

Document of
The World Bank

FOR OFFICIAL USE ONLY

Report No: PAD324

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US\$116 MILLION

AND A

PROPOSED LOAN FROM THE CLEAN TECHNOLOGY FUND

IN THE AMOUNT OF US\$25 MILLION

TO THE

REPUBLIC OF THE PHILIPPINES

FOR THE

CEBU BUS RAPID TRANSIT PROJECT

September 3, 2014

Transport and ICT Global Practice
East Asia and Pacific Region

This document is being made publicly available prior to Board consideration. This does not imply a presumed outcome. This document may be updated following Board consideration and the updated document will be made publicly available in accordance with the Bank's policy on Access to Information.

CURRENCY EQUIVALENTS

(Exchange Rate Effective July 31, 2014)

Currency Unit = Philippine Peso (PHP)
US\$ 1.00 = PHP 43.63
PHP 1.00 = US\$ 0.023

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
ANDAR	Alyansa sa Nagkahi-usang Driver-Operator Alang sa Reporma
ATC	Area Traffic Control
BAC	Bids and Awards Committee
BAU	Business As Usual
BP	Bank Procedures
BRT	Bus Rapid Transit
CITOM	City Traffic Operations Management
CBD	Central Business District
CCG	Cebu City Government
COA	Commission on Audit
CTF	Clean Technology Fund
DA	Designated Account
DBM	Department of Budget and Management
DBP	Development Bank of the Philippines
DED	Detailed Engineering Design
DENR	Department of Environment and Natural Resources
DOTC	Department of Transportation and Communications
DPWH	Department of Public Works and Highways
EE	Energy Efficiency
EIRR	Economic Internal Rate of Return
EMA	External Monitoring Agent
EST	Environmentally Sustainable Transport
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GoP	Government of the Philippines
IA	Implementing Agencies
IBRD	International Bank for Reconstruction and Development
IFRs	Interim Financial Reports
ITS	Intelligent Transport System
IVE	International Vehicle Emissions
LGUs	Local Government Units
LTFRB	Land Transportation Franchising and Regulatory Board

MtCO ₂ e	Metric Ton Carbon Dioxide Equivalent
NESTS	National Environmentally-Sustainable Transport Strategy
NMT	Non-Motorized Transport
NPMO	National Program Management Office
NSC	National Steering Committee
OP	Operational Policy
PDO	Project Development Objective
PHP	Philippine Peso
PIP	Project Implementation Plan
PIU	Project Implementation Unit
PM	Particulate Matter
PPP	Public-Private Partnership
PT	Public Transport
PUJs	Public Utility Jeepneys
RE	Renewable Energy
ROW	Right-of-Way
SBD	Standard Bidding Document
SOE	Statement of Expenditure
SRP	South Road Properties
TSC	Technical Support Consultant
VKM	Vehicle Kilometers
VSL	Variable Spread Loan

Regional Vice President:	Axel van Trotsenburg, EAPVP
Country Director:	Motoo Konishi, EACPF
Sector Director:	John A. Roome, EASSD (through June 30, 2014)
Global Practice Senior Director:	Pierre Guislain, GTIDR (from July 1, 2014)
Global Practice Director:	Jose Luis Irigoyen, GTIDR (from July 1, 2014)
Sector Manager:	Ousmane Dione, EASPS (through June 30, 2014)
Practice Manager:	Michel Kerf, GTIDR (from July 1, 2014)
Task Team Leader:	Ajay Kumar, GTIDR
Co-Task Team Leader:	Victor Dato, GTIDR

PHILIPPINES
Cebu Bus Rapid Transit Project

TABLE OF CONTENTS

	Page
I. STRATEGIC CONTEXT	1
A. Country Context.....	1
B. Sectoral and Institutional Context	1
C. Higher Level Objectives to which the Project Contributes	4
II. PROJECT DEVELOPMENT OBJECTIVES	4
A. PDO	4
B. Project Beneficiaries.....	4
C. PDO Level Results Indicators	5
III. PROJECT DESCRIPTION	5
A. Project Components.....	5
B. Project Financing	6
1. Lending Instrument	6
2 Project Cost and Financing.....	6
C. Lessons Learned and Reflected in the Project Design.....	6
IV. IMPLEMENTATION	8
A. Institutional and Implementation Arrangements	8
B. Results Monitoring and Evaluation	8
C. Sustainability	9
V. KEY RISKS AND MITIGATION MEASURES	9
A. Risk Ratings Summary Table	9
B. Overall Risk Rating Explanation	10
VI. APPRAISAL SUMMARY	11
A. Economic and Financial Analyses.....	11
B. Technical.....	11
C. Financial Management.....	12
D. Procurement	12

E. Social (including Safeguards).....	13
F. Environment (including Safeguards).....	14
Annex 1: Results Framework and Monitoring	16
Annex 2: Detailed Project Description.....	19
Annex 3: Implementation Arrangements	27
Annex 4: Operational Risk Assessment Framework (ORAF).....	49
Annex 5: Implementation Support Plan	55
Annex 6: Economic and Financial Analysis	63
Annex 7: Clean Technology Fund	70
Annex 8: Communication and Consultation	87

PAD DATA SHEET*Philippines**Cebu Bus Rapid Transit (BRT) Project (P119343)***PROJECT APPRAISAL DOCUMENT***EAST ASIA AND PACIFIC*

GTIDR

Report No.: PAD324

Basic Information			
Project ID P119343	EA Category B - Partial Assessment	Team Leader Ajay Kumar	
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints []		
	Financial Intermediaries []		
	Series of Projects []		
Project Implementation Start Date 26-Sept-2014	Project Implementation End Date 30-Dec-2020		
Expected Effectiveness Date 26-Dec-2014	Expected Closing Date 30-Jun-2021		
Joint IFC No			
Practice Manager Michel Kerf	GP Senior Director Pierre Guislain	Country Director Motoo Konishi	Regional Vice President Axel van Trotsenburg
Borrower: Republic of the Philippines			
Responsible Agency: Department of Transportation and Communications			
Contact: Telephone No.: 63-2-723-1507	Rene Limcaoco	Title: Email: Reneklimcaoco@yahoo.com	Under Secretary
Project Financing Data(in USD Million)			
[X] Loan	[] IDA Grant	[] Guarantee	
[] Credit	[] Grant	[] Other	
Total Project Cost:	228.50	Total Bank Financing:	116.00
Financing Gap:	0.00		
Financing Source		Amount	

Borrower	87.50
International Bank for Reconstruction and Development	116.00
Clean Technology Fund	25.00
Local Sources of Borrowing Country	0.00
Total	228.50

Expected Disbursements (in USD Million)

Fiscal Year	2015	2016	2017	2018	2019	2020	2021		
IBRD									
Annual	2.00	12.00	25.00	25.00	20.00	20.00	12.00		
Cumulative	2.00	14.00	39.00	64.00	84.00	104.00	116.00		
CTF									
Annual	1.5	2.5	5.0	6.0	5.0	5.0			
Cumulative	1.5	4.0	9.0	15.0	20.0	25.0			

Proposed Development Objective(s)

The Project Development Objective (PDO) is to improve the over-all performance of the urban passenger transport system in the Project Corridor in Cebu City in terms of the quality and level of service, safety, and environmental efficiency.

Components

Component Name	Cost (USD Millions) (including contingency)
BRT Infrastructure and System	186.00
Traffic Management	21.40
BRT Concept Dissemination and Development	7.00
Urban Realm Enhancements	3.00
Project Outcome Monitoring	5.00
Project Management	6.10

Institutional Data

Practice Area / Cross Cutting Solution Area

Transport & ICT

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Transportation	General transportation	40		100

	sector			
Public Administration, Law, and Justice	Public administration-Transportation	40		
Finance	General finance sector	20		
Total		100		
<input type="checkbox"/> I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.				
Themes				
Theme				
Major theme	Theme	%		
Financial and private sector development	Infrastructure services for private sector development	25		
Urban development	Urban services and housing for the poor	25		
Environment and natural resources management	Climate change	25		
Social development/gender/inclusion	Gender	25		
Total		100		
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
Financial Management, Procurement and Implementation	X		
Description of Covenant			
Standard financial management, procurement and implementation covenants as tailored to the project			
Name	Recurrent	Due Date	Frequency
Implementation Arrangement		27-Mar-2015	
Description of Covenant			
Appoint a financial management specialist and a procurement specialist to the PIU, with functions, qualifications, and terms of reference as indicated in the Project Implementation Plan			
Name	Recurrent	Due Date	Frequency
Preparation of Annual Work and Financial Plan and Safeguards Implementation	X		
Description of Covenant			
Project-specific covenants relating to: (a) preparation of annual work and financial plan for approval by the Bank; (b) implementation of the project in accordance with the Environmental Impact Assessment (EIA), Social Management Plan (SMP), Resettlement Action Plan (RAP); and (c) key outcome indicators			
Name	Recurrent	Due Date	Frequency
Project Management, Technical Support, Procurement, Monitoring and Evaluation		31-Mar-2015	
Description of Covenant			
Enter into a contract with a Technical Support Consultant to support the NPMO and PIU in project management, technical support, procurement, monitoring and evaluation by March 31, 2015			
Name	Recurrent	Due Date	Frequency
Legal, Financial and Institutional Framework		30-Jun-2016	
Description of Covenant			
Establish overall legal, financial and institutional framework acceptable to the Bank for the operation and maintenance of the BRT system in Cebu City by June 30, 2016			
Name	Recurrent	Due Date	Frequency
Cebu City BRT System Manager		30-Sep-2017	

Description of Covenant

Enter into a contract with a legal entity to serve as the Cebu City BRT system manager by September 30, 2017

Name	Recurrent	Due Date	Frequency
Bus Operator(s) for the Cebu City BRT		31-Mar-2018	

Description of Covenant

Ensure that services of one or more legal entities are contracted to serve as bus operator(s) for the Cebu City BRT by March 31, 2018

Name	Recurrent	Due Date	Frequency
Withdrawal Conditions		31-Dec-2013	

Description of Covenant

No withdrawal shall be made for payments made prior to the date of this Agreement, except that withdrawals up to an aggregate amount not to exceed \$23,200,000 from IBRD Loan and \$5,000,000 equivalent from CTF Loan may be made for payments made prior to this date but on or after December 31, 2013.

Conditions

Source Of Fund	Name	Type
IBRD	Board Presentation	Approval

Description of Condition

There are no conditions of Board.

Description of Condition

There are no conditions of Board.

Source Of Fund	Name	Type
CCTF	CTF Loan Agreement	Effectiveness

Description of Condition

The IBRD Loan Agreement has been executed and delivered and all conditions precedent to its effectiveness or to the right of the Borrower to make withdrawals under it (other than the effectiveness of this Agreement) have been fulfilled.

Source Of Fund	Name	Type
IBRD	IBRD Loan Agreement	Effectiveness

Description of Condition

The CTF Loan Agreement has been executed and delivered and all conditions precedent to its effectiveness or to the right of the Borrower to make withdrawals under it (other than the effectiveness of this Agreement) have been fulfilled.

Team Composition

Team Composition					
Bank Staff					
Name	Title	Specialization	Unit		
Kristine May San Juan Ante	Program Assistant	Program Assistant	EACPF		
Dominic Reyes Aumentado	Senior Procurement Specialist	Senior Procurement Specialist	GGODR		
Junxue Chu	Senior Finance Officer	Senior Finance Officer	CTRLN		
Victor Dato	Infrastructure Specialist	Infrastructure Specialist	GTIDR		
Simon Peter Gregorio	Consultant	Consultant	GTIDR		
Maria Luisa G. Juico	Program Assistant	Program Assistant	GTIDR		
Ajay Kumar	Lead Transport Economist	Task Team Leader	GTIDR		
Gia Mendoza	Program Assistant	Program Assistant	EACPF		
Shingira Samantha Masanzu	E T Consultant	Legal	LEGES		
Danielle Malek Roosa	Senior Counsel	Senior Counsel	LEGES		
Miguel-Santiago da Silva Oliveira	Senior Finance Officer	Senior Finance Officer	CTRLN		
Andrew Salzberg	Consultant	Consultant	GTIDR		
Tomas JR. Sta. Maria	Financial Management Specialist	Financial Management Specialist	GGODR		
Joan Toledo	Finance Analyst	Finance Analyst	CTRLN		
Maya Gabriela Q. Villaluz	Senior Operations Officer	Senior Operations Officer	GENDR		
Samuel L. Zimmerman		Consultant	GTIDR		
Non Bank Staff					
Name	Title	City			
Pramod Agrawal	Social Safeguard Specialist	Singapore			
Jamie Leather	Principal Transport Specialist	Mandaluyong			
Jack Reilly	Professor				
Locations					
Country	First Administrative Division	Location	Planned	Actual	Comments
The Philippines	Cebu Province	Cebu City			

I. STRATEGIC CONTEXT

A. Country Context

1. Despite rapid economic growth, the Philippines faces growing income inequality and unequal sectoral and regional distribution of growth. Public infrastructure gaps are widely recognized as binding constraints to job creation, inclusive growth and equitable social development in the Philippines. Enhancing both the quality and quantity of spending remains a priority challenge. Public infrastructure spending remains at less than 2.5 percent of GDP per annum, an amount that government has vowed to double in the medium term.

2. From close to 30 percent GDP in the 1970s, investment in physical capital declined to about 20 percent in the last decade. In the public sector, low tax collection effort and weak public investment management limited public infrastructure spending to less than 2.5 percent of GDP annually. Economic growth and poverty reduction in the Philippines has not benefited from urbanization gains as much as other neighboring countries. The country's urbanization trajectory is uniquely affected by among other factors, the archipelagic geography, leapfrogging industrialization process, highly fragmented structure for spatial and infrastructure planning, and poor metropolitan governance. Philippine cities have not been able to keep pace with explosive urban population growth as evidenced in infrastructure and housing deficiencies, traffic congestion and environmental pollution.

3. To achieve sustained and high growth, the Government calls for a stable macroeconomic environment, increased infrastructure investment and competitiveness, and improved governance. To enable broad-based access to development opportunities, the Government calls for increased investment in human capital and improved access to infrastructure. The Government has recognized the need to expand and upgrade the quality of transport infrastructure, supporting capacity development (institutionalizing inter-agency coordination, business process improvements, and integrity strengthening activities to improve governance in the sector progressively) and supporting the introduction of innovative and international good practices in developing and managing transport infrastructure.

B. Sectoral and Institutional Context

4. Unmanaged growth in transport demand is causing significant negative economic impacts. In 2008, traffic congestion cost the economy the equivalent of 140 billion PHP (~2% of the country's Gross Domestic Product GDP) in Metro Manila alone (*Formulation of a National Environmentally Sustainable Transport Strategy for the Philippines*, Department of Transportation and Communication, Department of Environment and Natural resources, Final Report, May 2011). This economic cost comes from lost man-hours, additional fuel consumption, increased health costs, a larger number of traffic fatalities, and lost investment opportunities. With rising motorization, the transport sector's contribution to national GHG emissions has increased by 6 to 12 percent per year since 1990, and transport's relative share of national greenhouse gas emissions has more than doubled, from 15 percent in 1990 to about 33 percent in 2009. Based on the current growth rates in motorization in combination with a projected increase in urban population of 35 million residents by 2030, emission contributions

from road transport, estimated at 24 MtCO₂e in 2007, are projected to more than triple by 2030 under a business as usual (BAU) scenario.

5. The lack of an integrated approach to multi modal transport hinders government's efforts to address these challenges. Planning and regulation of public transport in the Philippines is largely under the jurisdiction of the national government. There is currently no entity within Local Government Units (LGUs) with a specific mandate for urban passenger transport. Metropolitan Councils have not been given the legal power and resources to tackle the challenges of metropolitan transportation.

6. Cebu City Context. Metro Cebu is a loosely defined term that describes the conglomeration of several adjacent cities and municipalities that form the principal urban area of Cebu Province. Metro Cebu is the second largest metropolitan area in the Philippines after Metro Manila with a population of 2.5 million inhabitants, and Cebu City is its largest LGU, with a population of about 850,000 people. Cebu has historically been the regional, financial, and administrative capital of the Central Visayas Region. Economically, the city supports a strong and growing tourism industry due to adjacent natural attractions as well as the city's own history and culture.

7. Congestion. Rising congestion is creating increasingly negative consequences for the city. Over the past decade, as incomes have risen, there has been a shift from non-motorized and public transportation to private modes. This switch, while an indicator of economic success at the individual level, has resulted in increasing traffic accidents and growing congestion; growing local air pollution and noise; and an increase in the consumption of fossil fuels and emissions of greenhouse gases. Growth in vehicle ownership, growing in recent years at about 6 percent annually, is expected to accelerate over the next 10 to 15 years as incomes continue to rise.

8. Vehicle Ownership. Despite recent growth, car use and ownership levels remain comparatively low. Cebu City remains relatively poor compared to Manila, with average household monthly income estimated at only 14,300 PHP (US\$330). Vehicle ownership is dominated by motorcycles, with over 18 percent of the households owning one or more; about 10 percent owning a bicycle and less than 3 percent owning a car. In terms of mode split, walking carries about 36 percent of all journeys, jeepneys (the dominant form of public transport) carry approximately 34 percent, motorcycles and motorized tricycles carry 26 percent (including informal motorcycle taxis), and formal taxis and private cars carry only 3.5 percent of overall travel.

9. Urban Growth Patterns. In the absence of a coordinated response, the transport situation is likely to degrade. Most of the economic and land development in Cebu City continues to occur at the city's extremities at relatively low densities, particularly in the northeast. This sprawling pattern of urban development combined with increased motorization will only exacerbate the current conditions if not promptly addressed. Meanwhile, new high density development in concentrated areas in the center (for example, the new area around Ayala Mall), designed without careful transport integration or any addition to the public transport supply (other than increased concentration of jeepneys and taxis), will worsen the transport situation.

10. Gender. Women make up 55 percent of public transport users in Cebu, and experience a unique set of challenges. Project preparation has supported outreach targeted to understand the needs of women in accessing and using the existing public transport system. Women in Cebu, in general, perform a multitude of tasks in their travels during the day, including ferrying young children to and from school and other activities, as well as grocery shopping and attending to other household needs. Taking public transportation poses a challenge due to the limited space in Public Utility Jeepneys (PUJs) and the frequent practice of PUJ drivers to overload their vehicles. Key issues faced by women include safety and security in accessing public transport in terms of absence of sidewalks and poor street lighting, need to make trips during off-peak hours when public transport services are particularly poor, and a need to combine multiple short trips within a single journey which is not well served by current operations and adds to the cost of travel.

11. Public Transport Operations. The operation of Cebu City's public transport is almost exclusively road-based and provided by the private sector. PUJs form the backbone of public transport provision in Cebu. Traffic surveys indicate that while PUJs constitute 22 percent of the average daily traffic and carry over 60 percent of the motorized person trips, private cars compose 30 percent of the daily traffic but carry less than 10 percent of the person trips. There are an estimated 8,300 PUJs, 5,800 taxis and 950 buses and mini-buses operating in the City. PUJs currently serve as the main public transport mode for intra-city trips and are mostly operated by single vehicle companies. Shorter trips are often served by tricycles or three-wheelers, which are regulated by LGUs. They are prohibited by law from operating on national roads, although they are allowed to cross them. Most tricycle companies are single unit operators. Jeepneys comprise less than 25 percent of the vehicle traffic stream on major Cebu corridors but their impact on traffic congestion is disproportionately large.

12. Transit Organization and Representation. The 8,300 PUJs are operated by approximately 5,700 franchisees, serving 250 routes within and through Cebu city. About 90 percent of the franchises comprise a single unit. There are two associations of PUJ operators, but both cover relatively small portions of the entire jeepney market: the Cebu Integrated Transport Service Multi-purpose Cooperative and the Visayan United Drivers Transport Services Cooperative. Less than 20 percent of the 5,000 operators belong to either of these two organizations, implying that more than 80 percent of all PUJ operators are not part of any representative structure.

13. Transit Planning and Regulation. The individual PUJs generally operate independently as a micro-business, under route-based non-exclusive franchises issued by the Land Transport Franchising Regulatory Board (LTFRB) for a five-year period. Local government endorsements in the form of "travel lines" are issued by the Cebu City Traffic Operations Management (CITOM). There is no coordinated operation of the PUJs on the individual routes, with each operator working more or less independently. There are no formal route associations, no formal terminals for intra-Cebu routes, and no dispatchers to manage operations. The existing terminals at SM and Ayala Mall are provided, organized, and managed by the Mall owners, who charge the PUJs for use.

C. Higher Level Objectives to which the Project Contributes

14. The overall goal of the WBG's Philippine Country Partnership Strategy (CPS) for FY15-18 is inclusive growth through poverty reduction and shared prosperity, which is consistent with the goal of the country's Updated Philippine Development Plan. The project's link to the CPS is through support under Engagement Area 3 of Rapid, Inclusive and Sustained Economic Growth where the project will contribute to the Government's target of increasing the ratio of public investment to GDP, and provide one urban corridor with improved public transit services. Also consistent with the CPS, this activity will contribute to the knowledge agenda by helping the Government of the Philippines (GoP) and Cebu City to plan and implement the country's first BRT line, thus serving as a template for approaches in other cities. Through this project, the Government will be assisted in institutionalizing inter-agency coordination, business process improvements, and integrity strengthening activities to improve governance in the sector progressively, and introducing innovative and international good practices in developing and managing transport infrastructure.

15. CTF Rationale. The Clean Technology Fund (CTF) involvement will deliver climate benefits directly through the project as well as through the broader strategic promotion of the BRT concept in the Philippines. Studies reveal that implementing the BRT-ATC scenario in Cebu City would yield annual savings (in reference to a BAU baseline scenario) of 115,000 tons/year of CO₂e by the year 2020 and 192,000 tons by 2025 (equivalent to 24 percent and 41 percent of the current total annual GHG emissions from urban transport in Cebu respectively). A full discussion on the rationale for leveraging the CTF to support the project can be found in Annex 7.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

16. The Project Development Objective (PDO) is to improve the over-all performance of the urban passenger transport system in the Project Corridor in Cebu City in terms of the quality and level of service, safety, and environmental efficiency. (The Project Corridor is about 23 km long from Bulacao to Talamban, including South Road Properties).

B. Project Beneficiaries

17. The project will support multiple beneficiaries as follows: It will improve the capacity of government departments and agencies to plan and manage urban transport; provide public transit passengers faster, safer, and more reliable service; improve safety for pedestrians; provide a safer and more comfortable transport option for women; provide greater job security and working conditions for current public transport drivers; support economic development through travel time savings, environmental improvements, and accident reduction for all residents and visitors of Cebu; and improve opportunities for the private sector to support transit oriented development at stations and terminals and develop innovative financing mechanisms with broader application.

C. PDO Level Results Indicators

Performance Indicators:

18. The key results indicators are listed below and will primarily focus on measurements along the Project Corridor (unless stated otherwise). In addition, the project will also have broader city-wide impacts which will be measured as part of a supplemental ongoing program of monitoring and evaluation and is included in project files.

- (a) Increase in the number of people using improved public transport services;
- (b) Increase in the number of women using improved public transport services;
- (c) Reduction in average travel times for BRT users during PM peak from Ayala to Bulacao;
- (d) Reduction in the greenhouse gas (GHG) emissions of transport in Cebu City; and
- (e) Reduction in number of road accidents in Cebu City.

III. PROJECT DESCRIPTION

A. Project Components

19. The project consists of six main components as follows:

20. **Component 1 – BRT Infrastructure and System** (*Total base cost: US\$162.0 million, WB: US\$80.2 million, CTF: US\$8.8 million, GoP: US\$73.0 million*). This component will finance goods, works, and services for detailed design, construction and supervision of BRT infrastructure, and corridor traffic management systems. Land acquisition and resettlement costs in addition to investments in BRT road infrastructure will be financed by GoP.

21. **Component 2 – Traffic Management** (*Total base cost: US\$15.6 million, CTF: US\$13.2 million, GOP: US\$2.4 million*). This component will finance goods, works, and services for intelligent transportation system components, traffic management, and road and intersection upgrades across Cebu City.

22. **Component 3 – BRT Concept Dissemination and Development** (*Total base cost: US\$7.0 million, WB: US\$4.0 million, GOP: US\$3.0 million*). This component will finance studies, training, and capacity building to support bus improvements and BRT application in the Philippines, as well as preparation of feasibility study and detailed design of the proposed Metro Manila BRT system.

23. **Component 4 – Urban Realm Enhancements** (*WB: US\$3.0 million*). This component will finance goods, works, and services to foster integration of land development and BRT system in Cebu City by establishing physical connections from stations and terminals to major trip attractors and generators.

24. **Component 5 – Project Outcome Monitoring** (*Total base cost: US\$5.0 million, WB: US\$3.9 million, CTF: US\$1.1 million*). This component will finance technical assistance, equipment, and other operational support for monitoring project performance and results.

25. **Component 6 – Project Management (WB: US\$6.1 million).** This component will finance technical assistance, equipment, vehicles, office equipment, outreach activities, and other operational support for management of implementation of BRT and related measures.

B. Project Financing

1. Lending Instrument

26. The lending instrument for this project will be an Investment Project Financing (IPF) Loan.

2. Project Cost and Financing

27. The project will be financed by a World Bank loan (US\$116 million) and CTF loan (US\$25 million). The project will also be co-financed by the GoP (US\$87.5 million). The World Bank loan will be a US dollar-denominated, LIBOR-based, commitment-linked, Variable Spread Loan (VSL) with level repayments of the principal. The loan will have a maturity of 25 years, including a grace period of 10 years. A front-end fee of 0.25 percent will be applied and capitalized through the loan.

28. The CTF financing of US\$25 million is extended under hard concessional terms for a maturity of 20 years, including a grace period 10 years, MDB fee 0.18 percent, and service charge of 0.75 percent. The MDB fee 0.18 percent is based on the undisbursed balance of the loan, in which case the fee payments will accrue semi-annually after loan signing.

Indicative Project Cost (US\$ million)

	TOTAL COST	IBRD	CTF	GoP
1. BRT Infrastructure and System	162.0	80.2	8.8	73.0
2. Traffic Management	15.6	-	13.2	2.4
3. BRT Concept Dissemination and Development	7.0	4.0	-	3.0
4. Urban Realm Enhancements	3.0	3.0	-	-
5. Project Outcome Monitoring	5.0	3.9	1.1	-
6. Project Management	6.1	6.1	-	-
Base Cost Total	198.7	97.2	23.1	78.4
Price contingency	11.1	7.2	0.8	3.1
Physical contingency	18.7	11.6	1.1	6.0
TOTAL	228.5	116.0	25.0	87.5

C. Lessons Learned and Reflected in the Project Design

29. Setting up a strong institutional basis for coordinated planning and regulation is critical to the success of urban transport projects. The focus in this project is on developing a national framework for policy, proposal development, and oversight of BRT in the Republic of the

Philippines, centered on the BRT-National Program Management Office (BRT-NPMO) and a BRT National Steering Committee. During the operational phase, the BRT will be managed by a dedicated BRT System Manager, under the oversight of DOTC and Cebu City Government.

30. The Cebu BRT project design should be based on an approach which is: **comprehensive** (addresses land use-transport integration, is multi-modal), **continuous** (plans, planning data and tools are updated on a regular basis), **cooperative** (all stakeholders participate, develop communications plan and stakeholder analysis), **connected** (capital projects are consistent with adopted long range plans), **championed** (support at the highest political level, ownership), and **incremental change** (scale-up interventions in an incremental fashion and allow flexibility in design).

31. It is critical to understand how politics and key stakeholder groups impact the formulation, implementation, and enforcement of public transport plans, policies, and regulations. Urban transport has become a high stakes political agenda and it is important to understand both the interest groups and what is driving them to get a full understanding of the political dimension.

32. Implementation of BRT is a big challenge and requires considerable up-front preparation and consensus building. BRT is a “system” and requires extensive up-front planning and discussions that consider all the relevant issues as a package, including the design of the busway; operations and service planning, design of the stops and junctions; design of the ticketing systems, fare levels, and structures; regulation and ownership of the buses; traffic and non-motorized transport (NMT) safety measures, traffic management strategies; and enforcement of traffic management. The project is designed with a focus on strengthening the regulatory framework, organizing and regulating existing services, bringing the operators on board, and understanding the needs of users through surveys and focus group discussions. Equally important is a need to ensure that the current bus operators and drivers are fully consulted in the design of the proposed project and that their concerns are reflected in development of suitable options to address any potential adverse impacts on their livelihood.

33. The BRT design and construction is very context specific. BRT has great potential to revolutionize the image and efficacy of public transport but it is important to show sensitivity to the city-specific context rather than chase a technological best solution. Attention should be focused on integrating the BRT design within an overall bus improvement scheme and transit oriented development to maximize benefits to city residents.

34. Consistently strong, vociferous support from politically astute champions is needed to implement a BRT system. Efforts of public transport advocates need to be complemented by a solid organization with superior administrative and technical skills and public transport experience.

35. Early development and implementation of a formal, multimedia communications strategy addressing the spectrum of stakeholders is critical. Skillful management of stakeholder expectations, two-way communication, and public involvement increases the chances of project success.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

36. The project will be implemented by DOTC, which will have the overall responsibility for its coordination and management (for details, please see Annex 3). The DOTC has set up a National Steering Committee (NSC) for the overall policy formulation and oversight of BRT systems in the Philippines. A National Project Management Office (NPMO) has been set up to support the mandate of the NSC and oversee implementation of all BRT plans, policies, standards, regulations, and projects nationwide. At the city level, a Project Implementation Unit (PIU) has been set up to carry out day-to-day project implementation, including project management, financial management, procurement, reporting, monitoring, and environmental and social safeguards. For project preparation and implementation, NPMO/PIU will be assisted by a Technical Support Consultant (TSC), in the areas of project management, technical support, procurement, monitoring and evaluation.

37. **Operations Business Model.** DOTC will enter into a single contract with a competent BRT System Manager (BRTSM), who will be responsible for all aspects of management of the BRT System. DOTC will be responsible for ensuring that bus operators are procured. Bus operators will be managed on a day-to-day basis by the BRTSM, both on the street and in terms of the respective contracts with the operators. All system revenue will accrue to DOTC, who will pay the BRTSM and directly pay the operating contractors for the services provided that meet standards. All transportation, customer-facing and support services will be performed by the private sector under contract. The BRTSM will be responsible to manage the contractors through performance agreements. Bus services will be provided by private sector operator(s) who will acquire, finance, operate and maintain their own buses. Bus operators will be paid on the basis of per-kilometer and availability payments (payment for performance made irrespective of demand). All other support and maintenance services will be provided by private sector suppliers, and will be based on availability payments.

B. Results Monitoring and Evaluation

38. A results framework has been developed (see Annex 1) and will provide the basis for monitoring and evaluating the project to make sure investments are on track. The project includes a comprehensive monitoring and evaluation component based on qualitative and quantitative performance indicators for each subcomponent. These include transport, social, environmental, and capacity development indicators. These data would be used, in turn, to estimate project-related GHG emission reductions.

39. Public oversight of the project will be also enhanced by crowd sourcing, smart phone applications, and web tools to better respond to network conditions and public transport service. In addition, a civic engagement platform will be established to improve the public's participation in transport network management issues.

C. Sustainability

40. Once constructed, the BRT system is expected to be financially sustainable over its operating life. Crucially, projections for revenue and costs indicate that as of its opening in 2018, the BRT system will be able to cover all recurring costs including bus purchase or lease cost, vehicle operating costs (fuel, drivers, service personnel, maintenance, etc.), and the costs of management of the BRT system (System Manager, control center personnel, terminal staff, fare collection cost, infrastructure maintenance, rapid response vehicles). Once constructed, the scheme is thus expected to be financially sustainable over its operating life, without considering repayment of initial capital costs.

41. In addition, the project addresses issues of sustainability by directly supporting policies that advance broad societal interests over the long term. These interests include:

- (a) Provision of mobility and access for Cebu City residents, workers and visitors irrespective of income, gender, age or physical ability and making transport safer, more convenient, and environmentally friendly;
- (b) Providing a model for financially sustainable, quality public transport;
- (c) Developing National Government and Cebu City institutional capacity in disciplines critical to rapidly growing urban economies such as integrated land use and transport planning, traffic management and public transport. In the long-term a BRT System Manager will manage and oversee the operation and maintenance of Cebu BRT; and
- (d) Building political support for public transport sectoral and institutional reforms. By improving the quality of life of people in the city and providing them with better access to public transport, the project would help build political support.

42. Another key to BRT's long term sustainability in Cebu City is to make sure that the project's larger social goals are met while mitigating any possible adverse impact on the current PUJ industry. By managing specific concerns of the PUJ operators and drivers and putting in place a mitigating framework, the project would lay the basis for sustainable reform in bus operations.

V. KEY RISKS AND MITIGATION MEASURES

A. Risk Ratings Summary Table

Risk Category	Rating
Stakeholder Risk	S
Implementing Agency Risk	
- Capacity	S
- Governance	S
Project Risk	
- Design	M

- Social and Environmental	S
- Program and Donor	L
- Delivery Monitoring and Sustainability	S
Overall Implementation Risk	S

Note: M (Moderate), S (Substantial)

B. Overall Risk Rating Explanation

43. The overall risk of the project is rated **Substantial**.

44. Stakeholder Risk. By design, many of the existing operators will be displaced from the franchised route. As a result, PUJ operators and drivers may choose not to or be unable to participate in initial stages and thereby frustrate efforts to regulate the sector. To mitigate this risk, an aggressive two-way communications program has been part of the preparation process. The mitigation plan includes franchise and route restructuring, a re-employment program, survey work, and a family sustainable livelihoods program. A detailed list of individual operators and drivers and the agreed method of addressing their concerns has been developed for further action.

45. Governance Risk: Two levels of government at the city and national level will need to be involved during implementation and operation. Loss of ownership and commitment to the project from any level could reduce project success. The mitigation measures include raising awareness, sharing information, and creating an institutional basis for the city and national departments to work together. A memorandum of understanding has been agreed among CCG, DOTC, and DPWH defining specific roles and responsibilities.

46. Social and Environmental Risk: Acquisition of right-of-way and resettlement will be necessary to support construction. A major social risk is the potential loss of employment by some PUJ operators and drivers. The project has been designed to minimize resettlement. A detailed Social Management Plan has been developed to include: (a) options for livelihood restoration of affected jeepney drivers, helpers and operators; (b) vulnerability analysis of affected jeepney operators and drivers; and (c) options as well as the institutional and financial arrangements for restoring livelihood of affected jeepney drivers, helpers and operators.

47. Implementing Agency Risk. A number of national departments and local agencies have overlapping responsibilities with only weak coordination. To mitigate this risk, the DOTC has established a National Steering Committee to coordinate the planning, implementation, management, regulation, and monitoring of BRT policies, plans, and projects; at the operational level, a National PMO with a Cebu-based PIU has been established with competent staff. Further, there may be inadequate capacity in procurement, financial management, operations planning, and bus route restructuring. This would be mitigated through a comprehensive project implementation plan. A consultant team with skills in all the requisite technical and administrative areas will be hired to assist the PIU (and NPMO) in moving the project forward.

48. Project Design. Delays in preparation of detailed engineering design and procurement of construction contractors may occur, as well as delays in land acquisition, which could adversely impact project delivery. To mitigate these risks, DOTC has initiated procurement of detailed engineering design (DED) consultants and detailed designs are expected to be completed in 2015. Further, a number of project design adjustments have been proposed that would mitigate the need for land acquisition.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analyses

49. Once constructed, the BRT system is expected to be financially sustainable over its operating life. Total recurring costs (including direct operating cost, system management, bus purchase, infrastructure maintenance, and technical support consultants) per annum are expected to be US\$19.9 million in the opening year. In contrast, total revenues from bus fares and commercial revenue (advertisement) are projected to be US\$20.5 million, of which 92 percent is derived from fares and the remainder from advertisement.

50. A detailed economic analysis was conducted for investments in the public transport system (including BRT, ITS, and ATC), traffic engineering, management and safety, land use improvements and project management, which together account for over 95 percent of the total project cost. The economic evaluation is based on savings in travel time, reductions in vehicle operating costs, and quantified external benefits including greenhouse gas reductions and traffic accident reductions. Over a life of 30 years (27 years of operation), the project is expected to deliver an economic rate of return of 39 percent. See Annex 6 for further details.

B. Technical

51. Physical Design. The physical design takes into account the limited right of way (ROW) without compromising BRT effectiveness. The section between Bulacao and Ayala Mall is mostly a dual three-lane road with sidewalks and requires minimal right of way acquisition. The section between Ayala Mall and Talamban, on the other hand, is partly constrained by a two lane road. Taking this into consideration, the BRT project will maintain an exclusive transit way for buses from Bulacao to Ayala Mall while extending bus operations to Talamban in the shared ROW, with prioritized access to buses at intersections. The negative impacts of operating in general traffic in these sections would be mitigated by providing BRT services with signal priority at the ends of dedicated transit way sections and at other, congested intersections.

52. Public Transport Integration. The BRT will introduce a need to reorganize all public transport that provides service within or to/from the BRT corridor. This will involve some jeepney routes being terminated and others being turned back or diverted to new routes to complement the BRT. The technical design would support measures to improve the physical integration between public transport modes and between public transport and other access, or onward journey modes (e.g., walking, tricycles).

53. Vulnerable Populations. The BRT system is designed with specific features tailored to address the needs of women, children and the physically disabled. The BRT system is designed for ease of boarding and alighting with buses and stations at the same level, making it easier to load and unload strollers and other carriers. In addition, the BRT vehicles will provide for more space for luggage or bags when compared with jeepneys, enabling more convenient shopping trips. Upgrades in sidewalks and walking infrastructure, paired with well-lit stations, will provide for safer access to and from public transport. Finally, the provision of well-organized public transport stations will reduce the conflict between vehicles and pedestrians, providing a safer environment for all Cebuanos, but women and children in particular. The guiding principle for designing accessible BRT follows the Bank guidelines with the objective to ensure accessibility for people with disabilities (*Bus Rapid Transit Accessibility Guidelines*, World Bank 2007).

C. Financial Management

54. Under the Bank's OP/BP 10.0 with respect to projects financed by the Bank, the Borrower and the project implementing entities are required to maintain financial management systems — including budgeting, internal control, accounting, financial reporting, and auditing systems — adequate to provide the Bank with assurance that funds will be used in an efficient and economical way to enable project development objectives to be met. The conclusion of the assessment is that DOTC's financial management systems meet the Bank's requirements. DOTC's Finance and Comptrollership Services Unit has adequate staff in terms of number and skills to provide support during implementation of the project. The Director for Comptrollership Service at DOTC is designated as the finance focal person for the project. As part of the project implementation arrangements, a PIU at Cebu City has been set up and will include financial management specialists to be deployed by DOTC to support the project on a day to day basis and will be reporting to the DOTC Finance and Comptrollership Service. A financial management (FM) staffing plan for the PIU has been developed. The project financial management system will be monitored through regular submission of Quarterly Interim Financial Reports and Annual Audited Project Financial Statements. The Bank will also conduct a FM Implementation Review mission at least every six months and will include visits to the project site and review of selected transactions. Details of the FM arrangements are in Annex 3.

55. Withdrawals up to an aggregate amount not to exceed US\$23.2 million from IBRD Loan and \$5.0 million equivalent from CTF Loan may be made for payments made after December 31, 2013 for eligible expenditures.

D. Procurement

56. The DOTC has set up a National Project Management Office to implement the project with the support of the PIU set up at the City level. The World Bank has carried out a procurement assessment of DOTC and the Cebu City Government (CCG). The World Bank/Philippine Government Procurement Policy Board report on Agency Procurement Compliance and Performance Indicators (APCPI) Assessment for DOTC was also taken into consideration. While both agencies have been doing procurement regularly including large ones for works, goods and consultancy using local and foreign funds, this will be the first time in many years that DOTC will be implementing a Bank-financed project.

57. Procurement risk for the project is assessed as “substantial”. Some of the weaknesses in DOTC procurement systems relate to: (i) lack of experience with the Bank’s Procurement Guidelines and Processes; (ii) inadequate information available on the annual procurement plan; (iii) timeliness of procurement process; (iv) notification of procurement results; and (v) timely release of payments. Risk management measures include: setting up a PIU which will be provided with relevant training on procurement and supported by a Procurement Specialist from the Technical Support Consultant team; preparing a Project Implementation Plan (PIP) with a specific procurement section detailing, among others, the procurement arrangement based on the Loan Agreement and processing timelines within DOTC; conducting annual procurement audit by the Commission on Audit (COA) following the Guide in the Audit of Procurement as part of the financial audit; and conducting on-going training for the procurement staff. Other improvements in the public procurement system will be adopted under the project including: (i) performance monitoring; (ii) professionalization; (iii) CSO/NGO and (iv) private sector involvement as procurement observers.

58. Procurement for the Project would be carried out in accordance with the World Bank’s “*Guidelines: Procurement of Goods, Works and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers*” dated January 2011; and “*Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers*” dated January 2011, and the provisions stipulated in the Legal Agreement.

E. Social (including Safeguards)

59. **Social Assessment.** The design is guided by consultation with users, specialist interest groups and stakeholders together with ethnographic study of transport users. Recommendations from the consultations have been taken into account in the project design and in the Resettlement Plan. The project is expected to have positive social impacts by improving the living environment and public transportation. The project will introduce a high occupancy public transport system, which will reduce carbon dioxide (CO₂) and local air pollution.

60. **Social Impact Assessment (SIA)/Social Management Plan (SMP).** The project is expected to affect 22 PUJ routes, operated by 1,191 franchises, 912 operators, 1,310 jeepneys and about 2,620 drivers. The SIA/SMP sets out options for jeepney operators and drivers who will be displaced by the operation of the BRT, which include transformation of their investment to participate in the BRT operations, operating as feeder services on a restructured route, operating on new routes, or applying for open franchises of other transport services such as truck-for-hire or school services.

61. **Involuntary Resettlement OP 4.12.** The project requires land for a) the bus depot and terminal; b) expansion of the sidewalks and roadway in areas fronting median stations; c) bus stops from Ayala to Talamban; and d) resettlement of physically displaced informal settlers. In addition to the government land, about 66.5 hectares of land will need to be acquired, which is estimated to impact 243 private structures, occupying an estimated 20,000 square meters. Currently a large proportion these structures (81%) is commercial and commercial-cum residential in use. About 57 structures are purely residential. There are a few informal settlers residing and doing business in the vicinity of the proposed stations. Compensation for land,

structures, resettlement site acquisition and development, and potential income losses is estimated to cost PHP1.267 billion (US\$30 million), which will be financed by government. The Borrower has prepared a Resettlement Action Plan (RAP) for the Project.

62. **Gender.** In terms of social impacts, the project will generate indirect long-term benefits to women, the elderly, and the physically challenged by responding to their concerns which were identified during design stage stakeholder consultations. Consultations with barangays and focus group discussions revealed the following key concerns of women and people with disabilities, which have been reflected in the project design:

- (a) Physical harassment by other passengers and operating personnel possible because of overloading;
- (b) Inadequate security in access, egress and on public utility jeepneys; and
- (c) Difficulty of travelling with children and luggage, which often requires taxi travel at a much higher cost.

F. Environment (including Safeguards)

63. The project triggers OP 4.01 on environmental assessment and is classified as a Category B project. Though the Project is environmentally enhancing, it would generate negative environment impacts during the construction phase, most of which are temporary and reversible during the operational phase. As part of the construction phase, the civil works will create to some extent unavoidable dust and waste, noise and vibration, in addition to removal of trees at the road side and in the median along the work areas. However, the removal of trees will not interfere with the sites protected for their biodiversity as the Project is more than 30 km from the nearest area protected for its biodiversity and landscape properties, falling in the urban area, mostly within the roads' ROW.

64. The preparation of feasibility study and detailed design for the Metro Manila BRT will have downstream environmental and social impacts once implemented. These impacts will be assessed as part of the feasibility study and detailed design preparation.

65. **Environmental and social assessment.** An Environmental Impact Assessment (EIA) was undertaken to evaluate environmental issues associated with direct and indirect impacts of the project during the planning, construction, and operational phases. The EIA included detailed alignment sheets showing the potential impacts and the concomitant mitigating measures as a basis for the analysis of alternatives for the BRT infrastructure sites and system technologies that will generate the least environmental and social impacts. As part of the construction phase, civil works will create to some extent unavoidable dust and waste, noise and vibration, in addition to removal of trees at the road side and in the median along the work areas.

66. As part of the operational phase, the project will result in loss of income for: a) vendors and business establishments along the corridor; and b) PUJ operators and drivers. It will also result in displacement of some houses and establishments located along the BRT corridor. An EIA and SIA have been carried out under this project to identify and minimize potential adverse environmental and social impacts through formulation of environmental management plan (EMP). The SIA/SMP sets out options for jeepney operators and drivers to be displaced by the

operation of the BRT. Five options have been identified to manage PUJ operator impacts. These include: (a) remain on their route, despite the impact of the BRT, and hope that a sufficient number of other operators will withdraw to make the route viable for those who remain; (b) remain on their route, which has been restructured and will remain strong; (c) operate on newly opened routes; (d) cancel their PUJ franchise and apply for open franchises of other transport services such as trucks-for-hire or school service; and (e) transform their investment to participate in BRT operations. The guidelines are in accordance with OP 4.01 and administrative frameworks relevant to the environmental assessment of transport-related projects in the Republic of the Philippines. The Grievance Redress Mechanism which is included in the EIA describes the process followed in the extensive public consultations and information dissemination and disclosure, including minutes of public consultations, photographs, attendance lists, notice of meetings, etc.

67. **Public consultation.** DOTC and the CCG have initiated a process of consultation during project preparation and intend to continue it during the construction and operational phase (for details, please see Annex 8). As part of the consultation process, the project concept was presented to the stakeholders and their views on the respective proposals were gathered and reflected in project design. More than 1,000 key stakeholders have participated in these consultations. During detailed design, DOTC and CCG will conduct public consultations and information disclosure. Affected stakeholders and property owners will be invited to attend these proposed consultations since detailed mode and scheme of property and structure acquisition and compensation will be presented and discussed. DOTC and CCG will maintain records of environmental and social complaints received during consultations, field visits, informal discussions, and letters, together with the subsequent follow-up and resolutions of issues.

68. To ensure stakeholder participation through the project cycle, a series of communication tools have been developed to accompany the planned press releases and associated promotional materials at appropriate stages of the project. They include:

- (a) A study website (in English and Cebuano language);
- (b) Social media communications (Facebook and Twitter) managed by the Communications Manager
- (c) Posters / flyers (in English and Cebuano language);
- (d) Promotional materials e.g., fans, t-shirts, badges;
- (e) Exhibition banners for display at shopping centers and other public locations; and
- (f) A BRT conference to which all stakeholders, politicians, media and adjacent cities are invited (planned).

69. **Disclosure.** All safeguard instruments, namely the EIA, RAP, and SIA/SMP for the proposed project have been prepared and disclosed locally on March 13, 2013; the EIA and SMP were disclosed electronically and in paper at the Bank's Infoshop on March 28, 2013, and the RAP was disclosed electronically and in paper at the Bank's Infoshop on March 29, 2013. Brochures in English and Sugbuanon will be distributed on the rights and responsibilities of displaced people and notices posted on the barangay, in Manila, and InfoShop.

**Annex 1: Results Framework and Monitoring
Philippines: Cebu Bus Rapid Transit Project**

Project Development Objective (PDO): The PDO is to improve the over-all performance of the urban passenger transport system in the Project Corridor in Cebu City in terms of the quality and level of service, safety, and environmental efficiency.												
PDO Level Results Indicators	Core	Unit of Measure	Baseline	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				YR 1	YR 2	YR3	YR 4	YR5				
Indicator One: Increase in the number of people using improved public transport services	<input checked="" type="checkbox"/>	Number of persons	75,000				250,000	275,000	Annually	On board surveys O-D surveys	NPMO/ PIU	Beneficiaries include additional persons using PT, better walk facilities for pedestrians, motorized traffic
Indicator Two: Increase in the number of women using improved public transport services		Number of women	40,000				140,000	180,000	Annually	On board surveys O-D surveys	NPMO/ PIU	Beneficiaries include additional persons using PT, better walk facilities for pedestrians, motorized traffic
Indicator Three: Reduction in average travel times for BRT users during PM peak from Ayala to Bulacao		Time in minutes	45				35	35	Annually	Travel time surveys	NPMO/ PIU	Travel time will be measured between specific O-D pairs
Indicator Four: Reduction in GHG emissions of transport in Cebu City	<input type="checkbox"/>	CO ₂ emissions per person-km in project corridor	131.1					75.2	Annually	Estimation of current GHG emissions. Base year = 2012.	NPMO/ PIU	Number of VKM travelled and unit emission

												rates for the various types of vehicles
Indicator Five: Reduction in number of road accidents in Cebu City ¹	<input type="checkbox"/>	Annual accidents in city per 100,000 population	1290				1000	1000	Quarterly	Using CITOM accident data, police records and hospital records	NPMO/PIU	Accident numbers at key intersections on and away from BRT corridor per person accident rates across the City

¹ The full monitoring report will monitor accidents at a city wide level as well as at key intersections along the project corridor.

Intermediate Results Indicators	Core	Unit of Measure	Baseline	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				YR 1	YR 2	YR3	YR 4	YR5				
Indicator One: Construction of BRT Corridor	X <input type="checkbox"/>	Kilometers	0					23	Annually	Survey	Implementing Agency	Length of BRT Corridor in km
Indicator Two: Improve Communications Strategy		Yes/No	No					Yes	Bi-annually	Survey	Implementing Agency	Develop a Communications and stakeholder participation plan
Indicator Three: Capacity Building		Number	0					20	Bi-annually	Survey	Implementing Agency	Staff in DOTC/CCG trained in public transport planning and management

Annex 2: Detailed Project Description

PHILIPPINES: Cebu Bus Rapid Transit Project

1. The following table presents a summary of project costs by component.

Table 2.1: Total Project Costs (US\$ million)

	TOTAL COST	WB	CTF	GoP
1. BRT Infrastructure and System	162.0	80.2	8.8	73.0
(a) BRT Road Infrastructure				
(i) Cebu Road South (new Bulacao Terminal -E Mambaling flyover)	29.1	-	-	29.1
(ii) Mambaling Flyover-East of Jones' Intersection	16.2	16.2	-	-
(iii) Osmeña Blvd (N. Bacalso-N. Escario St)	9.8	9.8	-	-
(iv) N. Escario St (Osmeña Blvd-Ayala Mall)	7.5	7.5	-	-
(v) SRP (segregated busway)	13.9	-	-	13.9
(vi) Ayala to Talamban and IT Park	0.8	0.8	-	-
(b) Bus Terminals	8.8	-	8.8	-
(c) Bus Depot/Station	39.9	39.9	-	-
(d) Land Acquisition and Resettlement	30.0	-	-	30.0
(e) Detailed Design and Supervision	6.0	6.0	-	-
2. Traffic Management	15.6		13.2	2.4
(a) Traffic Engineering and Management	11.2	-	11.2	-
(b) ATC, Intersection Signal Control	2.4			2.4
(c) Intelligent Transport System	2.0	-	2.0	-
3. BRT Concept Dissemination and Development	7.0	4.0	-	3.0
(a) Concept Development in the Philippines	4.0	4.0	-	-
(b) Detailed Design of Metro Manila BRT	3.0	-	-	3.0
4. Urban Realm Enhancements	3.0	3.0	-	-
5. Project Monitoring	5.0	3.9	1.1	-
(a) Supply, Demand, Performance	1.1	-	1.1	-
(b) Institutional, Environmental, Social, Economic, and Capacity Building	3.9	3.9	-	-
6. Project Management	6.1	6.1	-	-
Base Cost Total	198.7	97.2	23.1	78.4
Price contingency	11.1	7.2	0.8	3.1
Physical contingency	18.7	11.6	1.1	6.0
TOTAL	228.5	116.0	25.0	87.5

Component 1 – BRT Infrastructure and System (Total base cost: US\$162.0 million; WB: US\$80.2 million, CTF: US\$8.8 million, GoP: US\$73.0 million)

2. This component will finance goods, works, and services for detailed design, construction and supervision of BRT infrastructure and systems, including, among others, segregated busways, sidewalks, cycle ways, landscape strips, warning and directional signage, carriageway markings, highway rehabilitation, intersection improvements, station, depots, terminals, system management and marketing, and traffic management along the Project Corridor. The land acquisition and resettlement cost will be financed by GoP.

3. The construction of BRT infrastructure and associated systems along the Project Corridor is divided into sub-components to ensure that each sub-section is financed 100 percent by one financing source. The sub-components consist of:

- (a) Cebu Road South (new Bulacao Terminal - E Mambaling flyover (GoP: US\$29.1 million);
- (b) Mambaling flyover-East of Jones' Intersection (WB: US\$16.2 million);
- (c) Osmena Blvd (N. Bacalso – N. Escario St) (WB: US\$9.8 million);
- (d) N. Escario St. (Osmena Blvd-Ayala Mall) (WB: US\$7.5 million);
- (e) SRP (Segregated busway) (GoP: US\$13.9 million);
- (f) Ayala to Talamban and IT Park (WB: US\$0.8 million);
- (g) Bus terminals (CTF: US\$8.0 million);
- (h) Bus depot/station (WB: US\$39.9 million);
- (i) Land acquisition and resettlement (GoP: US\$30.0 million); and
- (j) Detailed design and supervision (WB: US\$6.0 million).

4. Infrastructure design was developed after an understanding of service plan requirements including the capacity of the BRT running way together with the passenger capacity of stations and terminal, and passenger access. Key elements of the BRT design are:

- (a) Segregated busway between Bulacao and Ayala Mall (BRT running lane: 3.5 m, overtaking lane: 3.5 m, sidewalk: 2.0 m, segregation between BRT and general traffic lane: 0.3 m);
- (b) BRT overtaking lane at all stations;
- (c) Stations and terminals along the segregated busway route (station platform: 4.0 m minimum) and beyond (Gaisano Country Mall in Talamban);
- (d) Depot for the overnight parking and servicing of buses designated to operate BRT services;
- (e) An open service plan that ensures that, whilst infrastructure is limited to that between Bulacao and Ayala, BRT services operate beyond Ayala Mall to Talamban (bus passage will be facilitated by bus priority measures at intersections and where achievable within the confines of the roadway); and
- (f) Interchange improvements to offer enhancement to the level of service received by all public transport passengers irrespective of whether they use BRT or not.

5. Key BRT planning design criteria include (Figure 1):
- (a) Accommodate demand and the maximum required service frequencies;
 - (b) Maximum use of exclusive, designated transitways;
 - (c) Separation of BRT and “feeder” vehicles from passengers and non-passenger pedestrians;
 - (d) Passing lanes at stations (except where vehicles are specifically mixed with general traffic i.e. inner CBD locations);
 - (e) Priority of public transport vehicles over other vehicles, most notably at traffic intersections;
 - (f) Minimum vehicle dwell times;
 - (g) Modern, safe, comfortable, convenient transit facilities and high quality passenger waiting environments for customers; and
 - (h) Full accessibility irrespective of traveler physical condition or age.
6. BRT station infrastructure: BRT stations provide an environment for the interface of public BRT passengers and vehicles. Station layouts are a fundamental product of the BRT planning and design process and many variables have been taken into account, including topography, accessibility, convenience of passengers, visibility, and current and future land uses.
7. Total BRT corridor will consist of approximately 23 km as shown in the following table and figure.

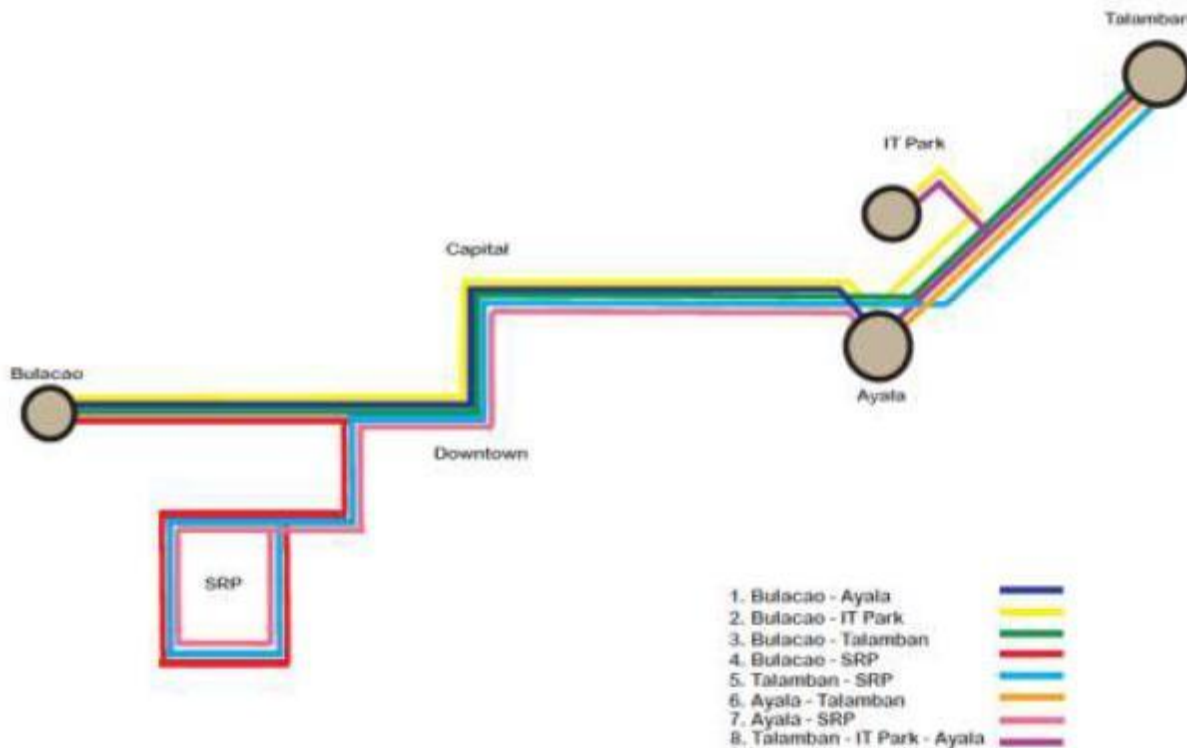
Cebu BRT: Total Corridor Length

	Segregated (km)	Un-segregated (km)	Total (km)
Bulacao-Ayala ¹	10.55	0.51	11.06
Mambaling-SRP	4.26	0.74	5.0
Ayala-Cebu IT Park, Talamban ²	0.10	6.8	6.9
TOTAL	14.91	8.05	22.96

Notes: ¹ Un-segregated distance of 0.51 km based upon BRT using existing Mambaling flyover

² Segregated distance of 0.1 km based upon BRT only route into Cebu IT Park

Figure 1: BRT Routes and Network



8. Each sub-component is described below:

9. Cebu Road South (new Bulacao Terminal - E Mambaling flyover) (GoP: US\$29.1 million). This sub-component will finance goods, works, and services to support:

- (a) Segregated median running lanes, each measuring 7.0 m, segregation barrier to measure 0.3 m;
- (b) Construction of both warning and directional signage relating to the areas of interaction between BRT vehicles and other road users;
- (c) Advanced directions signs, giving route/destination information;
- (d) Highway (carriageway) markings to support operation of new traffic intersection to manage vehicle-pedestrian flow in a more efficient and safe manner; and
- (e) Traffic management, including pedestrian walkways, intersection design improvements, etc.

10. Mambaling flyover-east of Jones' Intersection (WB: US\$16.2 million). This sub-component will finance goods, works, and services to support segregated median running lanes, construction of both warning and directional signage, advanced directions signs, carriageway markings, and traffic management.

11. Osmena Blvd (N. Bacalso – N. Escario St) (WB: US\$9.8 million). This sub-component will finance goods, works, and services to support segregated median running lanes, construction

of both warning and directional signage, advanced directions signs, carriageway markings, and traffic management.

12. N. Escario St. (Osmena Blvd-Ayala Mall) (WB: US\$7.5 million). This sub-component will finance goods, works, and services to support segregated median running lanes, construction of both warning and directional signage, advanced directions signs, carriageway markings, and traffic management.

13. SRP (Segregated busway) (GoP: US\$13.9 million). The introduction of BRT to the SRP from the outset of development occupation will be crucial in establishing travel habits for new residents, visitors, and employees at SRP. This sub-component will finance goods, works, and services for:

- (a) Signalized intersection;
- (b) Median stations along the western and northern boundaries to the Joint Venture development;
- (c) Six stations within the SRP and nine new or upgraded signalized intersections;
- (d) 2 m sidewalks along the segregated BRT route within the SRP on both sides of the carriageway and a 2 m landscaping strip to enable trees to be planted that offer shelter from the Sun; and
- (e) Along one side of the carriageway a 2 m wide cycleway is proposed which is expected to act as a precedent for more cycling infrastructure in the city.

14. Ayala to Talamban and IT Park (WB: US\$0.8 million). The BRT buses will be operating in mixed right-of-way along this section of the corridor. This sub-component will finance goods, works, and services to support:

- (a) Improvement of congested intersections at Gov. M. Cuenco Ave/Paradise Village Road and Gov. M. Cuenco Ave/M. L. Quezon Ave;
- (b) Provision of high-quality bus stops at about ten locations, with adequate capacity for boarding passengers, sheltered waiting area, ticket selling kiosk;
- (c) New at-grade pedestrian crossing facilities; and
- (d) Provide bus-only access by construction of a new signal-controlled intersection on Gov. M. Cuenco Ave to provide access to Cebu IT Park (CITP) as a major employment and trip generator.

15. Bus Terminals. This sub-component will finance goods, works, and services to support:

- (a) Public transport integration. Measures to improve physical integration among public transport modes and between public transport and other access, or onward journey, modes (walking NMT, tricycles). This will include feeder terminal and turn round facilities, improvements to the market area (primary PUJ focus), access and facilities for non-motorized modes (tricycles, bicycles); and
- (b) Bus terminals at Bulacao, Ayala Mall, and Talamban.

16. Bus Depot/Station (WB: US\$42.7 million). This sub-component will finance goods, works, and services to support:

- (a) Over 15 station locations to service the forecast passenger demand;
- (b) Curbside stops along Mambaling flyover for passenger boarding and alighting, stations to access SM development, pedestrian access via a pedestrian bridge, and station between SM development area and the Joint Venture development area to the West; and
- (c) Bus depot in the area of vacant industrial land, measuring approximately 3 ha to provide parking accommodation, servicing, and maintenance facilities for vehicles and facilities for staff.

17. Land Acquisition and Resettlement (GoP: US\$30 million). The sub-component will finance compensation for land acquisition and resettlement of project affected people.

18. Detailed Design and Supervision (WB: US\$6.0 million). This component will finance goods and service to support detailed design of BRT infrastructure and system (including segregated busway, highway rehabilitation, traffic management, terminals, depot and stations).

Component 2 - Traffic Management (Total base cost: US\$15.6 million, CTF: US\$13.2 million, GoP: US\$2.4 million).

19. This component will finance goods, works, and services to support traffic engineering, management, ATC, and ITS in the Cebu City.

- (a) **Traffic Engineering and Management.** The objective of this sub-component is to develop traffic management interventions that complement the development of BRT in Cebu City, enhance the value of ATC implementation and increase the positive effects of the planned program of works within the City. This sub-component would finance goods and works for intersection improvements on tributary routes used by BRT vehicles and those currently operating sub optimally and imposing a disproportionate effect upon network performance. Specific investments include:
 - (i) Intersection optimization. Investments will include public realm improvements, widening of sidewalks, capacity improvements at intersections at four intersections: Osmeña Boulevard / Colon Street, V. Rama Avenue / M. Velez Street / R. Duterte, M.J. Cuenco Avenue / J. Luna Avenue, and Gorordo Avenue / Salinas Drive;
 - (ii) Parking management. Cebu is experiencing traffic growth through both population increase and increases in car ownership. The existing car parking controls are loosely applied leading to erosion of available road capacity through unplanned and often indiscriminate parking. The BRT will require parking controls along its route and extracting the best value from ATC investment will require parking controls at least in the vicinity of intersections. This sub-component would finance services, goods and works to implement a coordinated approach to parking management; and

- (iii) Jeepney terminals. Investments will include a new terminal facility in the Cebu downtown area, restructuring and rationalization of routes, improvements at SM mall terminal facility to include better seating, toilet maintenance, and improved disabled access to the shopping mall.
- (b) **ATC, Intersection Signal Control**. The need for public transport priority at intersections through which BRT passes is recognized together with the deficiencies of the existing SCATS Area Traffic Control system in providing that priority. This sub-component would finance services, goods, and works for capacity optimization at key intersections, for upgrading or replacing the obsolete SCATS traffic control system using modern area traffic control techniques to optimize the transport network across the whole of the Cebu transport network, including a new traffic control room, ICT equipment including new traffic controllers, on site detection and CCTV surveillance systems; and
- (c) **Intelligent Transport Systems (ITS)**. This sub-component will finance goods, works, and services to support:
 - (i) BRT Control Centre systems, including computer hardware (central server hosting databases, workstations for display of route, vehicle and bus-stop status, CCTV images, passenger information system), computer software (application for analysis of vehicle location and route conditions, application to support route, stop, on-bus and off-route information displays), and communication equipment;
 - (ii) System management, planning, and specification. Specific investments will include: marketing, station hardware, control hardware, on-bus General Positioning System (GPS) units, software development;
 - (iii) Communications system for three main communication strands: vehicles to/from control center, control center to/from supervisors, and control center to/from external agencies;
 - (iv) CCTV at the bus-stop areas; and
 - (v) Closed Wireless Local Area Network at each bus stop.

Component 3 – BRT Concept Dissemination and Development (Total Base Cost: US\$7.0 million, WB: US\$4.0 million, GoP: US\$3.0 million)

20. This component will finance a) feasibility studies, training, and capacity building to build support and capacity for the BRT concept in the Philippines; and b) detailed design to support the proposed Metro Manila BRT application, including infrastructure, facilities, systems, traffic control and management.

Component 4 – Urban Realm Enhancements (WB: US\$3.0 million)

21. This component would improve relationship between transport and land use development through establishing physical connections to major trip attractors and generators. The Fuente Osmeña Circle will be designed to accommodate different functions performed including, leisure space, focal point for commercial activity, and pedestrian crossing. In particular, the component

would finance goods, works, and services to support the provision of reconfigured north-east quadrant of Fuente Circle, including a pedestrian / BRT only zone, enabling improved and safer pedestrian access to the recreational area of Fuente Circle as well as additional landscaping along the BRT corridor.

Component 5 – Project Outcome Monitoring (Total Base Cost: US\$5.0 million, WB: US\$3.9 million, CTF: US\$1.1 million)

22. This component would finance technical assistance, equipment, and other operational support for data collection and analysis to include: (i) transport system supply, demand, and performance; and (ii) institutional, environmental, social and economic impact, and capacity building.

23. This would cover annual monitoring surveys and analysis during project implementation. Surveys will include, but not limited to the following: household interviews, assessment of real estate prices, assessment of building permit applications, observational surveys, mystery traveler surveys, car journey time surveys, focus groups, satisfaction surveys, air / noise and emissions survey, traffic counts, accident data analysis.

Component 6 - Project Management (Total Base cost: US\$6.1 million, WB: US\$6.1 million)

24. This component would finance training, technical assistance, equipment, vehicles, office equipment, and other operational support for management of implementation of BRT and related measures by the Project Implementation Unit through design, construction/implementation. It will include application of a comprehensive communications, outreach, program focused upon information through construction and preparation of the city for BRT operation and technical and procurement audit.

Annex 3: Implementation Arrangements
PHILIPPINES: Cebu Bus Rapid Transit Project

1. The implementation occurs at three levels:
 - (a) A national framework for policy, proposal development and oversight of BRT in the Republic of Philippines, centered on the BRT-National Program Management Office (BRT-NPMO);
 - (b) The implementation arrangements for specific projects, centered on the Project Implementation Unit (PIU); and
 - (c) The operational arrangements for the systems implemented by the project, centered on the BRT system management entity.

BRT Design and Delivery Phase (2014-2017)

I. National Framework

2. The main authority is at the national government level. A Department Order has been issued by the DOTC to set up a BRT Steering Committee, a National Program Management Office (NPMO) and a satellite office (PIU) in the Cebu City.

3. The BRT National Steering Committee (NSC) would provide policy guidance and have oversight of all BRT studies, projects and operational systems in the country. The NSC would: (a) be chaired by the Secretary of the DOTC or his or her designated representative satisfactory to the Bank, and comprise, among others, representatives of the Department of Finance (DOF), Department of Public Works and Highways (DPWH), Department of Interior and Local Governments (DILG), Land Transport Franchising and Regulatory Board (LTFRB), representatives of local government units where BRT projects are being implemented or under study and DOTC; and (b) be responsible for, *inter alia*, (i) formulating the strategic directions and plans for developing BRT consistent with the national transport plan; (ii) setting policies, guidelines and procedures to facilitate the implementation of BRTs including the designation of segregated right-of-way infrastructure, (iii) coordinating the formulation of rules and regulations to govern and regulate the operations of BRT projects, and (iv) monitoring, evaluating and reporting on the impact on BRT development.

4. The BRT National Program Management Office (NPMO) would have its headquarters at DOTC central office, and be under the supervision and control of an Undersecretary of DOTC or his or her designated representative with a rank of at least Director, satisfactory to the Bank. The BRT-NPMO would be staffed by assigned DOTC personnel, and may be supplemented by external experts as required. The BRT-NPMO would deal with matters at national level and would prepare new proposals. The NPMO would: (a) be headed by an Undersecretary of the DOTC, and include as members relevant DOTC personnel and external experts as required; and (b) be responsible for planning and evaluation, resource mobilization, implementation, operations, monitoring and reporting, and promotion and communication for the proper development and operation of BRT in the Philippines.

5. Without limitation to the provisions of paragraph 1 of this Part B, the PIU shall be responsible for (a) developing the Annual Work Plans and Budgets for approval by the NPMO and NSC, (b) facilitating the administration and coordination of procurement, financial management, environmental and social management and other implementation arrangements, and (c) reporting to the NPMO and the Bank on all matters pertaining to the implementation of the Project and the use of the proceeds of the Financing.

6. A satellite office would be set up by DOTC in Cebu City to implement the project as a Project Implementation Unit (PIU). The PIU will be under the aegis of the NPMO, and ultimately subject to the oversight of the BRT Steering Committee.

7. Technical Support Consultants (TSC). It is proposed to engage TSC to support project implementation. The TSC would provide specialist staff in project management (including procurement, contract design and oversight of contractors), technical, including infrastructure, bus operations, traffic systems and technologies, and analysis, including planning, business models and data management, and safeguards. The TSC would be retained by DOTC on a 'one-stop service' basis to provide an agreed set of skilled staff, on full-time, short-term or retainer basis, as considered most appropriate for the individual skill areas and tasks.

Other National Departments

8. LTFRB: Amendments to the regulations and practice for route development and franchising will be required to facilitate BRT systems. LTFRB will engage at two levels:

- (a) At national level, through the BRT SC and in conjunction with BRT-NPMO to establish a framework within which BRT systems and services can be accommodated and smoothly processed; and
- (b) At project level, to facilitate the applications and authorizations for specific BRT systems and services, and to handle the franchising issues arising both for the BRT services and any impacted PUB and PUJ services.

9. DPWH: The BRT schemes tend to operate on major urban roads, many of which are DPWH roads. The BRT infrastructure will be constructed on these DPWH assets and will need to be maintained and occasionally rehabilitated over a period of several decades.

II. City BRT Project Implementation Framework

10. Cebu City Government Technical Working Group (TWG): The City Mayor has issued an Executive Order dated October 7, 2011, setting up the TWG to advise the project with the participation of city representatives (CITOM, City Planning Office) and regional offices of the national departments (DPWH, DOTC, LTFRB). The TWG reviews designs, proposals, requests and progress reports arising from the project and provides responses and feedback on behalf of CCG as required.

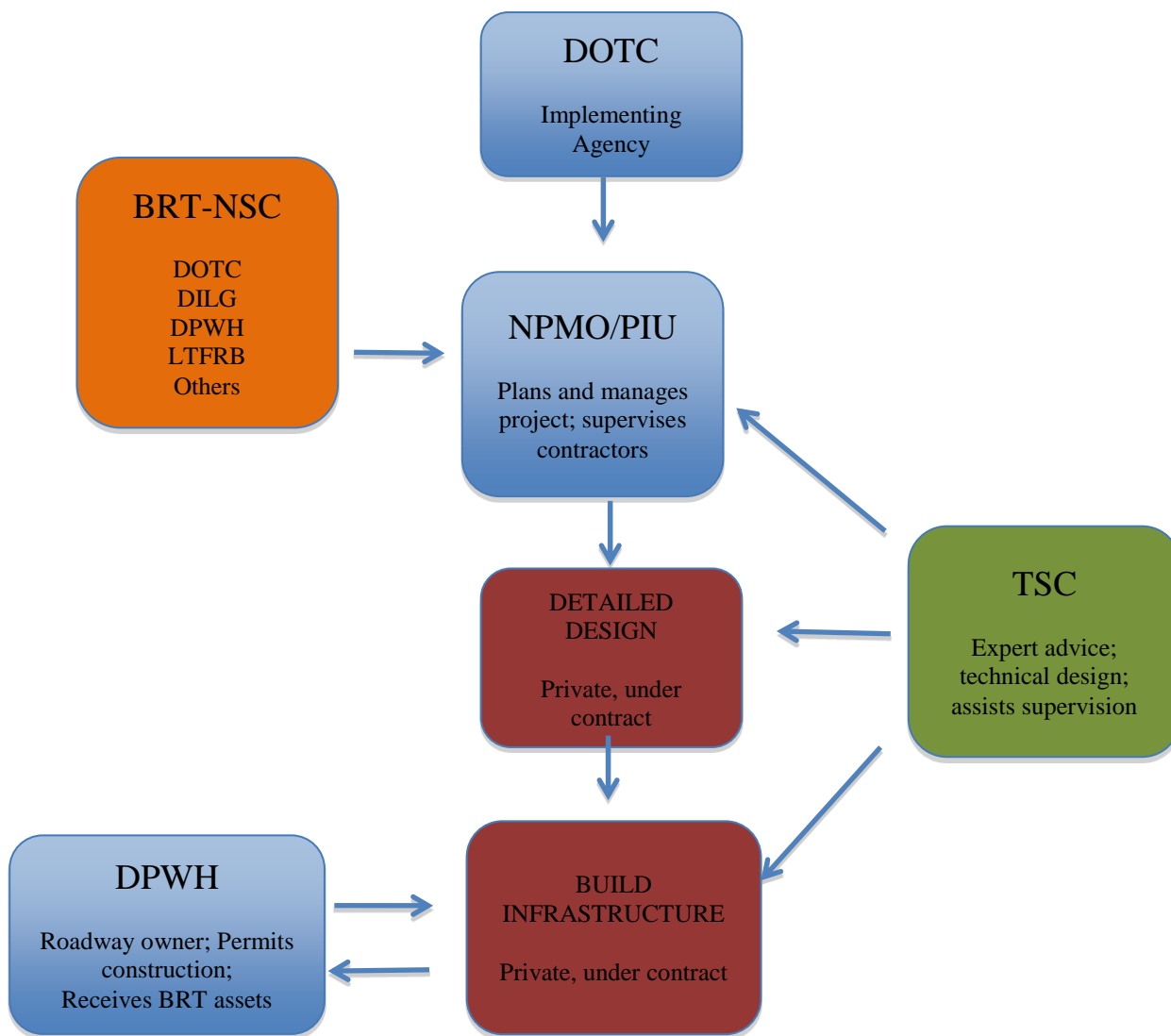
11. PIU: A Project Implementation Unit (PIU) is established by DOTC/CCG in Cebu City to work in coordination with NPMO. The PIU will be staffed by personnel assigned/seconded from DOTC and CCG, and supported by TSC.

12. LTFRB: Cebu BRT PIU will require support from LTFRB to facilitate the applications and authorizations for the BRT trunk and feeder routes, and to handle the franchising issues arising from impacted PUJ services.

13. DPWH: Cebu BRT PIU will require support from DPWH in relation to any DPWH roads on which the BRT is being constructed. This will include facilitating authorizations and approvals during the design and construction phase, and the ongoing maintenance agreements in the operational phase.

14. During the detailed design and infrastructure build stage, the delivery arrangements will be as shown in Figure 1.

Figure 1: Phase 1- Design and Build the BRT Infrastructure (2014-2017)



III. Operational Phase Framework

BRT Operational Phase (2017-2035+)

15. Delivery arrangements during the **operational phase (2017+)** are shown in Figure 2.

16. **Summary.** DOTC will enter into a single contract with a competent BRT System Manager (BRTSM), who will be responsible for all aspects of management of the BRT System. DOTC will be responsible for ensuring that bus operators are procured. Bus operators will be managed on a day-to-day basis by the BRTSM, both on the street and in terms of the respective contracts with the operators. All system revenue will accrue to DOTC, who will pay the BRTSM and directly pay the operating contractors for services provided which meets standards.

17. The arrangement is detailed as follows:

A. DOTC

18. A small professional in-house unit is needed within the DOTC. The BRT-NPMO, already established by DO, could perform this function, supplemented by a team of “staff extension” Technical Support Consultants (TSC). This unit will have the following functions:

Design and implementation phase

- Develop and apply planning and other support tools and data bases including cost, cash flow, ridership and revenue models to finalize the initial BRT service plan in cooperation with other relevant units of DOTC and the respective LGU’s
- Based on the service plan and related financial analyses, establish the initial BRT business model in terms of fares and service levels, etc.
- Develop payment/incentive mechanisms and contract terms for hiring the BRT System Manager (BRTSM)
- Carry out the selection, procurement, negotiation and contract close for the BRT System Manager
- Ensure that bus operating contracts are procured (with technical assistance from the systems manager)
- Arrange LTRFB permits for selected operating contractors if they do not already have them
- Establish monitoring and analysis systems, establish the data flows and data management capacity, and embed the information requirements in the contract for the BRT System Manager and operating contractors

19. The above activities will require close liaison with the Cebu BRT Project Implementation Unit (PIU), also established under NPMO, which is tasked to deliver BRT infrastructure and facilities.

Operational Phase

- Over-all BRT system management
- On an ongoing basis, gather and analyze information for the BRT system, including data provided by the BRT System Manager and, through it, from the operating contractors.
- Manage the contract of the BRT system manager, including performance monitoring and application of any agreed payments, incentives or penalties
- Manage BRT Bus Operator(s) contracts with support from the BRT system manager, including performance monitoring and application of any agreed to payments, incentives or penalties
- Use system data and analysis tools to maintain the business model by making needed adjustments to routes, service levels and other operational or pricing parameters.
- Overall system performance monitoring and reporting to relevant stakeholders

20. To perform the later function, a monitoring capability will be established within DOTC (presumably at the NPMO) which will receive all data from the fare collection, operations management and other BRT reporting systems. Both BRTSM and bus contract operators will be explicitly required in their contracts to make all such data available from the respective sources. This is primarily an automated process, with software processing the data and reporting it for performance monitoring. Data will be archived, and will also be available for other uses such as route planning. The monitoring function will require 1-2 technical specialists.

21. All System Revenue will accrue to DOTC, who will pay the BRTSM and the Bus contract operators for the service they successfully provide. This means that DOTC is carrying the system financial risk. This is reasonable as DOTC will rightly control the main financial instruments – route alignments and terminals, the levels of service offered, service quality, fare levels – and can adjust them as required to reach acceptable fiscal outcomes or other objectives.

22. Professional competence within this unit is essential. The total financial turnover of the BRT system in its 20-year period would be in the order of \$500 million. This must be professionally managed. The essential core skills are planning, business and contract management. The unit would be supported by competitively-procured Technical Support Consultants functioning as staff extensions at least through an initial period of operation.

B. BRT System Manager (BRTSM)

23. A private sector BRTSM will be engaged under a single global services contract. The BRTSM may subcontract some functions (e.g., station maintenance and security), but will need to satisfy DOTC of subcontractor competence and integrity, as, in any case, the BRTSM will be fully responsible for all aspects of system performance. The BRTSM will be responsible for managing all operations customer-facing and infrastructure services. These will include:

- Station management, staffing and security;
- Fare collection, including staffing of kiosks and distribution to off-system points of sale;
- Revenue protection, banking;
- Customer support;

- Passenger information;
- Marketing;
- Bus dispatching and on-street operations supervision;
- Support to the DOTC in management of bus operator contracts;
- Station cleaning, maintenance;
- Data collection, IT and ITS management;
- Liaison with the infrastructure and facilities maintenance owners and contractor(s) for maintenance, repairs and rehabilitation.

24. The BRTSM will be paid on a blended formula of availability payments, passenger throughput and amount of service successfully offered. This reflects both the BRTSM's cost base and also provides incentives to maximize ridership. It will be necessary to ring-fence system revenue so that all payments to operating and maintenance contractors can be made without being subject to broader DOTC administrative processes and budget issues.

25. The BRTSM contract, of up to seven years duration, will allow for renewal in case of satisfactory performance, with opportunity to revisit financial arrangements.

C. Bus Operating Contractors

26. The DOTC will be responsible for ensuring that bus operating contractors are procured according to a procurement process and criteria to be determined. The TSC and the BRTSM will provide technical assistance with the procurements, although the selection decision will rest with the DOTC. The bus operators will:

- Provide contract specified level of service in terms of vehicle Km, number of buses and drivers, etc., under supervision of BRTSM (who will provide dispatching, service/schedule/quality monitoring, supervision and oversight, etc.);
- Establish an acceptable vehicle preventive maintenance program (as agreed in the performance contract);
- Hire, train and manage drivers, mechanics and all other staff required to provide BRT operating and vehicle maintenance personnel and labor management;
- Generate and provide such data and reports to the BRTSM and DOTC as specified in their contract with the DOTC.

27. Operators will be paid on the basis of the amount of service provided, with bonus/penalty for performance relative to standards and their contract durations will be approximately seven years. This reflects industry norms and provides a reasonable opportunity for the contractors to recover any up-front costs (e.g., for bus purchases, if so decided) and obtain financing for these costs. All bus operating contracts will be put to competitive tender at the end of the contract duration, regardless of performance.

D. LTFRB

28. The LTFRB will perform a new function for BRT. It will develop the legal mechanism that allows a company or companies selected by the DOTC to exclusively provide service on a

given BRT route. This will be subject to the level of service and other terms of the company's contract with the DOTC. The operating company's vehicles, drivers, etc. will need to comply with LTFRB's roadworthiness, reporting and other applicable requirements. The LTFRB will continue to regulate the PUJs in the corridors impacted by BRT implementation.

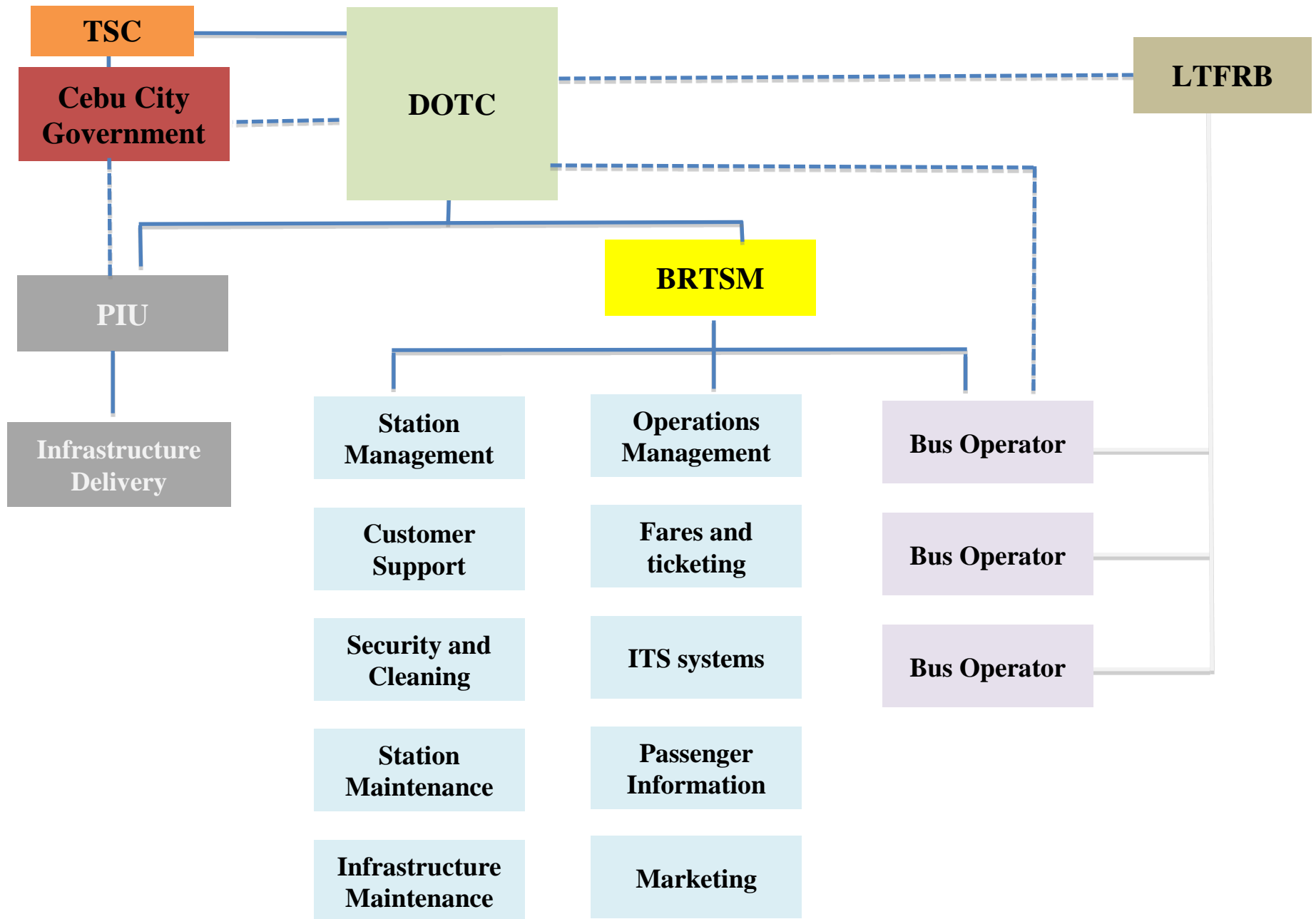
E. Cebu City Government (CCG)

29. The CCG has signed a MoU with the DOTC for BRT, addressing the following areas:

- Long-term/perpetual allocation of lanes and other road space required for the BRT; any wayleaves, easements etc., which are needed for BRT operation and/or maintenance;
- Traffic management measures, including traffic signals programming and operation, priority at junctions, road signage and markings, lane access, turning and parking restrictions, etc.;
- Daily operational support including enforcement, emergency response, incident and event management, diversions, etc.;
- Resettlements associated with construction of infrastructure and facilities
- Maintenance of any BRT infrastructure on CCG rights of way

F. DPWH

30. The DPWH has entered into a MoU with DOTC/CCG in relation to any national highway infrastructure and lanes that come under their control. This is a three-way MoU among DOTC, CCG and DPWH. In particular, agreement was reached on the use and maintenance of BRT infrastructure on national highway rights of way.



Financial Management, Disbursements and Procurement

Financial Management²

31. Under the Bank's OP/BP 10.0 with respect to projects financed by the Bank, the Borrower and the project implementing entities are required to maintain financial management systems — including accounting, financial reporting, and auditing systems — adequate to ensure that project funds will be used in an efficient and economical way to enable project development objectives to be met. The conclusion of the assessment is that the financial management systems at the Department of Transportation and Communications (DOTC) meet the Bank's requirements.

32. The financial management risk of the Project before the mitigating measures is assessed as **Substantial** but could be reduced to **Moderate** after the proposed mitigating measures described below are implemented and have shown effective impact.

33. The mitigating measures to be implemented to reduce risks associated with the current Financial Management system are: (i) finalize and adopt a Project Implementation Plan that includes FM Section to formalize control processes specific to the project; and (ii) maximize use of direct payments for large contracts. DOTC has addressed the remaining findings of the Commission on Audit (COA) on the 2012 audit of DOTC Central Office. A status report on the progress has been submitted to the Bank.

FM Implementation Arrangements

34. DOTC's current financial management system will be used for the implementation of the project. It includes acceptable budgeting, accounting, reporting, internal controls including internal audit and staffing. DOTC will have a robust information system that will regularly report the progress of BRT implementation. The Director of the Comptrollership Service at DOTC was designated as the focal FM person who will: (a) facilitate the financial management processes within DOTC; and (b) coordinate the financial management requirements of the project with the PIU.

Budgeting Arrangement

35. Budget proposals are prepared annually by DOTC and submitted to DBM and which after review are incorporated into the General Appropriations Act each year. The project will prepare an annual work and financial plan together with disbursement projection to be submitted to the Bank before 15th November for the following year.

² The financial management assessment of the project was conducted in accordance with the "Financial Management Practices in World Bank Financed Investment Operations" issued by the Financial Management Sector Board on November 3, 2005 and as further rationalized in the "Principles-Based Financial Management Practice Manual" issued by the Board on March 1, 2010.

Accounting Arrangement

36. The accounting records of the project shall be maintained by DOTC using the DOTC's computerized accounting system which is run in Oracle. The chart of accounts complies with the NGAS chart of accounts prescribed by the Commission on Audit. The DOTC Accounting Division under the Comptrollership Service shall maintain the accounting records in accordance with the country accounting procedures and policies. As accounting of the project transactions shall be mainstreamed, adequate staff resources of the Accounting Division (currently 47 staff) shall be made available to ensure timely completion of the financial reports, monitoring of the Designated Accounts, and preparation of withdrawal applications. Due to the adverse opinion by the Commission on Audit (COA) on the 2010 to 2012 consolidated financial statements of the DOTC, separate books of account will be maintained for the project. DOTC Central Office has already addressed most of the COA findings on the 2012 audited financial statements. A status report on the actions taken on the remaining COA findings has been received by the Bank.

Internal Control and Internal Auditing

37. DOTC Finance and Comptrollership has adequate segregation of duties. The Finance and Management Service has two divisions; the Budget Division (with 10 staff) and the Management Division (with 12 staff). The Comptrollership Service has also two divisions namely; Accounting Division (with 47 staff) and Treasury Division (with 17 staff). The project will follow the internal controls and policies found in New Government Accounting System (NGAS), Government Audit and Accounting Manual, COA and DBM memoranda and circulars, and other laws and regulations. The Internal Audit function is performed by the Internal Audit Unit composed of twelve personnel headed by a Division Chief. Specifically, the following requirements will be implemented for the project:

- (a) Subsidiary records will be maintained for the Designated Accounts (Das) and the related project peso accounts;
- (b) Quarterly bank reconciliation statements will be required to be prepared and submitted to DOTC Comptrollership Service every 20th day after end of each quarter together with the trial balance; and
- (c) Annual physical inventory count of fixed assets will be conducted and results reconciled with the accounting and property records.

Funds flow arrangements

38. The funds from the loans will flow from the World Bank to the Bureau of Treasury account at the Central Bank of the Philippines. After the issuance of the Notice of Cash Allocation (NCA) by the Department of Budget and Management (DBM), the funds will be credited to the Designated Accounts of the project maintained by DOTC Central Office.

Financial Reporting Arrangement

39. DOTC will prepare and submit Unaudited Interim Financial Reports (IFRs) within 60 days after the end of each calendar quarter consisting of the: (a) financial reports on the project's: (i) statement of financial position; (ii) statement of sources and uses of funds which should include the current and cumulative data compared with plan & by fund source; and (iii) bank

reconciliation statements, both dollar and all peso project bank accounts; (b) physical progress report and (c) procurement status report. The physical accomplishment report must be linked to the financial report. The IFR should also be accompanied by a narrative explanation of the progress of the project and the significant variances between actual against planned and financial against physical accomplishments. The format of the IFR will be agreed before negotiation and shall be included in the Project Implementation Plan.

External Audit Arrangement

40. The audit of the Project Financial Statements (consisting of the statement of financial position, statement of financial performance, a statement of changes in net assets/equity, and a cash flow statement) will be conducted by the COA, the Philippines’ Supreme Audit Institution. COA has extensive experience in auditing government agencies and World Bank-funded projects and is acceptable to the Bank. The audit will be conducted in accordance with International Standards on Auditing and the reports will be submitted to the Bank within six months after the end of each calendar year. Based on prior experience there is a risk that the audit may not be received within the period prescribed in the Loan Agreement. Finance staff will be advised to work closely with COA to minimize the risk of late receipt of the audit report. At present, DOTC is not implementing any WB-assisted project.

Financial Management Action Plan

41. The actions to be taken to strengthen DOTC’s financial management system and reduce the fiduciary risks are the following:

Action plan to strengthen DOTC’s Financial Management

	<i>Action</i>	<i>Date due by</i>	<i>Responsible</i>
1.	Complete FM staffing plan at the PIU to support day-to-day operations.	Within three months after effectiveness	DOTC
2.	Capacity building on financial management conducted for finance staff who will be involved in the Project. Brief FM orientation to key finance officers and staff will be conducted to ensure that they understand the FM requirements under the Project.	Within six months after effectiveness	DOTC/ Bank

Disbursements

42. The disbursement of the loan will be in accordance with the financial plan of the project for the following categories:

Allocation of IBRD Loan Proceeds

Category	Amount of the Loan (Expressed in US Dollars)	% of Expenditures to be Financed
1. Goods, works, non-consulting services, consultants' services, Training and Workshops, and Operating Costs under Parts 1(a)(ii), 1(a)(iii), 1(a)(iv), 1(a)(vi), 1(c), 1(e), 3(a), 4, 5(b) and 6 of the Project	115,710,000	100%
2. Front-End Fee	290,000	Amount payable pursuant to Section 2.03 of this Agreement in accordance with Section 2.07 (b) of the General Conditions
TOTAL	<u>116,000,000</u>	

Allocation of CTF Loan Proceeds

Category	Amount of the Loan (Expressed in US Dollars)	% of Expenditures to be Financed
1. Goods, works, non-consulting services, consultants' services, Training and Workshops, and Operating Costs under Parts 1(b), 2(a), 2(c), and 5(a) of the Project	25,000,000	100%
TOTAL	<u>25,000,000</u>	

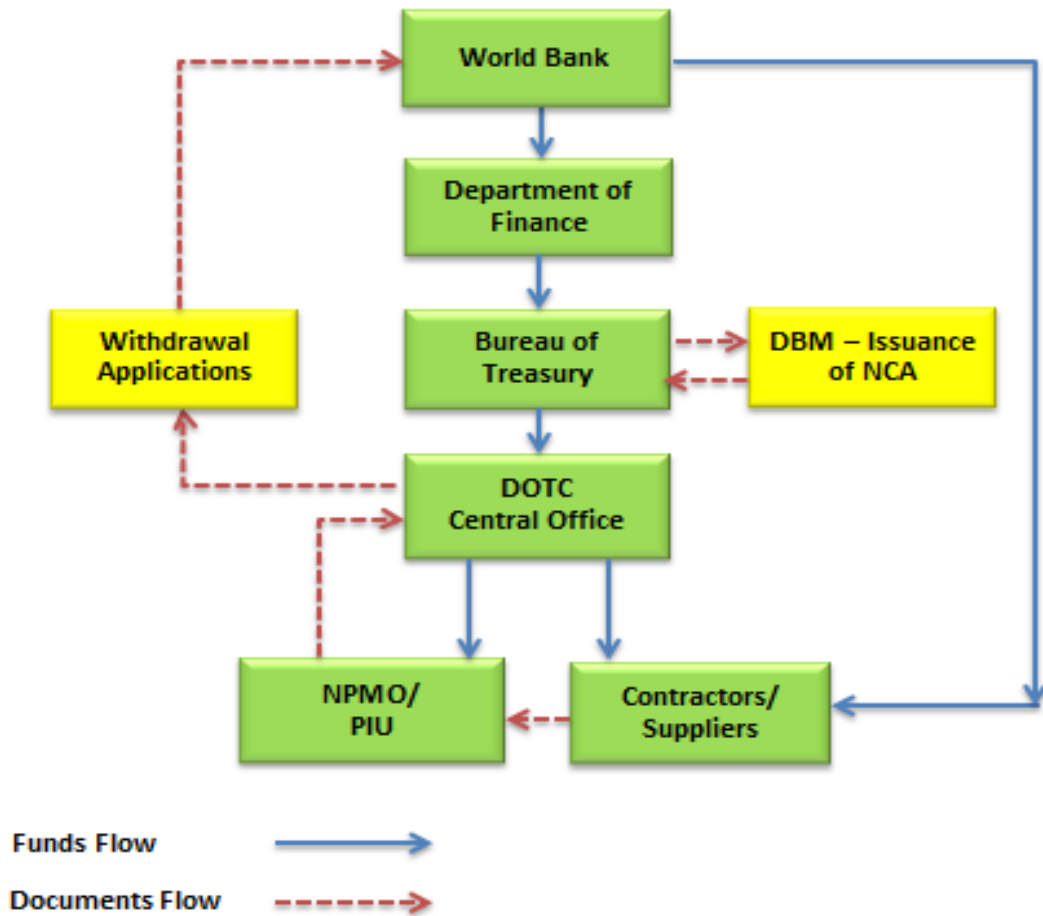
43. The disbursement methods allowed under the project are (i) advance, (ii) direct payments, (iii) reimbursements; and (iv) special commitments. *The project will maximize the use of direct payments for large contracts.* The proposed minimum value of application for direct payments, reimbursements and special commitments is US\$1 million for the IBRD loan and US\$200,000 for CTF loan.

44. Withdrawals up to an aggregate amount not to exceed US\$23.2 million from IBRD Loan and \$5.0 million equivalent from CTF Loan may be made for payments made after December 31, 2013 for eligible expenditures.

45. Under the advance method, DOTC would open and maintain two DAs in US Dollars (for IBRD and CTF) at Land Bank of the Philippines, an authorized government depository bank acceptable to the Bank. The maximum ceiling for the DA shall be initially set at US\$10.0 million and US\$1.0 million, respectively. The DA ceilings would be reviewed by DOTC in consultation with the Bank's Task Team from time to time to assess its reasonableness and adequacy. DOTC would withdraw funds from the Bank through the submission of duly signed Withdrawal Application and Statement of Expenditures (SOEs) and Summary Sheets. Disbursements under the project would comply with the Bank policies and procedures on disbursements and financial management as reflected in the Bank's Disbursements Handbook and Financial Monitoring Report Guidelines. All replenishments to the DAs would only be for eligible expenditures based on the agreed eligibility/financing percentage in the Loan Agreements and shall have adequate supporting documents. Attachments of supporting documents to the Summary Sheets for withdrawal applications would be based on threshold limits specified in the Disbursement Letter. The frequency for reporting eligible expenditures paid from the DA will be quarterly or as need arises.

46. To allow the submission of Withdrawal Applications and supporting documentation, for expenditures *incurred* on or before the Closing Date, the project will be granted a four-month grace period to report these eligible expenditures.

Figure 3.2: Cebu BRT Funds Flow for IBRD and CTF Loan Proceeds



Procurement

General

47. Procurement for the Project would be carried out in accordance with the World Bank’s “Guidelines: Procurement of Goods, Works, and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers” dated January 2011; and “Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrower” dated January 2011, and the provisions stipulated in the Legal Agreements. While the Philippine Procurement Law (RA 9184) is in reasonable harmony with the Guidelines at the NCB level, the Procurement Schedule of the Loan Agreement will include an annex detailing procedures that are not acceptable to the Bank and provisions that apply when NCB is used. The general descriptions of various items under different expenditure category are described below. For each contract to be financed by the IBRD and CTF Loans, the different procurement methods or consultant selection methods, estimated costs, prior review requirements, and time frame are agreed between the Borrower and the Bank project team in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

48. **Procurement of Works.** Works procured under this project, would include transit ways, stations/stop buildings and terminals and BRT control center, depot and ancillary NMT facilities, land development, etc. Contracts estimated to cost the equivalent of \$15.0 million or more will be procured following International Competitive Bidding (ICB) method and will use the Bank's Standard Bidding Documents (SBD). Contracts to be procured following National Competitive Bidding (NCB) method, which are estimated to cost the equivalent of less than \$15.0 million, will use the Harmonized Philippine Bidding Documents (PBD), in accordance with the provisions of paragraphs 3.3 and 3.4 of the Procurement Guidelines. Shopping for works, following paragraph 3.5 of the Procurement Guidelines may also be used for small item contracts estimated to cost the equivalent of \$200,000 or less.

49. **Procurement of Goods.** Goods procured under this project would include various operating systems such as Area-wide Traffic Control (ATC) and Intelligent Transport System (ITS), BRT support equipment, vehicles, information technology and other office equipment, etc. The procurement will be done using the Bank's Standard Bidding Documents for ICB contracts estimated to cost the equivalent of \$3.0 million or more. Limited International Bidding following paragraph 3.2 of the Guidelines may be used regardless of the value of the contract in case where there are only limited number of suppliers for particular goods. Contracts estimated to cost less than \$3.0 million will be procured following NCB method, using the Harmonized PBD, in accordance with the provisions of paragraphs 3.3 and 3.4 of the Procurement Guidelines. Shopping will also be used for small item procurement for contracts estimated to cost the equivalent of less than \$100,000, in accordance with the provisions of paragraph 3.5 of the Procurement Guidelines. Direct Contracting may be used following paragraphs 3.7 and 3.8 of the Procurement Guidelines.

50. **Selection of Consultants.** Consulting firms and individual consultants would be required for technical assistance and operational support, capacity building and various surveys and studies for project implementation and monitoring, feasibility study and detailed engineering design, information, education, communication and advocacy activities. Shortlists of consultants for services estimated to cost less than \$500,000 equivalent per contract may be composed entirely of national consultants in accordance with the provision of paragraph 2.7 of the Consultant Guidelines. Quality and Cost Based Selection will be the preferred mode while the following may also be used, as appropriate for the contracts: Quality-Based Selection, Consultants' Qualification Selection, Single Source Selection and Individual Consultants by competition and sole source.

51. **Incremental Operating Costs.** Activities relating to managing the project, including staff travel and office utilities and supporting the project operations will be provided in accordance with existing government prescribed limits and procedures acceptable to the Bank.

Assessment of the agency's capacity to implement procurement

52. Procurement activities will be carried out by DOTC. The Bids and Awards Committee (BAC) will carry out the procurement specifically from the pre-procurement conference to handling the actual bidding process up to the award of contracts. The BAC will be supported by regular (administrative) secretariat unit and an ad hoc technical working group whose membership (to include representative from CCG) depend on the nature of contract to be

procured. These offices are staffed with people familiar with the local procurement rules in varying degrees. Both DOTC and CCG have been doing procurement regularly including large ones for works, goods and consultancy using local and foreign funds; however this will be the first time in many years that DOTC will be implementing a Bank-financed project while CCG has not implemented one. Hence, a PIU will be set-up to provide overall coordination and guidance and initiate procurement activities, among others.

53. An assessment of the capacity of the Implementing Agency to implement procurement actions for the project has been carried out by the Designated Procurement Staff for the Project in April 2012, updated in May 2014. The assessment reviewed the organizational structure for implementing the project and the interaction between the various offices responsible for delivering procurement results.

54. Procurement risk for the project is assessed as “substantial”. Some of the identified weaknesses in DOTC and CCG procurement systems relate to: 1) the lack of experience for both agencies on the Bank’s Procurement Guidelines and Processes; 2) inadequate information available on the annual procurement plan; 3) timeliness of procurement process; 4) notification of procurement results; and 5) timely release of payments. The following measures were agreed to mitigate the gaps/risks:

- (a) Project Implementation Unit to be set-up by DOTC staffed with people from DOTC and CCG with a focal person in procurement to be provided with continuous relevant training on procurement and to be supported by Procurement Specialist from a Technical Support Consultant team by Appraisal.
- (b) A Project Implementation Plan with a specific Procurement Section detailing, among others, the procurement arrangement based on the Loan Agreement and processing timelines within DOTC and standard procurement documents including SBDs and PBDs acceptable to the Bank will be prepared by the PIU by Appraisal.
- (c) On the basis of the Loan Agreements, DOTC will ensure annual procurement audit (within six months after each fiscal year), alongside the financial audit, is performed by COA following the Guide in the Audit of Procurement. The Bank will ensure that findings are discussed and appropriate measures are put in place to align and enhance the procurement process involving Cebu-BRT project on a continuing basis.
- (d) A Procurement Plan detailing the identified contract packages for works, goods and consultancy will be prepared by the PIU by Appraisal and updated on an annual basis or as the need arises to reflect current circumstance, and cleared with the Bank. The Procurement Plan will be made available on PhilGEPS, DOTC and CCG websites and would be strictly followed especially in ensuring that procurement timelines and dissemination requirements on procurement opportunities and results conform to the Bank and government standards.

Procurement Plan

55. The Borrower, at appraisal, developed a Procurement Plan for project implementation which provides the basis for the procurement methods. This plan was agreed between the Borrower and the Project Team by the end of appraisal and will be available at the PIU-DOTC. It is available in the Project's database and on the Bank's external website. The Procurement Plan will be updated in agreement with the Project Team annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

Frequency of Procurement Supervision

56. In addition to the prior review supervision to be carried out from Bank offices, the capacity assessment of the Implementing Agency has recommended two per year supervision missions to visit the field to carry out post review of procurement actions.

Details of the procurement arrangement involving international competition

General

- (a) **Bank's approval Date of the procurement Plan:** 31 July 2014
- (b) **Date of General Procurement Notice:** 29 Aug 2012
- (c) **Period covered by this procurement plan:** June 2014 to December 2015

Goods and Works and non-consulting services.

57. **Prior Review Threshold:** Procurement Decisions subject to Prior Review by the Bank as stated in Appendix 1 to the Guidelines for Procurement:

	Procurement Method	Prior Review Threshold US\$	Comments
1.	ICB (Goods)	3m and above	All
2.	NCB (Goods) packages	N/A.	Only the first contract
3.	ICB (Works) packages	15m and above	All
4.	NCB (Works) packages	N/A.	Only the first contract

58. Summary of the Procurement Packages planned during the first 18 months after project effectiveness (including those that are subject to retroactive financing and advanced procurement) is as follows:

1	2	3	4	5	6	7	8
Ref. No.	Description	Estimated Cost US\$	Procurement Method	Domestic Preference (yes/no)	Review by Bank (Prior / Post)	Expected Bid Opening Date	Comments
	Works: Package I (Lots 2, 3, 4 & 6) BRT Corridors	34.3m	ICB	no	prior		Bank's SBD Works
	Works: Package II Bus Depot, Stations and Terminals	48.7m	ICB	no	prior		Bank's SBD Works
	Summary of the NCB (Goods) packages	2.5m	NCB	no	post		Harmonized PBD
	Summary of the Shopping (Goods) packages	0.1m	shopping	no	post		Request for Quotation Form

- (a) All ICB Contracts, first NCB contract and all Direct Contracting will be subject to prior review by the Bank.

Selection of Consultants

59. **Prior Review Threshold.** Selection decisions subject to Prior Review by Bank as stated in Appendix 1 to the Guidelines Selection and Employment of Consultants:

	Selection Method	Prior Review Threshold US\$	Comments
1.	Competitive Methods (Firms)	100,000 & above	All
2.	Single Source (Firms & Individuals)	Regardless of Amount	All

60. **Short list comprising entirely of national consultants:** Short list of consultants for services, estimated to cost less than \$500,000 equivalent per contract, may comprise entirely national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

61. **Any Other Special Selection Arrangements.** Advance selection process to follow the Bank's Consultants Selection Guidelines to be eligible for retroactive financing under the proposed loan (i.e., Detailed Engineering and Design and Supervision Consultancy, Technical Support Consultant, FS for Metro Manila additional alignments, Comprehensive Bus Service and Operations Plan Study for Metro Manila).

Consultancy Assignments with Selection Methods

1	2	3	4	5	6	7
Ref. No.	Description of Assignment	Estimated Cost US\$	Selection Method	Review by Bank (Prior / Post)	Expected Proposals Submission Date	Comments
	Package I: Detailed Engineering Design & Construction Supervision	3.5 m	QCBS	prior	January 2015	Bank's SRFP
	Package II: Technical Support Consultant	3.0 m	QCBS	prior	March 2015	Bank's SRFP

Environmental and Social (including safeguards)

62. An Environmental Impact Assessment (EIA), Resettlement Plan (RP), and a Social Management Plan (SMP)/Social Impact assessment (SIA) were developed in conformity with the Bank's safeguard policies to evaluate environmental and social issues associated with direct and indirect impacts of the project during the planning, construction, and operational phases. The EIA includes detailed alignment sheets showing the potential impacts and the concomitant mitigating measures as a basis for the analysis of alternatives for the BRT infrastructure sites and system technologies that will generate the least environmental and social impacts. The RP and SMP will be updated by a property appraiser, social development specialist, and resettlement specialist during the detailed design stage to meet O.P.4.12 requirements for eligibility and the use of replacement cost for valuation of affected assets. The PIU will engage social and environmental safeguard specialists to supervise updating and disclosure of the plans during the detailed design phase and the implementation of the RP and SMP. Before civil work is authorized to proceed, the PIU will certify that the RP has been successfully implemented. The PIU will also monitor implementation of SMP and conduct annual monitoring during the civil works to flag any resettlement and other social issues to be addressed. Monitoring of safeguards implementation will also be done through the Bank's regular missions and through support to be provided by the Task Team's social and environmental safeguard specialist.

63. Other than land acquisition, a major social risk facing the project is the potential loss of employment by some jeepney drivers operating along the BRT corridor.

64. Loss of Livelihood for Transport Service Providers: The project would cause economic displacement of some jeepney operators and drivers operating on the proposed BRT corridor. Information on jeepney operators and drivers affected by the BRT operation was obtained from LTFRB. The project is expected to affect 22 PUJ routes, operated by 1,191 franchises, 912 operators, and 1,310 jeepneys. At a ratio of two drivers (one regular and one reliever) per unit, the number of drivers whose livelihood may be affected would total 2,620.

65. The options for livelihood restoration of affected jeepney drivers, helpers and operators have been developed as part of the preparation studies. The study includes a vulnerability

analysis of affected jeepney operators and drivers. The options as well as the institutional and financial arrangements for restoring livelihood of affected jeepney drivers, helpers and operators are addressed in the Social Management Plan. The SIA/SMP sets out options for jeepney operators and drivers to be displaced by the operation of the BRT. Five options have been identified to manage PUJ operator impacts. These include: (a) remain on their route, despite the impact of the BRT, and hope that a sufficient number of other operators will withdraw to make the route viable for those who remain; (b) remain on their route, which has been restructured and will remain strong; (c) operate on newly opened routes; (d) cancel their PUJ franchise and apply for open franchises of other transport services such as trucks-for-hire or school service; and (e) transform their investment to participate in BRT operations.

66. **Participation/Consultation/Communication Mechanisms.** There has been significant public and private sector participation in the planning and design process through a variety of communications mechanisms. These provided a good opportunity for the concerns and views of multiple stakeholders to be mainstreamed into project preparation and implementation. Some of the channels include:

- (a) The formation of a Citizens' Advisory Board during the design and construction of the Cebu BRT is envisioned to provide information and feedback mechanism to various stakeholders;
- (b) Conduct of public consultation meetings and hearings at key milestones during various stages of planning and preparation; focus group discussions at local barangays and a quantitative 'hall test' survey of a representative sample of 500 citizens;
- (c) Development of a citizen's report card and BRT Information Center;
- (d) A crowd sourcing initiative for infrastructure is being introduced in Cebu using mobile phone application that allows the public to articulate concerns, comment or transmit views on a particular topic;
- (e) Development of a series of communication tools, including a study website, social media communications (Facebook and Twitter), poster/flyers, promotional materials, exhibition banners and workshops; and
- (f) The project will establish a grievance mechanism and dispute resolution measures where project affected persons can seek to redress for grievances related to adverse environmental and social impacts.

67. Though the project has environmental and social benefits through improved and more efficient public transport system, it is also expected to generate negative environment and social impacts. Civil works will generate dusts, wastes, noise, vibration, and contribute to the worsening traffic problem during construction. Trees may also be removed along the sides and in the median along the work areas. The EMP which contains the mitigating measures and monitoring and reporting requirements will be updated, implemented and reported by the contractor on a monthly basis to the Cebu City PIU. An Environmental Compliance Monitoring report will be prepared by the PIU and submitted to DENR and the World Bank on a semi-annual basis.

68. At the national level, DOTC would provide the overall sight through the National BRT Project Management Office which will operate under the guidance of the Steering Committee (SC). At the local level, there is Cebu Project Implementation Unit (PIU) that will oversee the works of the Contractor and the BRT Operator. One of the first tasks of PIU will be to draft a Land Acquisition and Resettlement Operations Manual in coordination with the social development specialists and property appraiser in the Detailed Engineering Design consultant team. The Manual will be used to update Resettlement Plan during the detailed design phase. BRT-PIU and Environment and Social Safeguard Specialists will be trained to ensure proper monitoring in the preparation and implementation of EMP, SIA/SMP and RP. Monitoring of safeguards implementation will also be done through the Bank's regular missions and through support to be provided by the Task Team's social and environmental safeguards specialist.

Monitoring & Evaluation

69. **Where will the data for the project's outcome and results indicators come from?** When the BRT is operating, routine data will be collected relating to passenger numbers and fleet performance. This will be collected, collated and reported as a function of the BRT System Manager. In addition a project monitoring and evaluation methodology has been developed. This annual activity will provide information that will be used to measure key performance indicators and evaluate progress toward achievement of the PDO. The ex-ante data were collected as part of project preparation providing a baseline from which project impacts can be assessed.

70. The data collected consists of both qualitative and quantitative measures to support defined key performance indicators. These data will be collected annually commencing in the first year of operation (ex post) to be compared with collected ex ante data sets. The methods of collection will include user questionnaires, user surveys, traffic and movement data together with collected records.

71. **What capacity is available to collect data? If limited, how will it be strengthened?** Data collection and monitoring will be undertaken and coordinated initially by the PIU and thereafter by the 'BRT System Management entity'. The need to monitor and evaluate will be specified within the function of both units.

72. The survey protocol including forms and analysis methodology has been specified as part of project preparation. The protocol extends local knowledge of basic data collection to incorporate that of system impact analysis. If required the PIU/BRT System management capability will be strengthened by the Technical Support Consultant.

73. **What additional costs will be required to support M&E?** The project will finance monitoring and evaluation of project components on an annual basis. These costs assume that external support will be required and include the cost of enumerators and analysis/evaluation.

74. **How will data be used to assess the project's effectiveness during implementation?** Whilst measures will be put in place to minimize adverse effects, project implementation will involve disruption to all road users along the BRT corridor. This disruption will be manifested in increased journey time, limited accessibility and noise. The effects will be felt by those living and working within the corridor and roads accessing the corridor as well as by those living and

working on routes used as an alternative to the BRT corridor. In addition there will be effects upon businesses that rely upon the corridor for access. During construction these effects will be monitored using qualitative surveys of users and affected parties, quantitative data on vehicle movement and journey time surveys. The tools to be used during implementation include:

- (a) **Use of Crowd Sourcing as a Monitoring Tool.** Studies are under way to assess use of smart phone applications in taxis to increase the amount of knowledge of transport network performance and provide an automated data analysis and display tool. This approach could greatly enhance network knowledge and lead to better management of the network by system managers (CITOM) and network users (taxi drivers). The web-based tools would include visualizations and analyses tools which display live and time-series databases of taxi crowd-sourced traffic data for Metro Cebu. The intention is to expand this approach to monitor the impacts of construction and BRT system testing and implementation. As well as providing traffic speed, journey time and congestion comparisons, transport network performance tools are also included so that CITOM's control room staff can place onto the live map information about traffic accidents and the intersections where they need to deploy traffic enforcers because the traffic control systems aren't working.
- (b) The smart phone application and web tool would be expanded as part of project implementation for regulated BRT feeder services to enable better responses to network conditions to improve vehicle utilization, where the adoption of a route specific ITS control system is not financially feasible.
- (c) **Civic Engagement Platform.** Establishment of a civic engagement platform improves the public's participation in transport network management issues. Focus group discussions with local residents identified the adoption of text based fault reporting as the best means of communication. Barangay mapping was undertaken by groups of local people to increase local knowledge of highway maintenance issues.
- (d) The SMS text fault reporting system would be expanded during project implementation to include fields for specific BRT issues (service delays, cleanliness of vehicles, faults at stops and stations, driver behavior, ticketing problems); along with weekly themed 'crowd voting' surveys (ticket prices, service quality, operating hours etc.). The latter would be tied into the longer term marketing, communications and branding of the BRT, since the SMS text responses from service users will provide insight into whether the BRT system is meeting passenger expectations in Cebu.

Role of Partners

75. The Clean Technology Fund (CTF) is co-financing project components, as identified in Annex 2.

Annex 4: Operational Risk Assessment Framework (ORAF)

PHILIPPINES: Cebu Bus Rapid Transit Project

Project Stakeholder Risks						
Stakeholder Risk	Rating	Substantial				
<p>Risk Description:</p> <p>There are a number of stakeholders (especially PUJ operators and drivers, but also perhaps private vehicle drivers, private land developers, other vested interests benefiting from the current system) who may resist the proposed reforms and jeopardize project implementation.</p>	Risk Management:					
	<p>Sharing information, holding focus group discussions, and inviting feedback has been at the heart of the preparation process. Significant public and private sector participation will continue in the planning and design process through a variety of communication mechanisms. This approach will be intensified during implementation and operation.</p> <p>In addition, a citizen report card will be developed as a tool for monitoring and evaluation of performance of a government agency in the delivery of its products or services.</p>					
	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:
	Both	In Progress	Implementation	<input checked="" type="checkbox"/>		Yearly
Implementing Agency (IA) Risks (including Fiduciary Risks)						
Capacity	Rating	Substantial				
<p>Risk Description:</p> <p>(a) Technical and Managerial Resources. While both DOTC and CCG have experience in implementing complex projects, neither has experience building or managing bus rapid transit systems. Thus, technical and managerial expertise for implementation is limited.</p> <p>(b) Experience with World Bank projects. Both DOTC and CCG have limited experience with Bank processes and systems for FM, procurement, social and environmental safeguards, and governance and anti-</p>	Risk Management:					
	<p>(a) Capacity building activities, including training on project implementation and public transport management, will be a significant component of the Project, both during preparation and implementation. In addition, a Technical Support Consultant (TSC) will also be hired to provide on call consulting services related to technical aspects of BRT implementation and operation.</p>					
	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:
	Both	In Progress	Implementation	<input checked="" type="checkbox"/>		Yearly
	Risk Management:					
	(b) FM, Procurement, and Safeguards teams will provide substantial training to both					

<p>corruption.</p> <p>(c) Weak internal controls at DOTC and CCG as disclosed in the 2012 audit reports of the Commission on Audit (COA) which show adverse and qualified audit opinion on DOTC and CCG financial statements, respectively.</p>	<p>local and national-level counterparts during Project preparation to ensure compliance with Bank policies and guidelines.</p>					
	Resp: Both	Status: In Progress	Stage: Implementation	Recurrent: <input checked="" type="checkbox"/>	Due Date:	Frequency: Yearly
	<p>Risk Management:</p> <p>(c) The agreed financial management arrangements will include use of direct payments for large contracts, opening of separate books of accounts and regular bank reconciliation. DOTC will also report status of actions on the remaining COA audit findings yet to be implemented.</p>					
	Resp: Both	Status: In Progress	Stage: Implementation	Recurrent: <input checked="" type="checkbox"/>	Due Date:	Frequency: Yearly
<p>Governance</p>	Rating	Substantial				
<p>Risk Description:</p> <p>Description:</p> <p>(a) Politically charged city environment derails project implementation.</p> <p>(b) Lack of ownership. Two levels of government will need to be involved in the different stages of project preparation, implementation and management. Loss of ownership and commitment to the project from any level could reduce project success.</p> <p>3.3 Institutional and Regulatory</p> <p>Description:</p> <p>There are no established regulatory and institutional frameworks that clearly and comprehensively set out the different roles and responsibilities of the government agencies in place. Longer-term institutional frameworks for BRT systems (an institutional issue), as well as a provisional institutional structure for the Project (an</p>	<p>Risk Management:</p> <p>(a) Raising awareness and sharing information about the potential benefits of the proposed reform program has been at the heart of project preparation. The focus is on working with the main political, institutional and community stakeholders to generate widest understanding and ownership of the BRT project and its benefits. The project will aim to maintain public presence of the project, its activities and its progress, so that any attempted interference becomes apparent.</p>					
	Resp: Bank	Status: In Progress	Stage: Implementation	Recurrent: <input checked="" type="checkbox"/>	Due Date:	Frequency: Yearly
	<p>Risk Management:</p> <p>Risk Management:</p> <p>(b) To formalize the basis for working together, a memorandum of understanding has been agreed between DOTC and CCG. Detailed implementation arrangements have been agreed upon to strengthen institutional coordination.</p>					
	Resp: Bank	Status: In Progress	Stage: Implementation	Recurrent: <input checked="" type="checkbox"/>	Due Date:	Frequency: Yearly
	<p>Risk Management:</p> <p>3.3 Institutional and Regulatory</p>					

<p>implementation issue) need to be developed.</p> <p>3.4 Procurement</p> <p>Description:</p> <p>Limited capacity in DOTC and CCG to implement Bank-financed projects. There is limited information available on the timeliness of procurement processes, notification of procurement results.</p>	<p>Risk Management: These risks should be mitigated by the proposed structure which combines a National Program Management Office (PMO) with a Cebu-based Project Implementation Unit (PIU). This structure has been agreed to and is in the process of being formalized.</p> <p>This risk is mitigated at the national level by setting up a Steering Committee for coordinating the planning, implementation, management, regulation, and monitoring of BRT policies, plans, and projects. It has representatives from all key Departments, including DOTC, DILG, DOF, and LTFRB. The Mayor of the city is also represented on the Committee. In addition, representatives of the private sector and transport sector are also represented. An institutional study for the BRT management and operations structure has been undertaken, and DOTC needs to take decisions on the organizational set-up to allow time for their establishment and selection of private partners.</p> <p>Detailed mitigation measures to address governance issues are addressed in 2.1.</p> <p>On the environmental aspects, the project has conducted an Air Quality Study and a Greenhouse Gas Emissions Study to further understand and monitor the environmental benefits of the project.</p>					
	Resp: Both	Status: In Progress	Stage: Implementation	Recurrent: <input checked="" type="checkbox"/>	Due Date:	Frequency: Yearly
	<p>Risk Management:</p> <p>3.4 Procurement</p> <p>Risk Management: The PIU set up in Cebu City with a focal person on procurement and the DOTC Bids and Awards Committee (BAC) will be supported by a procurement specialist from the Technical Support Consultant. A detailed Procurement Plan will be prepared and updated on an annual basis. A Project Implementation Plan with procurement arrangements and processes will be developed; there will be an annual procurement audit.</p>					
	Resp: Both	Status: In Progress	Stage: Implementation	Recurrent: <input checked="" type="checkbox"/>	Due Date:	Frequency: Yearly
Project Risks						
Design	Rating	Moderate				
Risk Description:	Risk Management:					

<p>Multiple risks will need to be addressed during Project design and implementation:</p> <p>(a) During construction stage, traffic impact mitigation is not properly designed and lead to serious congestion along BRT corridor, which could heighten any public opposition.</p> <p>(b) Different components of the BRT system are not coordinated properly during construction or operation, leading to delayed implementation or poor performance.</p> <p>(c) Projected BRT ridership is not attained and operational sustainability is compromised in early years of implementation.</p> <p>(d) Insufficient number of local bidders with the capacity to operate or maintain a BRT.</p> <p>(e) Inability of the BRT to address needs of the vulnerable groups (such as physical harassment by other passengers or arising from overloading, inadequate security, and difficulty of traveling with children and luggage) may result in high customer dis-satisfaction.</p>	<p>These risks are primarily addressed through Project design (specifically in Components 1 and 4, and 5 under the Project, which include detailed design, institution-building, and staff training) and during preparation, through the feasibility study and stakeholder consultations, as well as a series of studies, which cover institutional organization and informal transit sector impact mitigation and management.</p> <p>There is significant potential through careful management, to reduce scheme cost and maximize scheme benefits through public-private partnership to develop at least some stations and terminals. Adoption of performance standards in contracts with respect to vulnerable groups will be studied.</p>					
	Resp: Both	Status: In Progress	Stage: Implementation	Recurrent: <input checked="" type="checkbox"/>	Due Date:	Frequency: Yearly
Social and Environmental	Rating Substantial					
<p>Risk Description:</p> <p>(a) Environment. Risk of adverse environmental impacts from construction and operations is moderate. Limited capacity of the implementing agencies to comply with the Bank and the country's safeguards policies create a risk.</p> <p>(b) Social. Acquisition of right of way and resettlement will be necessary to support Project construction, and the implementing agencies are not familiar with relevant Bank social safeguards guidelines. Not adhering to Bank guidelines could create delays. A major social risk facing the project is the potential loss of employment by some PUJ operators and drivers.</p>	<p>Risk Management:</p> <p>The Bank will provide extensive training on Bank safeguard policies, both at the local and national levels, and provide limited technical support to the PMO on hiring and managing environmental and social safeguards consultants.</p> <p>The Social Management Plan includes: a) options for livelihood restoration of affected jeepney drivers, helpers and operators; b) vulnerability analysis of affected jeepney operators and drivers; and c) options as well as the institutional and financial arrangements for restoring livelihood of affected jeepney drivers, helpers and operators.</p> <p>The Environmental Management Plan (EMP) which contains the mitigating measures and monitoring and reporting requirements, including an Environmental Code of Practice (ECoP) will be updated, implemented and reported by the contractor on a</p>					

	<p>monthly basis to the Cebu City-based Project Implementation Unit (PIU). An Environmental Compliance Monitoring report will be prepared by the PIU and submitted to the Steering Committee for endorsement to the DENR and the WB on a semi-annual basis.</p> <p>Monitoring of safeguards implementation will also be done through the Bank's regular missions and through support to be provided by the Task Team's social and environmental safeguard specialist.</p>																								
	<table border="1"> <tr> <td>Resp:</td> <td>Status:</td> <td>Stage:</td> <td>Recurrent:</td> <td>Due Date:</td> <td>Frequency:</td> </tr> <tr> <td>Both</td> <td>In Progress</td> <td>Implementation</td> <td><input checked="" type="checkbox"/></td> <td></td> <td>Yearly</td> </tr> </table>	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:	Both	In Progress	Implementation	<input checked="" type="checkbox"/>		Yearly												
Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:																				
Both	In Progress	Implementation	<input checked="" type="checkbox"/>		Yearly																				
Program and Donor	Rating Low																								
<p>Risk Description:</p> <p>At appraisal, Agence Francaise de Developpement (AFD) was expected to co-finance the project. However, the AFD co-financing was withdrawn which funding will now be provided through a contribution from the Government of the Philippines.</p>	<p>Risk Management:</p> <p>Not Applicable</p> <table border="1"> <tr> <td>Resp:</td> <td>Status:</td> <td>Stage:</td> <td>Resp:</td> <td>Status:</td> <td>Frequency:</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Resp:	Status:	Stage:	Resp:	Status:	Frequency:																		
Resp:	Status:	Stage:	Resp:	Status:	Frequency:																				
Delivery Monitoring and Sustainability	Rating Substantial																								
<p>Risk Description:</p> <p>(a) Delivery quality will be largely contingent on the capacity of the local government and private sector to enforce and comply with operating contracts and regulations.</p> <p>(b) Monitoring and evaluation of project results may pose a challenge, since many of the local city agencies are not experienced with collecting high quality data.</p>	<p>Risk Management:</p> <p>(a) Component 4 of the Project will include development of institutional capacities, both in the public and private sector, for ensuring compliance with contracts and satisfactory enforcement.</p> <table border="1"> <tr> <td>Resp:</td> <td>Status:</td> <td>Stage:</td> <td>Resp:</td> <td>Status:</td> <td>Frequency:</td> </tr> <tr> <td>Both</td> <td>In Progress</td> <td>Implementation</td> <td>Both</td> <td>In Progress</td> <td>Yearly</td> </tr> </table> <p>Risk Management:</p> <p>(b) Data collection capacity building was addressed under three parallel activities. The Bank supported a capacity building program to support the introduction of low cost techniques for acquiring high-quality transport system data. The Bank supported a study on measuring GHG emissions associated with the Project.</p> <table border="1"> <tr> <td>Resp:</td> <td>Status:</td> <td>Stage:</td> <td>Resp:</td> <td>Status:</td> <td>Frequency:</td> </tr> <tr> <td>Both</td> <td>In Progress</td> <td>Implementation</td> <td>Both</td> <td>In Progress</td> <td>Yearly</td> </tr> </table>	Resp:	Status:	Stage:	Resp:	Status:	Frequency:	Both	In Progress	Implementation	Both	In Progress	Yearly	Resp:	Status:	Stage:	Resp:	Status:	Frequency:	Both	In Progress	Implementation	Both	In Progress	Yearly
Resp:	Status:	Stage:	Resp:	Status:	Frequency:																				
Both	In Progress	Implementation	Both	In Progress	Yearly																				
Resp:	Status:	Stage:	Resp:	Status:	Frequency:																				
Both	In Progress	Implementation	Both	In Progress	Yearly																				

Overall Risk		
Overall Implementation Risk:	Rating	Substantial
<p>Risk Description:</p> <p>During implementation, the main risks will be with respect to procurement activities, right-of-way acquisition and displacement of employment of affected jeepney drivers and operators.</p>		

Annex 5: Implementation Support Plan
PHILIPPINES: Cebu Bus Rapid Transit Project

I. Technical Issues

1. The project implementation structure places the Cebu BRT NPMO/PIU as the controlling/coordinating organization responsible for letting contracts for procurement for scheme development and of supportive services. The PIU will be formed through joint venture between DOTC and CCG with input from other governmental organizations as required to ensure implementation minimizing implementation risk. In forming this structure it is recognized that this is the first BRT project implemented in the Philippines and that whilst component skills that make up the BRT requirements might exist in country and within the public sector organizations making up the PIU, the specific skills relating to BRT implementation that would reduce delivery risk and ensure full exploitation of the potential of BRT in meeting PDO are not present. The implementation support plan focuses upon two support areas:

- (a) Oversight and monitoring; and
- (b) Project integration and skill gap repair

Oversight and monitoring

2. Oversight and monitoring refers to the need to follow World Bank guidelines and procedures, in particular relating to social impact/mitigation/resettlement and environmental management and monitoring. The responsibility for implementation will lie with the implementing authority. Whilst there exists within both Cebu City Government and National Government (through DPWH) experience in right of way acquisition and environmental impact mitigation there is a history of under compliance that has led to a mistrust between the general public, land use developers and the public sector. The success of this project and its achievement of the PDO lies within efficient management of project impacts. Delivery risk would be significantly reduced through clear and timely articulation of World Bank compliant procedures and following implementation of these procedures. The World Bank would provide overarching support to locally drawn teams.

Project integration and skill gap repair

3. Each individual contract includes its own technical complexities and uniqueness in relation to implementation of BRT in Cebu. While technical competency exists, the implementing agency is un-familiar with the application of that competence in the context of BRT, in what is a challenging environment both physically and politically. In addition the contracts to be commissioned cannot be considered in isolation but must be integrated and managed effectively. At a minimum the management structure that monitors and integrates should achieve compliance although performance over and above compliance is, under the right conditions, readily achievable. This is outlined in relation to specific project issues below.

- (a) Land use and transport integration. There is significant research that mass transit implementation is able to positively influence land use change and enhance land values. The BRT stations are placed in areas of largely informal development and the Bulacao and Talamban terminals are in locations of significant development potential. Cebu City is a fast developing environment with significant investors who are fully aware of the relationship between quality public transport and land value and watchful of the progress of BRT. The Philippines has a weak history of public sector control of land use development and an even weaker history of placing an expectation upon the private sector to mitigate its own transport impact. It is considered that there is significant potential, through careful management, to reduce scheme cost and maximize scheme benefits through public-private partnerships (developer agreements) to develop at least some stations and terminals.
- (b) Conceptual definition. Much effort has been expended in developing a BRT concept from the user perspective whereby infrastructure matches operational requirements. This is evident in station design, ticketing, information, the use of materials and the relationship between BRT and the public realm through urban design principles. There is much world wide experience of instances whereby design consultants have designed important aspects of conceptual detail but not realized their true value. The risk of this occurring increases when the implementing agency (IA) is not experienced in BRT development. There is therefore a clear skill gap within the IA in terms of the management of design contracts that adhere to the BRT principles developed through feasibility.
- (c) Stakeholder expectation. Feasibility studies have involved close liaison with a variety of stakeholder organizations ranging from those that focus upon historical preservation to those who represent persons with limited mobility. A common theme has been noted of mistrust that the Government (local or national) will adhere to principles relating to historical reference, cultural preservation or measures to enhance the mobility of the most vulnerable in society. Although most likely unintentional, there is a concern that design principles developed during the feasibility study might be lost during the detailed design process. This would lead to further disenfranchisement of vulnerable sectors of society and further mistrust of Government. The skills required to address the needs of vulnerable and specific interest groups during BRT implementation are not present within the implementation agency.
- (d) Communications. The feasibility study followed a consultation and communications plan that has both developed the trust of consulted groups/individuals and given relevant and timely information. The feasibility study further defined an on-going consultation plan for continuing to work with these groups and widens the scope of consultation as the project progresses. International experience suggests that effective consultation considerably reduces project delivery risk. Whilst CCG have a significant consultation capability and consultative network, it lacks knowledge and exposure to experience elsewhere as to how to apply such consultation capability to implementation of a BRT. Technical support would thus need to be provided to facilitate the consultation process.

4. These issues are addressed within the project implementation arrangements through a *Technical Support Consultant* on call to the PIU.

Monitoring & Evaluation

5. When operating, routine data will be collected relating to passenger numbers and fleet performance. The data will be collected, collated and reported as a function of the BRT System Manager. In addition a project monitoring and evaluation methodology has been developed as part of the project preparation. This annual activity is based upon the reporting on key performance indicators that in turn are used to evaluate achievement of the PDO. The data collected as part of project preparation provides a baseline from which project impacts can be assessed.

II. Social Safeguards

6. **Implementation Strategy.** For the first twelve months of project implementation, the focus will be on procurement of the required specialists to update the RP produced prior to appraisal. This updated RP will be based on the final detailed design. The other focus for the first twelve months will be the staffing of the National Project Management Office (PMO)/PIU with safeguard specialists and preparation for implementation of the RAP and the Social Management Plan. The latter will involve the constitution of the safeguard implementation structures and staffing of these structures.

7. At the second stage (12-48 months), the focus will be on safeguards implementation and completion, monitoring, and evaluation.

8. Time spent and resources used by the Bank's social safeguard/development specialist/s will be extensive and intensive in these two stages. During the first stage, coordination with the Bank's procurement specialist and the relevant NPMO/PIU staff will be important as well as capacity development and advisory services to the NPMO/PIU. The second stage tasks are weighted in the direction of monitoring and evaluation, trouble shooting, coordination, and conflict resolution. When civil work starts, inputs in terms of time and resources used for social safeguards implementation are expected to diminish (See Table 5.1 for details).

Table 5.1: Social Safeguards

Time	Focus	Skills Needed	Resource Estimate	Partner Role
First 12 months	<p>1. Updating of the Resettlement Action Plan and the Social Management Plan based on the final detailed design phase</p> <p>2. Contracting of social development specialist within the Project Management Office to supervise resettlement specialist and property appraiser in the updating of the RAP;</p> <p>3. Constitution of the resettlement and social development and implementation mechanisms</p> <p>ROW Acquisition team identified who will be authorized to make offers of compensation; initiate expropriation proceedings for problematic lands and property owners choosing this option.</p> <p>4. Contracting of External Monitoring Agent for Resettlement</p>	<p>1. Parcellary mapping, Property appraisal, and Resettlement Specialist</p> <p>2. Supervisory and coordination skills; understanding of Bank policies, experience in community development, grievance handling, conflict resolution</p> <p>3. Negotiation skills; familiarity with Bank policies; legal expertise and experience in expropriation proceedings; grievance receipt and handling.</p> <p>4. Monitoring and evaluation</p>		<p>1. The implementing agency (IA) will contract the property appraiser and resettlement specialist as part of the detailed design team. Bank social safeguard specialist to assist in drafting terms of reference and supervision.</p> <p>2. The IA will hire social development specialist. Bank social safeguard specialist to provide training.</p> <p>3. The IA will constitute the team. Bank social safeguard specialist to provide orientation on Bank policies and receive reports. Provide training on grievance handling.</p> <p>4. Partner (DOTC or CCG) will procure this. Bank social safeguard specialist to review and finalize TOR, review cost estimates, recommend clearance, and monitor procurement process.</p>
12-48 months	<p>5. Implementation of the RAP and SMP.</p>	<p>Negotiation skills and legal expertise; Project management; expertise in enterprise development</p>		<p>The IA partner will implement. Bank social safeguard specialist to monitor progress, monitor grievance.</p>

III. Environmental safeguards

9. **Scope of the Environmental Impact Assessment.** A comprehensive Environmental Impact Assessment (EIA) was prepared by DOTC which identified potential environmental impacts that may be generated during pre-construction, construction and operational stages of the project. The Environmental Management Plan (EMP) lays out detailed plans for mitigation, monitoring and reporting of all identified impacts and addresses institutional responsibilities, policy, legal, and administrative framework, cost and financing, and monitoring. The description of environmental issues was developed based on alignment sheets. These sheets, include information on alternative alignments and locations of bus ways, terminals and stations; selected locations of all project-related development sites; general layout and extent of facilities at project-related development sites; flow diagrams of facilities/operations, design basis, size, capacity, pre-construction activities; construction, schedule, facilities and services; operation and maintenance activities. Good construction practices are included in a Grievance Redress Mechanism which is detailed in the EMP.

10. **Implementation Strategy.** DOTC and CCG jointly ensured that the safeguard policy issues are addressed during project preparation. This included establishment of an institutional arrangement that consists of the creation of a National Steering Committee composed of the DOTC, CCG, DPWH and other concerned line agencies responsible for road transport services in Cebu. The Steering Committee endorsed DOTC's conduct of an EIA, EMP, SMP and RAP, and a rigorous series of public consultations and widespread information dissemination. A Grievance Redress Mechanism at the DOTC and CCG was put in place to address public concerns on a timely basis.

11. A PIU has been set up that will have the capacity to oversee, monitor and report on the safeguards compliance of the project. Capacity building of the PIU and other relevant agencies/entities will be conducted regularly to update them on the current practices to maintain the sustainability and smooth operation of the BRT system. The ECoP that the PIU needs to follow even during the operation of the BRT system will also be updated regularly. DOTC will be assisted by a detailed design consultant, which would have an environmental specialist to guide them with their compliance with environmental safeguards and an resettlement and social development specialist which would build the capacity of the PIU to undertake land acquisition, implement the social management plan and handle grievances and manage conflicts. The supervision consultant will also have safeguard responsibilities which are triggered in the event of design changes requiring land acquisition and physical displacement.

12. **Environmental Management Plan** The EMP plan includes: (i) mitigating measures and associated costs of implementation, (ii) required monitoring and frequency associated with the mitigating measures, and (iii) implementation arrangements. A section on institutional set-up discusses the requirements and responsibilities during pre-construction, construction, and operation phases. The plan includes information on: (i) required measures for each environmental impact that requires mitigation, (ii) monitoring parameters, (iii) locations where the measures apply, (iv) associated cost, and (v) responsibility and skills mix for implementing the measures and monitoring.

IV. Procurement

13. Procurement would be given particular attention based on the on-going reform agreed by the Bank and the Government Policy Procurement Board and the commission on Audit. Key aspects to be followed would be:

- (a) Adoption of good procurement practices including electronic posting and downloading of the Bidding Documents, strict adherence to procurement rules, and use of geo-tagging/GPS technology and Geo-mapping.
- (b) Early establishment of the PIU including the appointment of Procurement Focal Person/ Specialist.
- (c) Procurement Assistance to be provided by TSC.
- (d) Implementation of APCPI in accordance with GPPB Resolution No. 10-12, prescribing the Government's Standard Procurement Monitoring and Assessment Tool.
- (e) Close monitoring of the processing timeline, through APCPI, to ensure that Bid Evaluation Reports and Award recommendations are completed no later than 60 days from Bid Opening and contract award are made within 90-calendar days from Bid Opening. A contract will be signed and Notice to Proceed will be issued within 30 calendar days from Notice of Award.
- (f) A detailed review of the first 18-month procurement plan shall be conducted by a technical specialist to ensure that contracts are packaged in an appropriate and optimum manner, and then reviewed and cleared by the Designated Procurement Specialist (DPS). Monitoring of progress should be on the basis of the annual procurement plan.
- (g) Professionalization of procurement function mandated under Section 16 of RA 9184, which requires all members of the Bids and Awards Committees (BAC), BAC secretariat and others who are involved in the procurement function to be certified as procurement professionals, which will be implemented through close partnership of DoTC with GPPB. Activities will include: updating of DOTC procurement manual, training and certification for DOTC staff. The APCPI system will be the tool to measure the training result.
- (h) Implementation of an innovative approach to communication with the CSOs/NGOs, private sector and citizenry on how transparency in procurement is being implemented through geo-tagging, and training for Procurement Observers Guide.

Table 5.2: Environmental Monitoring Plan

Phase	What (What are the significant parameters to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)
During activity preparation	Air quality	Curbside	Collect ambient air quality samples	During conduct of EIA	Determine impact on ambient air quality	Part of EIA cost	CCG
During activity implementation	1. Air quality and noise 2. Stockpiles, construction debris, solid wastes 3. Traffic management 4. Potential trees or infrastructure to be affected	1. Curbside 2. Construction site 3. Traffic counts	1. Collect ambient air quality samples and noise levels 2. Contractor's Logbook 3. Monitor traffic congestion 4. Type and number of trees or infrastructure to be affected	Continuous	1. Determine impact on ambient air quality and noise levels during construction 2. Prevent clogging of waterways, safety, contamination and obstruction concerns 3. Avoid traffic congestion and long waiting time 4. Prevent significant damage or displacement of vegetation or infrastructure	Part of construction cost	Contractor
During activity supervision	Air quality	Curbside	Collect ambient air quality samples	Annually	Monitor air pollution	Part of BRT operational cost	PIU

Table 5.3: Skills Mix Required

Skills Needed	Number of Staff Weeks	Number of Trips
Environmental Specialist	10 staff weeks per year	3 per year
Social Scientist	10 staff weeks per year	2 per year

Annex 6: Economic and Financial Analysis
PHILIPPINES: Cebu Bus Rapid Transit Project

1. **Background.** A detailed financial and economic analysis was conducted for investments in public transport system (including BRT, ITS, and ATC), traffic engineering, management and safety, land use improvements and project management, which together account for over 90 percent of the total project cost. Both costs and benefits reflect 2012 prices and a project life of 30 years is assumed. Financial costs have been converted to economic costs by elimination of price contingency, taxes, and customs duty on imported materials.
2. **Methodology.** The approach is based on establishing two baseline scenarios: the existing and future ‘do-nothing’. From the future scenario, predicted BRT demand is forecast based on abstraction of trips from other modes. An estimate of future trip growth has been derived through consideration of future population growth forecasts, historical trends in travel growth and a study on evolution of car ownership and trip rates by mode. The constraints of the existing transport network have been taken into account in establishing future growth estimates.
3. The capital cost includes construction of BRT running lanes, rehabilitation of carriageway, stations, terminals, depots, Area Traffic Control, and land acquisition and resettlement. The operating cost includes bus financing cost and cost associated with running BRT services, including driver wages, maintenance staff, fuel, tires, material, and insurance and licensing.
4. **Summary of Results.** The total capital cost of the project investments subjected to financial and economic evaluation is US\$195.0 million.
5. Total recurring costs (including direct operating cost, system management, bus purchase, infrastructure maintenance, and technical support consultants) per annum are expected to be 854.5 million PHD (US\$19.9 million) in the opening year of 2015. In contrast, total revenues from bus fares and commercial revenue are projected to be 881.6 million PHD (US\$20.5 million), of which 92% is derived from fares. In the project’s opening year, revenues are thus sufficient to cover all recurring costs including bus purchase or lease cost, vehicle operating costs (fuel, drivers, service personnel, maintenance, tires, etc.), and the costs of management of the BRT system (system managers, control center personnel, terminal staff, fare collection cost, infrastructure maintenance, rapid response vehicles). Once constructed, the scheme is thus expected to be financially sustainable over its operating life. However, the scheme cannot recover its initial capital costs.
6. The economic evaluation is based on savings in travel time and reduction in vehicle operating costs. The impact of “externalities” – monetized impact of lower GHG emissions and reduction in accidents is also included in the computation of economic benefits. The following table summarizes the results of economic evaluation.

Table 6.1: Economic Evaluation Summary (all monetary units 2012 PHP millions)

Sensitivity Test	Economic Appraisal Indicators		
	EBCR	ENPV	EIRR
NO SENSITIVITY	8.0	81,439	39%
20% Reduction in Time Savings	6.4	63,447	36%
Time Savings Constant from 2025	2.8	20,479	33%
10% Patronage Reduction	8.0	81,439	39%
10% Revenue Reduction	8.0	81,420	39%
10% Infrastructure Cost Increase	7.6	80,864	38%
Excluding CTF investments on ATC	3.4	27,700	28%
20% Reduction in Time Savings and Remaining Constant from 2025 & 10% Revenue Reduction & 10% Recurrent Cost Increase & 10% Infrastructure Cost Increase	2.1	13,541	27%

Passenger Demand Forecasting

7. **Approach.** The passenger demand forecasting establishes two baseline scenarios: the existing and future ‘do-nothing’. The existing scenario is derived through the observed travel patterns collected in the travel surveys undertaken on the study corridor. This represents demand levels and travel patterns in 2009. The future scenario considers how travel levels would evolve into the future, both in terms of level and of trip distribution. From this future scenario, predicted BRT demand is forecast based on diversion of trips from other modes.

8. **Existing Scenario.** The existing scenario is based on the travel trends and demand levels observed through the primary data collection undertaken on the corridor. This data provides insight not only into the levels of observed demand along the corridor but also the way in which travelers use the corridor in terms of modal choice, interchange requirements and origins and destinations. Other datasets which provide further insight into travel in Cebu, particularly at a citywide level beyond the confines of the study area, have also been used to inform this analysis.

9. **Future Do Nothing (without BRT) Scenario.** An estimate of future trip growth has been derived through consideration of future population growth forecasts, historical trends in travel growth and a study on evolution of car ownership and trip rates by mode.

10. **Land Use Change.** Changes in development patterns and the consequent changes in future travel demand and travel flows has been accounted for within the model, with a specific focus on developments along Southern Reclamation Project area.

Future BRT Scenario

11. Ridership on the BRT system has been forecast using a Cube model developed for the purposes of project evaluation. BRT demand estimates in the opening year of 2015 are given in Table 6.2.

Table 6.2: BRT Demand Characteristics 2015

Statistic Forecast (2015)	
AM peak passengers	26,100
Daily passengers	330,000
AM peak link loading (pphpd) *	5,300

* pphpd: persons per hour per day

Capital Cost Summary for Financial Analysis

12. **Preliminary engineering costs** have been calculated for the infrastructure works required for implementation. The total project cost subject to financial analysis is US\$195.0 million.

Operating Cost Estimates

13. **Direct operating costs** including driver and maintenance specialist wages, fuel, tires, infrastructure maintenance, materials and license and insurance costs are approximately US\$12.2 million per annum.

14. **System management costs**, including BRT control center, communication charges, maintenance, BRT operations manager, control center staff, terminal dispatchers, mobile maintenance unit are estimated to be US\$2.8 million per annum.

15. **Annual repayment for vehicle fleet** is computed assuming a total vehicle fleet size of 176 units required to service the forecast demand level in the opening year of 2015. The annual repayment capital required to purchase vehicles, with recurring costs every 7 years as new vehicles replace old (an allowance is made for residual value), is estimated to be (assuming \$100,000 per bus) US\$4.9 million.

16. Total operating cost per annum is expected to be US\$19.9 million.

Revenue Forecast

17. Farebox revenue is driven by demand and by fare levels. The demand levels applied to calculate revenue are derived from the low case growth assumption.

18. **Fare levels.** Current public transport fares are regulated, with travelers paying a minimum fare for even the shortest of journeys, after which fares increase by a fixed amount for each additional distance increment beyond a certain threshold. Currently, the minimum PUJ fare is 7 pesos. The mystery traveler surveys recorded fares of between 9 and 14 pesos for the longer trips along the corridor between Talamban and the CBD and between Bulacao and the CBD.

19. The fare levels are set at a level same as the existing PUJ fares; a small annual increase in bus fares is assumed to maintain the real price by applying a 1.7 percent increase per annum throughout the project period.
20. *System Revenue.* Based on forecast daily demand at 330,000 trips, fare at 9 pesos per trip and fare collection leakage of 15 percent, total revenue per annum is expected to be 812 million PHP.
21. Assuming advertising revenue is a revenue generating option for the operating entity, conservative estimates place the sum at approximately 78,464,000 PHP/year in 2015, approximately 7% of fare revenue. The VAT would apply to this revenue, so the total after tax revenue from advertising is projected at 69 million PHP per annum.
22. Therefore, the total project revenue projected for 2015 is expected to be 881 million PHP.

Economic Evaluation

23. The economic benefits generally take three forms: consumer surplus; producer surplus and externalities.
24. Consumer surplus is derived from lower cost incurred by passengers. In the absence of fare changes, this is driven purely by lower time costs. For previous PUJ passengers, the full sum of total time savings is allocated to project benefits because such patronage is an abstraction. However, the time savings derived from (previous) car, taxi and motorcycles passengers are now additional (or generated) to the bus industry, and therefore, the sum of the time savings are applied to the principle of the ‘Rule of Half’.
25. Under the “BRT Scenario” and in the absence of a change in revenues, the producer surplus is mainly derived from the reduction of vehicle operating costs by displacing passengers from PUJs to more efficient BRT vehicles. This value represents the efficiency gain by the BRT operators.
26. In addition to savings in vehicle operating costs and reduction in travel times, the impact of “externalities” – monetized impact of lower GHG emissions and reduction in accidents is – also included in the computation of economic benefits.
27. The appraisal period for modeled benefits and costs is 2012 – 2042.
 - (a) All costs and benefits are presented in 2012 prices;
 - (b) Discount rate of 12 percent is applied; and
 - (c) All costs are expressed in factor prices – the first process involves stripping out all taxes as these are recycled back within the economy; the second process involves conversion factors using shadow costs.

Consumer Surplus

28. In the opening year, the scheme will provide approximately 5 million hours saved in generalized time – this equates to an NPV of 940 million PHP. Throughout the appraisal period the scheme will save approximately 13.5 billion hours of generalized time. This equates to approximately an NPV of 150 billion PHP.

29. In terms of generalized time saved, approximately 45 percent of time saved is benefitted to car users and 40 percent to Jeepney users. About 7 percent of generalized time saved is taxi, 5 percent for motorcycle and 2 percent for trucks.

Producer Surplus

30. In the opening year, the scheme will provide approximately NPV 60 million PHP of discounted benefits. Over the appraisal period, the scheme will provide NPV 820 million PHP. The producer surplus benefits fall entirely on the business (public transport) sector.

Greenhouse Gas Emissions

31. Please see Annex 7 for details on Greenhouse Gas emission savings.

Accident Reduction

32. Throughout the project period it is estimated that the scheme will reduce the number of fatalities by approximately 80, the number seriously injured by approximately 150, the number slightly injured by approximately 360 and the number of properties damaged by approximately 230.

33. In the opening year accident reduction impacts will be approximately NPV 130 million PHP. Throughout the project period it is estimated that the scheme will provide approximately NPV 1,800 million PHP derived from accident reductions.

Project Costs

34. The total costs amount to approximately NPV 15,000 million. In non-discounted value, the vast majority of costs are due to the recurring costs (87 percent); however in NPV terms, the split is relatively more even with approximately 40 percent of total costs derived from initial infrastructure costs and the remaining 60 percent derived from recurring costs.

Net Economic Benefits

35. The investments are expected to result in an EBCR of 8.0 and EIRR of 39 percent. This suggests the high economic return on the investments.

Sensitivity Analysis

36. To test the sensitivity of the economic analysis different combinations of a 20 percent reduction in time savings, flat growth in time savings after 2025, a 10 percent reduction in

patronage; a 10 percent increase in capital costs; a 10 percent revenue reduction; and a 10 percent increase in recurring costs have been carried out and are presented in Table 6.1 above.

Environmental and Health Benefits

37. Benefits from the BRT project will not only result from GHG emission reductions, travel-time, operating cost savings or even increased land values, but also from air quality improvements leading to potential public health impacts. Adoption of CTF supported measures would result in reduction in exposure to airborne pollutants. International experience in implementation of BRTs has demonstrated that operation of well run and designed systems have the potential to reduce exposure to airborne pollutants and air toxics, and road accidents. This is made possible by: (a) improved technologies with better emission controls; (b) fewer stops than previous system, thus reducing major emissions during start-ups; (c) separate bus lanes and reduced generation of airborne pollutants in the area of influence of the corridor. These health benefits would be multiplied accordingly under the proposed project.

38. A study³ to estimate health co-benefits of the Cebu BRT project revealed that:

- (a) Particulate matter (PM) savings from this project is around 0.52 to 0.75 tons/km/year. The Gold standard BRT in Asia (i.e. Guangzhou BRT of 22.5km) saves around 40 tons of PM over 10 years (i.e. 0.2 tons/year/km).⁴ The Rio de Janeiro BRT saves around 0.1 to 0.3 tons /year/km.⁵ The Jakarta BRT corridor saves around 0.8 tons/year/km.⁶ The higher savings in Cebu when compared with Guangzhou and Rio de Janeiro is due to a large modal shift from jeepneys to the BRT and high number of pre-euro vehicles which still ply the roads of Cebu City. The PM savings are conservative because the analysis assumed that tighter vehicle emission standards would be enforced during the BRT's operation resulting in a much cleaner fleet in Cebu; this results in PM savings of 167 to 239 tons not attributable to the BRT;
- (b) Total nitrogen oxides (NOx) savings is in the range of 1,160 to 1,665 tons or 4 to 5 tons/km/year. In comparison, the Guangzhou BRT saves around 20 tons/km/year. The high savings in Guangzhou is due to inclusion of the increase in mixed traffic speed parameter and high efficient buses being introduced as BRT buses (Euro IV). Rio de Janeiro BRT saves around 1 to 3 tons/year/km and Jakarta BRT corridor saves around 5.5 tons/km/year which is comparable to Cebu BRT;
- (c) In terms of vehicle kilometer travel reductions, the project over its 20-year lifecycle removes 20,000 to 30,000 new cars from road, including removal of 600 to 1,000 two-stroke tricycles contributing to PM reductions, removal of 250 to 350 new pre-euro buses contributing to NOx reductions;

³ A study was undertaken during January-May, 2012 to estimate the health co-benefits of the Cebu BRT project (linked to the reduction of pollutants from mobile sources), define an air quality monitoring action plan and strengthen air quality management in Cebu city (including by promoting public participation) to reverse the growing air pollution associated with transport increase.

⁴ <http://www.itdp.org/documents/20110810-ITDP-GZBRTImpacts.pdf>

⁵ <http://164.67.121.27/files/UP/Posters%202012/26%20Lupita%20Ibarra.pdf>

⁶ <http://esci-ksp.org/wp/wp-content/uploads/2012/05/Energy-and-Environmental-Impacts-of-BRT-in-APEC-Economies.pdf>

- (d) The project over its lifetime saves more fuel and CO2 emissions than one to two years of fuel consumed and CO2 emissions produced by the transport sector in Cebu⁷; and
- (e) The city-wide analysis shows: Total monetary savings ranging from US\$94-135 million from reduction of premature mortality, adult chronic bronchitis, child acute bronchitis, respiratory hospital admissions, cardiac hospital admissions, emergency room visits, asthma attacks, restricted activity days, and respiratory symptom days. When impacts on land use are considered the total monetary savings is in the range of US\$269-385 million.

⁷http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/Approval_by_Mail_CTF_Philippines_updated_investment_plan_Dec_2011.pdf

Annex 7: Clean Technology Fund

PHILIPPINES: Cebu Bus Rapid Transit Project

Introduction

1. Urban transport represents one of the fastest-growing sources of GHG emissions in the Philippines. To address this and other related problems, there is a need to break from past transport enhancement practices that emphasized construction of new infrastructure capacity. There is growing recognition that to best promote environmentally sustainable transport (EST), there is a need to plan and implement integrated packages of improvements in public transport, footpaths and cycle ways, vehicular travel management, clean fuels and technologies, and road safety.

2. In the Philippines the need is even more acute than other countries. Emissions from mobile sources contribute 65 percent of air pollution emissions nationwide, much more than stationary sources. Mobile sources account for a large proportion of the particulate matter, carbon monoxide, nitrogen oxides, and volatile organic compounds (VOC) currently emitted in large Philippine cities. While air quality in these areas has continued to improve since 2003, concentrations of pollutants such as total suspended particles continue to be above the acceptable values set by the Clean Air Act.

3. Transport consumes more energy than any other sector. In 2008, the transport sector accounted for 36.5 percent of total national energy consumption. This increased to 37.7 percent in 2009, with road-based freight and passenger transport consuming about 80 percent of this share. It has also been estimated that the transport sector accounts for over 70 percent of the country's petroleum products consumption.

Philippine Investment Plan for the CTF

4. The Cebu City BRT project is derived from the Investment Plan (IP) approved by the CTF Trust Committee on December 2009 and revised in August 2012. The Clean Technology Fund (CTF)⁸ Investment Plan is a "business plan" agreed among the Government of Philippines, the International Bank for Reconstruction and Development (IBRD), the Asian Development Bank (ADB) and the International Finance Corporation (IFC) that proposes \$250 million of CTF co-financing. Specifically, the original approved Investment Plan proposes CTF co-financing for (i) catalyzing private sector investment in distributed generation through renewable resources and increasing the number of viable off-takers (Electric Cooperatives) for such renewable energy (RE); (ii) investment support and risk mitigation for the private sector's entry into energy efficiency and cleaner production sectors; (iii) solar generation with net metering; and, (iv) introduction of Bus Rapid Systems in Cebu and Metro Manila. The CTF investments will mobilize financing of about US\$2.5 billion from the government, multilateral development banks, carbon finance and the private sector. The major change proposed in August 2012 is to

⁸ The Clean Technology Fund invests in projects and programs that contribute to the demonstration, deployment and transfer of low carbon technologies with a significant potential for long term greenhouse gas emission savings. The CTF Trust Fund Committee oversees the operations of the Fund. The World Bank (IBRD) is the Trustee of the Fund.

restructure CTF funding implemented in partnership with ADB to focus on an Energy Efficient Electric Vehicles project and a revised Solar Energy Development project. It is proposed that \$105 million be allocated to the ADB Electrical Vehicle project and \$20 million to the solar energy development project, as shown the following table:

Table 7.1: Indicative Financing Plan After Reallocation (US\$ million)

Financing Source	Renewable Energy (WBG)	Urban Transport (WBG)	Energy Efficient Electric Vehicles (ADB)	Solar Energy Development (ADB)	Total
CTF	75	50	105 ^a	20 ^a	250
GoP / DBP	180	50	99	20	349
IBRD Loans	250	180	0	0	430
IFC Loans	250	0	0	0	250
ADB Loans	0	0	300	80	380
Private sector	750	0	(tbd) ^b	(tbd) ^b	750
Other cofinancing	0	20	0	0	20
Total	1,505	300	504	120	2,429

Source: MDB teams

(tbd)=to be determined, WBG=World Bank Group

Notes to Table 7.1:

^a For the Electrical Vehicle project, a CTF grant of US\$1 million is requested for fine-tuning of technology options, technology transfer, local industry support and capacity building (implementation support, including monitoring and evaluation activities will be financed by the ADB loan). For the Solar Charging Stations component a CTF grant of US\$4 million is requested; ^b Private sector entities will participate in project implementation via supply of goods and services. For the Electrical Vehicle project, private sector investment is expected during replication and scale-up, and as such no private sector co-financing is shown. Private sector co-financing for the solar energy development project has yet to be determined.

Rationale for CTF involvement

5. CTF Involvement will deliver climate benefits directly through the project as well as through the broader strategic promotion of the BRT concept in the Philippines. These benefits are described below.

6. The project will directly support the reduction of emissions from Cebu's transport sector. A detailed GHG inventory and forecast were undertaken as part of project preparation. Based on these forecasts, implementing the BRT-ATC scenario in Cebu City would yield annual savings across Cebu City (in reference to a BAU baseline scenario) of 115,000 tons/year of CO_{2e} by the year 2020 and 192,000 tons by 2025 (equivalent to 24 percent and 41 percent of the current total annual GHG emissions from urban transport in Cebu respectively). For reference, this opening year estimate is approximately half the annual GHG benefits recorded by Transmilenio system in Bogota, Colombia two years after opening in 2000 (250,000 tonnes/year) and double those recorded by the BRT system in Baranquilla, Colombia in recent years (61,000 tonnes/year). The project would save a cumulative total of 3,867,000 tons of CO₂ over a 20 year period from the opening year by comparison with the baseline scenario - the equivalent of saving over eight times the current total annual GHG emissions from urban transport in Cebu.

7. In addition to these direct GHG savings, the project will help deliver a strategic long term climate benefit through the demonstration and proof-of-concept of BRT in the Philippines. In practice, BRT remains less familiar in the Philippines as compared to other (often more

expensive) mass transit modes such as light rail transit and metro rail transit. When successfully implemented, the Cebu BRT will provide an on-the-ground demonstration of BRT in practice, disseminating both technical and institutional knowledge for decision makers in other cities, both in the Philippines and beyond. The project explicitly recognizes the importance of this dissemination impact by including a component designed to propagate the tools, technical knowledge, and institutional capacity to successfully implement BRT in other major cities of the Philippines. The potential climate benefit from this long term strategy is not explicitly calculated here, but has the potential to be significant. Finally, in addition to the Cebu BRT, CTF is currently supporting several other simultaneous investments in BRT system implementation around the world, including Mexico and Cairo. The project will also seek to foster cross-fertilization among supported projects to enable knowledge sharing of global best practice in BRT systems design, development, and operations.

Project Description

8. The Cebu BRT project consists of the design and construction of BRT transitways, stations, terminals, a depot, and ancillary NMT facilities along Bulacao-Ayala Mall-Talamban corridor, including physical measures to improve integration between BRT and other public transport modes.

9. In addition, the project would finance goods, works, and services for traffic engineering, management, and safety, including intersection improvements on tributary routes used by BRT and other vehicles; the provision of new, at-grade, signal controlled, pedestrian crossing at key locations; area wide traffic control for all of Cebu City, in part to replace the existing and obsolete SCATS traffic control system using modern area traffic control technologies; and d) an Intelligent Transport system (ITS) operational support system and the acquisition and installation of a corridor traffic control system. The project would also include financing for project management, project outcome monitoring, and streetscape improvements. A full description is found in Annex 2 of this document.

10. Specific investments to be funded by CTF are: bus terminals (US\$8.8 million), traffic engineering and management (\$11.2 million), ITS (\$2.0 million), and project outcome monitoring (US\$1.1 million).⁹ The importance of these components as contributors to climate benefits is described under CTF additionality at the end of this annex.

Potential for GHG Emissions Savings

Emissions Reduction Potential of Investment:

11. The study appraisal methodology follows a process of applying appropriate greenhouse gas emission factors (g/veh-km) to vehicle kilometres travelled by different vehicle types under current conditions and under the alternative future scenarios using the International Vehicle Emissions (IVE) model.¹⁰ Particular attention was paid to deriving and using greenhouse gas

⁹ The remaining portion of the US\$25 million finances price and physical contingencies.

¹⁰ The IVE model was developed by ISSRC, part of the project team leading the preparation of the Feasibility Study. It is a java-based stand-alone computer model that takes account of information on engine technology in the local

(CO₂, N₂O and CH₄) emission factors that are as appropriate as possible to the local conditions in Cebu, in terms of:

- (a) The local vehicle fleet composition (breakdown by type, engine technology); and
- (b) Driving conditions in Cebu (stop-start conditions, average speed, speed variability, temperature, topography).

12. The boundary for all future numbers and calculations in this annex are taken as the whole of the emissions from all vehicles driving within and through Cebu City (including the BRT corridor).

Current GHG emissions from transport in Cebu

13. Greenhouse gas emission factors for the six main current vehicle types were taken from the IVE emissions model based on the analysis of current driving conditions in Cebu, as shown in Table 7.2. The final column of the table gives the overall greenhouse gas emission factor as “CO₂ equivalent” based on widely accepted values of the relative global warming power of each individual gas.

Table 7.2: Current greenhouse gas emission factors derived from IVE model

Vehicle type	Road-type	Current Emission factors (g/km)			
		CO ₂	N ₂ O	CH ₄	CO ₂ equiv
Car / light vehicle	Highway	357.496	0.002	0.933	377.826
	Arterial	386.081	0.003	1.021	408.317
	Residential	466.568	0.003	1.244	493.648
Taxi		393.020	0.001	2.246	440.632
Jeepney		1563.799	0.008	0.000	1566.359
Bus		1876.469	0.014	0.000	1880.853
Motorcycle / tricycle		61.854	0.000	2.794	120.532
Truck		1164.752	0.008	0.000	1167.078

14. In essence, the approach follows the standard calculation process for emission estimation, with the number of vehicle-kilometers travelled by different vehicle types multiplied by appropriate emission factors for the greenhouse gases. The sophistication of the adopted approach lies in:

- (a) Using an up-to-date and validated new transport model of Cebu City to derive the vehicle-kilometer estimates for the current situation and future scenarios;
- (b) Using local data on current on-road drive cycle characteristics (reflecting traffic conditions and local topography) in Cebu to calculate the applicable current emission factors using the International Vehicle Emissions (IVE) model; and

vehicle fleet and on-road drive cycle characteristics (as well as other local characteristics) in determining locally appropriate emission factors. For more information see the GHG report in the project file.

- (c) Adjusting emission factors for future scenarios to take account of likely changes in traffic conditions and vehicle technology within the local fleet.

15. The details of how the inputs to these calculations were derived are described in more detail in the GHG report in the project file.¹¹

16. The resulting greenhouse gas calculation for 2012 is provided in the following Table 7.3. This shows an initial estimate of 475 thousand tons of annual CO₂ equivalent emissions from some 892 million vehicle-km of travel.

Table 7.3: Estimate of 2012 greenhouse gas emissions from transport in Cebu City

Vehicle type	Road-type	Cebu City				
		Veh-km 2012	Emissions (tonnes) 2012			
			CO ₂	N ₂ O	CH ₄	CO ₂ equiv
Car / light vehicle	Highway	121,774,573	43,534	0.3	114	46,010
	Arterial	155,628,103	60,085	0.4	159	63,546
	Residential	69,424,019	32,391	0.2	86	34,271
Taxi		128,735,201	50,596	0.2	289	56,725
Jeepney		128,045,077	200,237	1.1	0	200,565
Bus		2,827,079	5,305	0.0	0	5,317
Motorcycle / tricycle		254,801,966	15,761	0.0	712	30,712
Truck		31,658,857	36,875	0.2	0	36,948
Totals		892,894,876	444,783	2.4	1,360	474,093

Emissions under the Baseline future scenario

17. Social and economic factors are likely to significantly influence greenhouse gas emissions from transport in future years. Taking into account population forecasts, an increase in demand for vehicle ownership and a corresponding increase in vehicle-km, increases in freight travel demand, and annual growth in GDP, initial forecasts of vehicle-km in future years were obtained for opening year (earlier assumed as 2015), 2020, 2025 and 2035.¹²

18. The forecast of greenhouse gas emissions under the baseline scenario is provided in the following Table 7.4.

¹¹ Cebu City Greenhouse Gas Emissions Study, Final Report (July 2012), The World Bank

¹² Future technology changes in the vehicle fleet were estimated based on the timeline for introduction of the Euro standards in other Asian countries and then made conservative assumptions on a further delay in those vehicles infiltrating the fleet in Cebu, given the relatively slow fleet turnover. In doing this, the team paid particular attention to the Chinese implementation dates for emission standard since China is likely to play an increasingly dominant role in the Asian vehicle market in future years. A full description of these assumptions is available in the GHG report.

Table 7.4: Forecast greenhouse gas emissions (tons CO₂e) for 2015-2035 (baseline)

Vehicle type	Road type	2015	2020	2025	2035
Cars & light vehicles	Highway	55,750	90,726	142,707	253,061
	Arterial	77,231	128,399	207,943	398,689
	Residential	41,558	71,736	121,621	242,572
Taxis		66,511	97,095	139,499	178,665
Jeepneys		197,848	238,574	302,376	386,866
Inter-urban buses		1,630	1,654	1,218	796
BRT buses		0	0	0	0
Motorcycles		33,051	38,406	27,422	72,436
Trucks		38,813	53,735	86,609	137,739
Total		512,391	720,325	1,029,394	1,670,825

Emissions under the BRT + ATC (With project) future scenario

19. Under the scenario in which BRT and an upgraded adaptive area traffic control system are implemented in Cebu, two key traffic impacts would result:

- (a) Smoothing of traffic flows and reduction in delays / improvement of journey times from implementation of the improved area traffic control system; and
- (b) Reduction in vehicle-km across all motorized modes resulting from transfer of trips to the new BRT system.

20. First, for emissions reductions from the ATC system, a review of international experience reveals:

- (a) 16 percent reduction in fuel consumption when signals were coordinated (using “green waves”);
- (b) Up to 15 percent fuel savings through adaptive signal coordination in comparison to an uncoordinated network¹³; and
- (c) Carbon savings of between 3 percent and 8 percent using the SCOOT adaptive traffic control system¹⁴.

21. Based on this evidence, it is assumed that a good adaptive traffic control system would achieve at least 5 percent GHG emissions saving across the network. The reduction is applied to half of the emissions from the baseline future scenario to take account of this element of the project (BRT+ATC) scenario.

¹³ Robertson, D. I., C. F. Lucas and R.T. Baker (1980) Coordinating traffic signals to reduce fuel consumption, *TRRL Laboratory Report LR934*, TRRL (Transport and Road Research Laboratory), Crowthorne, United Kingdom.

¹⁴ Robinson J and G Jackson (2009). Innovative SCOOT benefits analysis: Quantifying emissions and travel time reductions. Proceedings of ITS World Congress, Stockholm, 2009

22. Emissions savings from BRT assume the system enters operation in 2015. The initial fare for the BRT was set at PHP9, plus an additional PHP9 for journeys over 8km. These fares would subsequently rise in real terms at 1.7% per annum. This was based on an analysis of historical changes in jeepney fares.

23. The introduction of BRT would have an impact on the jeepney network, and it is expected that changes would be made to jeepney routes to support the BRT. To reflect this in the transport model, a number of amendments were made to the jeepney network. Analysis of the current travel patterns suggests that 24 existing jeepney routes would need to be deleted, 10 would be curtailed to connect with the BRT route and a further 11 would be re-routed to avoid direct competition with the BRT corridor.

24. Other assumptions on transport infrastructure and development would be the same as those used for the baseline scenario:

(a) Non-BRT transport infrastructure would generally remain as it is today, with the exception of the impending widening of M J Cuenco Avenue between the Gen. Maxilom Avenue intersection and the J Luna Avenue intersection; and

(b) The main shopping mall at SRP would be completed and operational before 2015, together with 50% of the remaining planned development. The remaining 50% of the planned development would be in place before 2020.

25. **Changes in travel demand patterns.** Changes in overall travel demand due to population growth and economic growth are expected to be the same as for the baseline scenario. However, people's choice of travel mode will change (as indicated by the transport model outputs) due to the availability of the new system. This is reflected in the vehicle-km figures presented in the following paragraphs.

26. The following Table 7.5 presents the forecast vehicle-km travelled within Cebu City (the analysis boundary) by different vehicle types under the BRT-ATC scenario, based on the transport modeling outputs. For reference, the BRT ridership in the 'with' scenario is approximately 330,000 daily passengers in the assumed opening year of 2015, with approximately 95% of ridership derived from former jeepney passengers.

Table 7.5: Forecasts of annual vehicle-km travelled in Cebu City under BRT-ATC scenario

Vehicle type	Road type	2015	2020	2025	2035
Cars & light vehicles	Highway	155,669,793	214,378,235	270,972,985	423,018,638
	Arterial	187,483,176	265,256,743	347,066,720	557,407,988
	Residential	82,442,184	119,929,158	165,932,176	289,842,984
Taxis		133,365,811	154,304,791	178,894,613	224,969,440
Jeepneys		103,454,119	113,085,514	126,508,068	125,786,213
Inter-urban buses		5,303,829	5,231,342	4,418,941	1,089,345
BRT buses		5,858,496	7,582,271	9,047,639	20,402,234
Motorcycles		270,139,194	308,373,997	355,326,614	435,936,289
Trucks		36,572,585	47,029,301	58,283,866	88,889,401
Total		980,289,186	1,235,171,354	1,516,451,621	2,167,342,531

27. Taking the forecast vehicle-km figures along with the GHG emissions factors, the following Table 7.6 gives the forecast of greenhouse gas emissions under the “with project” (BRT+ATC) scenario for years 2015, 2020, 2025, and 2035.

Table 7.6: Forecast greenhouse gas emissions for 2015 – 2035 tons CO₂e (BRT+ATC scenario)

Vehicle type	Road type	2015	2020	2025	2035
Cars & light vehicles	Highway	54,198	86,132	129,247	225,223
	Arterial	70,525	115,145	178,881	320,699
	Residential	37,486	62,940	103,403	201,627
Taxis		59,571	84,720	118,496	152,239
Jeepneys		136,245	154,657	188,708	197,246
Inter-urban buses		8,648	8,322	7,871	2,056
BRT buses		6,620	9,046	11,862	27,605
Motorcycles		31,806	35,780	24,204	62,393
Trucks		36,061	48,582	74,517	117,994
Total		441,160	605,325	837,189	1,307,084

28. Over a 20 year period from the assumed opening year of 2015, the forecast total greenhouse gas savings that would result from the BRT-ATC scenario compared with the baseline scenario would be 3,867,000 tons of CO₂e, averaging 193,000 tons per year. As an indication of the overall magnitude of these savings, this is the equivalent of saving over eight times the current total annual GHG emissions from urban transport in Cebu.

Table 7.7: Annual greenhouse gas savings from BRT-ATC scenario (tons CO₂e)

Annual savings (tonnes CO ₂ e)		
Year	Cebu City	BRT corridor
2015	71,230	41,237
2020	115,000	55,926
2025	192,205	72,227
2035	363,741	100,431

29. Cost-effectiveness (Incremental impact of CTF Financing): The CTF financing forms US\$25 million of the total financing for the BRT and associated package. It is a critical and integral financing element, without which the overall project could not proceed as envisaged. It is therefore reasonable to conclude that the cost-effectiveness of the CTF financing in terms of unlocking the greenhouse gas emissions is US\$6.46 per ton of CO₂ equivalent saved.

30. The cost estimate of implementing the BRT system in Cebu, together with the upgraded adaptive area traffic control system and other associated measures is US\$211 million. The total, undiscounted cost per ton of CO₂ equivalent saved is therefore approximately US\$55.

Demonstration Potential at Scale

31. As described above, the Cebu BRT system has a cumulative GHG emissions abatement potential of over 3.8 Mt CO₂e over twenty years. This is the only proposed BRT system in the Philippines whose potential emissions reductions have been analyzed in detail to date. However, in addition to the Manila BRT system that already forms a part of the CTF investment plan, the demonstration effect of the Cebu BRT system could affect cities beyond the capital region. Emerging metropolitan areas such as Metro Davao, Naga, Bacolod, Iloilo and Cagayan de Oro have been identified as potential sites for future projects. Although the emissions reductions of projects have not been studied in detail, many have urban development patterns and sizes similar to Cebu, and at an aggregate level would be expected to deliver benefits of the same order of magnitude.

32. The crucial ingredient that will enable this broader adoption in the Philippines is an operational example of a successful BRT system in the local context. Cebu, as the first system to be developed in the country, holds the potential to be the catalyst for this broad national change. Although the benefits of BRT for the growing cities of the Philippines are evident in theory – travel time savings and economic benefits for users, modernization of the public transport system and operators, upgraded urban development along corridors – having a working model of a system ‘in country’ will naturally help spur the further development of further systems. This project also explicitly recognizes this demonstration impact by including a \$5 million component, with funding from World Bank and French Development Agency, for concept dissemination, capacity building, and design of BRT systems in other cities, notably Metro Manila.

Development Impact and Expected Co-Benefits

33. The BRT project is seen as a catalyst for change. One of the objectives of this first BRT project in the country is to improve passenger mobility in the project’s corridors by providing an alternative that is fast, comfortable, cost-effective, efficient, and generates fewer emissions reducing both local and global pollution. With the help of CTF resources, the project would support the National Environmentally Sustainable Transport Strategy (NESTS), whose overall development objectives are: (i) reduction of annual growth rate of energy consumption and associated GHG and air pollutant emissions from the transport sector, and (ii) enhance sustainable mobility through the development of a viable market for environmentally sustainable

transport (EST) goods and services, which involves, among others, the promotion of transportation systems of low carbon intensity and shift towards the use of more sustainable transport modes. Further, and perhaps more importantly, the use of CTF will help realize the co-benefits associated with such investments, including improvements in urban air quality, improved transport safety, and an upgrade in the design and walkability of the urban area. These co benefits are described below.

34. Environmental co-benefits: According to the Department of Environment and Natural Resources (DENR), particulate matter (PM₁₀) levels in Cebu City's ambient air in 2008 exceeded the recommended national guideline values for annual exposure as well as WHO guideline values. Moreover, a 2002 World Bank study estimated the health costs of particulate matter (PM₁₀) exposure in Metro Manila, Baguio City, Cebu City and Davao City to be over US \$430 million per year, equivalent to 0.6 percent of the country's national gross domestic product.¹⁵

35. Adoption of CTF supported measures would result in reduction in exposure to these airborne pollutants. This will be made possible by: (a) improved vehicle technology with better emission controls; (b) bus operation with fewer stops than existing jeepneys, reducing the large emissions that occur during start-ups; (c) separate bus lanes for smoother operation. It will carry more passengers on fewer, larger vehicles, reducing over-all vehicle-km. The BRT system will use vehicles with more advanced and better maintained propulsion systems that require fewer liters of fuel for moving a given number of passengers over a given distance. These vehicles will operate a less fuel intensive drive cycle that minimizes unnecessary stops due to congestion by taking public transport out of general traffic and giving it signal priority.

36. A study¹⁶ to estimate health co-benefits of the Cebu BRT project revealed that:

- (a) Particulate matter (PM) savings from this project are estimated at around 8-10 tons/year. For reference, the Gold standard BRT in Asia (i.e. Guangzhou BRT of 22.5km) is estimated to save approximately 4 tons/year.¹⁷ The higher savings in Cebu when compared with Guangzhou is due to a large modal shift from jeepneys to the BRT and high number of pre-euro vehicles which still ply the roads of Cebu City. The PM savings are conservative because the analysis assumed that tighter vehicle emission standards would be enforced during the BRT's operation resulting in a much cleaner fleet in Cebu; this results in PM savings of 167 to 239 tons not attributable to the BRT;

¹⁵ Results of an air quality monitoring project in 2002 identified the downtown area having the highest concentration of pollutants and pointed to the high and medium traffic density as a most likely source of NO_x in Cebu City. The air quality monitoring project also indicated how Cebu City's air quality is affected by pollution from nearby cities since "wind rose pattern reveals most of the time, wind coming from the northeast (where Mandaue and Lapu-lapu cities are situated) is blown towards the city of Cebu." (Kitakyushu Initiative, 2003). Based on the DENR Environmental Management Bureau-Region 7 last emissions inventories of air pollution sources for the Central Visayas region (Cebu City included), conducted in 2008, mobile sources contribute to 64% of air pollution, compared to 21% for industrial sources and 15% for area sources (PIA, 2011).

¹⁶ A study was undertaken during January-May, 2012 to estimate the health co-benefits of the Cebu BRT project (linked to the reduction of pollutants from mobile sources), define an air quality monitoring action plan and strengthen air quality management in Cebu city (including by promoting public participation) to reverse the growing air pollution associated with transport increase.

¹⁷ <http://www.itdp.org/documents/20110810-ITDP-GZBRTImpacts.pdf>

- (b) Total nitrogen oxides (NOx) savings is in the range of 65-80 tons/year. In comparison, the Guangzhou BRT saves around 450 tons/year. The high savings in Guangzhou is due to inclusion of the increase in mixed traffic speed parameter and high efficient buses being introduced as BRT buses (Euro IV);
- (c) The city-wide analysis shows: Total monetary savings ranging from US\$94-135 million from reduction of premature mortality, adult chronic bronchitis, child acute bronchitis, respiratory hospital admissions, cardiac hospital admissions, emergency room visits, asthma attacks, restricted activity days, and respiratory symptom days.

37. **Qualitative impact on customer satisfaction.** The active communications and consultation program implemented during the conduct of the Cebu BRT Feasibility Study has revealed the expectations for an increase in the quality of transport as one of the major future benefits of the system. Projected benefits include:

- a) Improving quality of service. The level of service by current jeepneys is considered low, with unreliable waiting and travel times, difficult boarding and alighting, vehicle overloading, and PUJ drivers frequently refusing to pick up elderly passengers. Taxis, on the other hand, are comfortable but expensive, and thus do not offer a viable public transportation option for most commuters. The Cebu BRT will address this quality of service issues while remaining affordable to the average commuter. With a fare structure similar to the existing PUJ rates, riders will enjoy more reliable, faster, and safer travel. In addition, the replacement of jeepney vehicles with modern BRT buses would improve service quality. While the former PUJs are aging, inefficiently operated, unreliable, and operate in congested, mixed traffic, the latter operate in dedicated busways with off-board fare collection, traffic signal priority and real time passenger information. Combined, these improvements have the potential to significantly upgrade both the quality and efficiency of public transport operations in Cebu.
- b) Efficient and safe boarding and alighting for elderly and persons with disabilities. One of the most cited transportation problems in Cebu City are related to improper boarding and alighting of PUJs. Consultations with commuters revealed that PUJ drivers follow a double standard when loading and unloading passengers; drivers refuse to stop on demand when requested by a passenger for disembarking, insisting on only stopping in proper loading and unloading areas. However, when it comes to allowing passengers to board (and thus collect a fare), drivers are happy to stop anywhere, even at areas where loading and unloading are prohibited. In addition, both the elderly and people with limited mobility have difficulty boarding jeepneys. This difficulty in boarding is further compounded by drivers who begin to move the jeepneys forward before the passengers are properly seated. With the implementation of the Cebu BRT, the danger of falling off the vehicle while boarding or alighting will be eliminated with buses stopping at designated stations only. Moreover, the design of the Cebu BRT is based on national and international guidance on design for people with limited mobility. The principle of at-grade access has been generally adopted in system design, except where this presents an adverse effect upon safety or an unacceptable compromise upon capacity. Where at-grade access is not possible alternative provision will be made for the mobility impaired. Access between station and bus will be step-less benefiting all users.

- c) Safe access to the BRT stations. Children below 15 years old are considered to be the most vulnerable road users as far as road accidents are concerned; they are often too small to be seen by drivers while playing or crossing the street. The BRT system will carefully design access facilities around stations to reduce the possibilities for conflict between children and vehicles that sometimes occurs with existing jeepney operations.
- d) Provision of transport supportive of women. Women in Cebu, in general, perform a multitude of tasks in their travels during the day, including ferrying young children to and from school and other activities, as well as grocery shopping. Taking public transportation poses a challenge due to the limited space in PUJs and the frequent practice of PUJ drivers to overload their vehicles. Moreover, cramped space inside the vehicle due to overloading provides opportunities for harassment. The BRT system will be designed for ease of boarding and alighting with buses and stations at the same level, making it easier to load and unload strollers. Where necessary, drop down ramps may also be provided. In addition, the BRT stations and vehicles will also provide for space for luggage or bags.

38. Improved facilities for pedestrians and non-motorized transport. The project will result in improved walking environment for pedestrians through the construction of sidewalks along the segregated BRT route within the SRP on both sides of the carriageway and a 2m landscaping strip to enable trees to be planted that offer shelter from the sun. For cyclists, a 2m wide cycleway is proposed along one side of the SRP carriageway which is expected to act as a precedent for more cycling infrastructure in the city.

39. Safety improvements. In terms of accident fatalities, the project over its twenty years lifecycle will save around 727 lives, a number roughly as high as the Philippines current annual traffic fatalities. In terms of monetized savings derived from accident reduction, in the opening year savings from accident reduction are expected to be PHP130 million (US\$3 million), and through the life of the project net present value of savings is expected to be PHP1,800 million (US\$44 million).

40. Improve integration between transport and land use development. The project would support land use-transport integration through establishing physical connections to major trip attractors and generators.

- (a) The Fuente Osmeña Circle, in particular, will be designed to accommodate the different functions performed including, leisure space, focal point for commercial activity, and pedestrian crossing. The investments would support the provision of reconfigured north-east quadrant of Fuente Circle, including a pedestrian / BRT only zone, enabling improved and safer pedestrian access to the recreational area of Fuente Circle as well as additional landscaping along the BRT corridor.
- (b) Where specific major urban developments of significant scale are known, account has been taken. This includes SRP, the extension to Ayala Shopping Mall, and the Gaisano Country Mall redevelopment. BRT is planned specifically to accommodate the forecast public transport trip generation of these known developments and accommodate general

growth in trip making. Anticipating travel demand in these areas provides an opportunity to develop BRT as a genuine viable alternative to the private car in these areas.

- (c) In the long term, BRT will provide a context, and be a catalyst, for more effective land use planning structure around public transport. Mechanisms are proposed to secure, where appropriate, additional BRT capacity in advance of known future development.

Implementation Potential

Country/sector strategies

41. Under the aegis of the NESTS, the country is committed to identify, promote and undertake EST strategies and initiatives. The Philippines has undertaken various programs and activities towards achieving sustainable development and addressing climate change since its signing of the United Nations Framework Convention on Climate Change (UNFCCC) Agreement in Rio de Janeiro in 1992. These activities eventually led to the formulation, legislation and implementation of Republic Act No. 8749 or the “Philippine Clean Air Act of 1999,” which provides for EST through harmonization of national emission standards with international standards.

42. The Philippines is a signatory to the Manila Statement of 2004 that welcomes, among others, the initiatives of the United Nations Centre for Regional Development (UNCRD) in extending assistance to the countries of the region, especially developing countries, in preparing national strategies and action plans to promote environmentally sustainable transport, and to facilitate annual high-level meetings and expert group meetings. The Philippines is also a signatory to the Aichi Statement of 2005 that recognizes the need for both national and local level governments to develop and adopt integrated policies, strategies, and programs incorporating key elements of environmentally sustainable transport.

43. The Government of Philippines has developed a NESTS following the Administrative Order (No. 254) by the President of the Philippines dated 30 January 2009, which mandated the Department of Transport and Communications (DOTC) to lead the formulation of an EST strategy. The formulation of the national strategy is primarily intended for the identification of priority challenges in the context of EST that would need to be addressed through the formulation of strategies. These strategies will have specific targets, incorporate multi-sector commitments, and recommend measures for the promotion of EST in Philippines. The overall goal of the strategy is the following:

- (a) Reduction of the annual growth rate of energy consumption and associated GHG and air pollutant emissions from the transport sector in urban areas of the country; and
- (b) Enhance sustainable mobility through the development of a viable market for EST goods and services, which involves, among others, the promotion of transportation systems of low carbon intensity and a shift towards the use of more sustainable transport modes.

44. **Institutional arrangements.** The project will be implemented by DOTC, which will have the overall responsibility for its coordination and management (for details, please see

Annex 3). The DOTC has set up a framework at the national level for the overall policy formulation and oversight of the BRT in the Philippines and a satellite project implementation unit in Cebu city for the day-to-day project implementation:

- (a) The BRT National Steering Committee (BRT-NSC) would provide policy guidance and have oversight of all BRT studies, projects and operational systems in the country. The specific functions will include: formulation of strategic directions for BRT development, setting policy and guidelines, evaluating proposals, and formulating rules and regulations;
- (b) The National Program Management Office (NPMO) will have the primary function of supporting the mandate of the BRT National Steering Committee and overseeing the implementation of all BRT plans, policies, standards, regulations, and projects nationwide;
- (c) A Project Implementation Unit (PIU) has been set up by DOTC in Cebu city to carry out day-to-day project implementation. The key tasks will include project management, financial management, procurement, reporting, monitoring, and environmental and social safeguards; and
- (d) To support project preparation and implementation, NPMO/PIU will be supported by a Technical Support Consultant (TSC). The TSC would provide specialist staff in the following areas, as required, during the project: a) project management, including procurement, contract design and oversight of contractors; b) technical, including infrastructure, bus operations, traffic systems, and technologies; and c) analysis, including planning, business modeling, and data management.

45. **Partnership Arrangements.** The CTF funded activities will complement World Bank funding and foster reduction of GHG emissions from the urban transport sector by making direct investments on the BRT and removing barriers at local and national level to promote and implement more sustainable and efficient transport systems.

46. **Support private sector participation.** The BRT delivery model in Cebu is proposed as a PPP model with the public sector responsible for the delivery of infrastructure as well as planning, regulating, operating and controlling the system. The private sector is responsible for procuring and operating buses, as well as providing support services (fare collection, maintenance of support infrastructure, etc.). The maintenance of the transitway is expected to be contracted to the private sector based on long-term performance based contract. For the Cebu BRT, the feasibility study examined the potential revenue that a BRT system would generate and the costs involved in building, operating, and maintaining it. What this study found was that, assuming fares similar to those of the existing jeepneys, revenue generation would be sufficient to cover all operational costs, loan repayment on buses and return a reasonable profit. Private sector procurement of buses is expected to inject roughly US\$5 million of capital into the Cebu BRT project.

Sustainability: Evidence of Commitment and Ownership

47. The NEDA Board's Cabinet-level Infrastructure Committee has identified an ambitious CTF Investment Plan that focuses its interventions in laying out the foundations for a

transformation of the transport sector to support EST, as described above. BRT projects form an essential element of these strategies and have high replication potential in the Philippines as there is low technology risk and substantial demand and private sector interest.

CTF Additionality

48. As described elsewhere, BRT operations are expected to be financially sustainable – in other words, revenue from fares is expected to be able to cover the cost of bus operations, system administration, and costs related to the maintenance of the running way and stations after the start of operations. Over the long run, this will help ensure that once in place, the system has the financial capacity and momentum to maintain the positive impact of the project over time.

49. However, the system is not expected to be able to repay or cover the cost of the initial infrastructure investment. The public sector will need to carry the primary burden of making this significant capital outlay. Given that BRT systems are relatively unknown inside the Philippines, this large investment for a relatively new concept naturally carries with it a fair degree of risk for public sector decision makers. CTF concessional financing, directed towards these capital investments, makes a significant contribution to lowering the cost of this capital investment – and hence in lowering the financial risk for the public sector in pursuing the project. This lower capital investment hurdle has been crucial to the development of the project.

50. In terms of specific components, CTF financing has been directed to enhance elements of the project will deliver significant benefits but have been known to be overlooked in other similar BRT investments. These include: BRT stations, system management/marketing, Area Traffic Control (ATC), and project outcome monitoring. The importance of each and its additional benefit to the project are described below.

51. First, station infrastructure and system management/marketing. Although stations are the most prominent symbol of a BRT system, past experience has shown many instances where insufficient attention was paid to the details of station infrastructure. Financing stations using CTF financing will allow for stations to develop their full potential as the public ‘face’ of the project, developing a positive image of BRT in Cebu, as well as ensuring that all proper facilities for disabled access are incorporated into the design.

52. ATC system will improve BRT operations as well as improve traffic flow throughout the city. The need for public transport priority at intersections has been recognized by the city, and the existing SCATS Area Traffic Control system is unable to provide that priority. Implementation of the BRT service will require an efficient and effective traffic control system that allows priority to be given to BRT vehicles while minimizing any consequent delays to other vehicles on the Cebu road network. In addition, other improvements targeted at traffic management interventions proposed throughout the city’s road network will be optimized through the use of the modernized ATC system. As a result, investments in ATC will benefit savings in travel time and reduction in vehicle operating costs not only for the BRT operations but also for traffic throughout the city. Not surprisingly, therefore, ATC investments account for over half the expected benefits, with just a fraction of the cost. Excluding the benefits resulting

from ATC investments significantly reduces rate of return (from 39 percent to 28 percent), though the project remains economically viable even without investments in ATC.

53. Finally, proper monitoring and evaluation of the myriad benefits of an integrated BRT system is a challenging, complex, and often costly task, and is thus often give short shrift by local project implementing agencies whose natural focus is on delivering the project itself. Given both the CTF and the Cebu BRT project objectives of promoting the emissions savings potential of BRT in the Philippines and around the world, careful monitoring and evaluation of project benefits will be crucial. To that end, a specific component with dedicated budget has been established to support this activity over the life of the project, supported by CTF financing. As a first step, detailed collection of project baselines and inventories as well as year by year plans and sources for data collection are provided in the Baseline Monitoring Report, available in the project files.

Implementation Readiness

54. The project is at an advanced stage of readiness.

(a) From an institutional perspective, following actions have been taken:

- i. The project has been technically approved by NEDA
- ii. The project has been approved by the City Council
- iii. Department Orders have been issued by DOTC creating National Steering Committee, National Project Management Office and Cebu based Project Implementation Unit. Full-time staff has been assigned and has commenced work

(b) From an operational perspective,

- i. DOTC has commenced procurement of consultants for detailed design
- ii. Detailed operations and service plan has been prepared
- iii. As part of the procedural Budget Hearings for the 2013 Budget of the Republic of the Philippines, an amount of 975 million PHP (US\$24 million) has been included for the Cebu BRT project in the 2013 DOTC Agency budget;
- iv. Resettlement Action Plan (RAP), Social Management Plan (SMP), Environmental Impact Assessment (EIA) have been prepared and submitted to the Bank for approval.

Key Indicators	CTF funding	Total Project funding	Scaled-up Phase
Increase in the number of beneficiaries along the corridor (disaggregated by gender---women in parenthesis) 18	Increase from 150,000 (80,000) to 275,000 (180,000) persons		N/A
Leveraging (US\$ million)	25	222.5	500
CTF investment leverage ratio	1:8		1:20
CO2 avoided Tons per year (ton/year) Lifetime (ton/20 years)	193,000 3,867,000		N/A
CTF Investment cost effectiveness (US\$ per ton of CO2 avoided)	6.46	54.56	N/A
Environmental co-Benefits	Particulate Matter (PM) savings: estimated 8-10 tons/year average over 20 year life NOx savings: estimated 65-80 tons/year average over 20 year life		
Other Co-benefits			
Gender: Increased Public Transport User Satisfaction for Women	Improved customer satisfaction for women travelers through easy and more secure street access, easy luggage carrying facilities, efficient and safe boarding and alighting for children		
Reduced number of road accidents	An estimated reduction of approximately 700 traffic fatalities over the project 20 year life		
Improved facilities for pedestrians and NMT	Improvements to the urban area surrounding the BRT system, including sidewalks, bikeways, etc. which ultimately support an increase in overall NMT mode share		
Support land use-transport integration	Integrating major new urban development plan (SRP) into BRT scheme		
Support to local economy (increase in land values)	Increase in land values adjacent to stations		
Opportunity for improved private sector delivery	Mobilize private capital for bus procurement, mobilize private sector firms for infrastructure delivery		

¹⁸ See Annex 1 for other project specific indicators

Annex 8: Communication and Consultation
PHILIPPINES: Cebu Bus Rapid Transit Project

1. This section describes communications and consultation process adopted as part of the project preparation at two levels:
 - (a) Evaluate the impact of the proposed project on the jeepney industry and to develop a mitigation plan; and
 - (b) Understand needs and values of the general public and key stakeholders in order to test the BRT concept, gather views on its applicability at a local level, determine perceptions on the potential environmental and social impacts of the proposed project and inform project design.

I. Evaluating the Impact of Introducing Reforms on Jeepney Operations

2. With the implementation of the BRT system in Cebu City, the role of the jeepney as a primary mode of transportation will be re-defined. A study was conducted to evaluate the impact of this change and to identify how this can be managed to ensure that the societal benefits are maximized. Specifically, the study aimed to evaluate impacts of introducing reforms on the PUJ sector in Cebu City by looking at:

- (a) WHAT makes urban transport a focus of political agenda in the City?
- (b) WHAT are the key governance and operational issues affecting the efficient and effective delivery of urban transport services?
- (c) WHO are the groups most affected by the proposed reforms?
- (d) WHY have these issues persisted? and
- (e) HOW can the issues be addressed going forward?

3. The key research questions focused on:

Task 1: Pathology Analysis:

- (a) What are the inherent weaknesses and strengths in the PUJ sector, in terms of its ability to provide public transport services in Cebu? What are the key needs for improvement?
- (b) What pathologies have persisted over time despite attempted reforms/ interventions?
- (c) What is the appropriateness of the current framework and coordination mechanisms, both established through a formal or informal arrangement for management, for the PUJ sector? And
- (d) What is the appropriateness and efficacy of the organization arrangement for PUJ owners and drivers? How well are the route contracts/franchises issued and controlled? Is there a quality control mechanism, and if so, how well is it functioning?

Task 2: Identifying Stakeholders

- (a) What form of organization/association is there among owners, drivers and others employed in this sector?
- (b) Whether there is a collective arrangement to represent the concerns of the owners/drivers?
- (c) What the power base and nature of political support is behind this collective?
- (d) Whether there might be background beneficiaries, and if so, whether they are linked to political patronage? and
- (e) Whether there are competing interests driving the market?

Task 3: Rules of the game

- (a) What the rules and regulations are determining?
- (b) Entry/exit of transport providers;
- (c) Allocation of routes; and
- (d) Which key parties can influence reform and what their motivation is for doing so?

Task 4: Impact and Mitigation Measures

- (a) What the likely displacement impact is and the possible mechanisms to accommodate the needs of displaced operators/owners?
- (b) Possible reasons for vehicle owners or drivers to resist the reform program?
- (c) Possible measures to assist the PUJ sector in its organizational structure and capacity?
- (d) Incentives for owners and drivers to support the reform program?
- (e) Other opportunities that can be offered to the jeepney operators/owners?
- (f) How to minimize the negative impact on traffic, safety, etc.? and
- (g) How to sensitize the traffic police and other implementation bodies to support the reform program?

Stakeholder Analysis

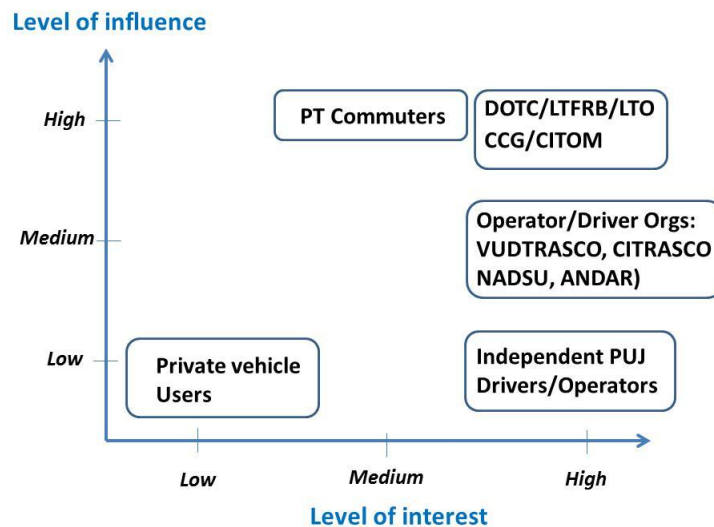
4. Based on the results of the stakeholder consultations and analysis of the regulatory environment of the PUJ industry in Cebu City, the positions of the various stakeholders in the implementation of the BRT are categorized as:

- (a) Promoters: Stakeholders who attach a high priority to the reform policy a priority and whose actions can have an impact on the implementation of the policy (DOTC, LTFRB and line agencies, CCG, CITOM, PUJ organizations);
- (b) Defenders: Stakeholders who attach a high priority to the reform policy but whose actions cannot have an impact on the implementation of the policy (individual jeepney driver/ operator);
- (c) Latents: Stakeholders whose actions can affect the implementation of the reform policy but who attach a low priority to this policy (commuters);

- (d) Apathetics: Stakeholders whose actions cannot affect the implementation of the reform policy and attach low priority to this policy (private car owners); and
- (e) Vested interests: Stakeholders who benefit illicitly from current arrangements and disarray. They will resist either because there is no role for them in a formalized system, or because they fear exposure of their current benefit.

5. These positions are shown in the Figure 8.1 based on the existing power bases or resources available to the respective stakeholder group.

Figure 8.1. Stakeholders Interest and Influence



Social Accountability and Governance Mechanisms

6. To ensure that the actions discussed above are performed, social accountability mechanisms are recommended to be put in place. These are classified into:

- (a) Internal/horizontal mechanism – building accountability between implementing agencies by mutual agreement of their roles; and
- (b) External /vertical mechanism – avenue for civil society to ‘demand’ for government agencies to implement sound and equitable policies. This category may further be divided into formal or informal channels.

Internal/horizontal mechanism

7. The successful implementation of the Cebu BRT system requires that the DOTC and the Cebu City Government work together effectively. To formalize the basis for working together, a memorandum of understanding has been agreed between DOTC and CCG.

8. External /vertical mechanism

- (a) BRT Citizens' Advisory Board. The formation of a Citizens' Advisory Board during the design and construction of the Cebu BRT is envisioned to provide the key stakeholders a means to obtain information and provide them feedback on pertinent issues that affect them. Board would have representation from the national and city agencies, the business sector, transport cooperatives, consumer groups, and representatives of drivers;
- (b) Public meetings and hearings. Conduct of public meetings and hearings at key milestones of the BRT implementation shall be the responsibility of the Cebu PIU;
- (c) Development of a citizen's report card for BRT implementation. The use of a citizen report card is a potentially powerful tool that can be used for monitoring and evaluation (M&E) of performance of a government agency in the delivery of its products or services. It is suggested that the tool be managed by a local academic institution (discussions are on-going with University of San Carlos)¹⁹ to retain objectivity; and
- (d) Feedback through crowd source. The crowd sourcing initiative for infrastructure presently being introduced in Cebu makes use of mobile phones for articulating concerns, comments or views on a particular topic to a designated hotline number.

II. Consultation and Communication

9. The approach followed through the communications and consultation process during preparation is discussed in this section. The objective is to gain a baseline understanding of the key issues to be considered in the outline design process (consultation) whilst raising awareness and promoting a general understanding and acceptance of the Cebu BRT concept in the city (communications).

Consultation Approach

10. The overall approach is based on the premise that the technical aspects of the work are to be led by the demands and objectives of the user throughout the study. The BRT concept therefore developed systematically through consultation with key stakeholders and the travelling public. At the same time it was vitally important to communicate aspects of progress in the development of the BRT concept, develop and raise awareness of the Cebu BRT brand, feed the consultation debate in order to address any issues raised whilst emphasizing the positive aspects and sound reasoning of the Cebu BRT concept to the wider public.

11. A Communications and Consultation Plan was developed and implemented within an overall framework coordinated at the city level by the Cebu City Government Communications Committee. This comprised three stages of consultation events and an ongoing program of communications activities.

¹⁹ Nascent work in employing this tool as a means of social accountability was initiated in 2009 by the Department of Public Works and Highways (DPWH), in partnership with Bantay Lansangan, for measuring the quality of road service delivery.

12. Consultation Stage. The first consultation stage (months 1 to 2) was designed to gain a baseline understanding of the needs and values of the general public and selected key stakeholders (in addition to the separate consultations held with jeepney franchisees, operators, drivers, conductors and mechanics) in order to test the BRT concept and to gather views on its applicability at a local level. The consultations included multiple general public meetings, appointment of local BRT ambassadors and discussions with representatives of special interest groups.

13. An interim stage of consultation (month 5) was then designed to facilitate the development of the Cebu BRT brand identity and involved focus groups at local barangay level with selected representatives of the first stage consultation, and a quantitative ‘hall test’ survey of a representative sample of 500 citizens.

14. A final stage of consultation (months 6 to 8) was then held to test the BRT outline design system principles developed during preparation.

Communications Approach

15. The main objective was to ensure that messages to external audiences (stakeholders and media) were clear and consistent at all times. It was important to recognize the desire to promote the activities of the technical work whilst ensuring that all media relations fitted within the objectives of the communications and consultation plan. A communications protocol was therefore defined for the study to ensure consistency of key messages coming out of the Cebu BRT FS and to define the role and responsibility of each party and to reduce duplication of work.

16. At regular intervals throughout the duration of the project, press releases were communicated to key media outlets. A series of communication tools for this study were developed to accompany the planned press releases and associated promotional materials at appropriate stages of the project. These included:

- (a) A study website (in English and Cebuano language);
- (b) Social media communications (Facebook and Twitter) managed by the Communications Manager
- (c) Posters / flyers (in English and Cebuano language);
- (d) Promotional materials e.g. fans, t-shirts, badges;
- (e) Exhibition banners for display at shopping centers and other public locations; and
- (f) A BRT conference to which all stakeholders, politicians, media and adjacent cities are invited (planned).