS fleet and operations:* • Reduced transit travel time • Improved vehicle / fleet utilization *ITS information systems:* • New or more frequent choice riders • En-route mode shift to transit • Riders' perception of improvement in service reliability *Efficiency benefits of all of the above:* • Reduced ratio of employees per bus
2. Public transport provision in Addis Ababa	Modernizing and Improving ACBE's operational facilities (workshops and depots)	11.2	*Efficiency benefits:* • Reduced costs for routine maintenance • Improved effectiveness of routine maintenance • Improved security of ACBE's facilities
3. Asset management and related systems in Addis Ababa	Asset management software (including pavement management) and creation of necessary database for its use	2.5	*Efficiency benefits:* • Improved cost-effectiveness of maintenance expenditures • Reduced costs of infrastructure information generation • Reduced spending on functionally obsolete assets *Effectiveness benefits:* • Improvement in timely maintenance of assets *Know-how benefits:* •Improved channeling of resources to investments with higher payback
4. Capacity development for AARTB	Various activities, technical assistance and training	20.1	*Know-how benefits:* • Improved ability to control land development impacts on traffic • Improved ability to utilize parking to increase revenue and restrain demand for car use • Improved quality control over road design process • Improved quality control over road contract oversight process • Improved ability to carry out public transport service planning

Intervention Area	Component	Capex (US$, millions)	Enumerated Benefits
5. Planning and development control for better integration of transport and land-use objectives	Advisory Services for TOD and LDP planning; training and capacity development	5.8***	*Know-how benefit* • Improved capacity for planning and implementing TOD • Improved capacity for land-use control *Effectiveness benefit* • Improved compliance with strategic master plan
6. System for managing compliance with driver licensing and vehicle permitting requirements in Ethiopia	Support to Ministry of Transport: Information Technology, Infrastructure and Systems	108.6	*Efficiency benefits* • Reduced costs per driver license issued • Reduced costs per vehicle permit issued • Increased infraction penalty recovery ratio • Reduced costs per infraction penalty recovered • Increased revenues from greater compliance *Effectiveness benefits* • Lower infraction rate among younger (newer) drivers • Fewer repeat offenders • Increased effectiveness of enforcement actions • Reduced accidents attributable to driver error (due to better trained drivers) • Reduced accidents attributable to vehicle defect (due to more effective compliance system)
7. Strengthening national urban transport capacity	Support to development of university program in urban transport; support for national urban transport policy	2	*Know-how benefits:* • Increase in number of trained urban transport professionals available in labor market • Increase in availability of urban transport support materials for secondary cities in Ethiopia • Increase in understanding of how to approach urban transport growth problems in secondary cities in Ethiopia

*Net social benefit or cost of these effects cannot be forecast even qualitatively in the absence of detailed technical analysis, because the tradeoff between per unit gains and aggregation losses cannot be known a priori.
**US$6 million consultancy to design both complete streets corridors and traffic signal system is allocated evenly to each of these categories.
*** Includes activity to develop transport master plan in furtherance of urban planning principles.

5. A subset of the benefits enumerated in Table 5.1 can be quantified, and a subset of these can be monetized. For quantification, the evaluation needs to be made against a counterfactual that assumes that, in the absence of the project, existing trends in the management and investment of urban transport would continue. The assumptions of this scenario are as follows:

(a) Investment in new roads would continue to be the primary mechanism the city uses to improve transport conditions;

(b) Systematic, professionalized traffic management would not occur; traffic management would remain, *de facto*, the purview of the traffic police, who would muddle through;

(c) Quality control for AACRA would not reflect best practices in the industry;

(d) Public transport operations would continue to reflect operators' needs to reduce costs and /or increase profits, rather than enhancing services for passengers and responding to passenger demand; there would be no strategic coordination of services offered;

(e) The urban master plan would articulate a vision for how the city should develop without a strategy to guide development and change in the transport sector; and

(f) Nationally, driver and vehicle licensing in Ethiopia would remain regionally fragmented, making enforcement of driving infractions in Addis Ababa and elsewhere very difficult.

C. Detailed Analysis of Costs and Benefits

6. An extensive cost-benefit assessment of the TRANSIP project, particularly enumerated intervention areas 1(a) and 1(b) in Table 5.1, would require outputs from detailed studies which are not available at the time of this writing. The closest approximation that can be made is to compare the ex-post economic assessment results of other projects having similar components to the present project. For this, we use three urban transport projects from China implemented during the previous decade. These are presented in the Table 5.2.

Table 5.2. Ex-post Economic Assessment Results of other Projects with similar components as TRANSIP

Project	Components Included	Year of Ex-post Evaluation	Ex-post ERR	Comments
Wuhan urban transport project (P069852)	Road network development; Traffic management and road safety; Public transport; Road maintenance; and Environmental protection	2010	24.40%	Component-by-component results not reported
Liaoning Urban Transport Project (P041890)	Public transport; Traffic management; Road infrastructure; and Road maintenance	2006	22.90%	Component-by-component results not reported
Urumqi Urban Transport Improvement Project	Road network development; Traffic management and road safety; Public transport; and Environmental management	2008	17.90%	For road network development component only

7. The above-referenced projects all had project ERRs within the range of 17 to 25 percent. Unfortunately, the project documentation does not permit a component-by-component assessment

of the economic rate of return. However, since the overall mix of project components is similar to that contemplated in the current project, it is likely that economic benefits of the TRANSIP project will be in similar range. New guidance under preparation at appraisal, project ERRs over 6.1 percent are recommended as acceptable for funding. The remainder of this section consists of specific considerations for each intervention area, and, where possible, preliminary estimation of ERR based on whatever information is available. The analysis is summarized in Table 5.3.

Integrated Complete Streets Corridors for Addis Ababa

8. The full range of benefits that can be expected from a "complete streets" approach to road network rehabilitation and design is not captured in the Chinese examples above, which used a more conventional approach to urban road rehabilitation. The US-based National Complete Streets Coalition (NCSC) has enumerated and identified a number of benefits associated with complete streets, which the team has adapted below to reflect conditions of and likely benefits in Ethiopia:

(a) **Complete streets bolster economic growth and stability** by providing accessible and efficient connections between residences, schools, parks, public transportation, offices, and retail destinations.

(b) **Complete streets improve safety by reducing crashes through safety improvements**. One study found that designing for pedestrian travel by installing raised medians and redesigning intersections and sidewalks reduced pedestrian risk by 28 percent.

(c) **Complete Streets encourage more walking and bicycling.** Public health experts are encouraging walking and bicycling as a response to the obesity epidemic, and complete streets can help. One study found that 43 percent of people with safe places to walk within ten minutes of home met recommended activity levels, while just 27 percent of those without safe places to walk were active enough. In a study of four communities in the US which had adopted a complete streets approach over four years, researchers found an increase of 23 and five percent in utilitarian (that is, non-recreational) walking and cycling trips, respectively.

(d) **Complete Streets can help alleviate exposure to congestion.** Streets that provide travel choices can give people the option to avoid traffic jams, and increase the overall capacity of the transportation network. Several smaller [US] cities have adopted complete streets policies as one strategy to increase the overall capacity of their transportation network and reduce congestion.

(e) **Complete Streets help children.** Streets that provide room for bicycling and walking help children get physical activity and gain independence. More children [in the US] walk to school where there are sidewalks, and children who have and use safe walking and bicycling routes have a more positive view of their neighborhood.

(f) **Complete Streets make fiscal sense.** Integrating sidewalks, bike lanes, transit amenities, and safe crossings into the initial design of a project spares the expense of retrofits later. Jeff Morales, former Director of Caltrans, said, "by fully considering the needs of all non-motorized travelers (pedestrians, bicyclists, and persons with

disabilities) early in the life of a project, the costs associated with including facilities for these travelers are minimized." In Washington State, which has an active program of Main Street projects, one study found that had a complete streets approach been designed into each Main Street project from the beginning, the state would have saved around 30 percent of investment (US$9 million per project) associated with reduced scope, schedule, and budget changes.

9. Many of these benefits detailed by the NCSC might not be quantifiable in an *ex ante* analysis. What might be quantifiable are the following enumerated benefits:

(a) Effectiveness benefits
  (i) Reduction in delays from vehicle movement conflicts and side friction;
  (ii) Reduction in serious and fatal injuries from vehicle movement conflicts;
  (iii) Reduction in serious and fatal injuries from vehicle / pedestrian conflicts;
  (iv) Reduction in day-to-day variability in travel time along intervened corridor(s);
  (v) Improvement in public transport vehicle utilization / service capacity; and
  (vi) Improvement in quality of experience for pedestrian.

(b) Externalities
  (i) Total fuel consumption of vehicles on affected corridors;
  (ii) Total GHG emissions of vehicles on affected corridors; and
  (iii) Contribution to air pollution by vehicles on affected corridors.

10. However, as mentioned, quantifying these benefits would require detailed input from the design studies for the five candidate corridors. Indeed, these quantified costs and benefits coming out of the concept design studies will be used in a rigorous process of selection of the corridor(s) for investment funding under the project. It is anticipated that a multi-criteria evaluation technique will be used, since some of the enumerated benefits can be quantified but not monetized. Even so, it is likely that the evaluated economic return of the investment will be a main factor in this multi-criteria approach.

11. Each of the five corridors will undergo a rigorous and iterative process of concept design, through which the street-space redesign parameters will be developed and refined against costs and the above-enumerated benefits and potential benefits. These will be calculated using a range of techniques, likely including vehicle traffic and pedestrian simulations, vehicle emissions modeling, and other techniques. For each corridor, design concepts will be tested in an iterative manner, in discussions with AARTB management until a solution for each corridor is converged upon, balancing engineering, planning, and environmental criteria. This process will involve substantial capacity development for both AACRA and the TMA, as they learn how to operationalize the concepts of Complete Streets. (This benefit is enumerated in the framework above, but not captured quantitatively).

Traffic Management Improvements for Addis Ababa

12. Traffic management improvements will be accomplished through intersection design, installation of 159 signals, and development of a traffic management center that will gradually introduce centralized traffic control. Anticipated benefits are enumerated in Row 1(b) of Table 5.1. Most of these benefits are estimable on an *ex ante* basis only through contextual and detailed analysis allowing for intersection-by-intersection simulation of future conditions with and without the improvements, which are not available at the present time. Because the proposed project intervention involves simultaneously providing signals to intersections that were previously un-signalized, providing automated signal control, and implementing a centralized traffic management system, gauging the incremental benefit contribution of each is not possible. Instead, we rely on engineer's rule of thumb estimates suggesting that 80 percent of the benefit would come from the intersection improvements and traffic signalization, ten percent from automated signal control, and ten percent from centralized traffic management. These proportions are roughly in line with the allocation of resources within this component.

13. The anticipated enumerated benefits for this activity include the following:

(a) Efficiency benefits
    (i) Reduction in traffic police labor hours required to manage intersections.

(b) Effectiveness benefits
    (i) Reduction in left turn / right angle crashes;
    (ii) Reduction in serious and fatal injuries;
    (iii) Reduction in average person trip travel time through intervened intersections;
    (iv) Reduction in day-to-day variability of person trip travel time through intervened intersections; and
    (v) Reduction in incident clearance time.

(c) Externalities
    (i) Total fuel consumption by vehicles using improved intersections;
    (ii) Total GHG emissions by vehicles using improved intersections; and
    (iii) Contribution to air pollution by vehicles using improved intersections.

14. These benefits will be assessed in detail by the consultant during design study period.

Pedestrian Safety Improvements in Addis Ababa

15. Data from the Addis Ababa Police inventory of accidents shows that 73 percent of all road crashes involving deaths, and 60 percent of all road crashes involving both deaths and serious injuries are from crashes involving vehicle / pedestrian conflicts. 49 percent of these occur at marked pedestrian crossings, while a further 12 percent involve pedestrians crossing outside of marked crossing zones.

16. The specific Pedestrian Safety interventions to be carried out in Addis Ababa under the IDA credit are yet to be determined, through contextual study. Unfortunately, there is a dearth of ex-poste cost-effectiveness information in the literature, particularly for developing countries. For

example, Muñoz-Raskin and Sarasti (2008) surveyed literature for a study of footbridge cost-effectiveness and not only were they unable to find academically rigorous research on footbridges, but also that methodologies to demonstrate cost effectiveness had not been properly expounded.

17. That said, the US Federal Highway Administration maintains a database of the crash-reduction effectiveness of different interventions. Typical interventions to increase pedestrian safety, are shown below, with the number in parenthesis representing the range of crash reduction associated with the measure, as reported in the literature:

(a) Introduction and improvement in design of pedestrian crossing (17–26 percent);
(b) Increased cycle length of pedestrian crossing at signalized intersections (45–50 percent);
(c) Installation of high-visibility sidewalks (19–40 percent);
(d) Installation of raised pedestrian crosswalks (30–46 percent);
(e) Raised median with marked crosswalk (46 percent); and
(f) Pedestrian footbridges (linked to compliance rate).

18. Pedestrian footbridges' effectiveness in reducing accidents are linked to their compliance rate. For example, 100 percent compliance with use of the footbridge would mean 100 percent reduction in crashes. However, compliance is often low, raising substantial questions about cost-effectiveness. For example, Muñoz-Raskin and Sarasti (2008) examined three footbridges in Panama City, and found only 81 percent compliance. Their analysis showed that crossing time for pedestrians on the bridge was on average 233 percent of the time to cross at grade. What is unclear from any of the existent literature is whether the presence of a footbridge increases the risk of death or injury to those pedestrians who do not comply.

19. The pedestrian safety program, therefore, will involve an evaluation of the above measures, including capital costs, costs to ensure compliance, and likely compliance rates, against a range of likely benefits as below:

(a) Decrease in pedestrian fatalities;
(b) Decrease in DALYs associated with traffic fatalities involving pedestrians;
(c) Decreased variability of walking time; and
(d) Improvement in quality of experience for pedestrian.

20. The most cost-effective solutions will be selected for implementation under the project. It is anticipated that the methodology used will also help build road safety capacity of the Traffic Management Agency.

Improvements in Traffic Enforcement in Addis Ababa

21. The project will provide equipment to enhance traffic enforcement. The benefits anticipated from such equipment are:

(a) Efficiency benefits
    (i) Increase in ratio of records to violations; and
    (ii) Reduction in processing time for violations.

(b) Effectiveness benefits:
    (i) Reduction in infraction rate; and
    (ii) Reduction in speeding-related accidents

22. Improved enforcement will reduce the amount of speeding. Empirical studies in sub-Saharan Africa and elsewhere have shown the importance in speed reductions for road safety outcomes. Chisholm, Naci et al. (2012) have estimated that speeding is the single most important risk factor in sub-Saharan Africa for crash-related road fatalities, at about 25 percent. They cite results from Elvik et al (2004) showing that improved enforcement of speeds restrictions reduces road crashes by about 6 percent, and crash-related fatalities by about 14 percent. They estimate that for the sub-Saharan region, cost-effectiveness of speed reductions is about US$1,668 per Disability Adjusted Life Year (DALY) averted, the most cost-effective single measure of those they evaluate, with the exception of enforcement of bicycle helmet-use.

23. However, effective enforcement seems to be a key limiting factor in the effectiveness of speed reductions. In Oromia, a road safety Law in Ethiopia was strengthened in 2007, enacting new road safety requirements and tightening restrictions already in place, including maximum speed limitations, use of Khat and alcohol while driving, and unsafe loading penalties. While researchers did find a 12.4 percent decrease in fatality rates along the key corridor through Oromia between Addis Ababa and Djibouti, they found little change in other indicators, such as rate of non-fatal accident rates, and the amount of fatality reduction was lower than results of similar changes in comparator countries.

24. In Rwanda, for example, a similar set of changes to the Law in 2001, combined with a campaign of sensitization for both the general public and the police, as well as measures to improve effectiveness of enforcement, had reduced road-crash-related fatalities by 30 percent (Parry 2007); in Uganda, a 17 percent reduction in fatality rates following a similar intervention in 2004 was observed, with a cost-effectiveness of about US$600 per death averted or US$27 per DALY averted (Bishai, Asiimwe et al. 2008). The researchers in the Oromia study concluded that lack of effective enforcement for speed violators was the key impediment to more effective results. (Abegaz, Berhane et al. 2014) In a study of Brazilian traffic safety techniques, researchers developed a model to estimate that the same techniques applied to sub-Saharan Africa generally would yield a cost-effectiveness ratio of about US$313 per death averted (Bishai and Hyder 2006). Given these results and the high proportion of pedestrians in the fatality statistics in Addis Ababa, therefore, the team estimates that the cost effectiveness of the investments in improvement in traffic enforcement in Addis Ababa are likely to be within the US$300 to US$500 per death averted range.

Equipment and Software for Electronic Fare Collection and ITS for ACBE

25. ACBE operations are fully manual at the present time. Paper tickets are issued for each trip, fares paid with cash, and revenue and receipts are coded, digitized and checked manually on a daily basis. Staff time is also spent physically carrying cash and tickets from depots to Banks, in a well-orchestrated security process. As a result, ACBE operations are highly inefficient. Data provided to the Bank by ACBE show that, in the 2012/2013 fiscal year, 31 percent of ACBE operations were subsidized from the Addis Ababa administration, and that subsidy increased to almost 50 percent in FY 2013/2014. Salaries represent about 20 percent of ACBE's operating

budget, and are equivalent to 42 percent of the operating subsidy provided by Addis Ababa city in 2013/2014. Fuel costs are about 29 percent of the annual budget and are, by far, the highest single expense category. There are on average 4.8 employees per bus, yielding less than 6,200 revenue vehicle kilometers per year per employee.

26. On the basis of this data, the Bank estimates that the ratio of operational to non-operational employees is 1.96. Total annual non-operational employee costs is about US$1.7 million (45.8 ETB) per year, about 30 percent of total salary costs, and just over six percent of total costs. Any measures to increase the ratio of operational to non-operational employees, therefore, will have substantial impact on the cost-efficiency of the operation and, ultimately, the effectiveness of the service.

27. Intelligent Transport Systems and Electronic Fare Collection systems would generate benefits for ACBE in three categories:

(a) Electronic Fare Collection:

(i) Reduced back-office employment requirements;
(ii) Improved transit travel time (from reduced dwell time at stops / stations);
(iii) Improved fare collection ratio / reduced fare evasion;
(iv) Increased opportunity to contextualize fare and subsidy structure; and
(v) Improved data on ridership (for service planning and other purposes).

(b) ITS fleet and operations:

(i) Reduced transit travel time /Improved vehicle / fleet utilization [increased Vehicle Kilometers of Travel (VKT) per bus].

(c) ITS information systems:

(i) New or more frequent choice riders;
(ii) En-route mode shift to transit; and
(iii) Riders' perception of improvement in service reliability.

28. For the purpose of the economic analysis, two of these enumerated benefits were quantified and monetized on the basis of data provided by ACBE: improved vehicle fleet utilization and reduced back-office employment requirements. It is estimated that the ratio of employees per bus would be reduced from 4.8 to 2.8 after full implementation of the ITS measures contemplated. A further conservative estimate of VKT reduction of five percent following ITS implementation would result from both improved fleet utilization and lower dwell times. Using the estimated US$10.8 million investment cost for the component, and on the basis of an assumed three percent inflation factor, an assumed ITS system operating and maintenance cost of about US$5.3 million per year and a 20-year benefit period, on the basis of the above-referenced employee ratio change and total VKT to provide the same level of service would result in an economic rate of return of about 9.6 percent. This corresponds to a net present value of about US$3.6 million at a discount rate of 6.1 percent. Actual ERR and NPV would likely be higher, reflecting a range of benefits that have not been quantified, since a number of benefits have not been quantified.

Modernizing and Improving ACBE's Operational Facilities

29. Maintenance expenditures were 11 percent of annual expenditures in 2013/2014 or about US$4,700 per bus. Due to the current state of the motor vehicle industry in Ethiopia, maintenance is performed in-house by ACBE staff. Consequently, measures to reduce maintenance costs will have productive benefit for ACBE, either by reducing the amount of subsidy required, or enabling an expansion of service (increased vehicle kilometers of travel per bus). Anticipated benefits would come from the following efficiency benefits:

- **Efficiency benefits:**
    - Reduced costs for routine maintenance ;
    - Improved effectiveness of routine maintenance; and
    - Improved security of ACBE's facilities.

30. On the basis of information at hand, it is not possible to carry out a cost-benefit analysis on this activity, but a breakeven analysis suggests that a reduction in the average maintenance cost per bus of at least US$760 would result in an activity ERR of higher than 6.1 percent, over an assumed 20 year investment life.

Development of Asset Management and Related Systems in Addis Ababa

31. An asset management system will help different parts of the Road Transport Bureau, and particularly AACRA, better manage their assets within their areas of responsibility for the whole lifecycle of the asset. As a result, they can be expected to produce significant and different kinds of benefits, including efficiency, effectiveness, and know-how benefits. These are enumerated below:

- **Efficiency benefits***:*
    - Improved cost-effectiveness of maintenance expenditures;
    - Reduced costs of infrastructure information generation; and
    - Reduced spending on functionally obsolete assets.

- **Effectiveness benefits:**
    - Improvement in timely maintenance of assets.

- **Know-how benefits:**
    - Improved channeling of resources to investments with higher payback.

32. It is not possible to quantify or monetize these benefits, however, and the team has been unable to find previous studies quantifying or monetizing such benefits following implementation of an asset management system.

Capacity Improvement for AARTB and Related Agencies

33. The project includes a substantial amount of capacity-development activities, consistent with the stated needs for the project. These activities include the following:

(a) Advice on Optimization of ACBE Management;
(b) Advisory Services in Establishing and Operating the PTA;
(c) Advisory Services in Establishing and Operating the TMA;
(d) Advisory Services in planning and managing Service Contracts;
(e) Advisory Services in updating road design manual, improving contract management and associated capacity building;
(f) Advisory Services on developing an improved road maintenance and associated funding strategy;
(g) Advisory Services on restructuring of AACRA and reestablishing its fictional units; and establishing quality assurance systems;
(h) Assistance in Planning/Establishing an Integrated Public Transport Systems for all modes;
(i) Development of a drainage masterplan for Addis Ababa;
(j) Future Traffic Planning Studies;
(k) Institutional Strengthening, capacity building and Training;
(l) Miscellaneous Goods and Equipment;
(m) Preparation of future activities;
(n) Prepare Parking Strategy and Implementation Program;
(o) Preparing a detailed plan for improving pedestrian conditions, parking and motor vehicle circulation and public transport access in the Merkato market area;
(p) Project Implementation Support;
(q) Road Safety Awareness and Public Education Program and training;
(r) Support the implementation of institutional and policy reform in the provision of public transport services; and
(s) Training

34. Key benefits of these activities are primarily in enhancing the know-how of agencies to execute their responsibilities in ways that can have substantial impacts on accessibility, safety, and environmental impact. This includes:

(a) Improved ability to control land development's impacts on traffic;
(b) Improved ability to utilize parking to increase revenue and restrain demand for car use;
(c) Improved quality control over road design process;
(d) Improved quality control over road contract oversight process; and
(e) Improved ability to carry out public transport service planning.

35. These benefits are tangible, but cannot easily be quantified or monetized.

Improved Capacity for Planning and Development Control to Ensure Better Coordination and Integration of Transport and Land-use

36. The project includes an initial set of capacity-development activities to facilitate improved coordination of transport with land-use. These activities include:

- Carrying out studies on Transit-Oriented Developments (TOD) and preparing detailed plans for selected strategic TOD(s) as well as formulating the operation and management strategies and implementation plan for these TODs;

- Provision of advisory and technical assistance in enhancing the capacity in Metro area master planning including preparing selected Local Development Plans for strategic TOD areas consistent with the new Structural Plan;

- Building the capacity of AALDMB in carrying out its functions including enhancing actual implementation and enforcement through provision of advisory services, goods and training; and

- Supporting an update to the transport master plan to ensure better integration with land-use plans.

37. These activities will yield know-how and effectiveness benefits:

Improvements to System for Managing Substantive and Procedural Compliance with Driver Licensing and Vehicle Permitting Requirements in Ethiopia

38. Improving Ethiopia's system for managing drivers' licenses and vehicle registrations will yield numerous benefits, as systematized below.

(a) Efficiency benefits

(i) Reduced costs per driver license issued;
(ii) Reduced costs per vehicle permit issued;
(iii) Increased infraction penalty recovery ratio;
(iv) Reduced costs per infraction penalty recovered; and
(v) Increased revenues from greater compliance.

(b) Effectiveness benefits

(i) Lower infraction rate among younger (newer) drivers;
(ii) Fewer repeat offenders;
(iii) Increased effectiveness of enforcement actions;
(iv) Reduced accidents attributable to driver error (due to better trained drivers); and
(v) Reduced accidents attributable to vehicle defect (due to more effective compliance system).

39. Road safety is a major challenge in Ethiopia. The World Health Organization estimates that Ethiopia had 23,837 road traffic fatal accidents and 3,000 deaths in 2014, giving it a fatality rate of 25.3 deaths per 100,000 people, the 37th highest fatality rate among 180 countries. Yet

Ethiopia has a motorization rate of less than 5.1 vehicles per 1,000 people, making it one of the least motorized countries in the world. Its traffic fatality rate per 10,000 vehicles therefore is 64, one of the highest in the world.

40. Data provided by the FTA (2016) indicate that 91 percent of road accidents are associated with either driver error or vehicle defect, so more effective management of both licensing and vehicle registration are critical aspects of any strategy to reduce these rates. A preliminary cost-benefit analysis was carried out for the entire US$107.1 million investment under this component, including the following assumptions:

(a) Vehicle kilometers of travel, and number of vehicle registration actions will grow at the rate of vehicle growth for the past 10 years, 10.4 percent per year (African Development Bank 2013). For the registration information, this is likely a conservative estimate, because the rate of vehicle growth itself is likely to increase, and because it does not include re-registrations, which would also benefit from the investment.

(b) Current (2015) driver's license data by region was provided by the FTA. Historic annual rate of growth of driver's licenses was interpolated assuming that driver's licenses grow at the same rate as registered vehicles. Annual issuance of driver's licenses was projected to the future by assuming that past ratio of license growth to VKT growth remains constant.

(c) Accident rate in the baseline remains at the current rate of 181.8 accidents per 100,000 vehicle kilometers (team calculation).

(d) Accident rate in the investment scenario reduces off the baseline rate by 20 percent for both accidents caused by vehicle defect and those caused by driver error. (Proportions of each were provided by FTA, and it is assumed that these proportions remain consistent into the future in both baseline and investment scenario.) This is likely a low-end estimate; the team's road safety expert suggested that a reduction of 20 to 30 percent for each is consistent with international experience.

(e) Time to process a driver's license and vehicle registration reduces from 2 hours and 1.5 hours, respectively, in the baseline (figure provided by FTA) to 0.5 hours for each (figure estimated by consultant).

(f) Maintenance costs for the system are US$1,000,000 per year initially.

(g) Benefits ramp up linearly over 5 years over the investment, maintenance costs ramp up linearly over 2 years following the investment, with a 20-year evaluation period.

(h) Wages and maintenance costs are subject to 3 percent inflation rate.

41. On the basis of the above assumptions and inputs, an ERR for this activity was calculated to be 16.5 percent. This corresponds to a net present value of about US$168.8 million at a discount rate of 6.1 percent.

42. Long-term capacity development for the country on urban transport through development of a Masters' program in urban transport.

43. The project includes some activities to improve the ability of the Federal Government to manage motorization and urban transport in Ethiopia. These activities include:

- development of a long-term program to improve skills for urban transport management through engaging with local universities in developing the corresponding curriculum, and supporting students in these programs on a pilot basis;
- developing an urban transport policy and investment program; and
- support in the implementation of institutional and policy reform in the provision of public transport.

44. Key benefits of these activities include the following:

- Know-how benefits
    - Increase in number of trained urban transport professionals available in labour market;
    - Increase in availability of urban transport support materials for secondary cities in Ethiopia; and
    - Increase in understanding of how to approach urban transport growth problems in secondary cities in Ethiopia.

45. These benefits are tangible, but cannot easily be quantified or monetized.

Table 5.3. Summary of Economic Assessment by Activity

Targeted Area of Improvement	Analytic Unit	Economic Assessment Summary
Overall project	Project as a whole	Three World Bank financed investment operations in China with similar mix of interventions from mid-2000s used as comparators. Project ERRs reported in the Implementation Completion Reports ranged between 17.9 and 24.4 percent.
Traffic management and safety	1 Integrated urban corridor development based on a complete streets approach	Benefits of comparator projects (mostly from North America) are summarized qualitatively. Methodology to be used to rank and select the designed corridors for implementation through the operation, as well as the criteria to be incorporated, is also discussed.
	2 Traffic management improvement through intersection design, signalization, and centralized traffic control	Key benefits of signalization, automation, and centralized traffic control are enumerated qualitatively.

Targeted Area of Improvement	Analytic Unit		Economic Assessment Summary
	3	Pedestrian safety improvements	Data from Addis Ababa show that nearly 45 percent of all crash-related deaths in Addis Ababa involve pedestrians trying to cross a street. The economic analysis discusses how locational and design criteria will be applied to maximize effectiveness of the investment under the pedestrian safety and community connectivity program.
	4	Improvements in traffic enforcement	Comparator initiatives in East Africa and elsewhere are examined. On this basis, a cost-effectiveness assessment with respect to equipment and training supplied under this component are likely to be in the range of US$300–US$500 per death averted.
Public transport operations	5	Equipment and Software for electronic fare collection and ITS for ACBE	Using very conservative assumptions related to the specific benefits of ITS and EFC, and maintenance costs of the system, the team estimates an economic rate of return on investment under this subcomponent of about 9.6 percent. ERR for this component is likely to be significantly higher since many benefits were not quantified.
	6	Modernizing and Improving ACBE's operational facilities (workshops and depots)	Break-even analysis suggests that a reduction in average maintenance costs per bus of at least US$760 would be consistent with an ERR for this activity of higher than 6.1 percent.
Capacity to manage transport and land-use in Addis	7	Development of asset management and related systems in Addis Ababa	Anticipated benefits are enumerated qualitatively. The team was unable to identify *ex-poste* studies of benefits of asset management systems.
	8	Capacity improvement for AARTB and related agencies	Key know-how benefits are enumerated. Quantification and monetization of benefits considered infeasible.
	9	Improved capacity for planning and development control to ensure better coordination and integration of transport and land-use	Key know-how benefits are enumerated. Quantification and monetization of benefits considered infeasible.
Capacity to manage motorization and urban transport in Ethiopia	10	Improvements to system for managing substantive and procedural compliance with driver licensing and vehicle permitting requirements in Ethiopia	Using very conservative assumptions related to the impact on compliance of the new system and maintenance costs of the system, the team estimates an economic rate of return on investment under this subcomponent of about 16.5 percent. This figure monetizes changes in agency processing costs for drivers' licenses and vehicle registration, as well as reduced property damage value from reduced accidents, but does not monetize value of deaths or DALYs averted. Actual ERR, therefore, is likely to be substantially higher.
	11	Long-term capacity development for the country on urban transport through	Key know-how benefits are enumerated. Quantification and monetization of benefits considered infeasible.

Targeted Area of Improvement	Analytic Unit	Economic Assessment Summary
	development of a Masters' program in urban transport.	

D. Public Sector Involvement

46. Classically, public sector involvement in markets is justified in response to market failures. Three relevant factors of market failures include: public goods, non-inclusion of full costs and / or benefits in transaction, and asymmetric information. In addition, where market mechanisms result in outcomes that are socially intolerable because of their inequity, governments often take steps to adjust the outcomes. Urban transport in general, and the specific interventions proposed in this project, share these characteristics. The specific characteristics with respect to the key project investments are presented in Table 5.4.

Table 5.4. Characteristics of Key Project Investments

Component Identifier	Component	Public Good (Non-excludable, Non-rivalrous Consumption)	Non-inclusion of Full Costs/Benefits (Externalities)	Asymmetric Information	Shared Prosperity
	Supply and Install Traffic Signal System including traffic control centre system	1	1	-	-
	Constructing a building for the Traffic Control centre (AACRA)	1	-	-	-
	Intersection Improvements at Signalized Intersections (AACRA)	1	1	-	-
	Traffic Enforcement Equipment	1	1	-	-
	Implementation of Comprehensive Corridor Improvements	1	1	-	1
	Construction of Pedestrian Footbridges	-	1	-	1

Component Identifier	Component	Public Good (Non-excludable, Non-rivalrous Consumption)	Non-inclusion of Full Costs/Benefits (Externalities)	Asymmetric Information	Shared Prosperity
	Goods and Software in Support of the Asset Management System	1	1	1	-
	Equipment and Software for electronic fare collection and ITS for ACBE	-	1	1	1
	Modernizing and Improving selected ACBE's operational facilities (workshops and depots)	-	-	-	1
	Support to Ministry of Transport: Information Technology Infrastructure and Systems	1	1	1	-

E. World Bank Engagement

47. World Bank involvement in this project stems from a request from the Ministry of Finance and Economic Cooperation (MoFEC), who recognized that urban development in Addis Ababa and the traffic problems that are being created as a result do not support the country's goals becoming a middle income country by 2025. Specifically, MoFEC recognized that the city's approach to urban transport challenges were not adequate, and, indeed, might be exacerbating the problems, and that the Ministry of Transport was not in a position to provide guidance based on experience. It specifically sought World Bank support to help what were perceived of as intractable management and know-how problems; indeed, the project has no single major flagship investment such as a ring-road, BRT or light rail transit facility.

48. As such, the Bank's key value added is in four areas. First, it will provide technical guidance on a number of urban transport planning and management concepts that are new in Addis Ababa. Among these are Complete Streets design, public transport integration, parking policy and management as a planning and demand management tool, asset management and maintenance, and traffic impact assessment.

49. Second, the Bank, through this and potentially other operations later, will provide support and guidance for long-term institutional development of the urban transport sector, not only in Addis Ababa, but also in Ethiopia generally. At present, capacity to manage and develop urban

transport facilities and services is rudimentary in Ethiopia, often resulting in unintended outcomes. Third, the Bank's engagement, through this and potentially future operations, can help influence political priorities with respect to urban transport. This includes important issues as integrating land-use planning and development control with transport, planning for Transit Oriented Development, incentivizing a culture of road and asset management and maintenance, improving land management policy, strengthening commitment to pedestrian safety, and ensuring environmental outcomes. Finally, the Bank's involvement will help provide guidance on fiduciary processes, including procurement, resettlement, and environmental and financial management, that can help strengthen public confidence in institutions in Addis Ababa and the Federal Government.

Abegaz, T., Y. Berhane, et al. (2014). "Effectiveness of an improved road safety policy in Ethiopia: an interrupted time series study." BMC Public Health 14: 539-539.

Bishai, D., B. Asiimwe, et al. (2008). "Cost-effectiveness of traffic enforcement: case study from Uganda." Injury Prevention 14(4): 223-227.

Bishai, D. M. and A. A. Hyder (2006). "Modeling the cost effectiveness of injury interventions in lower and middle income countries: opportunities and challenges." Cost Effectiveness and Resource Allocation 4: 2-2.

Chisholm, D., H. Naci, et al. (2012). "Cost effectiveness of strategies to combat road traffic injuries in sub-Saharan Africa and South East Asia: mathematical modelling study." BMJ 344.

Muñoz-Raskin, R. and A. Sarasti (2008). Footbridges or "Foolbridges"? An Analysis of the Efficacy of Three Pedestrian Bridges in Panama City. 2008 Annual Meeting of the Transportation Research Board. Washington, DC.

Parry, J. (2007). "Rwanda's road-safety transformation." Bulletin of the World Health Organization 85(6): 425-427.

Annex 6: Existing Urban Transport Challenges

ETHIOPIA: Transport Systems Improvement Project

Additional Background and Details on Urban Transport System

1. Addis Ababa has invested heavily in its road infrastructure and most recently it is developing mass transport systems. Two Light Rail Transit (LRT)[31] lines totaling 32 km, with 32 stations, have been completed. One Bus Rapid Transit (BRT) line[32] of around 16 km is at the preliminary design stage, with a further six possible lines identified. The road network in the city is about 3,800 km, of which, 47 percent is paved[33]. Capital investment in transport constitutes about 26 percent of the city's three year Capital Investment Plan (CIP) budget, second only to water supply and sewers. However, there is inadequate allocation of funds toward road maintenance and rehabilitation. Over the last three years the city spent on average about US$260 million per year on new road construction but a mere US$6 million per year on maintenance.

2. A study in 2011 estimated that most people in Addis Ababa walk to their places of work with a share of about 54 percent of all trips. Yet the facilities provided for pedestrians are either inadequate or tend to be substandard. For instance, while sidewalks are normally provided with new infrastructure, they are not adequate for the volume of pedestrian traffic and are often built with poor access to adjacent properties or neighborhoods. Many road facilities in the city are wide, with no signalization, road markings, or pedestrian islands, and long gaps between pedestrian crossing points, making pedestrian movement across these facilities hazardous.

3. The city apparently does not allocate funds from its own revenues for road maintenance, but rather it depends entirely on an annual apportionment of the Ethiopian road maintenance fund. The inadequate maintenance of roads is contributing to the premature failure of sections of the critical network. The importance of maintenance cannot be underestimated. When roads fall from a maintainable condition to one requiring rehabilitation or reconstruction the cost rise exponentially. The project will support the city administration, particularly Addis Ababa City Roads Authority (AACRA), in exploring various maintenance delivery options.

4. The Addis Ababa Road and Transport Bureau (AARTB) is an agency of the City of Addis Ababa. In 2012, AARTB was established to oversee three existing entities, being AACRA, the Addis Ababa Transport Programs Management Office (TPMO), and the public transport operator ACBE. AARTB is mainly responsible for most of the regulatory and administrative aspects of urban passenger transport. This includes the licensing of vehicles and drivers for all categories, enforcement of violations, permit issuing for minibus-taxis and taxis, traffic management and transport operations. ACBE is the municipal-owned public transport operator. It operates a network of 119 routes with a fleet of about 700 buses, moving over 600,000 passengers in a day,

[31] The LRT lines have been developed by the Federal Government through the Ethiopian Railway Corporation. ERC has also taken responsibility for operations and maintenance, and has engaged Shenzhen Metro Corporation for this purpose.

[32] A pilot BRT line is at the detailed design stage, and will be constructed with financial assistance from the French Government, through the French Development Agency (AFD).

[33] City Government of Addis Ababa, Bureau of Finance and Economic Development, Socio-Economic Profile of Addis Ababa, 2011/2012

and is thus a significant operator. ACBE retains the direct governance and financing links with the City that it had prior to the formation of AARTB. How to address these issues so that ACBE is fully under AARTB governance is under consideration. To date, ACBE has been mainly responsible for planning its own routes, services, performance criteria, and so on. Tariff-setting is a function of the City.

5. The current public transport provision/operation and management has a number of weaknesses, with governance being a critical one. Current public transport modes and services are not integrated with regard to network coverage/routes, fares, schedules and facilities. In addition, the two bus transport modes, ACBE bus and the independently operated mini-bus-taxis are somewhat weak in planning and coordination, organization, operation, productivity and quality. There is high level of competition among these modes of public transport. There is a need for a public transport development strategy to rationalize the existing systems of operation and meet the growing demand for public transport in the city. Meanwhile, the oversight responsibility for the LRT operations and maintenance is under discussion to determine whether these would be City or Federal Government functions, while for BRT services, the system will be developed and overseen by the Addis Ababa City Government.

6. The institutional structure for urban planning and development and provision of infrastructure and services, such as transport, has been complex and fragmented. Responsibilities for urban planning and development, from the planning stages to implementation and enforcement, has rested with multiple agencies. As a result these activities are often overlapping, not clearly defined and not well-coordinated. Inter-agency coordination is still weak between transport and land use and housing agencies, resulting in large inefficiencies. There is thus an urgent need to streamline the institutional set-up, and strengthen the respective institutions' abilities and capacities to develop: (a) appropriate and clearer planning standards; (b) land use controls and mechanisms to ensure their enforcement; and (c) traffic management and enforcement, and so on, as part of the master plan implementation process. The recent establishment of a new structure for the Addis Ababa Road and Transport Bureau (AARTB) by the Addis Ababa City Government will assist in addressing some of these issues and the project will support some of the agencies created under these reforms. The City Government is in the process of establishing a new Traffic Management Agency (TMA) that will be responsible for managing the traffic signal system and other traffic management measures to be supported by the project.

7. These weaknesses are exacerbated by inadequate capacity within AARTB to effectively manage the public transport comprehensively, according to public needs, through effective public transport network design, adequate enforcement on the behavior of operators, and improved traffic management to facilitate bus services. To address this challenge, the City Government has decided to establish a Public and Freight Transport Authority (PFTA). Provision will be made under the project to support its setting up.

8. The Addis Ababa City Government has recognized the need to establish PFTA within AARTB, which would consolidate all governance, regulatory and planning functions for the urban passenger as well as freight transport in Addis Ababa. Two LRT lines have been constructed and one or more BRT corridors may be operational by 2019, the number of urban buses needs to be increased with the introduction of new operators, and the minibus-taxi sector needs to be

overhauled. A law to establish the PTFA has been enacted by the City Council and Cabinet. The organizational structure has been drafted and is under discussion.

9. The PFTA and TMA will both require expert support in their formative phases to develop their functions and capacities to serve immediate and emerging requirements including responding to the rapidly changing situation in urban passenger transport. There are many internal and extraneous initiatives that require the leadership or participation of an effective PFTA, but this is still only in the process of being established. Many of these initiatives will require considered analysis and strategy/program development, but need action before such analysis or strategies are complete. Particular issues include increasing the number of urban buses, commencing restructuring of the minibus sector, and preparatory actions for inter-modality.

10. Expert support to AARTB, TMA and the PFTA will be required to establish a sufficient platform to: (a) commence development of the functions and capacities; and (b) prepare interim strategies, programs and operational methods for time-critical activities including bus fleet expansion, establishment of new entrants, engagement with the minibus sector, and essential preparatory actions with LRT and BRT to assure inter-modality.

11. Even though the new institutional arrangements provide the long-term vision on the governance structure in the urban transport subsector in the city of Addis Ababa, challenges still remain among them include:

(a) *Managing the evolving institutional changes including setting up of new institutions, for example, establishing TMA and PTFA is likely to pose some challenges*. For instance, the project will be implemented during a time of institutional transition, but the institutional capacities for many core functions needed under the project – like traffic and asset management – do not currently exist and will need to be developed under the project. In addition, the client has limited experience in implementing a number of the proposed activities for support by the project, such as traffic management. This is one of the reasons that the GoE is seeking Bank assistance to support them through this process;

(b) *Setting up new institutions, building their capacities, as well as implementing the project concurrently may slow down the pace of implementation*. Furthermore, the urban orientation of the project coupled with myriad and complex issues and multiple stakeholders, combined with the fact that there is a mix of civil works approaches—with comprehensive physical works in a few locations, and more discrete interventions in a larger number of locations, as well as several studies planned to be undertaken and managed—means there is an inherent level of complexity that constitutes a substantial risk given the existing institutional capacities;

(c) *Streamlining the mini-bus and private bus operators may face some resistance and protract the overall integration process of reforming provision of public transport*. In addition, a multiplicity of stakeholders are likely to be involved including: (a) current and likely future owners and operators of transport services within Addis Ababa; (b) building owners and developers (since parking and access management aspects are proposed under the project); and (c) transport system users including the general

public. There is a risk of not getting sufficient stakeholder buy-in or even opposition from these stakeholders that could jeopardize the project; and

(d) *Integrating the city and federal public transport operators will require intensive coordination and goodwill for harmonizing provision of public transport.* In the case of the LRT, the infrastructure is under development by Ethiopia Railways Corporation (ERC), a Federal entity not subject to oversight by Addis Ababa city. Though the oversight arrangements are under discussion, ERC has expressed interest in continuing to be involved in the operations of the LRT, which requires plans to integrate it into the rest of the urban transport network.

12. Given the foregoing, it is evident that the urban development and transport challenges facing Addis Ababa require a holistic and strategic approach. This approach would involve a mixture of institutional change and strengthening the capacities of the existing entities, new ways of perceiving and addressing well known challenges, reassessment of expenditure priorities, mainstreaming communications and Information Communications and Technology (ICT) functions as an integral part of the institutional arrangements for transport and priority investments and phasing implementation. For instance, setting up and building the capacities of new institutions and reforming long established habits, are achieved after a long time with some activities implemented after the sound bases are established. Details are provided in Annex 2.

Public Transport

13. A number of policy documents and studies illustrate the transport challenges the city of Addis Ababa is currently facing and proposals have been made on the appropriate interventions to address them. For instance, the 2011 Transport Policy of Addis Ababa, as well as the City of Lyon study (Lyon Town Planning Agency 2012) indicates that walking remains the predominant travel mode, with current estimates setting it at 54 percent of all city trips. According to recent AARTB estimates, Addis Ababa public transport modal split is as follows: Mini-taxis, 39.6 percent; ACBE, 28.6 percent; Inter-city buses used locally, 24.8 percent; Higer minibuses, 6.6 percent; and Alliance, 0.4 percent. Even though minibus taxi fares are often four times as expensive as those on ACBE, the importance of the industry's contribution to mobility is evident from its current dominant market share.

14. The main forms of public passenger transport in Addis Ababa currently consist of buses (a total fleet of about 700 buses, on a network of over 100 routes), minibus-taxis (about 10,000 vehicles operating in the city, plus an additional 400 "Higer" midi-buses), taxis and 3-wheelers. Mass transport systems are being developed: two LRT lines totaling 32 km, with 32 stations, ten of which being hub stations, are under construction (estimated to be operational in 2016); and one BRT line of around 16 km is in the planning stage with a further six possible lines identified. However, for both the LRT and BRT, the operations and maintenance oversight responsibility have not been decided, and it is not clear whether these would be a city or national function. To improve public transport, for the city's largely non-motorized population, substantial investments in mass transport network have been made or identified.

15. Private cars carry only 15 percent of trips. They nonetheless contribute 60 percent of vehicle traffic, while uncontrolled street-side parking of vehicles limits road capacity. A lack of

taxi bays or off-street bus stops contributes to poor lane use of these vehicles and adverse impacts on traffic. Currently, half of the 10,000 freight vehicles entering Addis Ababa on a typical day park on the street overnight since there is no city parking dedicated specifically to medium to heavy freight vehicles.

16. Road network is 4,148 km and it occupies about 15.6 percent of the city's surface area and projected to increase to 20 percent in 2020, according to AARTB plans. Road management issues including lack of traffic planning, adequate signalization, road signs and markings, and the custom of moving animals on major roads in the city, combined with ineffective enforcement by a police force uncoordinated with city planning and transport agencies has contributed to low standards of operation. There is no traffic control center or emergency response system.

17. According to the AARTB records, annual traffic accidents stand at a rate of 74 per 10,000 vehicles in the city. During the year 2013/14, 391 deaths occurred while 1,484 heavy injuries and 1,128 light injuries were sustained. The accident rate is worsened by the lack of repair and maintenance of traffic signs and road markings; the paucity of traffic and street lights and their proper maintenance; and the high volume of U-turn movements in traffic.

18. A lack of coordination between environmental protection and transport agencies detracts from efforts to control transport-related environmental damage, although studies have been conducted to assess the costs and benefits of operating lower-polluting as against traditional diesel buses for new BRT service, indicating an awareness of the need to confront environmental issues. Addis Ababa currently lacks any transport model for simulating analyzing the effectiveness of alternative potential transport plans and innovations. Transport-related data is poor and often little better than anecdotal.

19. The Transport Policy of Addis Ababa (MoT 2011) points to disconnect in agency reporting relationships, with different branches under city and federal control without institutional linkage. The policy stipulates that: "Though transport service requires coordination among different institutions, evidence suggests that collaboration among these institutions seems to be minimal and ill-coordinated. Lack of coordination among concerned stakeholders and lack of trained manpower are main problems that threaten the sector."

20. The new PFTA and TMA offer opportunities to provide the coordination that has been lacking, and the potential for integrating planning, regulation and operations of transport services, to reach a sustainable balance between public and private transport usage.

(a) Pedestrians

21. Even though most trips in Addis Ababa are made by walking, facilities for pedestrians tend to be inadequate and substandard. Motorized trips, by public or private transport, begin and end with pedestrian movements. However, transport planning and provision of related infrastructure are largely not human-centric. While sidewalks are normally provided with new infrastructure, they are not scaled to the volume of pedestrian traffic and often built with poor access to adjacent properties or neighborhoods. Many road facilities in the city are wide, with no signalization, striping, or pedestrian islands, but with long gaps between marked pedestrian crossing point, making pedestrian movement across these facilities both necessary and treacherous.

22. Pedestrians remain the most poorly-served of travelers, with more than 65 percent of the road network lacking pedestrian walkways, and a general emphasis on planning for cars rather than people. Streets are not planned or designed for pedestrians or cyclists, while accessibility for the disabled is difficult or impossible.

(b) Bus Transport

23. ACBE a publicly owned company operates buses offering a low frequency service managed without modern management principles or performance parameters as well as extended journey times. The buses are often filled to capacity, and this service is critical to low-income residents as it offers the only affordable motorized service option.

24. A fleet of blue minibuses operate in the city organized into thirteen owners' associations and approximately 840,000 daily trips are completed. While average daily ridership on ACBE is about 600,000. Other modes include Alliance, privately operated bus company; the 27-seat Higer minibuses organized into three owners' associations; and mid-sized intercity buses licensed, that offer in-city service to relieve peak demands, complete the general fleet of public transport vehicles. A number of special purpose fleets, most notably the buses operated by the Public Service Employees Transport Service Enterprise (PSETSE) to carry civil servants, target specific employer markets and are not available for general public use.

25. Public transport services focus principally on routes of densest demand; peripheral areas of the city and non-Central Business District based trips are poorly served. ACBE has recently been extending services to peripheral areas where residential development is in progress, however, while minibus taxis often provide the only service to a number of other remote or low-density settlements. The absence of bus prioritization or adequate traffic control measures degrades bus service operations, while bus terminals are badly planned, congested, and often with dangerous pedestrian access. The start of bus operations on facilities being built to be a part of a new BRT network heralds the start of a changed role for the urban bus, although it is one that can only emerge through integrated citywide transport planning. Due to inadequate resources ACBE is not able to provide better service coupled with less than satisfactory quality standards of buses that their operational and maintenance plant require relatively huge resources to operate. The buses are not regularly cleaned due to inadequate cleaning equipment. The fares are set at the federal level and subsidies by the city, there is no one-stop process to relate subsidy needs to the public service obligation of holding fares low. The current fares do not generate adequate revenues for ACBE to meet the operational needs.

26. The depot are in a deplorable condition. The lack of asphalting at the depots lead to severe losses of capacity during the rainy season, hindering maintenance severely. Maintenance of buses is carried out systematically according to systems of examination at varying intervals according to the expected failure rate of different components. Some parts are machined on the premises to combat issues of shortages and excessive costs (the company deliberately orders less parts than it knows it needs because it says it does not have the money to pay for them) and tires are extensively reconditioned to cut costs.

27. Cleaning of vehicles remains a major problem due to shortage of capacity. There is only one automated cleaning machine and a handful of manual bus washing bays that cannot begin to

cope with the volume of buses. The electrical maintenance crew has designed and built their own testing equipment, and could be seen during a visit working together impressively in team problem solving. Throughout the rundown works, employees are keen to show their best efforts to innovate in areas of cost-saving, and there is strong evidence of systematic efforts to link and coordinate the various parts of the depot operation to achieve the best possible results despite conditions that seem to make work close to impossible.

28. Almost all operations use manual approaches that are highly inefficient but applied in a systematic way to achieve consistent results. Despite the constraints, solid efforts are made to organize data professionally. Dispatch boards clearly show the status of each bus in service along with spare buses that can be made available for emergency needs. Route performance reports are generated regularly for each line along with records of ticket sales. While spare part inventory is recorded and managed by time-consuming manual data entry and parts have to be located by a visual search for their hand-written tags, some 16,000 parts are stored in an orderly manner and are available for use.

29. ACBE is making gallant efforts to cope with the prevailing circumstance in providing a critical service. Despite evidence of hard work and discipline of the staff, based on the foregoing, it is inevitable that ACBE needs upgrading in the area of information systems, organizational and training to gain skills in modern operating practices, improving the condition of the depots operational and financial performance. The proposed project is expected to modernize the information systems, training of existing managers and/or recruitment of new personnel skilled in modern best practice operating techniques as well as reforms to ACBE's core management and operating principles as well as fleet and physical plant.

(c) Road Infrastructure

30. Most residents are either pedestrians or public transport users. Indeed, most of the investment made so far provides very little benefit for public transport users. Along Bole Road, for example, the rehabilitated and redesigned roadway provides no facilities for public transport stops. Second, even among car users, the infrastructure is often developed in a way that limits car parking. Bole Road is also a good example. The rehabilitation eliminated most of the on-street car parking, providing no off-street alternatives. This means that businesses along Bole Road are now less accessible by car than they had been before the rehabilitation. Third, because of the lack of integration of road development with surrounding urbanization, many urban neighborhoods have suffered a reduction in quality of life. The ring road, for example, cut many neighborhoods in half, creating a barrier in the middle of the neighborhood; the LRT currently under development carries a strong risk of doing the same.

31. Finally, investments in infrastructure may not have addressed the key challenge giving rise to congestion in the first place: the way traffic is managed. Thus these investments in the road network may provide less economic and mobility value for residents than their planners may have intended.

(d) Institutional Arrangements

32. Three new city agencies have been designated including PFTA, TMA, and a Driver and Vehicle Licensing Authority. AARTB is expected to supervise all of these operations; however, a variety of AARTB functions and staff can be expected to transfer to the new organizations to maintain coordination and avoid fragmentation and duplication of Government services, and to supply appropriate skilled manpower to get the new organizations going.

33. AARTB was established in 2011, and the creation of the new agencies is designed to develop AARTB's effectiveness in planning and managing the city's transport operations. In addition, activities related to road planning and operations are not coordinated with public transport, and there is a lack of organizational responsibility for traffic or safety management. The three new agencies due for imminent implementation, respond to the need to create well-defined organizational lines of responsibility with clear and transparent operations along with strong coordination and integration. The Driver and Vehicle Licensing Authority is distinct from the other two in that it will directly offer a variety of public services at a series of branches. The PFTA will supervise a number of Government public transport enterprises. The TMA will be responsible for traffic management, traffic planning, and parking services.

34. The urban development and transport challenges facing Addis Ababa are manageable, but require a holistic and strategic approach, diligence, consistency and professionalism to begin to get a handle on the challenges of rapid urbanization and motorization. This approach necessarily involves a mixture of institutional change and strengthening, new ways of perceiving and approaching well known problems, and a candid reassessment of the priorities that have and continue to govern resource allocation.

35. The foregoing illustrates that the current public transport provision/operation has a number of weaknesses, with governance being a critical one. The existing public transport modes and services are not integrated, with regard to network coverage/routes, fares, schedules and facilities. In addition, the two main passenger transport modes, ACBE and the independently operated mini-bus-taxis are somewhat weak in planning, organization, operation, productivity and quality. These weaknesses are exacerbated by a lack of an integrated passenger transport agency unit[34] or capability within AARTB to effectively manage comprehensive network design, according to public needs, by poor enforcement on the behavior of operators, and by a general lack of effective traffic management. The resulting congestion reduces the overall effectiveness of public transport services.

Transport and Land-use

36. **Integrating transport with land-use development has also proven to be very difficult in Addis Ababa.** For example, at present, there is only a very weak off-street parking requirement that is required of the land-development process. Nominally, developers need to provide one parking space per large apartment, one parking space per five moderately sized apartments, one parking space per ten small apartments, and one parking spot for every 70 m^2 of commercial space provided. Even these standards are poorly enforced, with a great deal of non-compliance or

[34] Notwithstanding the recent integration of transport services into a single Bureau (AARTB).

subsequent conversion of parking to higher return uses. As already mentioned, housing development has not been integrated with transport development at all.

37. **With regard to overall urban development, although the Government is making attempts at planning and catering for the rapid urban growth, urbanization still takes place largely in an unplanned/informal way.** The master plan for Addis Ababa and surrounding Oromia region is currently being revised with the passing of a decade since the last plan. In addition, Local Development Plans (LDPs) (developed by the Urban Planning Institute) which guide urban renewal (responsibility of the Land Development and Urban Renewal Agency) and Government subsidized housing programs (responsibility of the Construction and Housing Development Office) support the overall efforts in urban planning and development. However, a large gap exists between the plans and actual developments, with the main challenges being: (a) a general lack in capacity in most urban planning and development agencies[35] from planning to implementation and enforcement; (b) gaps in related regulations, planning standards and execution; and (c) lack of coordination between agencies within the same sector and across sectors (for example, with transport and other infrastructure agencies). The resulting unplanned urban growth prevents the Ethiopian economy from maximizing the opportunities provided by urbanization and growing cities.

38. **In recent years, the rate of spatial expansion of the city is outpacing the rate of population growth, resulting in a less than efficient overall physical form.** The overall density of Addis Ababa is still relatively high (at around 5,000 people per sq. km) and the city consists largely of mixed-use developments. However, recent urban developments do not reflect a clearly structured hierarchy to organize and best match services and infrastructure, transport network, employment and population centers. Currently, extremely high density (from around 15,000–30,000 people per km^2) is found within four main sub-cities (Addis Ketema, Arada, Lideta and Kirkos) near the city core, concentrating around 30 percent of the population on eight percent of the land in Addis, with generally poor living conditions. New residential areas are largely established on the fringe of Addis, far from jobs and not sufficiently served by necessary amenities and mass transport options. The resulting urban sprawl underlies fundamental inefficiencies and leads to rising costs of services and transport provision to city residents.

39. **Strengthen current capacity and institutional arrangements for urban planning and development.** The ability to implement master plan recommendations for a single sector, let alone coordinating multiple sectors, remains a serious challenge in Addis Ababa. There are three fundamental issues with respect to strengthening the urban planning and development institutions: (a) general lack in capacity and expertise, especially to develop greater clarity, specificity and granularity in urban plans and guidelines; (b) lack of a cohesive, continuous ecosystem which supports the key stages of planning, implementation and enforcement in a reiterative urban development process; and (c) generally weak inter and intra agency coordination. In general, the institutional structure is complex and fragmented. Responsibilities for urban planning and development, from the planning stages to implementation and enforcement, rest with multiple agencies and are often overlapping, not clearly defined or not well-coordinated. Inter-agency coordination (such as among units within the Land Management and Development Bureau or

[35] For example, only approximately 4 percent (around 2,000 ha) of Addis has Local Development Plans prepared. This implies that most developments are not well guided by detailed plans.

between transport and land use agencies or land use and housing agencies) is generally weak, resulting in large inefficiencies. There is thus an urgent need to strengthen institutional ability and capacity to develop appropriate and clearer planning standards, land use controls and ensure their enforcement as part of the master plan implementation process.

40. The proposed project is therefore intended to focus on the following key areas:

(a) Recognize the importance of streets and the multi-faceted role they play in urban life and economies; streets do not just move traffic. Streets are a basic building block of cities; they have an important place-making function in cities and provide access to buildings and to land. This role is important for streets at all levels of the road hierarchy, from arterials to very local streets. So while it is important to ensure that the proportion of street coverage in the overall urban area is consistent with international norms, it is equally if not more important to ensure an appropriate balance among street or road types within the hierarchy.

(b) Raise the priority given to traffic management and road maintenance. While Addis Ababa has invested, and will likely continue to invest heavily in expanding the city street system in response to increased travel demand, it should be recognized that many cities have tried and failed to build their way out of the traffic problem. It is therefore critical for the city to undertake measures to obtain the greatest possible efficiency out of this current network. Moreover, traffic management investments including expanding the traffic management signaling system, preparing an ITS for the city including installing a traffic control and operations centers and improving the existing network are without a doubt likely to produce better traffic results per unit of expenditure than investments in expanding the road network. Equally important is the way road maintenance is being managed. At the moment almost all maintenance works are being carried by own force in a centralized manner. However, given the size of the network city, more efficient and effective ways of maintenance management need to be explored.

(c) Ensure that freight, an important part of the traffic mix, is understood as part of the urban transport problem and encompassed in the solutions. Freight is particularly important for the Addis Ababa metropolitan area because it is a major transshipment point for freight coming from the port of Djibouti to the rest of Ethiopia. As such, freight vehicles crisscross Addis Ababa, heading to and from the north such as Debrebrihan to Modjo and Hawassa and also from Djibouti to other parts of the country crossing Addis Ababa. In the process the road to south along the southern cone from Addis Ababa has become dotted with small industrial warehouses and distribution centers but the location of these facilities, and the movement of vehicles to and from them, is very poorly understood. Nevertheless, there is no institution that has comprehensive responsibility over improving the functioning of freight vehicles in the city or the Metropolitan region.

(d) Use parking strategically as a tool to shape neighborhoods. Parking is identified as one of the key "infrastructural" challenges in Addis Ababa under the 2011 Transport Policy of Addis Ababa. However, the issue of parking is the overutilization

of road space by parked vehicles, lack of off-street parking facilities, and the need to create and incentivize the use of park-and-ride facilities related to mass transit services. This is indeed an important area of concern for sustainable transport policy. While there are instances when developers flout the law and do not provide the necessary off-street parking or illegally convert parking to other uses, the main issue is that parking in general is not appropriately recognized as a commodity and regulated as such. In reorienting parking policy along these lines, parking can be a useful tool to help shape streets as the building blocks of neighborhoods.

(e) Improve public transport operations by focusing on effectiveness and user needs. Transforming urban public transportation into a service that is responsive to the needs of the users will include creating an effective public transport authority, setting fares appropriately, having a transparent approach to subsidies, and managing, operating and maintaining the system, including the LRT, in an integrated and effective manner, and having an effective communications strategy for the public, so that the public is informed of the changes. For ACBE, in particular, being able to pursue the above means strengthening its operations in four key areas: computerization of operations, improved management, improved maintenance facilities, and scientific application of comprehensive operational analysis. All the above should be underlined by a coherent strategic vision and plan for the public transport sector, particularly one that builds upon existing mass transport investments to help create an integrated network and lays out a realistic development program for getting there.

(f) Ensure that land-use functions and transportation modes, because of their strong inter-dependent relationship, are developed in a coordinated manner. Urban development and land-use decisions and actions are generally still taken without adequate integration with related transport functions. Improvements can be made through developing a hierarchical system of urban development nodes (or centralities) which concentrate urban activities and transport intermodal services, matching appropriate development densities with the necessary transport infrastructure and service capacities.

Annex 7: Existing Challenges with Driver Licensing and Vehicle Registration Systems

Additional Background and Details

Development of an Integrated System for Driver Licensing, Vehicle Registration and Inspection and Penalty Payments.

1. Available information indicates that about 64 people die per 10,000 vehicles annually on Ethiopian roads, which is comparatively high by international standards. Furthermore, about 85 percent of fatal accidents are attributed to driver error, six (6) percent due to vehicle defects, five (5) percent due to pedestrian error, two (2) percent as a result of poor road conditions and the remainder attributed to various other reasons. It is believed that there are a huge number of fake driving licenses due to inadequate and appropriate control mechanisms, and the lack of an effective information sharing platform for transparent law enforcement, raising integrity concerns. In addition, the absence of an effective coordination mechanism between the regulatory institution, the road users, vehicle owners, driving school and police is conducive to fraudulent practices.

2. One of the main consequences of the inadequate means of transparent law enforcement and an effective data exchange platform is the large number of accidents and resulting loss of life and property. Experience elsewhere has shown that the presence of an organized and well managed information platform offers the necessary mechanism to monitor and address such issues.

Support to the Federal Transport Authority

3. **Background**. One of the main real world consequences of the inadequate means of transparent law enforcement and an effective data exchange platform is the large number of accidents and resulting loss of life and property. The main challenges include: (a) lack of adequate driver registry and record management and information exchange platform; (b) inappropriate vehicle registry and record management and information exchange platform; (c) weak means of enforcing traffic laws/rules; and (d) poor Government services to citizens looking to put and keep themselves and their vehicles in compliance with transportation registration requirements.

4. A summary of the main issues inherent in the current traffic management system in Ethiopia is outlined in Table 7.1 and also includes proposals on how the challenges could be addressed, most of which under the proposed project. Establishing a modern integrated system will: (a) facilitate economic development and provide a platform for innovative public and private businesses such as establishment of contemporary garages and driving schools; (b) reduce death rate arising from traffic accidents; (c) save public and private property due to traffic related accidents and crime; and (d) discourage illegal and false businesses by introducing a transparent business processes and enforcement frameworks which deter forgery and illicit trade and encourage honest and innovative business people to invest in the transport sector.

Table 7.1. Key Driver Licensing and Vehicle Registration and Inspection Systems Challenges

	Issue	Proposal
1	There are gaps between business process workflows and practice leading to citizens evading the laid down procedures, frequent errors and high operational cost	Refine the business processes based on best practices.
2	Application forms and paper-based breeder documents are not protected against falsification which contributes to documents doctored or counterfeit documents accepted, citizens apply under false pretense or bypass aptitude tests and vehicle inspections.	Introduce security paper forms with security features and also forms and breeder documents should be made of high security paper and features for protection.
3	There is no unified central database and hence no connection with local installations creating room for citizens obtaining various driving licenses at a time in a number of zones or assume.	Establish an integrated distributed databases, replicate and robust centralized database and software platform. Create a central Biometric database and frequently synchronize and consolidate central driver licensing database with the data obtained in local installations by means of technology that utilize the current IT infrastructure.
4	Existing database contains multiple entries for the same citizen implying that driver licenses or registration of vehicles could be obtained under multiple identities.	Establish an IT system for capturing biometric identifiers, checking for duplicates before storing in a new record and de-duplication using fingerprint matcher.
5	Driving license registration documents are not adequately protected against adulteration and counterfeiting. This opens avenues to the use of doctored or counterfeit license documents or driving without valid permits, or dodging fines and license suspensions.	Introduce counterfeit-proof machine, readable driver license cards with security features and high quality driver license card body, laser-engraved optical content and cryptographically protected machine readable data.
6	Vehicle registration documents are not adequately protected against adulteration and counterfeiting, hence doctored or counterfeit vehicle registration documents may be used for trafficking stolen vehicles, evading taxes, or keeping un-roadworthy vehicles.	Introduction of security paper based document with key security features and also for vehicle registration documents including owner and vehicle data.
7	Lack of integration between (a) training institutions and driver licensing issuing business; (b) traffic offices and Traffic Police; and (c) vehicle inspection centers and registration offices.	Create an integrated system for driving license issuance and vehicle inspection and registration systems and an interface with the Traffic Police.

5. The identified challenges could be addressed by executing a number of measures including the following:

(a) Establishing a secure, clean and universally accessible database for driver licenses and vehicle registration;

(b) Introducing a highly secure driving license card and vehicle registration document that are difficult to falsify by inbuilt security features such as driver license to carry fingerprint biometric data;

(c) Establishing regional site servers to ensure a reliable and robust system so that the regional governments maintain and manage their data (excluding biometric data) while guaranteeing the highest reliability, interoperability and integrity;

(d) Ensuring that all access to the registry and business process system are controlled via role based logical control access solution such that interactions with the database will be logged and any fraudulent attempt and malicious behavior are detected by the auditing tools; and

(e) Creating a modern and fully operational business processes for citizen services transforming FTA into a catalyst for development of Ethiopia.

6. This project will therefore include the above measures with the intention of building the foundation and modernizing driver registration and verification services as well as vehicle and inspection services. Subsequent projects would incrementally build other practical business application services such as traffic, public, and freight transport management systems, third party services for integrating various stakeholder applications such as insurance, payment facilities, and National registry system. The new database system will provide a conducive platform for establishing and developing private businesses and improving the security situation in road traffic. In particular (the subsequent project) would help to:

(a) Create a traffic management system and environment favorable for encouraging private service oriented businesses such as insurance, car inspection businesses, driver schools among others; and

(b) Improve verification and vehicle inspection solutions, public security and safety, and equip the Police with means to reliably verify validity of driving license and status of vehicle in the FTA registry system.

7. To address these challenges, the Government, under this project proposes to establish a state-of-the-art distributed database system with guaranteed accessibility, integrity and security of the data as well as a robust Information Technology (IT) infrastructure. The system is expected to provide various web applications and services for driver's license registry and management, vehicle registration and inspection, and penalty management at Federal, regional and zonal levels. The details on the specific activities to be covered under the project are provided in Table 7.2**.**

8. The project will involve establishing a modern database system with guaranteed accessibility, integrity and security of the data as well as a robust Information Technology (IT) infrastructure which will be implemented to provide various web applications and services for driver's license registry and management, vehicle registration and inspection, penalty management at Federal, regional and zonal levels. The summary of the activities under this component will include:

(a) Mass re-registration of current drivers with ten fingerprints and replacement of existing driver's licenses with modern security driver's license documents.
(b) Mass re-registration of vehicles with vehicle chassis numbers and replacement of the existing vehicle registry documents by secure unified vehicle registration documents.
(c) Deployment of driving school management solution.
(d) Deployment of vehicle inspection management solution.
(e) Deployment of driver's penalty management system.

(f) Deployment of police mobile solutions for driver and vehicle verification as well as penalty management.
(g) Deployment of central help desk support solution.

9. The scope of this component will involve the parameters listed in Table 7.2 indicating the current state and what is expected to be supported under the project.

Table 7.2. Physical Component Parameters

	Quantity Summary	Current Qty	End of the Project
1	Central office	1	1
2	Regional offices	11	11
3	Zonal offices	74	74
4	Number of drivers' licenses	2,000,000	3,000,000
5	Number of vehicle registration document	1,160,000	1,700,000
6	Number of breeder documents	2,500,000	4,500,000
7	Number of driving schools	290	450
8	Number of vehicle inspection stations	52	150
10	Portable verification units in police patrol vehicle	0	200
11	Mobile application for police	0	2,000
12	Vehicle inspection vans	0	12
13	Reserve (replacement) enrollment stations	0	22
14	Central help desk ticket system	0	1

10. **Central Office.** The Central Office is the centralized core of the entire system where biometric data processing will take place and where the central database and application systems, personalization facility will be located and managed. The target design will allow the system to handle approximately 10,000 concurrent accesses nationwide. The key sub-activities in the Central Office will include:

(a) Two primary database servers running via Oracle Enterprise Real Application Cluster (RAC) at RAID 10 SAN in FTA data center.
(b) One standby database server running at RIAD 10 SAN in the federal data disaster recovery center.
(c) Ten application servers running at open source application server to provide service modules of driver's license, vehicle registration and inspection, and penalty management systems.
(d) Four driver's license personalization machines to issue driver's licenses.
(e) One Automated Fingerprint Identification System (AFIS) to process, de-duplicate, and store all driver's fingerprints.
(f) Oracle RAC license in the primary data center and Data Guard license in the standby data center.
(g) One admin workstation.
(h) Tape backup solution.
(i) Upgrade of UPS, backup generator, and air conditioning in the primary data center to meet data center requirements.
(j) Upgrade of router and firewall in the primary data center to meet network and data security requirements.

11. **Regional Offices.** For each of the eleven regional offices the activities involved include a regional server system which will be placed at the Regional Transport Authority headquarters in regional capitals or other desired locations. The server will host the driving license registration system for the region excluding biometric database. The regional office is the owner of the data and the data will be replicated to the central office. New installation at the regional office will include:

(a) One database server running at RIAD 10 SAN.
(b) One application host running at an open source application server.
(c) Two client PCs to perform system administration and management.
(d) Enrollment peripheral equipment: Webcam, signature pad, 4-4-2 fingerprint scanner, barcode scanner, eye exam machine, contactless ID card reader, regular office printer.
(e) Oracle 3 named user license.
(f) Local office data capture software license.

12. **Zonal Offices.** In each of the 74 zonal office, the activities will include enrollment and verification stations. It also provides the function of vehicle registration card printing. New installation at the zonal office will include the following items:

(a) One database server running at RIAD 10 mirror internal disks.
(b) One application host running at an open source application server.
(c) Two client PCs to perform system administration and management.
(d) Enrollment peripheral equipment: Webcam, signature pad, 4-4-2 fingerprint scanner, barcode scanner, eye exam machine, contactless ID card reader, regular office printer.
(e) Oracle 3 named user license.
(f) Local office data capture software license.
(g) Printer to print vehicle registration document.

13. **Driver licensing system.** This will involve the following items:

(a) Driver's license (DL) card. State-of-the-art security technology will be built into the secure driver's license card which will include security features of Laser Perforation, Fine Lines, Ghost Image, Kinegram, 2D bar code, Machine-readable zones, UV printing, and Date of birth overprints photo and multiple Date of Birth Placements.

(b) Secure breeder documents. During the issuance of DL or VR process, counterfeit-protected breeder documents will be used to ensure that applications are not processed unless truthful paper work has been submitted.

(c) Driving school. A software module will be deployed to all the privately owned and operated driving schools (currently 290 and will increase to 450 at the end of the project) under Public Private Partnership (PPP) arrangements to ensure compliance of the regulated pre-registration and training process across the country.

(d) Portable verification units in a police patrol vehicle. A total of 200 portable PC-based units will be mounted inside of police's patrol vehicles so that the police can verify the driver's license and vehicle registration via wireless network. A software

model will be deployed allowing the traffic police to use the same device to access and manage penalty information.

(e) Mobile application for police. A cell phone with card reader capability will be deployed to 2,000 traffic police. A mobile application will be deployed so that the traffic police can verify the driver's license and vehicle registration via wireless network.

14. **Vehicle registration system.** This system will cover:

(a) Secure vehicle registration (VR) document. Secure vehicle registration documents printed on state-of-the-art security paper with high-resolution water marks, holographic security threads, pre-printed anti-patterns and other high-end security features will be used for the current 1.16 million documents with a target of reaching 1.7 million at the end of the project;

(b) Vehicle inspection stations. Hardware interfaces and software modules will be deployed in the current privately owned and operated 52 stations (target 150 at the end of the project) under Public Private Partnership (PPP) arrangements to all vehicle inspection stations to automate the inspection and data collection process and prevent fraud;

(c) Vehicle inspection vans. To ensure the integrity of the vehicle inspection and prevent fraud, 12 vehicle inspection vans with standard vehicle inspection device will be deployed to enable ad-hoc audit of vehicle inspection stations and any vehicles on the road; and

(d) Reserve (replacement) enrollment station. A total of 22 spare enrollment kits will be procured to ensure the continuity of operations at regional and zonal offices.

15. **Central help desk ticket system.** A central help desk ticket system will be implemented to provide online customer services to ensure a smooth operation of the systems across federal, regional, and zonal levels. The key functions of the Help Desk include knowledge base, register issues, case routing, and automated email communications.

System Topology

16. **Administrative service structure.** The proposed technology and system have to meet the need of the administrative structure and topology established in Ethiopia, which comprises of a central Federal TA office, 11 Regional/Self-governing City Offices, and 74 Zonal Offices. The central site will contain the consolidated DL and VR database, biometric fingerprint de-duplication servers and the central personalization printing facility of the nation. The Regional Offices will perform regional data aggregation, management and synchronization. This requires that all regional offices have a reliable fiber optic direct internet connection to the central site. A Zonal Office functions as a service point for all transport related services within the zone. The design will accommodate an intermittent internet connection between the zonal sites and the central site.

17. **Two stage database repository framework.** Each region remains in control of its driver's license system with its own database repository at the regional capital. A central database repository will maintain the master database at a central location. The central system will also comprise of a disaster recovery site and a central personalization printing facility.

18. **System architecture.** The system design will be based on a modular, scalable and extendable system architectural approach which exposes functionality through interfaces. The whole system is divided into subsystems with its own functionality as shown in figure 7.1. This architecture allows deployments to be executed at each module without impacting other components of the whole system.

Expected Outcomes and Results

19. Phase 1 of the program will significantly improve road safety and promote economic and business development within the road transportation sector. The expected outcomes will be:

(a) A comprehensive IT infrastructure system with unified management systems across the areas of driver and vehicle registry, vehicle inspection and regulation, driver training quality control centers, and penalty management across the country.

(b) The IT infrastructure will also be a robust and ubiquitous foundation of the introduction of phase two modern transport management system.

(c) A successful management framework can be leveraged by other Government functional areas.

(d) The successful implementation of the management system will significantly reduce the number of fatal traffic accidents over the coming years.

(e) The successful implementation of the management system will also reduce the economic loss as a result of high number of traffic accidents.

(f) The transparency across the transportation sector will prevent bribery and fraud. As a result, honest and innovative business people are encouraged to invest in transportation sector.

20. The system design will be based on a modular, scalable and extendable system architectural approach which exposes functionality through interfaces. The whole system will be divided into subsystems with its own functionality. This architecture allows deployments to be executed at each module without impacting other components of the whole system.

21. A number of challenges have been identified that could impede the smooth execution and subsequent operations of the systems once installed. These challenges include:

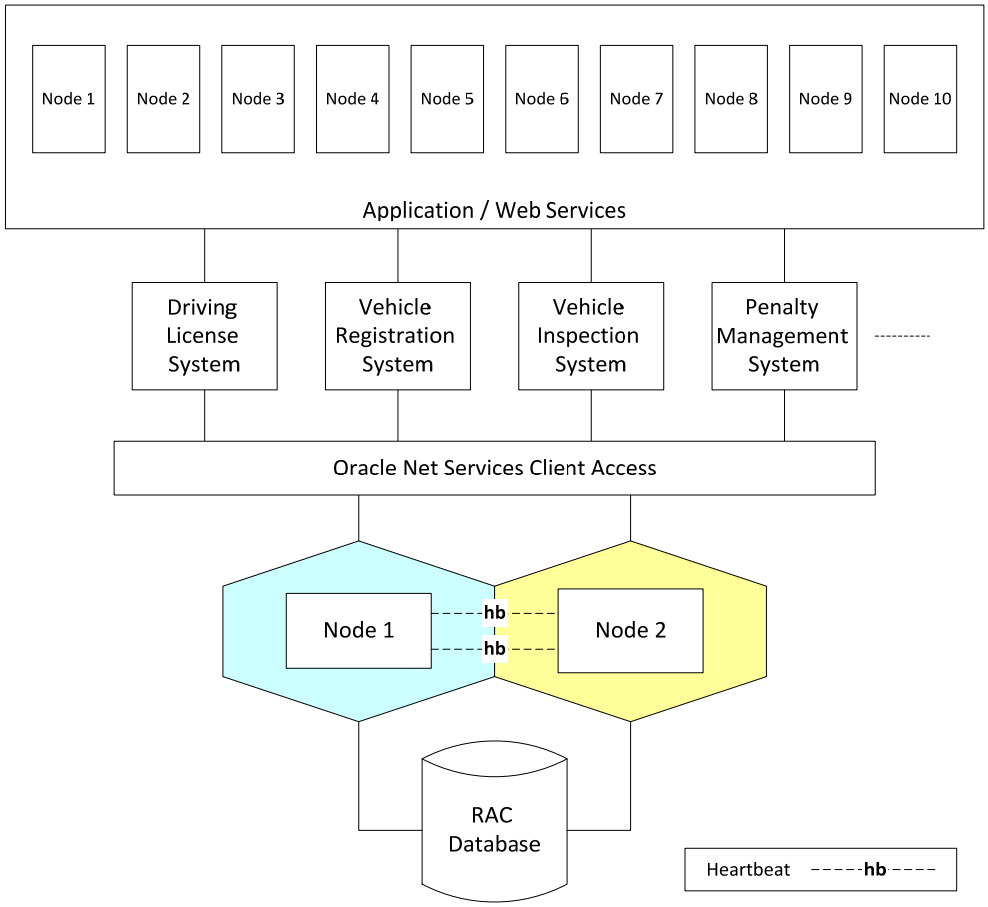
(a) The last mile connectivity. To ensure project successful implementation, each operational office will be connected to the closest Government network (WoredaNet) or Ethio Telecom point of presence where currently the network has been to 3g capability throughout the country. The country is undertaking an initiative and

expending the fiber network from current 13K km to 20K km under a 5-year GTP II. The GTP II program is expected to cover initial connectivity service costs during the first three years after installation. After that, the Government will be responsible for their services;

(b) Power interruption solution for regional and zonal offices. Each office will be provided with solar technology power back-up capability. In case the office areas are remote and a competitive bid is not feasible the project will explore and use the option of engaging a UN Agency to undertake the solar power back-up installation. Each set of the power interruption solution will have enough capacity to support eight (8) hours business operations in each zonal office; and

(c) Adequate budget allocation for maintenance and operations.

Figure 7.1. Schematic Layout of System Architecture



Improving Road Safety by Enhancing Driver Training and Testing

22. Studies by World Health Organization 2010 show that an equivalent of one percent National Domestic Product globally is lost due to road related accidents and crimes annually. One of the main reasons for this huge accidents and loss of property is the lack of means of transparent law enforcement and data exchange platform. The experiences from other countries in similar

situation as Ethiopia show that a properly organized and managed information platform offers the necessary means to monitor, manage, and carve out the Issues.

23. The available data in Ethiopia indicates that most accidents are mainly caused by careless driving and therefore raise questions on the quality of driver training and testing in the country. According to the regulations and practice, driver training is currently carried out in off-road traffic training complexes installed with CCTV cameras. Practical driving test varies from area to area in Ethiopia. In Addis Ababa for instance, all training and testing is done at the traffic complex. The problem with the complex is that although it is large the students hardly exceed 20 km/h during training and testing. Very little, if any, interaction with ordinary traffic is taught. The new driver has therefore not experienced real traffic situations or driven at higher speed before given a driving license. This means that the new license holder will have to learn to drive in real traffic by looking at others instead of getting the experience at the driving school.

24. In some other areas where there is no traffic complex the students will get their training initially on an available field and later in real traffic. With this system drivers could get good driving experience during training though it is very basic and the testing as well.

25. It should be noted that the driving school training follows closely what is expected at the test. Therefore the students are given very basic driver training. Typically, a practical driving training and testing should consist of a basic maneuver test and a comprehensive on road driving test The on road driving test should, if possible, include but not limited to:

(a) Urban area. Driving on roads in urban areas, roundabouts, junctions with traffic signals, on roads with several lanes; and starting up hill, crossing railway; and turning and parking in traffic (not with vehicles with attached trailers);

(b) Rural areas. Driving on roads in rural areas; entering highways and main roads; exit from highways and main roads; and overtaking; and

(c) Special situations and other tasks. Cope with pedestrians/bicycles, high-risk groups of road users, unprotected users, stationery vehicles, animals, roadwork area, emergency stops, emergency vehicles, fog and rain, and driving on slippery roads.

Proposed Interventions to Enhancing Driver Training and Testing

26. Given the foregoing, the project will support the following interventions in an effort to improve on road safety in Ethiopia instead of construction of driver testing complexes:

(a) Consultancy services to evaluate current legislation and if needed propose changes that the driving test can include a comprehensive on road test for all different types of vehicles. This will involve: (i) evaluating the current curricula for all different types of vehicles and propose changes if needed; (ii) evaluating the current driving examiner handbooks for all different types of vehicles and propose changes if needed; (iii) evaluating the current driver instructor handbooks for all different types of vehicles and propose changes if needed; and (iv) evaluating the current learner drivers' handbooks and propose changes / develop new books if needed. All books should be easy to read with many illustrations to support the text. Final books should be

translated. All Driving Examiners will be required to learn to drive the type of vehicle they will conduct tests for.

(b) Consultancy services to develop and conduct a driver instructor training program for a selected group of Driving Examiners (Senior Driving Examiners) who will conduct the training of all driver instructors nationwide. The training will include but not limited to:

(i) Minimum requirements for driving school vehicles;
(ii) How to teach students with different backgrounds and of different age;
(iii) How to train the student to handle a vehicle safe and efficient in different traffic situations;
(iv) How to assess student's performance;
(v) How to follow up and assess the driving school performance; and
(vi) Together with the participants develop the training program for driver instructors.

(c) The consultant shall follow up the driver Instructor training, support and evaluate the Senior Driving Examiners performance.

(d) Consultancy services to develop and together with the Senior Driving Examiners conduct a training program for all Driving Examiners including but not limited to:

(i) Road safety situation in Ethiopia;
(ii) Efficient road safety work;
(iii) How to conduct driving tests for all different types of vehicles;
(iv) How to assess driving tests; and
(v) Corruption issues.

(e) The program should be followed up with on job training and evaluation of how the new testing system is working. At the end of the project all driving tests nationwide should include a basic maneuver test and an on-road test following the guidelines set up in the Driving Examiners Handbook.

Annex 8: Key Risks and Proposed Mitigation Measures

1. TRANSIP is a pioneer project to support the improvement of urban transport, systems development and institutional building. There are major potential risks that have been identified associated with the project. Overall risk is High. Risks include: (a) managing the evolving institutional changes involving setting up of new institutions, for example, TMA and PTFA and building their capacities, as well as implementing the project concurrently which may slow down the pace of execution; (b) integrating the city and federal public transport operators will require intensive coordination and goodwill for harmonizing provision of public transport; (c) likely resistance from transport operators to the introduction of any new regulatory framework; (d) motorists resisting new traffic and parking management regulations by the proposed PFTA; and (f) drivers, vehicle owners as well as dealers resisting the introduction of transparency and accountability in the licensing process. An explanation of each of the risk identified and the corresponding mitigation measure(s) is presented in Table 8.1.

Table 8.1. Systematic Operations Risk Rating (SORT)

Risk Category	Rating	Risk Mitigation
1. Political and Governance: Regional security risks that manifest itself in armed conflict and groups operating in countries neighboring Ethiopia such as South Sudan and Somalia pose a challenge and could potentially distract and divert the attention and resources of Government to deal with either people fleeing conflict or rivalry armed groups crossing borders into Ethiopia. In the event this happens, it could slow down decision making and the pace of implementation of the project.	Moderate	Ethiopia is seen as an 'honest broker' by some of its neighbors in conflict which has helped in abating the severity of the insecurity challenges in the region and its economy. In addition, the smooth transition following the sudden death of the former Prime Minister as well as conclusion of the May 2015 general elections and firm commitment by the GoE in continued implementation of its long term development strategy anchored in the GTP puts the country on a strong footing**.**
2. Macroeconomic: The Government of Ethiopia is pursuing a public investment led growth model, which has delivered very high growth over the past decade. A hybrid of macroeconomic policies have been in place to achieve this, including financial repression, real exchange rate overvaluation, low foreign reserves, and a highly expansive fiscal policies increasingly financed by non-concessional external borrowing. The current policy stance is associated with risks related to the realization of contingent liabilities in the banking system, weather related shocks exposing low forex reserves, and heightened risk of debt distress.	Moderate	The Government does not currently have a program with the IMF, as it prefers to maintain economic policy independence and views the current quota as too low. The Bank has a regular economic policy dialogue with the Government of Ethiopia. This dialogue takes place in various contexts, including through analytical work and the dialogue around the IDA Non-concessional Borrowing Policy. In addition, the Bank chairs the Macroeconomic Discussion Forum convening GoE and DPs. The policy dialogue has strengthened under the new CPS, though in case of an economic shock, the Government would nonetheless be expected to seek financial assistance from the IMF and the World Bank.

Risk Category	Rating	Risk Mitigation
External risk factors are related to a growth slowdown in advanced and emerging economies (especially China) leading to reduced export demand, declining commodity prices, reduced FDI and external bilateral financing, and remittances.		From a macroeconomic perspective, IDA financing of the TRANSIP helps to reduce the cost of financing compared to the alternative of non-concessional external finance. Should any of the above risk scenarios play out, they are unlikely to have a major impact on the implementation of this project.
3. Sector strategies and policies: There are a number of risks under this category including: (a) Multiplicity of players in the institutional arrangements of the project may pose implementation challenges. (b) Managing the evolving institutional changes involving setting up of new institutions such as TMA and PFTA and simultaneously building their capacities, and implementing may slow down the pace of implementation. (c) While integrating the city and federal public transport operators will require intensive coordination and goodwill for harmonizing provision of public transport.	Moderate	A Project Steering Committee to be chaired by the Head of AARTB for the city components and comprising the Heads of the participating institutions has been established to provide the platform for cross-agency coordination and resolve emerging project execution issues and bottlenecks of a policy nature. The implementation of reforms in the city transport sector clarifying the ownership and responsibilities of various institutions will be supported under the project, particularly financing their set up and capacity building including training of staff. The inadequate capacity risks will be mitigated by engaging technical experts financed under the project to complement the existing capacity in addition to the support by internationally recruited experienced consultants supervising the construction of works and supply ad installation contracts. Progress in the integration of city and federal public transport operators will be given particular attention during ISMs: Bank expertise in the area will be made available if required.
4. Technical design of project or program: The two parts of the project for the city of Addis Ababa and the other for FTA makes the project complex. This is compounded by the complex project activities such as designing of intersections, traffic signals and control center, improvements of selected corridors and associated pedestrians facilities; and construction and installation of the same pose a challenge due to low capacity among the implementing agencies. Inadequate data and information on urban transport systems and multiplicity of agencies involved in urban public transport could lead to less than optimum designs and delays in decision making.	High	The proposed project has diverse implementing agencies with different levels of experience and capacities. Standard practice of using internationally qualified consultants to do feasibility studies and detailed designs of major project components and use of familiar technology in civil works will make the likelihood of design failure low, hence mitigating this potential risk. Technical assistance will be used to facilitate generation of the required data, where necessary. Creation of the PFTA will reduce the number of decision-making points and enhance stakeholder coordination among public transport operators. On the performance of the planned systems, it is expected that:

Risk Category	Rating	Risk Mitigation
The availability and performance of the planned systems under the project including traffic signaling systems in Addis Ababa and databases for FTA are highly dependent on the quality of services provided by Ethio Telecom, and WoredaNet and also the quality of Information and Communications Technology (ICT) systems in the country. Currently, the WoredaNet uses VSATs (Satellite connectivity) in the Woredas. A robust connectivity and bandwidth between National Data Center (NDC) and the Regional Data Centers (RDC) is crucial for the proposed FTA databases to work in a Hub-spoke configuration connecting 74 zonal offices. A fully operational Wide Area Network (WAN) implemented by WoredaNet (the Federal Government Network) is a pre-requisite, and the non-availability of sufficient bandwidth would be a major potential risk factor. The implementation and operation and maintenance phases of the transport systems could potentially be impacted by: (a) the high turnover rate of IT staff (though, a national issue); (b) lack of coordination between FTA, NDC and RDCs; and (c) unsteady and unreliable power supply to regional and zonal offices. Currently power interruption disrupts the provision of ICT based services countrywide and may impact negatively on the envisaged success of the FTA component roll-out for all 74 zonal offices.		(a) FTA enters into Memorandum of Understandings (MoU) with sufficient details on Service Level Agreement (SLA) with the Region on the management of operation and maintenance of the system once installed; (b) FTA and National Data Center (NDC) and Regional Data Centers sign a MoU on the usage of these centers for purposes of hosting the databases for the transport systems; (c) FTA develops national security guidelines on the usage of the system as well as national standards; (d) Ensure there is adequate and reliable connectivity from Zonal offices to Regional Data Centers, or Regional Transport Offices; (e) Identify and install suitable alternative and reliable power supply to regional and zonal offices which may include replacing emergency generator with probably solar power system and indicate the cost associated with this option; (f) Ensure TMA and FTA staffed in adequate numbers with the right skill mix, qualifications and experience to manage the traffic signaling the city of Addis Ababa and driver licensing, vehicle registration, and inspection and penalty management systems; (g) TMA and FTA provide adequate funds toward the operation and maintenance of their respective transport systems; and (h) Ethio Telcoms completes the roll-out of the WAN countrywide currently under execution.
Governance of equipment supplied to the traffic police Traffic police could use the equipment provided under the Project for other purposes	Low	Ensure that all the equipment and training financed by the Project in respect of the Addis Ababa and Federal Traffic Police is directly related to improving road safety, by reducing fatalities and severe injuries through improved enforcement, and does not include weapons, lethal equipment or any other police or military equipment of such nature or support for activities not related to road safety[36]. The equipment is for enforcing road safety and supporting the implementation of information technology

[36]World Bank (2012b) Staff Guidance Note: World Bank Support for Criminal Justice Activities, A note prepared by the Justice Reform Unit of the Legal Vice Presidency.

Risk Category	Rating	Risk Mitigation
		based systems aimed at improving transparency in enforcing traffic rules and verification of information, thereby reducing the opportunities for bribe demands or fraud. A central help desk for the citizens to report any concerns and monitoring will be established under the project. AARTB and FTA, will report annually on (a) actions taken to improve road safety including the use of traffic enforcement equipment supplied under this project; and, (b) the usage and state of vehicles financed under the project.
5. Institutional capacity for implementation and sustainability: Lack of previous experience in implementing World Bank funded projects could lead to delays related to procurement, financial audits, processing of contractual documents and financial transactions, as well as monitoring social and environmental safeguards. Limitations of capacities of the implementing entities is likely to be manifested in slowing down project execution and at the same time managing the transforming the urban transport sector in Addis Ababa involving the setting up of new institutions, for example, TMA and PFTA, and building their capacities at the same time.	High	The Bank Team has conducted a fiduciary, safeguards and technical capacity review of the implementing entities and agreed with the GoE on mitigation measures. Accordingly, there is a provision under the project to finance the services of key project staff such as a project manager, procurement specialist, financial specialist, and technical specialists, such as a traffic engineer, and where necessary, will be enhanced through technical assistance to support the PIUs that have been established in each implementing agency. Most of the experts have been recruited. The Bank Team will provide close support in-country to the Clients to minimize delays.
6. Fiduciary: Financial risk assessment of both AACRA and FTA has been carried out and noted that these institutions do not have adequate institutional capacity and prior working experience on Bank funded projects hence there is the need for close support, including in areas of addressing weaknesses noted in their respective entity audit reports and the understaffed finance and internal audit units. Specifically the main weakness for the FM arrangements at AACRA are: (a) inadequate staff in internal audit directorate; and (b) significant internal control weaknesses as reported in the AACRA's audit reports and management letters. Internal weaknesses are related to poor cash management; outstanding receivable balances for which the auditors could not establish the age of the receivable; an unidentified payable balance, double recognition of	High	**Financial Management** An Action plan has been agreed upon to address the weaknesses observed. Financial management specialists have been recruited to strengthen the capacity. The specific actions underway include: (a) Development of a project Financial Management (FM) manual for each entity in line with overall Government procedures and will clarify project specific requirements. Also the FM manual will provide details on budget tracking mechanism and monitoring reporting system; and explaining major variances; and (b) Recruitment of External Auditors. Other mitigation measures will include: (c) Internal auditors will include the project in their annual plans and will perform an audit on an ongoing basis and share the report with the Bank; and (d) The project will be subject to full on site supervision, at least twice per year on the basis of

Risk Category	Rating	Risk Mitigation
expenditures; unsubstantiated expenditures; and effecting payments for projects that did not have a budget. The main weakness for the FM arrangements at FTA include: (a) high staff turnover; (b) inadequate number of personnel in the finance unit leading to considerable delays in recording, reporting and reconciliation tasks; (c) practical challenges in maintaining parallel system to report to management and for reporting to MoFEC; (d) weak transaction level budget monitoring; (e) inadequate qualified IT auditors in the performance audit team limiting the internal audit unit performance. These weaknesses have contributed to delays in closing of accounts and getting the entity accounts audited on time leading to a three years backlog in audit as well as qualification of the entity audit reports for the past number of years. A procurement risk assessment of the implementation arrangements for the project has been undertaken. The main risks identified include: (a) lack of accountability and unclarified roles for different parties; (b) Poor record keeping; (c) Inadequate number of procurement staff to manage the bidding processes including preparation of bidding documents and request for proposals as well as managing the bid evaluation stage; and (d) limitations in contract administration.		the current FM risk assessment after mitigation measures. After each supervision visit, the risk will be measured and recalibrated accordingly. Additional supervision activities will include: partial supervision on the follow up of the compliance with the agreed FM arrangements, as well as timely follow-up of issues arising from reviews and field visits; desk review of quarterly IFRs; desk review of internal audit reports; desk review of annual audited financial statements; transaction review; and updating the FM rating in the Implementation Status and Results Report (ISR) and the Portfolio and Risk management (PRIMA) system. **Procurement** The responsibilities of each party in the procurement process have been discussed and agreed to and will be detailed in the Project Implementation Manual (PIM). The mitigation measures for the identified risks include implementing agencies to: (a) prepare procurement manual as part of the PIM that clearly describes the procurement process, roles and responsibilities, and business standard for different steps; (b) keep records in a way that can be retrieved easily and allocate sufficient space and facilities for procurement functions; (c) use Bank's evaluation report template; (d) provide training to all involved in procurement decisions; (e) establish strong contract administration and monitoring system, and prepare and agree on a format for regular reporting of status; (f) undertake detailed design reviews and clear right of ways before signing works contracts; and (g) effectively coordinate inputs from beneficiary organizations
7. Environmental and social: Given that construction will take place in a congested urban area the implementation of environmental and social safeguards will require proper mitigation plans for traffic, dust, noise, diversions as well as resettlement of informal vendors. Street vendors (Informal Traders) using the existing side walkways to sell brewed coffee, tea, readymade clothes and other consumable goods as a means of earning their livelihood may resist to move to alternative location. In addition Project Affected Persons not satisfied with resettlement arrangements could impede site handover and	Substantial	The project largely focuses on strengthening the capacities of transport entities including putting systems in place such as management and operational information systems. Civil works will, as much as possible, be confined to the right of way and will involve installing traffic signaling and transport communication intelligent systems, as well as improving pedestrian infrastructure (walkways), foot bridges, and where necessary, rehabilitating the existing selected road corridors. The relevant safeguard documents including the RPF, SIA and ESMP have been prepared by the Borrower, reviewed and cleared by the Bank and disclosed in-country and in the Bank's InfoShop. A Grievance Redress Mechanism (GRM) for people to report concerns or complaints, if they feel unfairly treated or are affected by any of the subprojects will be

Risk Category	Rating	Risk Mitigation
construction schedules, thereby delaying project benefits. The Borrower has inadequate capacity and experience in implementing World Bank funded projects. The relocation of underground and over ground utilities will be required as part of the corridor improvement works, which is likely to lead to delays to construction works.		set up for the project. Citizens will have an opportunity to register complaints about the construction of sidewalk ways, drainages, foot crossings, streetlights and other development activities, resettlement, and any other perceived abuses of the project. The grievance committee at the various levels will address such complaints, including logging, tracking, and resolving grievances promptly. Although the Borrower has inadequate experience in implementing World Bank funded projects, it has assigned a qualified and experienced social development officer and environmental officer to be responsible for social and environmental safeguards matters complemented by recruiting additional social development and environmental specialists for each. The Bank will provide the required support and capacity strengthening for the designated counterpart staff during project implementation. Corridor and intersection design work should include the identification of existing utility routes and develop strategies for effective relocation. Close liaison with utility companies will be necessary during the design and implementation of the works. Payments for utility relocation need to be made on time.
8. Stakeholders: Private bus and mini-bus taxi operators, currently operating in an environment with minimal regulation to the extent of exhibiting indiscipline and disregard for safety and environment, may resist introduction of stringent enforcement of traffic rules, as well as corridor exclusivity that may be required for operations of a sustainable mass transit system. Similarly, installing and introducing of a security based document through a new and transparent ICT based systems for vehicle registration that will replace the existing manual based practice is a potential ground for resistance from vehicle owners or dealers and officials benefiting from the current situation which fails to ensure that documents are adequately protected against adulteration and counterfeiting, leading to the use of doctored or counterfeit drivers licenses or vehicle registration documents for trafficking stolen vehicles, evading taxes, or keeping un-roadworthy vehicles.	High	The Bank will work closely with the Government to identify champions and make available empirical information that would educate the public and other key stakeholders on the potential benefits and cost effectiveness that rationalizing public transport offer. This may include study tours and capacity building. Adequate measures will be included in the project to involve the private public bus and mini-bus taxi owners in participating. The establishment of the proposed PFTA offers opportunities for consultations. Project stakeholders and other users of the identified transport corridors as well as vehicle owners and dealers will be consulted to determine their support for the project. Publicity campaigns will set out the advantages of secure systems for drivers licenses and vehicle registration documents.

Annex 9: Mainstreaming Gender

1. **Gender and citizen's engagement.** Studies[37] have shown that in urban areas, women tend to rely more on public transport than men. A review of Brazil's household expenditure survey for 2002–2003 showed that women used public buses, informal and intermediate modes of transport (such as taxis) more than men. The results showed that 65 percent of women used public buses in the week compared to only 42 percent of men. Meanwhile, men were found to get access to and priority for the use of cars/ private motorized modes of transport. Similarly, a survey in Nigeria showed that the decision to acquire a car is made solely by the husband in nearly 60 percent of households.

2. These studies also found that women spend a greater share of their disposable income on public transport than men, which is exacerbated by unpredictability of fares. For example in Uganda women spend as much as 29 percent of their income on public transport and relatively high transport prices made services particularly prohibitive for women when it comes to reaching their workplaces. As a result women tend to work closer to home beyond a fixed cost threshold. Furthermore it is estimated that 75 percent of maternal deaths could be prevented through timely access to essential health care. Transport services and road infrastructure play a key role in accessing that care. Yet, in many cases, considerable time is spent by women and their families waiting for transportation and emergency travel to reach a health facility often has to be undertaken on foot or by local forms of 'non-motorized transport'.

3. These studies conclude that in developing countries, walking remains the predominant mode of travel for many women as other transport modes are often not available because they are either too expensive or not conveniently located. Cultural acceptance, personal safety and the avoidance of harassment are also major concerns for women in relation to accessing, choosing and using transport.

4. As explained elsewhere, the approach Ethiopia has adopted in the recent past to address urban transport has been primarily to increase road infrastructure. This seems not to have improved accessibility for either the poor or rich. In urban areas, studies[38] indicate that men and women have different travel patterns and transport needs. For instance, women are likely to have diverse travel destinations, ranging to various degrees from travelling to earn an income to accessing social services and markets, and paying visits to their relatives. Women make more complex trips while running household errands than do men, on both inward and outward commutes, irrespective of the number of persons in a household. To minimize travel time and balance the overlapping schedules of work and household responsibilities in response to the low level of available transport services, women choose work opportunities that are close to their homes.

5. Thus, identifying and addressing gaps in gender equality that will influence sector policies as well as the design, planning, and provision of infrastructure and services is critical. Attention has to be paid to the needs of all transport users disaggregated by gender since they face

[37] World Bank, Transport, Mainstreaming Gender in Road Transport: Operational Guidance for World Bank Staff (TP-28, March 2010), Women's Participation in Household Automobile Decision Making in a Developing Economy – Nigeria, Odufuwa, B. O. 2007, and Pakistan Journal of Social Sciences, Vol. 4, No. 6 pp. 379–345.
[38] Root, A, L. Schintler and K.J. Button (2000), Women, travel and the idea of sustainable transport.

different transport constraints. This requires that any proposed interventions should be targeted not just to improve the physical infrastructure but also to improve the means of transport, including the non-motorized transport modes as well as the quality of services. To do this, the travel behaviors of both women and men with regard to frequency of trips, travel time and mode choice must be examined to ensure that both men and women can equally afford and safely access and use transport.

6. These studies conclude that women have more limited access to available means of transport and tend to have access to fewer transport choices, thereby limiting the number and purposes of trips they make. Yet women have to fulfill their roles as workers; mothers taking care of children, handle household responsibilities and are often responsible for maintaining community and social networks. However, transportation prices can make public transport inaccessible with women having to spending a higher share of their income on average than men. Given these circumstances, walking remains the main mode of travel for many women in developing countries as other transport modes are either not available due to cost or not within easy reach due to their location.

7. The cited literature also shows that the pedestrian environment plays a major role in improving accessibility to and use of transport services. Except in specific urban contexts with a large supply of reliable and affordable public transportation, for most poor people and particularly women, rising rates of crime, the lack of safe and easily accessible pedestrian environments can lessen or limit the attractiveness of walking.

8. Unless the above issues are taken into account in designing operations, gender-based inequalities in transport will slow economic growth and poverty reduction. Not addressing men's and women's travel differences can have a negative impact on the economic and social development of economies since heavy demands on women's time restrict their ability to increase productivity and incomes, keeping them isolated and perpetuating a cycle of poverty. As a result, the studies conclude that constraints on the mobility patterns of women not only affect their household but also the development and productivity of economies as a whole.

9. These findings depict the prevailing situation in Addis Ababa. Thus, the provision of improved pedestrian infrastructure such as walkways, street lighting, and pedestrian crossings as well as improving public transport services through modernizing the operations of ACBE to enhance the reliability and quality of service and coordination with other transport services under the project will significantly benefit women.

10. As part of project preparation, the client conducted a Social Impact Assessment (SIA) and community consultations, and identified key gender mainstreaming and citizen engagement issues in the transport sector. The SIA identified the need to prepare a Gender Action Plan (GAP) that will focus on: (a) ensuring women's equitable participation in project-related public consultations, (b) incorporating gender-responsive design features in urban transport infrastructure and services, (c) promoting increased employment opportunities for women, and (d) strengthening the implementing agencies' institutional capacities for gender mainstreaming. The project recognizes the multiple roles and unique patterns of mobility of women and their particular transport needs for personal safety when using public transport and walking. The project will improve transport infrastructure and services to make travel easier and safer for women, thus increasing their access

to employment opportunities in new transport-related jobs in construction, urban greenery, and operation and maintenance, as well as in industrial jobs by reducing travel time from residential areas to workplaces.

11. The gender profiles for the implementing agencies (Table 9.1) show that the majority of the positions in these agencies are occupied by men. Permanent employees of Addis Ababa City Road Authority (AACRA) are 2,863 in number, of which 535 are women—about 19 percent. The female-male sex composition is close to equal in the Addis Ababa Road and Transport Bureau (AARTB) and ACBE City Bus Service Enterprise (ACBSE), 44 percent and 42 percent respectively. However these figures indicate that the participation of women in the transport sector as a whole is limited and more gender-responsive works have to be integrated throughout the project life cycle.

Table 9.1. Number of Employees for Each of the Project Stakeholders/Beneficiaries

		Male		Female		Total	Remarks
		Number	%	Number	%		
	FTA	302	62	184	38	486	
	PIU	9	100	nil	0	9	
	AACRA	2,328	81	535	19	2,863	
	AARTB	32	56	25	44	57	
	TPMO	49	72	19	28	68	
	ACBSE	2,357	58	1,709	42	4,066	
	PFTA						Newly established
	TMA						Newly established
	Total	5,077		2,472		7,549	

Note: The data for two newly established organizations, PFTA and TMA, are not included.

12. To provide equitable benefits and opportunities, the project will support active participation of women in the PIUs and in the project Steering Committees; there will be technical assistance for the FTA and Bureau of Women Affairs Directorate to enable the FTA and Bureau to: (a) monitor the implementation of gender mainstreaming guideline, (b) conduct a study on the different constraints men and women face in the transport sector, and (c) propose actions that need to be put in place such as gender training of transport staff, contractors, and consultants to ensure an understanding of women's issues.

13. The project will also facilitate consultative process with women's groups in the participating regions and cities to ensure that men and women have access to information on road safety, project related business opportunities, and public transport planning and management. Gender-disaggregated information will be collected as part of the routine tracking and monitoring system of the project. Also, the project will support all implementing agencies in the application of the gender budgeting guidelines developed by MoFEC. To reduce abuse and violence against women when using public transport, the project will establish a hotline telephone service where abuse can be reported. The project will proactively facilitate income restoration and employment opportunities for women, particularly those directly affected by the project. In the wider transport and haulage sectors, gender-disaggregation of data on drivers and vehicle ownership will allow FTA and MoT to design actions to increase the involvement of women in these traditionally male-dominated areas.

14. The project includes components that will address gender issues through the provision of pedestrian infrastructure including sidewalks, pedestrian crossings and improvement of public transport by modernizing the operations of ACBE, and improving the coordination between all public transport services in Addis Ababa. Benefits for women will include reduced waiting times for transport due to improve traffic flows on corridors, the improvement of pedestrian facilities, and addressing overcrowding and the lack of safety. The project has prepared a draft GAP which will be refined during implementation. This review will be informed by a study on the different constraints men and women face in the transport sector with proposed actions that need to be put in place and the necessary mitigating measures. The proposed activities and areas for action by the respective beneficiaries are listed in the draft GAP in table 9.2.

Table 9.2. Project Gender Action Plan

Project Components	Project Subcomponents	Targeted Gender Related Activities	Responsibility: Individuals/Institution/Department/Unit and so on.	Remarks
Component A: Traffic Management and Road Safety in the City of Addis Ababa	1. Improving the traffic and safety management practices in the City of Addis Ababa	• Provision of gender awareness raising in capacity building trainings for staff; • Create employment opportunity; • Conduct sub project gender study during design and consultancy; • Establish women groups in cooperatives who will manage and administer the new parking lots as Micro and Small Enterprises (MSE's); and Facilitate gender sensitization for contractors, consultants, MSE organizers, and motivate them to recruit women, before commencement of their work and agree with them at on gender issues related to the work process.	PIU, TMA, AARTB, Addis Ababa Traffic Police, AA Transport Bureau's gender department, consultants, contractors, and so on.	
	2. Improving road and pedestrians safety interventions of selected corridors at identified locations and strengthening the capacity of Addis Ababa City Roads Authority (AACRA)	• Consult women about transport needs and priorities before interventions; • Provide safe, clean and sanitation facilities and bathrooms at the roadside and in terminals in consultations with utility providers to make improve women and the poor facility constraints; • Improve and rehabilitate access routes to terminals, focusing on accessibility by pedestrians and bicycles as well as improving the quality of facilities; • Consider pedestrian walkways improvements' design to meet women's specific mobility needs, including lower height of entry steps into public buses as well as the installations of handrails or ramps;	PIU, AACRA, AARTB, AA Transport Bureau's gender department, consultants, contractors	Review "inclusive involuntary resettlement and displacement checklist"
		• Consider safe and gender-responsive design features in civil works to alleviate potential women's burden and improve security and safety; • Study and design of roadside economic activities based on the RPF and SIA and avoid any subsequent relocation or consider the economic opportunities that are lost and created through road improvement activities;		

		• Ensure the existence of joint property title for spouse and husband during resettlement compensation settlement; • Deposit women's cash compensation in individual bank accounts in their names during resettlement planning; • Provide livelihood trainings to women groups organized in MSE's with special attention to female headed households; and • Consult women who will be the users of the impacted roads so that solutions can be found to help alleviate economic losses.		
	3. Improving traffic oversight, public transport services and systems and strengthening the capacity of PFTA and the ACBE	• Re-consider the women's safety by providing lower height of bus entry steps and paths leading into public buses or subway cars; • Encourage women at the time of job recruitment by applying the provision of affirmative action; • Improve street and transit point lighting so as to improve security and safety for women; • Integrate gender awareness in capacity building trainings for PFTA and ACBSE staffs to perform activities in gender-responsive modes; • Reduce risk of sexual harassment and other potential social problems associated with public transport services through the application of enforcement and awareness creation measures;	PIU, PFTA, AARTB, ACBSE, AA Transport Bureau's gender department, consultants, contractors, and so on.	
		• Provide safety tools for women working in public transport to address occupational health and safety features; • Provide improved and better labor conditions for staff especially for women; • Expand hours and routes of public transport, possibly using similar vehicles so that many women engage in trip-chaining travel that combines several tasks in multi-segment trip; • Establish a system of bus transit/ passes to enable travel in multiple segments without paying separate fares; • Provide safe, clean and sanitation facilities and separate restrooms for women in selected bus terminals to make improve women and the poor facility constraints; and • Device a strategy that ensures women job security during the application of automated fare collection system by public transport enterprises.		
	4. Supporting AARTB and the Transport Programs Management Office (TPMO) to improve their	• Sex disaggregated data collection and analysis to be made so as to identify problems related to gender and take overarching mitigation measures;	PIU, TPMO, AARTB, AA Transport Bureau's gender department, consultants, contractors, and so on	

	business planning and implementation	• Conduct awareness raising trainings to overcome gender stereotypes blocking of women participation among staff; • Establish gender positions within the AARTB and TPMO staffing; • Assist in incorporating gender dimensions in monitoring and evaluation systems and procedural manuals; and • Consider the design to integrate platforms that create safe and secured urban transportation throughout project planning and implementation phases.		
Component B: Improvement of Integrated Urban Planning and Transport System	This component will involve supporting the AALDMB to develop Land Use and Transport Plans. Carrying out studies on TOD; Provision of advisory and technical assistance in enhancing the capacity in LRT area master planning; Building the capacity of AALDMB in carrying out its functions	• Consider the design to integrate platforms that create safe and secured urban transportation through TOD; • Conduct gender awareness trainings for the staff; • Encourage women employment as experts and managerial positions within the AALDMB staffing; • Assist in incorporating gender dimensions in monitoring and evaluation systems and procedural manuals; • Study and design of roadside economic activities based on the RPF and SIA and avoid any subsequent relocation or consider the economic opportunities that are lost and created through TOD; • Ensure the existence of joint property title for spouse and husband during resettlement compensation settlement; • Deposit women's cash compensation in individual bank accounts in their names during resettlement planning; • Provide livelihood trainings to women groups organized in MSE's; • Consult women who are the users of the impacted roads so that solutions can be found to help alleviate economic losses; and • Increase women participation in planning, implementation and evaluation of TOD projects.	PIU, TPMO, AALDMB, AA Transport Bureau's gender department, consultants, contractors and so on.	
Component C: Road Safety Interventions and Institutional Strengthening of Selected Federal Transport Institutions	1. Improving compliance with road transport rules and regulations nationally, through improved driver training, developing an integrated driver licensing and vehicle registration system, and strengthening FTA's capacity	• Sex disaggregated data collection and analysis along with developing an integrated driver licensing and vehicle registration system will be made; • Integrate gender awareness creation programs under the staff capacity building trainings to promote women active participation in developing rules and regulations, as well as in decision making, and enforcement procedures; • Provide gender related trainings for transport sector employees, consultants and contractors; • Enhance women employment in transport system management and operation;	PIU; FTA; AACRA, AARTB, ACBSE, AA Transport Bureau and Federal Transport gender departments; consultants; contractors and so on.	

		• Consult local women using surveys and FGDs on transport patterns, needs and constraints; • Incorporate women's ownership on the registration of Vehicles and transfer; • Reduce risk of sexual harassment and other potential social problems associated with driver-training process with appropriate enforcement of rules and regulations; • Increase number of women traffic police through training and other empowerment tools; and • Encourage women investors by creating investment opportunities in transport sector.		
	2. Improving federal traffic enforcement capability and strengthening the capacity of Federal traffic police	• Engender the efforts to improve the federal traffic enforcement capabilities; • Integrate gender awareness into the capacity building programs; and • Foster partnership with local organization and Government sectors to effectively mobilize women participation in the transport sector.	PIU, FTA, Federal Transport gender departments, Federal Traffic Police, consultants, contractors and so on.	
	3. Improving oversight capacity of MOT and MOC	• Integrate gender awareness into the overall road safety and institutional capacity building of the federal transport institutions; and • Involve local women in the implementation and evaluation of TRANSIP.	PIU, FTA, MoT, MoC, Federal Transport gender departments, consultants, contractors and so on.	

Annex 10: Map

ETHIOPIA: Transport Systems Improvement Project