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Report No: 51582-MX

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US$150 MILLION

AND A

PROPOSED LOAN FROM THE CLEAN TECHNOLOGY FUND

IN THE AMOUNT OF US$200 MILLION

TO BANOBRAS

WITH THE GUARANTEE OF THE
UNITED MEXICAN STATES

FOR A

URBAN TRANSPORT TRANSFORMATION PROJECT

February 25, 2010

Sustainable Development Department
Mexico Country Management Unit
Latin America and the Caribbean Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective February 17, 2010)

Currency Unit	=	Mexican Pesos
MX$1.00	=	US$ 0.0776
US$ 1	=	$ 12.878

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

BRT	Bus Rapid Transit
BANOBRAS	National Bank for Works and Public Services (*Banco Nacional de Obras y Servicios Publicos S.N.C.)*
CPS	Country Partnership Strategy
CTF	Clean Technology Fund
DA	Designated Account
FONADIN	National Infrastructure Fund (*Fondo Nacional de Infraestructura*)
FY	Fiscal Year
GEF	Global Environmental Facility
GEF-STAQ	Global Environmental Facility - Sustainable Transport and Air Quality Project
GHG	Greenhouse gases
GOM	Government of Mexico
GTC	Working Consultative Group *(Grupo de Trabajo Consultivo)*
IBRD	International Bank for Reconstruction and Development
IADB	Inter-American Development Bank
IP	Investment Plan
ITP	Integral Transport Plan
MASTU	Environmental and Social Management Framework *(Marco Ambiental y Social para el Transporte Urbano)*
MCMA	Mexico City Metropolitan Area
NGO	Non-Governmental Organization
NMT	Non Motorized Transport
PECC	Special Program for Climate Change (*Programa Especial de Cambio Climático)*
PIMUS	Integral Sustainable Mobility Master Plan *(Plan Integral de Movilidad Urbana Sustentable)*
PDO	Project Development Objective
POA	Annual Operational Plan *(Plan Operativo Anual)*
PM	Particulate Matter
PROTRAM	Federal Support Program for Mass Transit *(Programa de Apoyo Federal al Transporte Masivo)*
SCT	Communications and Transport Secretariat *(Secretaría de* Comunicaciones *y Transporte*)
SEDESOL	Social Development Secretariat *(Secretaría de Desarrollo Social)*
SEMARNAT	Environmental and Natural Resources Secretariat *(Secretaría de Medio Ambiente y Recursos Naturales)*
SFP	Public Administration Secretariat *(Secretaría de la Función Pública)*
SHCP	Finance and Public Credit Secretariat *(Secretaría de Hacienda y*

	Crédito Público)
UC	PROTRAM's Coordinating Unit *(Unidad Coordinadora del PROTRAM)*
UNFCCC	United Nations Framework Convention on Climate Change
UTTP	Urban Transport Transformation Project
VOC	Volatile Organic Compound

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Sector Director:	Laura Tuck
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Task Team Leader:	Walter Vergara
Co-Task Team Leader:	Arturo Ardila-Gómez

MEXICO
URBAN TRANSPORT TRANSFORMATION PROJECT

CONTENTS

MEXICO

URBAN TRANSPORT TRANSFORMATION PROJECT

PROJECT APPRAISAL DOCUMENT

LATIN AMERICA AND THE CARIBBEAN REGION

Date: February 25, 2010	Team Leader: Walter Vergara
Country Director: Gloria Grandolini	Sectors: General Transportation Sector (100%)
Sector Manager/Director: Aurelio Menendez	Themes: Climate change (67%); Environmental policies and institutions (33%)
Project ID: P107159	Environmental category: Full Assessment
Lending Instrument: Specific Investment Loan	Joint IFC:
	Joint Level:

Project Financing Data

[X] Loan [ ] Credit [ ] Grant [ ] Guarantee [ ] Other:
For Loans/Credits/Others:
Total Bank financing (US$m.): 150.00 (IBRD), 200.00 (CTF)
Proposed terms:

Financing Plan (US$m)

Source	Local	Foreign	Total
International Bank for Reconstruction and Development		150.00	
Clean Technology Fund		200.00	
FONADIN	767.50		
Local Governments	737.50		
Private Sector	839.00		
Total:	2,344.00	350	2,694.00

Borrower:
BANOBRAS as the borrower of the IBRD and CTF loans, will be responsible for procurement and financial management oversight, and credit monitoring and evaluation of projects

Responsible Agencies:
The technical aspects of the UTTP sub-projects will be the responsibility of BANOBRAS supported by the PROTRAM's Coordinating Unit (UC) in FONADIN with the support of the Grupo de Trabajo Consultivo (GTC). GTC is a working group for evaluation and supervision of the execution of PROTRAM's projects, that gathers representatives of federal agencies involved with urban transport (SHCP, SCT, SEDESOL, SEMARNAT, BANOBRAS, and FONADIN).

Estimated Disbursements (Bank FY/US$m)

FY	11	12	13	14	15	16	17		
Annual	20.00	20.00	40.00	58.00	58.00	76.00	78.00		
Cumulative	20.00	40.00	80.00	138.00	196.00	272.00	350.00		

Project implementation period: Start June 30, 2010 End: June 30, 2017
Expected effectiveness date: June 30, 2010
Expected closing date: June 30, 2017

Does the project depart from the Country Assistance Strategy in content or other significant respects? ***Ref. PAD I.C.***	[ ]Yes [x] No
Does the project require any exceptions from Bank policies? ***Ref. PAD IV.G.*** Have these been approved by Bank management? Is approval for any policy exception sought from the Board?	 [ ]Yes [x] No [ ]Yes [ ] No [ ]Yes [ ] No
Does the project include any critical risks rated "substantial" or "high"? ***Ref. PAD III.E.***	[x]Yes [ ] No
Does the project meet the Regional criteria for readiness for implementation? ***Ref. PAD IV.G.***	[x]Yes [ ] No

Project development objective ***Ref. PAD II.C., Technical Annex 3***

The objective of the Project is to contribute to the transformation of urban transport in Mexican cities toward a lower carbon growth path.

Project description ***Ref. PAD II.D., Technical Annex 4***

Part 1. Capacity Building: Provision of technical assistance and training to the Eligible Beneficiaries for the development and/or strengthening of the local urban transport development process in the Participating Entities (CTF: US$5 million, IBRD: US$5 million);

Part 2. Development of Integrated Transit Systems that reduce CO2 emissions: Development of integrated transit systems that contribute to the reduction of CO2 emissions in the Borrower's cities within the context of the ENAC and the PECC, by approximately 1.96 million tons per year beginning in 2017, through the carrying out of the following Bank-financed activities: (i) Mass transit corridors and ancillary investments (CTF: US$106 million, IBRD: US$110 million); and (ii) Low carbon bus technologies and scrapping of displaced buses (CTF: US$89 million, IBRD: US$35 million);

Part 3. Project Management: Provision of support (including the implementation of a technical monitoring system) to the Eligible Beneficiaries for the supervision and monitoring of the implementation of the Subprojects in the Participating Entities *(CTF: US$0 million, IBRD: US$0 million)*.

Which safeguard policies are triggered, if any? ***Ref. PAD IV.F., Technical Annex 10***
Environmental Assessment (OP/BP 4.01)
Physical Cultural Resources (OP/BP 4.11)
Involuntary Resettlement (OP/BP 4.12)

Significant, non-standard conditions, **if any**, for:
Ref. PAD III.F.
Board presentation: None

Loan/credit effectiveness:

(a) The Addendum to the PROTRAM Guidelines has been approved by FONADIN Technical Committee.

(b.i) The CTF Loan Agreement has been executed and delivered and all conditions precedent to its effectiveness (other than the effectiveness of this Agreement) have been fulfilled.

(b.ii) The IBRD Loan Agreement has been executed and delivered and all conditions precedent to its effectiveness (other than the effectiveness of this Agreement)

have been fulfilled.

(c) The Borrower has adopted the Operational Manual.

Disbursement conditions:

IBRD Loan Disbursement Condition: Notwithstanding the provisions of Part A of this Section (IBRD Loan Agreement, Schedule 2, Project Execution, Section IV, Withdrawal of Loan Proceeds), no withdrawal shall be made: (a) from the Loan Account until the Bank has received payment in full of the Front-end Fee; or (b) for payments made prior to the date of this Agreement, except that withdrawals up to an aggregate amount not to exceed $30,000,000 equivalent may be made for payments made prior to this date but on or after August 24, 2009 (but in no case earlier than one year from the date of this Agreement), for Eligible Expenditures; or (c) for payments to finance Eligible Expenditures under Categories (1), (2) and (3) in respect of any Subproject to be carried out by any Eligible Beneficiary, unless: (i) the Borrower has carried out and submitted to the Bank a satisfactory financial management assessment of the relevant Eligible Beneficiary as described in the Operational Manual; (ii) the relevant Credit Agreement has been signed by the parties thereto; and (iii) the Borrower and/or the Eligible Beneficiary have complied with the requirements of Section I.D.2 and 3 (if applicable) of this Agreement.

CTF Loan Disbursement Conditions: Notwithstanding the provisions of Part A of this Section (CTF Loan Agreement, Schedule 2, Project Execution, Section IV, Withdrawal of Loan Proceeds) no withdrawal shall be made: (a) from the Loan Account until the Bank has received payment in full of the Management Fee; or (b) for payments made prior to the date of this Agreement, except that withdrawals up to an aggregate amount not to exceed $40,000,000 equivalent may be made for payments made prior to this date but on or after August 24, 2009 (but in no case earlier than one year from the date of this Agreement), for Eligible Expenditures; or (c) for payments to finance Eligible Expenditures under Categories (1), (2) (3) and (4) in respect of any Subproject to be carried out by any Eligible Beneficiary, unless: (i) the Borrower has carried out and submitted to the Bank a satisfactory financial management assessment of the relevant Eligible Beneficiary, as described in the Operational Manual; (ii) the relevant Credit Agreement has been signed by the parties thereto; and (iii) the Borrower and/or the Eligible Beneficiary have complied with the requirements of Section I.D.2 and 3 (if applicable) of this Agreement.

I. STRATEGIC CONTEXT AND RATIONALE

A. Country and Sector Issues

1. Mexico's population is now 75% urban and continuing to urbanize. This places a tremendous strain on urban services, including the urban transport network, ultimately affecting both economic productivity and citizens' quality of life. In parallel, the transport sector is rife with externalities such as traffic accidents, noise and is associated to substantial emissions of air toxics and greenhouse gases (GHG).

2. Under conditions of rapid growth, mass transit development in Mexican cities has not been able to keep pace, and as a result public space is inefficiently utilized. Motorization in Mexican cities is increasing by about 10% annually, and today private cars often account for 80% of motor vehicles but only 20% of trips. Most cities face institutional weaknesses, insufficient staff capacity, and lack of an adequate framework for transport policy and planning, lack of transport corridor management, and inadequate operations and maintenance budgets. The UTTP seeks to address all of these issues.

Institutional Framework

3. A number of agencies are involved in the provision of urban transport. At the federal level, the Secretariat of Social Development (SEDESOL) is responsible for formulating the federal policy on urban development. The Transport and Communications Secretariat (SCT) is responsible for the development and maintenance of the federal railroad and highway network, sections of which often enter and traverse the urban areas. The Secretariat of the Environment (SEMARNAT) is the normative federal agency for environmental issues and sets policies and procedures for ensuring compliance with national laws. Other federal agencies are also involved such as the Secretariat of Finance and Public Credit (SHCP), and the National Development Bank for Public Works and Services (BANOBRAS). The latter is an important funding source in the transport sector, through credits and loans to the states, municipalities and operators of public transport.

4. To address the urgent need for modern urban transport infrastructure, the Government of Mexico (GoM) has launched the National Infrastructure Fund (FONADIN), a financial window in BANOBRAS to promote investments in infrastructure through grants, loans and guarantees. FONADIN is a successor organization to FINFRA (Infrastructure Investment Fund) and its funds originate from FARAC (Trust fund for Supporting the Recovery of Licensed Highways), the tolls road agency. For urban transport improvements the GoM has also created the Federal Support Program for Mass Transit (PROTRAM), for the use of FONADIN funds to finance mass urban mass transit systems.

5. At the city level, the responsibility for transport and traffic regulation, traffic engineering, traffic law enforcement, and land use/transport planning is divided among agencies at state and municipal level, or between different departments within individual agencies or even between different municipalities within the same metropolitan area, e.g. Monterrey, Puebla. Further, the design and implementation for such projects is usually much longer than the administrative term of elected officials, only three years, who have to 'champion' the project.

Urban Transport Issues

6. **An Inefficient Traditional Model.** Individual owner-operators of small buses compete for customers within the market, and their day's pay depends upon passengers carried. While this system has led to high frequencies it has also resulted in an oversupply of poorly maintained old buses, slow speeds due to congestion, and ultimately to higher-than-necessary fares as well. The accidents, congestion, pollution and GHG emissions caused by this system affect quality of life and productivity, and the effect is particularly harsh on the urban poor, who are transit-dependent and live far away from jobs and services.

7. **Inefficient Land Use and Allocation of Road Space.** The relatively low urban density prevalent in most Mexican cities make translates into long commutes. Since private vehicles and public transit share right-of-way, buses are slowed down by the volume of congestion generated by cars, which carry few passenger-trips but use a tremendous amount of street space. The poor, who depend on public transport, are most affected by these inefficiencies and must endure long commutes and in-vehicle times.

8. **Fuel Efficiency, Air Pollution and Health Impacts.** Despite fuel technology improvements and Mexico's recent enactment of an environmental legal framework, recent emissions inventories still indicate that mobile sources account for 52% of nitrogen oxide (NO_x) emissions, 40% of hydrocarbon (HC) emissions and 36% of particulate matter (PM) emissions. The transport sector is also the largest generator of methane (CH_4) and volatile organic compounds (VOCs), which react in the atmosphere to produce ozone. Vehicles are also responsible for emissions of carbon monoxide (CO), NO_x, sulfur dioxide (SO_2), and HCs, and contribute the emissions of particulates smaller than 10 microns (PM_{10}) emitted by stationary and mobile sources using diesel and other fuels. Many of these airborne pollutants have been linked to substantial health impacts, increases in morbidity, mortality and reductions in productivity.

9. **Limited Institutional Capacity.** In the last decade, some cities—Leon, Monterrey, Guadalajara, Mexico City and Ciudad Juarez for example—have dedicated considerable resources to training and institution building and have managed to maintain experienced staff. However, most cities need to build institutional capacity—strengthening planning units, establishing transport management entities. Under the earlier Medium Cities Project financed in part by the Bank, several cities developed Integral Transport Plans (ITP) that could serve as a basis for moving forward, but others have further to go. Also, under the Introduction of Climate Friendly Measures in Transport, the institutional, regulatory and business model for modern transport corridors has been developed in Mexico City, which also provides a useful framework for further reform.

Urban Transport, Climate Change and Mexico's Response

10. Mexico is among the more carbon-intensive economies in Latin America, and its transport sector is no exception. Transport accounts for 18% of Mexico's total GHG emissions, and even more in cities—as one example, 41% in Mexico City. This high carbon intensity is largely due to: (a) a high and rising motorization rate, the highest in Latin America; (b) inefficiently allocated street space that disfavors public transport; (c) an aging public transport

vehicle fleet consisting primarily of smaller-capacity vehicles, and (e) inadequate fuel specifications to improve energy efficiency and control airborne pollutants.

11. As a non-Annex I signatory to the Kyoto Protocol, Mexico is not mandated to reduce its GHG emissions but has nevertheless firmly adopted the UNFCCC principle of "common but differentiated responsibilities" and pledged to reduce its GHG emissions voluntarily. Mexico has created a Climate Change Office (COO) supported through an Institutional Development Fund (IDF) grant, has committed to specific targets, and has reiterated its commitment at various international fora. The Climate Change Performance Index for Newly Industrializing Countries (results 2009), has recognized Mexico as a leader in this field, ranking it third worldwide.

12. In the interest of reducing GHG emissions and raising national economic competitiveness and better serving the poor, Mexico has committed to improving its urban transport system through the creation of PROTRAM.

PROTRAM AND UTTP

13. Mexico has created the PROTRAM within FONADIN to improve the efficiency of the sector and to steer it towards a lower-carbon development path. PROTRAM will finance planning studies and infrastructure investments for mass transit through grants loans and guarantees. To be eligible, a sub-project must have an Integral Sustainable Mobility Master Plan (PIMUS in Spanish), ITP or equivalent that frames overall transport policy. The GTC, PROTRAM's decision-making structure, analyses sub-projects from technical, social, environmental, and financial viewpoints to determine basic feasibility of sub-projects presented to PROTRAM by the cities. The final decision on funding rests with FONADIN's Technical Committee (CT), headed by SHCP and participation of SCT, SEMARNAT, Tourism Secretariat (SECTUR), BANOBRAS, three state governments and SFP.

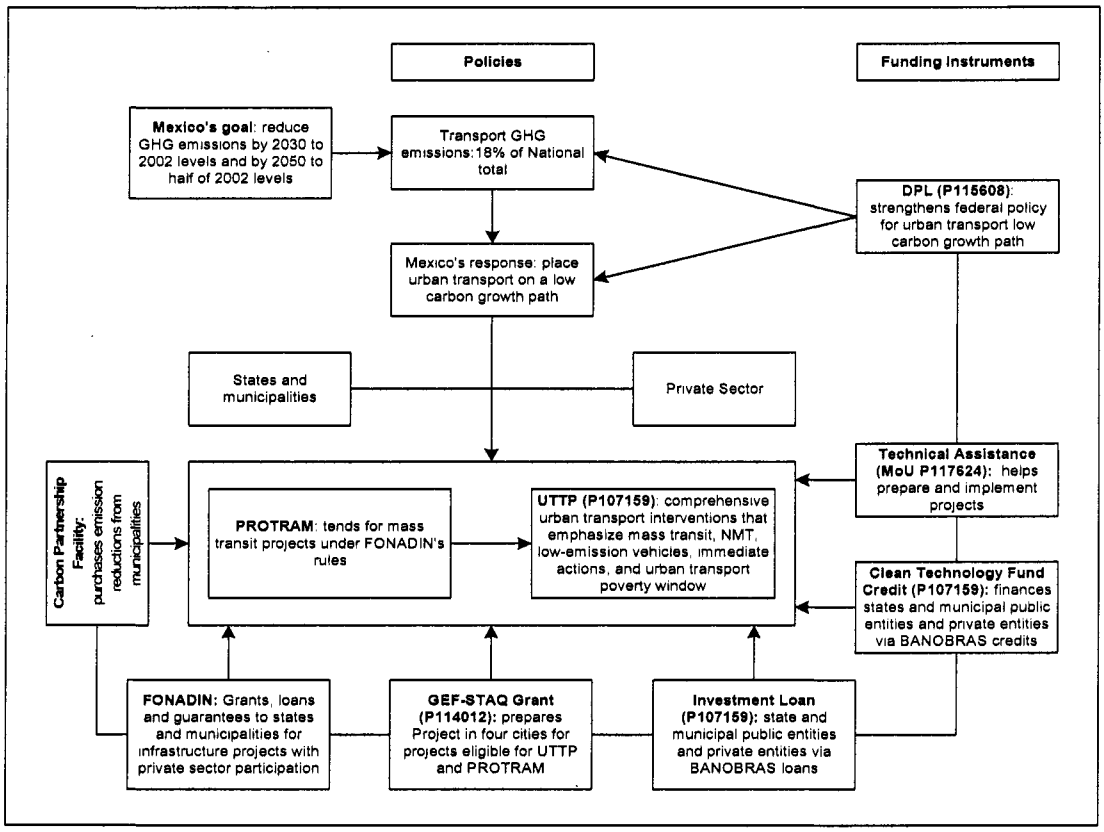
14. The GoM seeks to complement the PROTRAM through the Urban Transport Transformation Project (UTTP). The UTTP and the PROTRAM finance mass transit systems, but the UTTP also emphasizes complementary measures, including investments in non-motorized transport, which increase demand and attract car drivers, to increase or at a minimum, preserve the modal share of public transport. Therefore, the UTTP can help the GoM reach its emissions targets, and do so more cheaply. It has been estimated, for example, that standalone BRT projects can reduce CO_2 emissions at US$66 per ton, while BRT coupled with NMT improvements can achieve reductions at just US$30 per ton.

15. A related World Bank loan, the recently approved energy and transport, $1.504 billion Green Growth DPL (P116808), supported the development of a policy level foundation to the PROTRAM and the UTTP. This was achieved by further developing the regulatory, monitoring and financial framework for low-emissions evolution of the transport and energy sectors. The policy areas under the DPL aimed at: (i) implementing a verifiable, targeted and cross-sectoral strategy for emission reductions; (ii) establishing institutions, regulations and monitoring capacity to allow for the reduction of emissions in urban transport, energy generation and efficiency; and (iii) institutionalizing the appropriate financing mechanisms to allow for the reduction of emissions in urban transport, energy generation and efficiency. The two transport-

specific Prior Actions supported under the Green Growth DPL were the creation of FONADIN and of PROTRAM. Equally important, these actions also laid the foundation for implementation of the CTF Investment Plan in urban transport (see Annex 4), because without these financing mechanisms, it cannot be expected to cover the entire financial gap of the additional climate-related investments. The DPL Policy Matrix is included in Annex 3.

16. Therefore, PROTRAM financed by FONADIN, and complemented by the UTTP constitute the center piece of the GoM strategy to transform Mexican urban transport to a lower carbon growth path. This would not have been possible without the appropriate federal government, policy-level foundation supported by the Green Growth DPL. The comprehensive financial and institutional package set in place by the GoM and the World Bank will enable successful transport interventions (See Figure 1).

Figure 1. Elements of the UTTP



B. Rationale for Bank Involvement

17. The Bank brings together extensive experience and technical leadership on public-transport and air pollution issues and their linkage to climate change. The Bank's policy dialogue with the transport, environment and climate authorities is based on extensive expertise on the subject. The UTTP builds upon the outcomes of several projects. First, the Mexican Medium Size Cities Transport Program, which strengthened local agencies and supported the federal

urban transport decentralization process. This project also helped cities develop their first Integrated Transport Plans, a comprehensive approach to transport planning at the city level. Currently, an ITP (Integral Transport Plan) or Plan Integral de Movilidad Urbana Sustentable (PIMUS) or equivalent, is required for a city to participate in the UTTP. Bank work on the climate change and transport linkage in Mexico has been primarily in the Mexico City Metropolitan Area (MCMA), but much of this experience will be useful in implementing projects in other cities as well. The Bank's ten-year partnership with the MCMA has given rise to, among other projects, the world's first carbon finance project in the transport sector, the Insurgentes BRT project (P082656). Bank experience in Mexico City relating to urban climate change strategy, transport regulatory framework and business structure, carbon finance and BRT deployment will be indispensable to achieve emissions reductions in other Mexican cities.

18. Finally, the Bank has supported the development of national urban transport projects and transformational approaches to urban transport services in Mexico, Brazil, Colombia. Perú, and Chile. The Bank is therefore well positioned to provide technical assistance to the GoM to achieve the intended PDO because of its extensive experience in supporting urban transport projects in the region and in Mexico. Bank involvement is justified on the basis of its long-term involvement on issues related to transport and climate in Mexico and its ability to promote improvements in the regulatory and institutional frameworks to deal with these issues.

C. Rationale for CTF Involvement

19. Rationale for CTF Financing: Transport is an important contributor to the carbon footprint of Mexico (constituting 18% of Mexico's GHG emissions) and the sector's emissions grew by 27% between 1990 and 2005. The government's efforts to address climate change issues across its economy, including in transport is reflected in the ENACC and PECC. These efforts have led to the formulation of city-wide climate change strategies in selected urban areas, the restructuring of regulatory and business structures for surface transport, and the implementation of the first BRT system projects in Mexico City and Leon. The UTTP is part of a concerted government effort to accelerate the modal shift towards energy-efficient, low-carbon mass transport systems, in order to change the transport sector's carbon path.

20. However, low carbon integrated mass transit corridors face a number of barriers:

- City-wide BRT, while typically cheaper than investments in light rail systems, requires significant public sector investment which is normally not readily available from municipal or regional authorities facing a multitude of demands for public funds;
- Adoption of low carbon technologies, such as hybrid drives, is currently 30-40% more capital intensive than regular drives;
- Scrapping programs are essential to "lock-in" emissions savings from low-carbon technologies, but these are also capital intensive;
- Modal shifts often face political economy barriers that require financial and regulatory incentives.

21. CTF concessional financing would reduce the initial financial barriers for the adoption of low-carbon integrated mass transit corridors, as well as scrapping of older, inefficient public transport vehicles. Blending CTF resources with IBRD and other financing would make available investment capital for local governments in infrastructure and rolling stock, which may otherwise not be readily available.

D. Higher Level Objectives to which the Project Contributes

22. The World Bank Group's Country Partnership Strategy (CPS) 2008-2013 for Mexico (Report No. 42846-MX) was discussed by the Executive Directors on April 8, 2008. The CPS recognizes the need to support Mexico's development strategy, set out in the National Development Plan 2007-2012. The CPS focuses on the following thematic areas: sustainable growth, improving competitiveness, promoting social inclusion and reducing poverty, developing infrastructure and assuring energy security, and strengthening institutions; all of which pertain to this project. The proposed UTTP is consistent with the aforementioned CPS.

23. The project is part of Mexico's CTF Investment Plan and was endorsed by the CTF Trust Fund Committee in January 2009. The adoption of the proposed measures, at the scale envisaged by the project, could stimulate transformation of urban transport systems in Mexico. It is estimated that a national integrated mass transit program over time could achieve a share of 30% of daily trips in major urban areas, with a ridership eventually exceeding 20 million passengers per day, which could lead to a reduction of 20% in the sector's carbon footprint. The Mexico UTTP will provide an example for other cities in the region of how to implement sustainable transport policies while tackling environmental challenges. The UTTP brings together the local urban transport agenda, the national poverty reduction agenda, and the global climate agenda, while responding to the GoM voluntary pledge to adopt the UNFCCC principle of "common but differentiated responsibilities" to reduce its GHG emissions.

24. The project complements the Mexico GEF STAQ project (P114012), and the Green Growth DPL (P115608) for Mexico (see Figure 1). The Green Growth DPL (P115608) takes the process of mainstreaming climate change into public policy one step further by calling for the enactment of the Special Program on Climate Change (PECC in Spanish) and its establishment as a comprehensive policy framework for the reduction of emissions across sectors. Also, the DPL delineated measures to be taken in order to establish an institutional, regulatory, and monitoring framework for the reduction of emissions in urban transport and to set up the necessary financing mechanisms. It is upon these mechanisms that the PROTRAM/UTTP emerges as the GoM flagship program for a long-term transformational urban transport strategy. The PROTRAM/UTTP contributes to meet the PECC's goals and provides the incentives for a sustained longer term actions to abate the carbon footprint from the urban transport sector.

II. PROJECT DESCRIPTION

A. Lending Instrument

25. The project will be a Specific Investment Loan (SIL) to be disbursed over a seven year period (2010-2017). It is derived from the Investment Plan (IP), recently approved by the CTF

Trust Committee, and would be financed by a CTF loan in the amount of US$ 200 million[1], an IBRD loan in the amount of US$150 million. The loans will be to BANOBRAS, with guarantee from the United Mexican States. The IBRD Loan and the CTF Loan are being prepared as a single project and are the subject of this PAD.[2] Each loan has its own agreement.

26. The financing for individual cities' sub-project preparation and implementation comes from several sources. On the domestic side, the GOM through FONADIN offers grants, loans and guarantees which complement budgetary allocations by states and municipalities and the private sector. On the Bank side, the Mexico GEF STAQ project (P114012) offers grants for preparing sub-projects in four Mexican cities (Puebla, Monterrey, León, and Ciudad Juarez), all of which are currently part of the PROTRAM pipeline of sub-projects. Because the GEF-STAQ sub-projects are prepared under Bank supervision and rules, they meet the Bank's high technical, fiduciary and safeguard standards. In addition, a proposed Carbon Partnership Facility, catalyzed by the development of the UTTP, would purchase emission reductions from transport corridors; either financed or not by IBRD and CTF loans and would contribute to the attainment of the total emission reduction goal, discussed below.

B. Project Development Objective and Key Indicators

27. The **Project Development Objective** is *to contribute to the transformation of urban transport in Mexican cities toward a lower carbon growth path.* This will be achieved by improving the quality of service provided by the urban transport systems in a cost efficient manner, and by deploying equipment, infrastructure, and operational strategies that reduce CO2 emissions. Achieving the PDO will significantly reduce the overall transport sector carbon footprint and the emission of related air toxics.

28. The **Key Performance Indicators** to measure overall project performance are:

(a) Approximately 1.96 million tons of CO2 emissions avoided per year, by 2017, once all of the proposed investments with Bank and/or CTF loan financing enter into operation, at 30 dollars of CTF per ton

(b) A total of 18 Integrated Mass Transit Corridor Equivalent, implemented with Bank and/or CTF loan financing, are in operation by 2017

(c) The leverage of $2344 million of investment from other public and private sources of financing, representing 87% of total cost

29. Integrated Mass Transit Corridor Equivalent refers to the fraction of an Integrated Mass Transit Corridor (IMTC) that results in an estimated annual reduction of 109,000 tons CO2 over the business-as-usual scenario. For a BRT, this fraction is estimated to represent a 15 km route

[1] CTF terms are proposed as "harder concessional", i.e. 20 years, with ten years grace on principal repayments, and 0.75% service charge and 0.25% management fee.

[2] The proposed MX Low Carbon Transport Corridors (P106305) is a Carbon Partnership Facility operation (see Figure 1) seeks to purchases the emission reductions directly from the cities that carry out the sub-projects and it will be the subject of a separate PAD, under the guidelines of the CPF.

with 220,000 passengers per day. The UTTP will contribute to achieving the Key Performance Indicators. The financial support through the CTF and IBRD to the UTTP will catalyze additional activities supported through parallel interventions that will also contribute to the attainment of these indicators. These additional parallel interventions may also include carbon finance and GEF resources, contributing to the attainment of the performance indicators.

30. The **Intermediate Outcome Indicators** to track progress towards the PDO are described in Annex 3 and include:

Component	Intermediate Outcome Indicator
Component 1	• Number of cities with updated Integrated Transport Plans that include climate change mitigation considerations
Component 2	• Number of new mass transit corridors under operation
	• % Increase in vehicle kilometer travelled in low carbon mode (BRTs and BRTs with hybrid/low carbon - articulated buses) • % of total travel time reduction for public transit users on corridors with mass transit interventions
	• % of mass transit systems users that were formerly private vehicle users (modal shift)
	• Cities/municipalities that have a bus scrapping program in place that is leading to a reduction in oversupply of buses
	• The deployment hybrid buses as part of the mass transport corridors, eventually representing approximately one third of the trunk fleet or one half of the feeder fleet of the corridors
Project Wide	• The leverage of $2344 million of investment from other public and private sources of financing, representing 87% of total cost

C. Project Components

Component 1 - Capacity Building (CTF: US$5 million, IBRD: US$5 million)

31. Provision of technical assistance and training to the Eligible Beneficiaries for the development and/or strengthening of the local urban transport development process in the Participating Entities, including, inter alia:

(i) preparation, update or completion of Integral Transport Plans (ITP), which will include climate change mitigation considerations;

(ii) development of plans for modernizing traffic management and for efficient allocation of public space for transport and non-motorized modes;

(iii) support to urban transport institutions or regional transport coordination commissions which are responsible for sector coordination, modal and fare integration promotion and updating of ITPs; and

(iv) training of local government staff and other civil servants in areas such as transport system inventory, urban transport planning and programming, traffic management, formulation

of urban transport projects including bus rapid transit projects, traffic safety, non-motorized transport modes, environmental and social evaluation and rehabilitation and maintenance of roads.

32. The CTF resources under this component will only be used to finance the services required in pre-investment studies related to the infrastructure for the integrated mass transit corridors.

Component 2 - Development of Integrated Transit Systems that Reduce CO2 Emissions (CTF: US$195 million, IBRD: US$145 million)

33. Development of integrated transit systems that contribute to the reduction of CO2 emissions in the Borrower's cities within the context of the ENAC and the PECC, by approximately 1.96 million tons per year beginning in 2017, through the carrying out of the following Bank-financed activities:

Component 2a - Mass Transit Corridors and Ancillary Investments (CTF: US$106 million, IBRD: US$110 million).

(a) Provision of financing for the development of Integrated Mass Transit Corridors (IMTC) in the Participating Entities, including, inter alia: the preparation, design, construction, supervision, maintenance and rehabilitation of roads for trunk lines and feeder roads, terminals, yards, transfer and access stations, mixed traffic lanes, and the acquisition of rolling stock, signaling, control centers, information systems, environmental monitoring equipment, and fare collection systems.

(b) Provision of financing for ancillary carbon-reduction transport investments, including, inter alia: the adoption of traffic management measures, non-motorized transport, design of and implementation of universal access facilities, carrying out of studies and design of facilitates for bike-transit integration, parking space and transfer stations, vehicle use restriction, public space improvements, including sidewalks, adoption of safety and security programs, design of land use density and clustering plans, intelligent transportation, transport demand management marketing and promotion, freight management and car free planning.

34. CTF resources will be deployed to co-finance integrated mass transit corridors with an emphasis in the required infrastructure to induce low carbon behavior.

Component 2b - Low Carbon Bus Technologies and Scrapping of Displaced Buses (CTF: US$89 million, IBRD: US$35 million).

(a) Provision of financing for the acquisition of low-carbon rolling stock to be operated in the Participating Entities.

(b) Provision of finance for programs concerning the scrapping of old and displaced buses, including, inter alia: (i) building institutional capacity to develop and/or adopt clean and environmentally sound scrapping strategies (collection, dismantling and final disposal); (ii) the

purchasing of displaced rolling stock; and (iii) financing of the scrapping process, defined as the collection, destruction and recycling of steel scrap and disposal of non recyclable materials.

Component 3 - Project Management (CTF: US$0 million, IBRD: US$0 million)

35. Provision of support (including the implementation of a technical monitoring system) to the Eligible Beneficiaries for the supervision and monitoring of the implementation of the Subprojects in the Participating Entities.

D. Lessons Learned and Reflected in the Project Design

36. ***The institutional framework is key to advancing needed reforms.*** Within the different planning stages for urban transport reforms, most of the attention goes to the technical aspects of the sub-projects (engineering designs, technology, equipment, etc.), neglecting the institutional framework to back it up. Given the long-term nature of urban transport and climate agendas, it is important to support institutional strengthening at the state and local level.

37. ***There is a role for the federal government in the implementation of urban transport services reforms.*** Reforms in the sector normally require large investments and complex technical decisions. Given that states and municipalities lack both financial and technical resources, the participation of the GoM's becomes crucial in promoting reforms at the municipal level. There are also significant national externalities associated with urban transport in a typical city (e.g. GHG emissions, poverty alleviation) that merit the support of the federal government.

38. ***Implementation strategy should have both high political involvement and strong technical support.*** The implementation requires visionary leadership willing to take risks and become closely involved in the process and high-performance implementing agencies with strong technical capacity to design, plan, control and regulate the mass transit agenda.

39. ***GHG mitigation is a long-term problem that requires a long-term response.*** The GoM has recognized the need for a long-term strategy to reduce the carbon footprint of its economy and accordingly has committed to the development of a long-term strategy reaching beyond 2030. The project will assist in the laying out of the strategy in the urban transport sector and assist in partial implementation of the initial 7 year period. To assist in this long-term effort, the World Bank will continue to support the securing of sizable and permanent GHG reductions in the context of the commitments already made by the GOM in the ENACC. The project supports the long-term vision and the removal of institutional and other barriers.

40. ***The Bank's involvement should continue to be used for its catalytic effect.*** The World Bank should continue to catalyze the involvement and the participation of development banks and agencies, the private sector, NGO's and foundations and research and training centers. The Bank should work to mobilize technical and financial support from international environmental agencies and to organize study tours to cities with experience in modern transport strategies. The project will support a dissemination effort of the results and experiences obtained through the implementation of its components.

41. ***Local Air Management Matters from a Global Perspective.*** Local air pollution issues and global concerns are linked. Sub-projects may contribute to global benefits. Major environmental and economic benefits resulting from reductions of local air borne pollution can be harmonized with GHG mitigation efforts.

42. ***The Mobility Needs of the Poor are Different.*** The poor and very poor often are excluded from public transport services. Their mobility is reduced and with their quality of life. Frequently, public transport does not access poor neighborhoods because of the poor quality of the roads. The UTTP promotes to incorporate alternatives to incorporate poor areas access to public transport in their projects. At other times, the poor are priced out from using public transit. Research done at the Bank (Estupiñan et al. 2007) shows that demand-side subsidies are more efficient than supply-side subsidies to help the poor.

E. Alternatives Considered and Reasons for Rejection

43. ***Do nothing***: the number and use of private vehicles will continue to increase. No valid alternative to the automobile will exist. Cities will continue to sprawl. Average trip length will continue to increase. Emission reductions would be very difficult to achieve. The business-as-usual scenario will see a massive increase in car ownership in the foreseeable future, with mass and public transport services continuing to lose share, thereby exacerbating the increase in Mexico's carbon footprint.

44. ***Finance only BRT corridors through this project:*** BRTs are recognized as one of the most cost effective alternatives to reduce GHG emissions from transport; however, BRTs are more cost-effective and provide significant co-benefits when combined with other measures, such as traffic management, parking control, NMT improvements. An integrated approach maximizes the impact on both user mobility and climate change mitigation.

45. ***Finance infrastructure only in a fixed number of cities that have final engineering and bid documents for investment:*** This alternative was rejected after it was clear that very few cities are at this stage. It would reduce the potential impact in terms of maximizing the opportunities for transforming sub-project cycle that includes safeguards considerations in all interested cities. Additionally, the major leverage for transformational impacts comes from influencing the sub-projects at the preparation stage, and by assisting as many cities as possible in developing a comprehensive PIMUS, ITP or equivalent in order to mainstreams climate considerations.

46. ***Consider the use of standard technology vehicles.*** This option was rejected because it would not lead to as much gains in emission reductions and lower carbon foot-prints from vehicle fleets. The project would only fund hybrid bus technology or alternatives that demonstrate similar net reductions in carbon emissions.

III. IMPLEMENTATION

A. Partnership Arrangements

47. An effort of this magnitude is ambitious in terms of scope and funding requirements. Therefore, multiple stakeholders, each through its separate financing of separate projects, are contributing to the effort as follows;

- The CTF will contribute $200 million dollars of concessional finance to transformational projects that: provide positive incentives for demonstration of low carbon development and mitigation of GHG emissions; promote scaled up deployment, diffusion and transfer of clean technologies; and promote the realization and social co-benefits of low carbon projects.
- The IBRD will contribute a $150 million dollars loan that increases the concessional CTF loan.
- A future Carbon Partnership Facility project, MX Low Carbon Transport Corridors (P106305), is being proposed to set up to aide in the purchase of emission reductions produced by the individual activities in beneficiary cities.
- The GEF-STAQ (P096017) regional project will provide cross reference and experience sharing for the various cities implementing transformational sub-projects.
- The Mexico GEF STAQ grant (P114012) will help four cities prepare sub-projects that can be incorporated in the Project.
- SHCP/BANOBRAS/FONADIN will support public and private investments, through the provision of grants, loans and guarantees to support mass transit sub-projects.
- BANOBRAS, through CTF and IBRD loans, is in the position of offering additional financing if needed to states and municipalities.
- The private sector will contribute to investments in both infrastructure and equipment

B. Institutional and Implementation Arrangements

48. BANOBRAS will be the borrower and the recipient of the IBRD and CTF loans. BANOBRAS also houses and manages the funds of FONADIN and PROTRAM. As borrower, BANOBRAS will coordinate UTTP implementation and will have direct responsibility for analyzing credit capacity of the recipients and their financial management and procurement capacity when applicable, ensuring compliance with Bank Guidelines and agreed operational procedures in sub-projects financed by UTTP. The technical aspects of the sub-projects will be the responsibility of BANOBRAS (through the UC and GTC). In sum, BANOBRAS will have the roles of procurement and financial management oversight, and credit monitoring and evaluation of UTTP sub-projects. BANOBRAS as fiduciary agent of FONADIN will also be responsible for all formal correspondence with the Bank as well as performing prior review for terms of reference, consultants' services, civil works and other procurement activities carried out by the recipient of the UTTP credits.

49. Two technical bodies established under FONADIN within the Investment Bank Directorship of BANOBRAS (Dirección de Banca de Inversión de BANOBRAS) (the UC and the GTC) will support BANOBRAS in carrying out technical, financial and economic evaluation of sub-projects. The UC comprising technical and economic specialists will assess sub-projects technical and economic feasibility. The GTC will overlook planning and urban development matters as well as safeguards. SCT (or SEDESOL), as sector coordinator, will give its opinion on technical feasibility of subprojects and will be in charge of sending the cost-benefit analysis of sub-projects for registration at the Investments Unit of SHCP (when applicable). SEDESOL will

be in charge of urban development and social safeguard issues; and SEMARNAT will be responsible for compliance with national regulations and environmental safeguards. With the support of the GTC the UC will ensure that UTTP sub-projects comply with technical and financial standards, social and environmental safeguards, and IBRD and CTF criteria and requirements, as defined in the Implementation Arrangements and Operating Regulations (Annex 6). The SHCP will evaluate the cost-benefit analysis of the proposed sub-project and will authorize its registration within its Investment Unit. Once approved, the business unit of BANOBRAS will submit the UTTP sub-project to BANOBRAS' authorization committees for the approval of the credit to the beneficiary.

50. In order to execute the approved UTTP sub-projects, the eligible beneficiary cities will enter into credit agreements with BANOBRAS, according to its procedures (as long as these are acceptable to the World Bank). The credit agreement will define: (i) the objective of the sub-project; (ii) roles and responsibilities of the beneficiary; (iii) terms and conditions of credits from CTF and IBRD funds; (iv) resource requirements; and (v) the expected result indicators of the sub-project being financed. This agreement will also incorporate covenants for the cities compliance with the Environmental and Social Management Framework (MASTU). The agreement definitions are further explained in the operational manual. Under this agreement the recipient of the credits will have the following responsibilities: (i) manage and implement the sub-projects; (ii) comply with safeguards as established in the MASTU (see Annex 10 for details); and (iii) follow the procurement regulations and fiduciary procedures set in the Operational Manual approved by the Bank. Every credit agreement according to these lines will be prepared and submitted to the Bank for no objection.

C. Monitoring and Evaluation of Outcomes/Outputs

51. Each approved UTTP sub-project will receive funding through a credit from BANOBRAS and if applicable will also have resources from FONADIN. Additionally, each UTTP sub-project will have its own Results Framework of objectives and a monitoring system comprising process, outcome and output indicators. The eligible cities and/or sub-project implementing agencies will have the main responsibility for data collection and reporting on their sub-project results. BANOBRAS, supported by the UC, will promote knowledge sharing among beneficiary cities/sub-projects and will integrate data to evaluate results for a wider policy analysis and dissemination. To the extent possible, common sub-project indicators will be used to permit comparison and aggregation.

52. The monitoring and evaluation (M&E) framework will track progress in implementation, measure outcomes and outputs, and evaluate project impacts, when possible. The framework outlines key performance indicators, data collection methods, a timetable for collection, and responsible Mexican municipalities and State agencies. This framework will be used to supervise and monitor the implementation of the project. BANOBRAS, supported by the UC, has the required monitoring and evaluation capabilities needed to assume this coordinating role.

53. BANOBRAS, supported by the UC, will coordinate project monitoring and evaluation using the following tools: (a) Progress Reports: the credit recipient will prepare quarterly progress reports describing the main achievements of the project and sub-projects financed. BANOBRAS will integrate these reports to assess project progress; (b) Results-Based

Monitoring and Evaluation: the UC will support the cities to carry out annually this type of analysis including information on project outputs such as actual use of the transport services, user satisfaction with the quality of the infrastructure and services, tariffs, and reduction of travel time, among other indicators. For this purpose each city will prepare a base-line study and will organize participatory focus group discussions, consumer satisfaction surveys or other participatory methods.

D. Sustainability

54. The GoM is committed to the project's successful implementation as indicated by recent policy actions intended to transform the urban transport sector. As explained, on the urban transport side, the government recently created the FONADIN and the PROTRAM to help states and municipalities finance mass transit investments. The GoM will subsidize up to 50% of the cost of the infrastructure and other investment. On the climate change side, the GoM has undertaken steps that signal its commitment, already described above which guarantee political and economic support for the project.

55. The sustainability of the project will be based on the technical, financial and economic viability of the sub-projects approved and financed through BANOBRAS. The Bank, jointly with BANOBRAS and SHCP has designed implementation arrangements and operating regulations for selecting sub-projects and granting credits to eligible cities (Annex 6). The UTTP will help strengthen the institutional capacity of States and Municipalities to prepare, plan, implement, monitor and evaluate the technical and operational performance and environmental and social benefits of urban transport sub-projects, mitigating possible undesirable impacts. Operation and maintenance plans would be assessed during project evaluation to guarantee protection of assets over time. In the case of clean technology buses, bidding documents will require technical assistance of bus providers for maintenance during implementation.

56. To ensure overall sustainability of subsequent sub-projects, the project will focus on strengthening institutional and regulatory frameworks and financial sustainability at the state, city and country level (the latter through the Mexico Green Growth DPL (P115608), which has an urban transport side). The Project will also help strengthen public private partnerships in financing and operation of urban transport systems. The Project will also foster the implementation, at the local level, of environmental and social assessment to complement the urban planning and transport planning cycle through the MASTU (See Annex 10).

Replicability

57. The adoption of the measures supported by the project in the target cities, at the scale proposed, would stimulate a transformation of urban transport systems in Mexico, and would represent major scaling-up of current efforts and may have wider regional impacts. The focus on modal shift also has the potential to reduce transport costs and improve efficiency at a level that may overcome traditional barriers for change. The adoption of low-carbon bus technologies in Mexico has the potential to bring down the costs of alternatives by providing incentives for manufacturers to produce low carbon transport systems. This project has the potential to drastically change the surface transport sector in Mexico. The implementation of city-based, low-

carbon transport alternatives will provide substantive lessons for potential replication in other metropolitan areas. Dissemination of lessons learned, public education and outreach initiatives will ensure ongoing and effective knowledge exchange of accrued expertise. The proposed project is one of the first activities to be supported under the CTF. The information to be obtained and the lessons learned will be of significant value to regional governments and other countries in their submissions to the CTF.

58. Results from the CTF cofinanced intervention will be used by FONADIN/ PROTRAM as a basis for further expansion of the project. The environmental, social and economic benefits gained through the deployment of the mass transport corridors and ancillary investments will be used as a scale up strategy taking advantage of lessons learned and the potential reductions inherent in the market entry at scale of new systems and vehicles.

E. Critical Risks and Possible Controversial Aspects

Potential Risks	**Proposed Mitigation**	**Risk after Mitigation**
To PDOs		
The project might experience low demand for funds because of: (i) Not enough cities ready for participa-ting in the UTTP; (ii) Cities find it too complex to participate in the UTTP;	The Bank will provide technical assistance to help the first participating cities preparing their sub-projects. Additional technical support to help prepare sub-projects can be provided by FONADIN/PROTRAM. Additional funds to prepare sub-projects will be available in the form of a Memorandum of Understanding (MOU) between the GoM and the Bank. This MOU defines a scheme of technical assistance in support of PROTRAM on transport, carbon finance and safeguards aspects. The Bank will seek additional supervision resources to conduct training during implementation and will identify grant resources available.	S
Cities may not fully comply with Bank' safeguards because of perceived time and resource expense.	The ruling bodies of PROTRAM have adopted the MASTU for all projects in the PROTRAM and not just for those in the UTTP. Bank specialists will explain participant cities the advantages of safeguard compliance in a process of learning-by-doing. The MOU includes safeguards components. The Bank will seek additional supervision resources to conduct training during implementation and will identify grant resources available.	M
GHG leakages will make it impossible to achieve GHG reduction target.	Capacity building will help to manage sources of leakages and leakage-prevention measures. UC, the GTC, and the Bank will check for sources of leakages during sub-project preparation and implementation and propose remedial measures. MOU has a component to help prepare methodologies to measure baseline and actual emissions.	L

Potential Risks	Proposed Mitigation	Risk after Mitigation
Short tenure of municipal presidents (mayors) can delay project execution	The UTTP is structured with a clear sub-project cycle and regulations (Annex 6) to insure that stable institutional frameworks are in place, Sub-project champions will be identified and helped as much as possible to stay beyond changes in municipal administrations.	L
To Component Results		
Component 1 – Capacity Building		
Lack of capacity to complete sub-project design under the established requirements (completing a PIMUS or ITP that take into account climate change.	The project will finance preparation of such PIMUS, ITP or equivalent when necessary and will provide training to planning agencies at the local level. Additional funds for sub-project preparation are available from PROTRAM; and the MOU provides support. Preparation and training will focus on a holistic approach to urban transport, with climate change mitigation considerations mainstreamed.	L
Component 2 - Development of Integrated Transit Systems that Reduce CO2 Emissions		
Poor coordination between state and municipal governments for sub-project implementation.	The project has a capacity building component. UTTP (annex 6) requires participant cities to have adequate institutional structures for sub-project implementation. Adequate institutional arrangements will be required when signing agreements with BANOBRAS	M
Sub-project implementation delays, due to problems with local agencies for contracting and managing contingencies	Project requires participant cities to adequately prepare sub-projects planning, including a procurement plan. The project will provide technical assistance in key aspects that might threaten overall sub-project implementation such as: concessions, fare collection system design, smart cards, operational design, social and climate change mitigation, and land use planning and transport coordination. Adequate preparation of safeguard mitigation plans following the MASTU guidelines will minimize certain contingencies. The Bank will seek additional supervision resources to conduct training during implementation and will identify grant resources available. Procurement rules promote assigning contracts to capable firms.	S
Poor service performance of mass transit systems due to: (i) Lack of	As part of sub-project preparation, cities will submit proposal for institutional arrangements during the operational stage. The World Bank will recommend solutions based on its international experience in urban transport projects in countries like Mexico, Brazil, Perú, and Colombia.	M

Potential Risks	Proposed Mitigation	Risk after Mitigation
capacity of operating agency; (ii) Lack of capacity of private sector; (iii) Unfair competition from other bus services.	Incentives successfully used in previous experiences where the private sector has responded adequately in Mexico (Mexico City and León de Guanajuato) to incorporate modern BRT operators will be used. Project will be designed to ensure that cities address the institutional problem to prevent unfair competition. Project has component to scrap old buses and thus reduce unfair competition.	
Low-carbon emitting buses might not be ready for implementation when the sub-projects require them or might present operational and maintenance problems.	Low carbon technologies have been tested in other cities with similar operating conditions (e.g. New York, Chicago). Lessons learned will be incorporated in the project. A PHRD grant is financing tests of actual hybrid buses in Mexican conditions, to identify problems and further develop the technology, and test emission reductions. The bus component includes articulated and standard hybrid buses. Standard hybrid buses are at a higher level of development, these will be available faster.	S
Old buses are not scrapped but instead sent to other cities.	Project has component to scrap old buses and thus reduce unfair competition. The scrapping program would be coordinated with the municipality/state who will be responsible for executing this component.	L
Fiduciary Risks		
Capacity of BANOBRAS and of participating states and municipalities to comply with Bank's fiduciary and safeguard policies	BANOBRAS has experience in both Bank's fiduciary and safeguards policies undertaking a similar role in previous Bank's projects including the MX GEF Climate Measures in Transport (P059161) and MX Transport Corridors (P082656). The Bank will provide technical assistance to help participating cities prepare their sub-projects. The aforementioned MOU includes safeguard components. The Bank will seek additional supervision resources to conduct training during implementation and will identify grant resources available.	M
Other Risks		
Foreign exchange risk of CTF funds	BANOBRAS will hedge this risk in the international market directly. Current rates indicate that the direct hedging of this risk by BANOBRAS will not have significant impact on the on-lending interest rate.	L
Overall Risk Rating After Mitigation		S

F. Loan Conditions and Covenants

59. Effectiveness conditions that apply to this project are:

(a) The Addendum to the PROTRAM Guidelines has been approved by FONADIN Technical Committee.

(b.i) The CTF Loan Agreement has been executed and delivered and all conditions precedent to its effectiveness (other than the effectiveness of this Agreement) have been fulfilled.

(b.ii) The IBRD Loan Agreement has been executed and delivered and all conditions precedent to its effectiveness (other than the effectiveness of this Agreement) have been fulfilled.

(c) The Borrower has adopted the Operational Manual.

60. Disbursement conditions that apply to this project are:

61. **IBRD Loan Disbursement Condition:** Notwithstanding the provisions of Part A of this Section (IBRD Loan Agreement, Schedule 2, Project Execution, Section IV, Withdrawal of Loan Proceeds), no withdrawal shall be made: (a) from the Loan Account until the Bank has received payment in full of the Front-end Fee; or (b) for payments made prior to the date of this Agreement, except that withdrawals up to an aggregate amount not to exceed $30,000,000 equivalent may be made for payments made prior to this date but on or after August 24, 2009 (but in no case earlier than one year from the date of this Agreement), for Eligible Expenditures; or (c) for payments to finance Eligible Expenditures under Categories (1), (2) and (3) in respect of any Subproject to be carried out by any Eligible Beneficiary, unless: (i) the Borrower has carried out and submitted to the Bank a satisfactory financial management assessment of the relevant Eligible Beneficiary as described in the Operational Manual; (ii) the relevant Credit Agreement has been signed by the parties thereto; and (iii) the Borrower and/or the Eligible Beneficiary have complied with the requirements of Section I.D.2 and 3 (if applicable) of this Agreement.

62. **CTF Loan Disbursement Conditions:** Notwithstanding the provisions of Part A of this Section (CTF Loan Agreement, Schedule 2, Project Execution, Section IV, Withdrawal of Loan Proceeds) no withdrawal shall be made: (a) from the Loan Account until the Bank has received payment in full of the Management Fee; or (b) for payments made prior to the date of this Agreement, except that withdrawals up to an aggregate amount not to exceed $40,000,000 equivalent may be made for payments made prior to this date but on or after August 24, 2009 (but in no case earlier than one year from the date of this Agreement), for Eligible Expenditures; or (c) for payments to finance Eligible Expenditures under Categories (1), (2) (3) and (4) in respect of any Subproject to be carried out by any Eligible Beneficiary, unless: (i) the Borrower has carried out and submitted to the Bank a satisfactory financial management assessment of the relevant Eligible Beneficiary, as described in the Operational Manual; (ii) the relevant Credit Agreement has been signed by the parties thereto; and (iii) the Borrower and/or the Eligible Beneficiary have complied with the requirements of Section I.D.2 and 3 (if applicable) of this Agreement.

63. Covenants from Loan Agreements:

64. **Covenant 1:** (a) The Payment Dates are June 15 and December 15 in each year. (b) Notwithstanding paragraph (a) of this Section 2.05, if the Borrower requests, pursuant to the terms of Section 2.07 below, a Conversion of the Loan Currency into Mexican pesos, upon the Bank's execution of such Conversion, the Borrower shall pay interest on the converted Withdrawn Loan Balance on the 15th day of each calendar month. Notices with respect to the interest due on such converted amount may be given by the Bank to the Borrower through electronic means as provided in Section 10.01 of the General Conditions; such notices will be sent to the Borrower at such electronic mail address as the Borrower shall have designated by notice to the Bank for the purposes of receiving such information.

65. **Covenant 2 (CTF):** The Additional Events of Suspension consist of the following: (a)(i) The right to withdraw the proceeds of the CTF Loan Agreement has been suspended, canceled or terminated in whole or in part, pursuant to the terms of the CTF Loan Agreement; or (ii) the loan under the CTF Loan Agreement has become due and payable prior to its agreed maturity. (b) Any Eligible Beneficiary shall have failed to perform any of its obligations under the relevant Credit Agreement or a situation shall have arisen so as to materially and adversely affect, in the opinion of the Bank, the ability of any Eligible Beneficiary to carry out its obligations under the relevant Credit Agreement, in which cases the Bank may suspend Loan disbursements with respect to the above-cited Eligible Beneficiary (and related Subproject) that has so failed to perform, or whose ability to perform has been materially and adversely affected.

66. **Covenant 2 (IBRD):** The Additional Event of Suspension consist of the following, namely that any Eligible Beneficiary shall have failed to perform any of its obligations under the relevant Credit Agreement or a situation shall have arisen so as to materially and adversely affect, in the opinion of the Bank, the ability of any Eligible Beneficiary to carry out its obligations under the relevant Credit Agreement, in which cases the Bank may suspend Loan disbursements with respect to the above-cited Eligible Beneficiary (and related Subproject) that has so failed to perform, or whose ability to perform has been materially and adversely affected.

67. **Covenant 3:** Without limitation upon the provisions of Section 3.01 of this Agreement, the Borrower shall carry out the Project in accordance with the Operational Manual. Except as the Bank shall otherwise agree, the Borrower shall not amend or waive any provision of the Operational Manual without the Bank's prior written approval. In case of any conflict between the terms of the Operational Manual and those of this Agreement, the terms of this Agreement shall prevail.

68. **Covenant 4:** The Borrower shall select each Sub-project in accordance with the eligible criteria and procedures established in the PROTRAM Guidelines, in the Addendum to the PROTRAM Guidelines and in the Operational Manual.

69. **Covenant 5:** The Borrower shall make Sub-loans to Eligible Beneficiaries in accordance with eligibility criteria and procedures acceptable to the Bank, as set forth in the Operational Manual and in accordance with current internal practices of the Borrower.

70. **Covenant 6:** The Borrower shall make each Sub-loan under a Credit Agreement with the respective Eligible Beneficiary (Acuerdo de Crédito), on terms and conditions approved by the Bank, in which the Borrower shall obtain rights adequate to protect its interests and those of the

Bank, including the right to: (a) suspend or terminate the right of the Eligible Beneficiary to use the proceeds of the Sub-loan, or obtain a refund of all or any part of the amount of the Sub-loan then withdrawn, upon the Eligible Beneficiary's failure to perform any of its obligations under the Credit Agreement; and (b) require each Eligible Beneficiary to: (i) carry out its Subproject with due diligence and efficiency and in accordance with sound technical, economic, financial, managerial, environmental and social standards and practices satisfactory to the Bank, including in accordance with the provisions of the Anti-Corruption Guidelines applicable to Recipients of loan proceeds other than the Borrower and with the provisions of the ESMF; (ii) provide, promptly as needed, the resources required for the purpose; (iii) procure the goods, works and services to be financed out of the Sub-loan in accordance with the provisions of this Agreement; (iv) maintain policies and procedures adequate to enable it to monitor and evaluate in accordance with indicators acceptable to the Bank, the progress of the Subproject and the achievement of its objectives; (v) (A) maintain a financial management system and prepare financial statements in accordance with consistently applied accounting standards acceptable to the Bank, both in a manner adequate to reflect the operations, resources and expenditures related to the Subproject; and (B) at the Bank's or the Borrower's request, have such financial statements audited by independent auditors acceptable to the Bank, in accordance with consistently applied auditing standards acceptable to the Bank, and promptly furnish the statements as so audited to the Borrower and the Bank; (vi) enable the Borrower and the Bank to inspect the Subproject, its operation and any relevant records and documents; and (vii) prepare and furnish to the Borrower and the Bank all such information as the Borrower or the Bank shall reasonably request relating to the foregoing.

71. **Covenant 7:** The Borrower shall exercise its rights under each Credit Agreement in such manner as to protect the interests of the Borrower and the Bank and to accomplish the purposes of the Loan. Except as the Bank shall otherwise agree, the Borrower shall not assign, amend, abrogate or waive any Credit Agreement or any of its provisions.

72. **Covenant 8:** The Borrower shall carry out and/or shall cause each Eligible Beneficiary to carry out Part 1 and 2 of the Project in accordance with the provisions and recommendations of the ESMF.

73. **Covenant 9:** The Borrower shall and/or shall cause each Eligible Beneficiary to, prior to the carrying out of any works under any Subproject: (a) carry out, or cause to be carried out, an environmental screening/assessment of each of the pertinent works, and if needed, as determined by the Bank, approve or cause to be approved, an environmental management plan or similar environmental instrument, acceptable to the Bank, for each of said works (which plan or similar environmental instrument shall be based on the results of the pertinent screening/assessment mentioned herein, and the Bank's comments on the results of said screening/assessment, if any); and (b) immediately after said approval, implement and/or cause to be implemented, the corresponding plan (or similar environmental instrument) in accordance with its terms, and in a manner acceptable to the Bank.

74. **Covenant 10:** If as a result of the carrying out of the screening/assessment process mentioned in Section I.D 2. of this Schedule, it is determined by the Bank that resettlement will be involved in respect of any given works under the Project, the Borrower shall, and/or shall cause each Eligible Beneficiary to: (i) prior to the commencement of any said works under the

territorial jurisdiction of the relevant Participating Entity, prepare (and/or cause to be prepared) and furnish to the Bank, a resettlement plan (acceptable to the Bank), which plan shall be based on the provisions of the relevant Resettlement Framework; and (ii) immediately after, implement and/or cause to be implemented (as the case may be) the corresponding resettlement plan in accordance with its terms, and in a manner acceptable to the Bank.

75. **Covenant 11:** Withdrawal Conditions; Withdrawal Period. 1.Notwithstanding the provisions of Part A of this Section, no withdrawal shall be made: (a) from the Loan Account until the Bank has received payment in full of the Front-end Fee; or (b) for payments made prior to the date of this Agreement, except that withdrawals up to an aggregate amount not to exceed $30,000,000 equivalent may be made for payments made prior to this date but on or after August 24, 2009 (but in no case earlier than one year from the date of this Agreement), for Eligible Expenditures; or (c) for payments to finance Eligible Expenditures under Categories (1), (2) and (3) in respect of any Subproject to be carried out by any Eligible Beneficiary, unless: (i) the Borrower has carried out and submitted to the Bank a satisfactory financial management assessment of the relevant Eligible Beneficiary as described in the Operational Manual; (ii) the relevant Credit Agreement has been signed by the parties thereto; and (iii) the Borrower and/or the Eligible Beneficiary have complied with the requirements of Section I.D.2 and 3 (if applicable) of this Agreement.

IV. APPRAISAL SUMMARY

A. Economic and Financial Analyses

76. An economic and financial evaluation model was built for the mass transit sub-project most likely to be financed by the UTTP. Looking at PROTRAM's pipeline of sub-projects, it was estimated that the most common mass transit sub-project would be a bus rapid transit corridor, with 15 km in length and 222,000 rides per day. A series of scenarios were defined to study the contribution of the UTTP in general and of the CTF funds in particular. For example, by participating in the project it is expected that ridership will increase thanks in part to a modal shift from cars to mass transit.

77. The economic evaluation looks at the entire project from the point of view of society at large. In all scenarios studied (details in annex 9) the project has a positive NPV and therefore an ERR larger than the discount rate (12%). The project is consequently beneficial for society at large. The additional investment costs demanded by participating in the UTTP translate into higher NPVs with respect to the baseline scenario. Therefore, the investments in measures such as infrastructure to promote modal shift are beneficial for society. However, given the large costs of mass transit infrastructure, there is a disincentive to invest in these additional features. Moreover, the additional benefits from these investments are not captured by governments because the benefits are impossible to monetize or tax. For example, time saved by users cannot be taxed. Therefore, CTF concessional financing, blended when applicable with IBRD funding, will motivate governments to undertake those investments.

78. The financial evaluation looks only at the element of the project that lends itself to private sector participation. In all scenarios the private sector recovers its investment; hence the positive NPV and the IRR larger than the discount rate (12%) (details in Annex 9). The analysis

shows that the private sector benefits from measures to increase modal shift and to reduce competition from the old bus system. Furthermore, the introduction of novel technologies such as hybrid buses benefits society at large but the private sector has to undertake larger investments that are not compensated. The NVP and IRR drop. The private sector, therefore, will not purchase hybrid buses unless a subsidy is in place to compensate the loss in profitability. CTF concessional financing can make the investment in hybrid buses attractive for the private sector.

B. Technical

79. The UTTP aims at achieving a reduction of GHG emissions growth rates through sustainable and more efficient modes of transport. To this end, the sub-project will follow a technical design approach to ensure that the financed sub-projects: (a) are city-driven and supported by governments' efforts to promote climate change toward a Low Carbon Growth path; (b) leverage resources at Government, State and Municipalities as well as from private sector participations; and (c) demonstrate cost-effectiveness due to the financing of BRT sub-projects and different investment measures to reduce GHG emissions associated with transport.

80. The overall UTTP modality will be to provide IBRD and CTF long-term finance to eligible states, municipalities or agencies to finance preparation and execution of urban transport sub-projects. States, municipalities or agencies can apply. The selection of cities and sub-projects will be based on PROTRAM's requirements that include: the technical quality of the proposals and capacity of the local agencies to implement and supervise the sub-project and specific activities. The specific studies, technical assistance and sub-project investments to be funded by IBRD/CTF will follow general guidelines presented in Annex 6, as well as sustainable transport principles presented in the World Bank's Transport Strategy: Cities on the Move, the PROTRAM.

81. The Project will finance mass transit systems such as BRT and Light Rail Transit (LRT). In general, these sub-projects are not expected to present major technical difficulties in their design, construction or supervision. In the case of BRTs, the required civil works will, most likely, consist of the construction of segregated busways, stations and terminals, as well as the non-motorized infrastructure needed to access trunk-line stations. These works will use standard construction procedures, available materials and equipment. During the construction period, a specialized consultant firm/ supervisor will be contracted to control the quality of the works.

C. Fiduciary

82. Annex 7 of this PAD documents the results of the Financial Management (FM) Assessment of the Mexico: Urban Transport Transformation Project (the Project), as conducted by Bank staff in accordance with Bank Policy and Guidelines for Assessment of Financial Management Arrangements in World Bank-Financed Projects. It also takes account of the considerable experience of the BANOBRAS to manage Bank's resources. The fact that project expenditures will occur within the participating cities, and municipalities which will be granted with credit facilities by BANOBRAS, but with no relevant experience with Bank-financed projects, poses a challenge in terms of financial management design. In light of the size and complexity of the proposed operation, the inherent FM risk is deemed substantial. A number of project-specific mitigating controls, as described in Annex 7, will be put in place. Therefore, the

residual FM risk, i.e. the inherent risk as mitigated by project-specific controls and Bank supervision, will be moderate after mitigation. Annex 8 details the procurement assessment of the Project and a summary of the assessment followed. Before a credit is approved by BANOBRAS, it will conduct a Risk Assessment & Mitigation of each candidate state, municipality or agency and sign a Credit Agreement with the participating state or municipality with terms and conditions satisfactory to the Bank. All Credit Agreements will specify the conditions and procedures to carry out procurement and disbursement, based on the results of the corresponding State/Municipality Risk Assessment and Mitigation and the Procurement Plan. In addition, BANOBRAS will have the responsibility of certifying that beneficiaries of credits will follow adequately Bank procurement procedures. BANOBRAS will provide prior-review and ex-post review for the procurement aspects carried out by the eligible States/Municipalities.

83. BANOBRAS has a team staffed by personnel fully familiar with the procurement rules of the Bank. A Procurement Plan for the first 18 months has been already prepared. This plan will be posted in BANOBRAS and States or Municipalities web page. The specific packages, procurement methods, and prior review threshold by the Bank will be reviewed and approved in the procurement plan prepared by each entity.

D. Social

84. The project is expected to have positive impacts on living standards of the population through improved physical access and quality of public transport, enhanced non- motorized infrastructure, and built environment. Specific sub-projects funded under the UTTP will not be known before appraisal. Thus, the project has incorporated an Environmental and Social Management Framework –MASTU– to prevent and mitigate social impacts. The MASTU will guide cities on how to ensure proper consideration of environmental and social aspects within their sub-project cycle. The GoM has agreed to promote the participating cities to adopt the MASTU as part of the UTTP sub-projects preparation. An original draft version of the MASTU was posted for consultation at BANOBRAS' web-site on February 3rd 2009, and also posted at the Infoshop on January 29th 2009, and it is also available in the project's files. Consultations were held in Mexico City among key stakeholders on March 19th 2009, including municipal authorities, private sector operators, research institutions and universities as well as NGOs operating in urban transport.

85. The MASTU incorporates the experience of cities on urban transport projects in Mexico and establishes the social and environmental procedures and institutional responsibilities to ensure that UTTP sub-projects will include adequate prevention, mitigation and compensation measures to address and minimize the potential environmental and social impacts of construction and/or operation of the different projects. The mainstreaming of these procedures by participating cities ensures that sub-projects will have fulfilled national/state/local regulations as well as the Bank's safeguards requirements.

86. The social management procedures to be followed by all project activities are described in the MASTU. The documentation to be submitted by cities to qualify for UTTP financing includes a preliminary environmental and social assessment that provides enough information to classify the sub-project in the appropriate category following the procedures described in the MASTU; this assessment comprises also the protection of cultural assets in the project's area

including chance-findings. The procedures to be followed later will depend on the category assigned to each sub-project. Social procedures described in the MASTU are based on the federal, state and local regulations, complemented with the necessary measures to ensure that Bank safeguard's requirements will be met. Cities will be responsible for the implementation of the MASTU, and SEDESOL, as member of the GTC, will be responsible, at the national level, for supervising the fulfillment of the MASTU's social procedures in the sub-projects. The MASTU also includes mechanisms to solve grievances and conflicts and describes the principles and guidelines for public consultation of the sub-projects. Annex 10 presents a summary of the MASTU. The MASTU was submitted to public consultation; comments and recommendations received during this process were incorporated as necessary before its final disclosure.

E. Environment

87. The project is expected to have positive environmental impact by improving the quality of public transport and non-motorized transport systems, traffic flow and safety. The project is designed to have a positive long-term impact due to the reduction of global and local emissions, as CO_2, NO_x, SO_x, Particulate matter, and other contaminants currently present. A detailed screening – using standard forms – of the different sub-project sites will confirm that none are close to natural habitats or environmentally sensitive areas, nor do they require major works that will result in irreversible long-term impact or displacement of people.

88. The main direct impacts are expected to occur during construction and cause localized negative environmental impacts. Such impacts are expected to consist essentially of noise, vibration, dust, and traffic disruption. Environmental impacts associated to the operational phase will mainly include emissions of air pollutants and waste generation (e.g. oils). Most of these impacts will be mitigated by proper designs and the implementation of environmental and social management plans to be followed according to the procedures defined in the MASTU. An original draft version of the MASTU was posted for consultation at BANOBRAS' web-site on February 3rd 2009, and also posted at the Infoshop on January 29th 2009, and it is also available in the project's files. Consultations were held in Mexico City among key stakeholders on March 19th 2009, including municipal authorities, private sector operators, research institutions and universities as well as NGOs operating in urban transport.

89. The environmental management procedures to be followed by activities financed by the project are described in the MASTU. Environmental procedures are based on the Federal Law on Ecological Equilibrium and Environmental Protection (Ley General del Equilibrio Ecologico y la Proteccion al Ambiente in Spanish), and other federal ordinances, as well as state and local regulations, complemented with the necessary procedures to ensure that safeguard's requirements will be met. Cities will be responsible for the implementation of the MASTU, and at the national level SEMARNAT, as member of the GTC, will supervise the fulfillment of the MASTU environmental procedures in the sub-projects. Consultation and disclosure mechanisms of key environmental studies are included also in the MASTU.

F. Safeguard Policies

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

90. Although the project is expected to have positive social and environmental impacts, there is a broad range of activities subject to be financed that are yet to be determined. As detailed information is not available now on the candidate cities there is a potential for the following Operational Bank Policies to be triggered: OP 4.01, OP 4.04, OP 4.11 and 4.12, thus the UTTP has been rated in principle as a "Category A" project.

G. Policy Exceptions and Readiness

91. The project does not warrant any exceptions to Bank policies. The proposed operation meets the Bank's criteria for readiness. This project is demand-driven: cities in Mexico have to approach BANOBRAS to seek credits for the urban transport projects. The UTTP takes place in the context of the PROTRAM. PROTRAM has a significant pipeline of projects. Annex 4 has details on the pipeline of projects in the pipeline.

* *By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas*

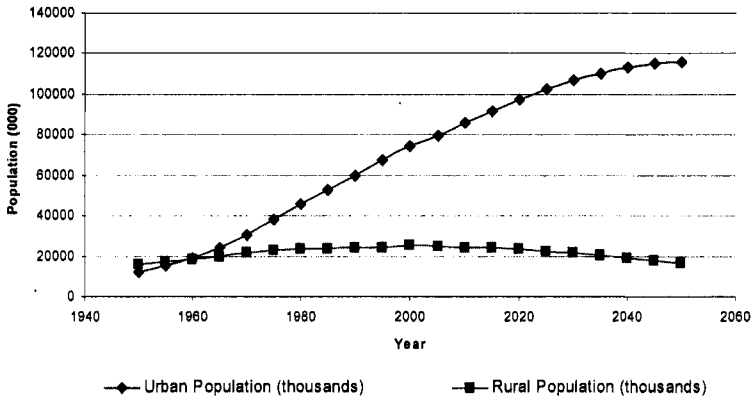
Annex 1: Country and Sector or Project Background

MEXICO: URBAN TRANSPORT TRANSFORMATION PROJECT

Urban Context and Recent Trends

1. Over the past 60 years Mexico has gone from a largely rural country to a highly urbanized one. As of 2007, Mexico's urban population stands around 80 million, or three-fourths of the country's population, with the urban population continuing to grow at 1.5% while the rural population declines gradually[3]. 30.6 million people, or almost 30 percent of the country's population, are concentrated in the five largest metropolitan areas of Mexico (Mexico City, Guadalajara, Monterrey, Puebla, and Toluca). The country's current economic development depends to a great extent on the efficient functioning of the cities and, in particular, their transportation networks. This problem also impacts the location of industry and productivity as well as poverty. The country's urban population continues to expand according to a typical developing country paradigm in which urban growth is not necessarily linked to progressive distributional effects and poverty alleviation. It is now estimated that over a third of Mexico's urban households are below the poverty line.

Figure 1: Mexico's Urban and Rural Population, 1950 to 2050



Source: United Nations, World Urbanization Prospects, 2007 Revision

2. As reflected in the Bank's current urban strategy and in Bank draft policy documents as an overall issue in developing countries, in Mexico urban growth exceeds the response capacity of local governments in both institutional and financial dimensions[4]. The consequences are reflected in: (i) a threat to the benefits of economic growth for households and businesses, (ii) burdens on the mobility of the city dwellers, especially of the poorest, (iii) negative repercussions on air quality, and (iv) impacts on the global environment with a larger carbon footprint. The deterioration of urban transport is reflected in the fact that, in terms of public

[3] UN Country Profile: Mexico. http://data.un.org/CountryProfile.aspx?crName=Mexico Accessed June 16, 2009.
[4] "Cities On The Move. A World Bank Urban Transport Strategy" (2002); "Operational Guidance Note for World Bank Staff. A Strategic Framework for Urban Transport Projects." (Draft not as of November 2007)

opinion, urban transport has escalated from the eighth to the second position among population concerns, second only after public security.

3. There is a heavy reliance on public transport but the service quality is poor and cities are hard pressed to satisfy the demand. Bus transport is deteriorating and becoming unreliable and is subject too much criticism regarding traffic safety and service quality issues. Consequently urban public transport has lost around 40% of its ridership since the early nineties, and private cars account today for 80% of total motor vehicles while they represent only 30% of daily passenger trips. The 10% annual increase in motorization poses immense institutional and budgetary challenges for governments.

4. The urban poor bear a heavy burden of high transportation cost and long travel times. This is observed in the Mexico City Metropolitan Area (MCMA), where in 2004 there were an estimated 39.7m daily trips[5] with a significant number (around 25%) crossing the major Distrito Federal/Estado de Mexico jurisdictional divide and many involving inter-modal transfers (34% in 1994) and long travel times (between 1.5 and 3.5 hours of motorized travel per person per day)[6]. In central areas the impact is felt on congestion and pollution, while in the peripheral zones where most of the poor reside, the impact is felt on access and mobility.

Urban Transport Issues

5. ***Poorly Organized Public Transport*** – Under the prevailing "hombre-camion" model of public transport in Mexico, individual owner-operators compete for customers within the market. This inefficient system has led to an oversupply of buses, higher-than-necessary fares and a host of negative externalities including GHG as well as local pollutants—particulate matter smaller than 10 microns (PM_{10}), SO_2, CO, NO_x, VOCs and ozone. The situation has been exacerbated by an ineffective and fragmented legal framework. Vehicular accidents are the fifth leading cause of death in Mexico, in part because "in the market" competition fosters racing, blocking and other maneuvers which kill transit users and, more often, pedestrians and cyclists. While these environmental and safety externalities affect everyone, other impacts are felt disproportionately by the poor: since the poor generally live on the urban fringe, they lose more time, and therefore quality of life, to congestion than others. In addition, travel costs very often represent about 20% of their daily budget, so the out-of-pocket price of transit is a burden. And as congestion and pollution worsen in the city center, more people respond by moving to the outskirts, abandoning the center and lengthening commutes for everyone.

6. The key issues related to poorly organized transport that are in need of improvement are: (a) lack of an organizational model to facilitate efficient, high-quality public transport operations; (b) dispersed operations that hinder the effective control of bus services and contribute to traffic congestion; (c) inefficient use of vehicles and a proliferation of old, polluting micro-buses; (d) deficiencies in bus inspection and maintenance; (e) lack of professional management among bus operators; (f) lack of coordination between transport operators; (g) fare systems that penalize transfers and thus discourage inter-modal movements; and (h) lack of physical, operational and fare integration.

[5] SETRAVI, 'Anuario del Transporte y Vialidad 2004', 2004 http://www.setravi.df.gob.mx/stv_anuario2004.pdf
[6] Flynn, J. (2007). Measures to make urban transport affordable to the poor. Case Study financed by TRISP.

7. ***Air Pollution is a Major Health and Environmental Concern in Several Cities*** – In most Mexican cities local air pollution is the greatest environmental concern related to urban transport. Vehicular emissions are very damaging for human health. According to the nature of the pollutant, concentration levels and the period of exposure, the effects of pollution can range from a mild irritation to acute sickness or even to premature death. In Mexico City for example, some 30 to 50 percent of the time PM_{10} levels exceed those recommended by the World Health Organization. Despite transport being just one among other sources of urban air pollution, it is often identified as a high priority because: (i) urban traffic is a large contributor to the most harmful fine particulate emissions; (ii) vehicles emit at ground level, contributing more to human exposure than emissions from other sectors; (iii) the urban transport sector is one of rapid growth and change, susceptible to positive and protective actions.

8. ***Inadequate Street Designs and Traffic Management*** - City streets too often do not have adequate capacity due to their circuitous layout, long blocks, uncoordinated street lights and irregular parking, all of which result in congestion. The operational characteristics are further worsened by the lack of maintenance and limited use of modern traffic demand management to secure maximum social value from network use in many cities. Congested road infrastructure hurts the city economy and harms the poorest by slowing road-based public transport.

9. ***Limited Institutional Capacity to Deal with the Issues Above*** - Several cities have shown improvements over the last decade as considerable resources have been dedicated to training and institution building. This is especially true for the cities that developed strong planning institutions (Leon, Monterey) and could retain a cadre of experienced staff despite the high turnover of municipal administrations. However, for the majority of cities, there is still a large unfinished agenda that needs to be addressed. This in particular relates to the strengthening of planning units, establishment of transport corridor management entities, and to the legal and administrative changes that would allow municipalities to manage both transport supply and demand; currently the latter is primarily the responsibility of the state government. In the absence of institutional capacity investment plans can become disarticulated, insufficient and often contradictory. Under the earlier Medium Cities Project financed by the Bank, several cities developed Integral Transport Plans that could serve as a basis for moving forward. Many others are still far away from this point.

10. ***Institutional Arrangements that Hinder Project Success*** – For many cities, the responsibility for transport and traffic regulation, traffic engineering, traffic law enforcement, and short and medium range land use/transport planning is divided among agencies at state and municipal level, or between different departments within individual agencies or even between different municipalities within the same metropolitan area without adequate coordination. The actual legal framework is based on the Transport Law of each one of the Mexican States. This Law establishes the State Government as the main authority in the transport and road sector (including urban transport) in most of the states. The State Government, through Secretaries or Departments of Transport and Road Sector has the responsibility for the regulation, administration, authorization and supervision of the urban transport service in the cities, while the municipalities are responsible for the provision of road infrastructure. Both agencies can implement investments in the urban transport and road sector. However, the current Legal Framework in some instances allows the State Government to sign agreements for the delegation

of competences and functions to the municipalities. In Leon for example, through this mechanism, the administration and management of urban transport have been transferred substantially to the municipality. Finally, in most of the cities, with the exception of Monterrey and Leon, it is necessary to adapt and develop the legal framework in order to implement modern institutional, financial, and operational organization models for the development of integrated transport systems.

11. This division sometimes results in agencies with varying interests and responsibilities having to share responsibility for a major transport project and without common incentives to implement the soundest projects. An additional complicating factor arises from the fact that the project cycle for such projects is usually much longer than the administrative term of elected officials who have to 'champion' the aforementioned project. Hence, there is a very high risk and well developed initiatives becoming stalled due to policy reversals by the incoming administration.

Urban Transport and Climate Change

12. The transportation sector is currently responsible for more than one-third of the carbon dioxide (CO2) emissions in Latin America, and is one of the fastest growing sectors for emissions. The International Energy Agency projects that CO2 emissions from vehicles will increase by a factor of 2.4 (or 140%); from about 4.6 gigatons in year 2000 to 11.2 by year 2050. The vast majority of this increase will take place in developing regions of the world, especially Latin America and Asia, as a result of increased motorization and vehicle use.

13. Urban transport represents a key sector for long-run GHG mitigation efforts. Latin American cities are rapidly growing and with 75% of the people currently living in urban areas, cities concentrate most of the vehicle kilometers traveled (VKT). The increasing use of motor vehicles not only generates additional GHG emissions, but also results in growing air pollution and associated health impacts, increased congestion, more accidents and reduced competitiveness of cities. Mexico has been going from relatively low levels of motorization, 100 cars per 1000 people to the Organization for Economic Co-operation and Development levels of 300 or more.

14. While most cities still have a considerable share of walking and public transport trips, car ownership and use is expected to continue increasing with economic and population growth. In addition, cities in Latin America are expanding and sprawling rapidly as the mobility needs are being primarily satisfied by a growing reliance on motorized vehicles and poor public transit systems, further increasing emissions and reducing energy efficiency. The poor are most affected as they rely on public and non-motorized transport, while investments are increasingly directed toward wealthier car users.

15. The cycle of rising incomes, increasing population, growing motorization, inadequate streets, inadequate traffic management, and increasing congestion, air pollution and GHG emissions is evident in many cities. The carbon footprint of Mexico's economy is heavily weighted by transport which accounts for 35% of the country's total GHG emissions, and inefficient transport only exacerbates its magnitude.

Mexico's National Urban Transport Strategy

16. The GoM has recognized the need to address the urban transport problems facing its cities. The main elements of the current strategy relevant to the project are:

a. The launching of a co-financing window (FONADIN) to promote investments in infrastructure through the direct federal financial participation and provision of federal loans and guarantees, for projects that incorporate private sector participation or have important environmental benefits.

b. The publishing of PROTRAM guidelines within the framework of FONADIN intends to provide incentives for the development of mass transit projects in cities with an estimated population by 2010 of 500,000 inhabitants or more. The project is under the responsibility of the Technical Consultative Group (Grupo de Trabajo Consultivo) of FONADIN integrated by SHCP, SEDESOL, SEMARNAT and SCT. It foresees the financing of studies and infrastructure investments with grants, loans and guarantees. Specific criteria for the selection of sub-projects have also been defined. FONADIN/ PROTRAM will need to include as part of its scope, addressing the climate footprint of the transport sector as well as to help reorganize the urban transport sector and finance mass transit projects.

c. Enhancing the institutional framework, through the use of appropriate tools for metropolitan integration, to build capacity at the municipal and state levels.

d. Improving the mobility of the poorest. The interventions are expected to benefit the poor directly, through its impact on the daily needs and access to basic services for poor people and indirectly through their impacts on the city economy. Car riders will have public transit alternatives of adequate reliability and capacity.

e. Promotion of private sector participation to provide appropriate financing mechanisms. Private sector investment in transport infrastructure, maintenance and operation may reduce the fiscal burden of the public sector and provide additional resources for the modernization of transport in cities. The GoM has set up a framework for private sector investment through regulatory interventions and providing support for competitive tenders for service provision and infrastructure construction concessions and other PPPs.

17. Mexico faces the challenge of improving its transport system to raise its competitiveness and better serve the poor, and to expand or at least preserve the market share of lower emitting modes. Implementing diverse and integrated packages of measures that promote a modal shift towards less carbon intensive modes appears to be the most cost effective means to reduce emissions from the transport sector while improving mobility for the poor (Wright and Fulton 2005). Low carbon mass transit corridors such as Bus Rapid transit Systems (BRT) can play a prominent role in catalyzing such integrated packages, by simultaneously influencing behavior, design and technology (Figure 1, this annex).

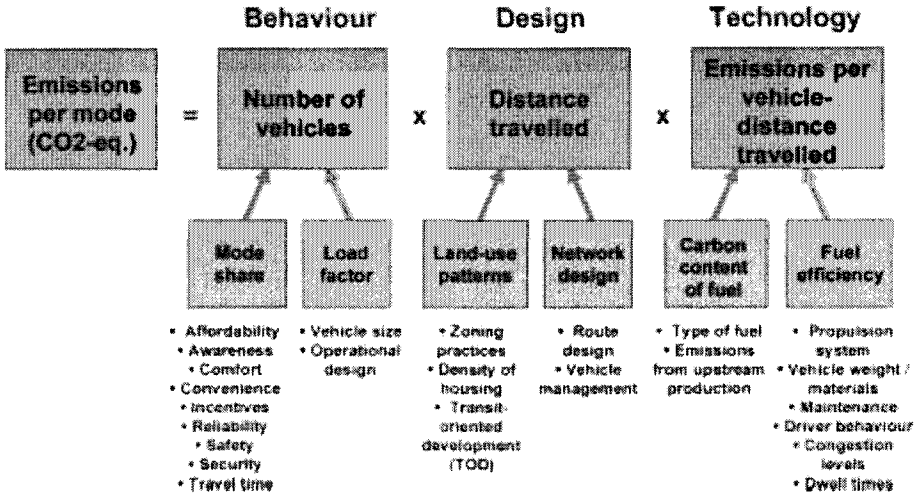


Figure 1 - Factors affecting greenhouse gas emission from the transport sector (Wright and Fulton 2005)

Mexico's Policies and Strategies to Reduce the Country's Carbon Footprint.

18. Mexico ratified the UN Framework Convention on Climate Change (UNFCCC) on March 11, 1993. Mexico's congress ratified the Kyoto Protocol (April 2000) by unanimous consent. Mexico has also launched an effort to strengthen its institutional capacity through the development of a Climate Change Office (CCO). The CCO has been supported through an IDF (Institutional Development Fund) grant. The IDF also supported the identification of economic instruments for the internalization of climate change concerns in economic planning.

19. As a non-Annex I country, Mexico is not mandated to limit or reduce its GHG emissions under the Kyoto Protocol. Nonetheless, the country has firmly adopted the UNFCCC principle of "common but differentiated responsibilities" and pledged to reduce its GHG emissions voluntarily. Mexico's leadership in the climate change arena has been recognized in the independent Climate Performance Index, which ranks countries based on (a) per capita GHG emission trends in the energy, transport, residential and industrial sectors; (b) absolute energy-related GHG emissions; and (c) climate policy. In this assessment released at the end of 2007, Mexico ranked fourth in the world.[7]

20. At the Conference of the Parties of the UNFCCC, in Poznam (December 2008), Mexico became one of the first developing countries to commit to a specific carbon reduction target. The GoM committed to reducing emissions countrywide to 2002 levels by the year 2030 and to halve 2002 emission levels by 2050. Mexico also plans a domestic cap-and-trade system by 2012 to abate emissions from point sources.

[7] See http://www.germanwatch.org/klima/ccpi2008.pdf

21. More recently, at the January 2009 meeting of the World Economic Forum in Davos, President Calderon reiterated Mexico's commitment to reduce GHG emissions by half by 2050. This commitment has been hailed by the UNFCCC General Secretariat as an example of long-term vision in environmental policy. The GOM commitment to work toward substantial reductions in GHG was also mentioned during the April 2009 summit in Mexico between the heads of state of the U.S. and Mexico.

A transformational Urban Transport Project

22. High quality transport systems are able to provide efficient mobility and accessibility for urban dwellers and are a powerful tool to promote growth, alleviate poverty, and achieve social and political integration while improving local environmental conditions, enhancing public space, and abating GHG emissions. A Mexican urban transport transformation calls for national and local governments to improve the relative efficiency of public transport while yielding a demonstrable reduction in the growth rates of GHG emissions as co-benefit. This will require moving from a corridor approach to a holistic programmatic approach that transforms the sector, maximizing the social benefits of a sustainable low carbon transport.

23. A Transformational Urban Transport Project is needed to enhance the social and environmental impacts of the Mexican National Transport Strategy. The overall project is framed by Rebelo's (1996) four pillars for successful urban transport planning: (1) Establishment of a Regional Transport Coordination Commission, to coordinate planning and implementation at the city level; (2) Enactment of an integrated Urban Transport, Land Use and Air quality and Climate Strategy to frame all actions within a holistic strategy; (3) Establishment of long-term financing mechanisms to ensure financial sustainability; and (4) Promotion of private sector participation to lower costs and improve financial sustainability.

24. Changing the sector's carbon path has the potential to alter the overall footprint of the Mexican economy. The new path would be centered on a massive effort to affect modal share towards energy efficient, low carbon mass transport systems. This modal shift can be secured through the deployment of BRT (bus rapid transit systems), light rails and similarly efficient transport modes. These are further enhanced through the application of low carbon drive systems (such as hybrid, articulated, high capacity vehicles), effective 100% scrapping of displaced rolling stock, and implementation of transport integration and transfer systems that promote harmonized urban development, climate and transport policies. This urban transport transformation, if deployed nationally, can place the whole country's transport sector on a path to a lower carbon footprint. Furthermore, this transformation has the power to induce changes in infrastructure, equipment and behavior, changes which will lock in carbon savings for the long term.

Annex 2: Major Related Projects Financed by the Bank and/or other Agencies

MEXICO: URBAN TRANSPORT TRANSFORMATION PROJECT

Issue	Project	Latest Supervision (ISR) Ratings (Bank-financed projects only)	
Bank-financed, completed		**Implementation Progress**	**PDO**
Improvement in the urban transport sector services, efficiency, costs, infrastructure and institutional capability	Urban Transport Project (Ln. 2824-ME)	Completed	S
Improvement in the quality and efficiency of urban transport systems in medium-size cities	Medium Size Cities Urban Transport Project (CPL-35590 SCL-3559A SCPD-3559S)	Completed	S
Economic reform package to stimulate sector efficiency. Restructuring of telecommunications and road transport (trucking) though privatization and regulatory reform in telecommunications; deregulation of trucking; and institutional changes	Road Transport and Telecommunications Sector Adjustment Loan Project (Ln.3207-ME)	Completed	S
Issue	**Project**		
Other Bank -financed Projects			
Transformation of the transport sector through improvements in the long-term sustainability, efficiency and quality of urban transport in Mexico City.	Mexico: Low Carbon Bus Corridor Project (P106305)		
Encouraging replication of the Integrated Solar Combined Cycle Systems (ISCCS) power generation technology in Mexico and elsewhere, thereby contributing to the reduction of global GHG emissions.	The Hybrid Solar Thermal (P066426)		
Grants to help reduce the amount of CO_2 and air pollutants in four Mexican cities by facilitating the use of public transportation and non-motorized modes, as well as planning for physical investments and regulatory frameworks that reduce the need for excessive movement of people and goods.	The Sustainable Transport and Air Quality (STAQ) project (P114012)		

Reduction of GHG emissions from power generation by 4 million tCO2e over a 20-year operation period, investments in wind energy, and the development of the international carbon market in Mexico.	Wind Umbrella, or La Venta II (P080104)	
Increasing access to efficient and sustainable integrated energy services in --predominantly indigenous-- rural areas of Mexico, and promote the development of social and productive activities to increase the use of electricity.	The Mexico (CRL) Integrated Energy Services (P088996)	
Development of policies and measures that assist in a long-term modal shift toward climate-friendly, more efficient and less polluting, less carbon intensive transport in the Mexico City Metropolitan Area (MCMA)	Mexico City: Introduction of Climate Friendly Measures in Transport (P059161)	
Economic assessment of air quality impacts in the Metropolitan Area of Mexico City (MCMA)	Air Quality Management Plan for the Mexico City Metropolitan Area (MCMA) (P072508)	
Reductions in local airborne pollutants and greenhouse gas emissions generated by the transport sector in the Metropolitan Area of Mexico City (MCMA)	Mexico City Insurgentes Bus Rapid Transit System - Carbon Finance Project (P082656)	
Issue	**Project**	**Status**
Other development agencies, completed, ongoing and planned		
Inter-American Development Bank	Subnational Credit Infrastructure, Public Services & Institutional Strengthening - CCLIP Conditional Credit Line Investment	Ongoing

IP/DO Ratings: HS (Highly Satisfactory), S (Satisfactory), MS (Moderately Satisfactory), U (Unsatisfactory), MU (Moderately Unsatisfactory), HU (Highly Unsatisfactory)

Annex 3: Results Framework and Monitoring

MEXICO: URBAN TRANSPORT TRANSFORMATION PROJECT

1. The Urban Transport Transformation Project will track results at two levels: (i) Project Level and (ii) Sub-project Level. The "Project level" refers to the totality of sub-projects developed under the Low Carbon Growth Path that follow World Bank's safeguards. The "Sub-project level" refers to specific local interventions that will be financed with IBRD and/or CTF resources, via a Banobras credit (UTTP sub-projects), and/or any combination of resources from FONADIN, CPF and local resources and that will follow the low-carbon growth path objective. All UTTP sub-projects under this results framework must follow procedures defined in the MASTU.

2. Each sub-project will have its own Results Framework of objectives, end-of-sub-project outcome indicators, and intermediate indicators. The Urban Transport Transformation Project Results Framework will therefore be developed as the addition of the various UTTP Sub-project Results Frameworks. Not all projects in PROTRAM will be directly financed with proceeds from the loans, given the large counterpart funding available from FONADIN and the private sector. However, projects financed by PROTRAM that in the opinion of the Bank comply with the MASTU, will count towards the results under this framework previous no-objection from the World Bank, regardless of the source of financing.

Results Framework

3. The following results framework will be used at the project level to track progress towards the PDO.

PDO	Project Outcome Indicators	Use of Project Outcome Information
To contribute to the transformation of urban transport in Mexican cities toward a lower carbon growth path.	(1) Approximately 1.96 million tons of CO2 emissions avoided per year, by 2017, once all of the proposed investments enter into operation, at 30 dollars of CTF per ton.	Assess the long-term global impact of the Urban Transformational Transport project. Quantify the extent to which the project has been effective in reducing GHG emissions.
	(2) 18 Integrated Mass Transit Corridor Equivalent, are in operation by 2017[8].	Gauge the improvement in the provision of public transport systems and services.
	(3) The leverage of $2344 million of investment from other public and private sources of financing, representing 87% of total cost	Quantify the extent to which the CTF component has been effective in leveraging other sources of funding

[8] Integrated Mass Transit Corridor Equivalent and refers to the fraction of an Integrated Mass Transit Corridor (IMTC) that results in an estimated annual reduction of 109,000 tons CO2 over the business-as-usual scenario. For a BRT, this is estimated to represent a 15 km route with 220,000 passengers per day.

Intermediate Outcomes	Intermediate Outcome Indicators	Use of Intermediate Outcome Monitoring
Component 1 – Capacity Building		
Cities launch the urban transport sector on a long term sustainable low carbon growth path	Number of cities with updated Integrated Transport Plans that include climate change mitigation considerations	Assess the long-term impact of the Urban Transport Transformation project
Component 2 - Development of Integrated Transit Systems that Reduce CO2 Emissions		
Component 2a – Mass Transit Corridors and Ancillary Investments		
High quality mass transit corridors are implemented and complementary measures that further support transformational aspects are in place	Number of new Mass Transit Corridor Equivalent completed and under operation	Gauge the improvement in the provision of public transport systems and services
	Minutes of travel time saved for public transit users on corridors with mass transit interventions per trip	Gauge the impact of the transport projects in urban productivity
	Increase in vehicle-kilometer traveled using low carbon integrated mass transit corridors	Gauge the impact on Low Carbon technology deployment
	% modal shift of mass transit systems users that were formerly private vehicle users	Gauge the improvement in modal shift and transit mobility
Component 2b – Low Carbon Bus Technologies and Scrapping of Displaced Buses		
GHG emissions have been avoided through the deployment of Low carbon transit technologies and the reduction of old buses over supply	Cities/municipalities that have a bus scrapping project in place that is leading to a reduction in oversupply of buses	Quantify the extent to which the project has reduced the oversupply of inefficient/old buses, which results in substantial reductions in GHG emissions
	The deployment of low carbon vehicle technologies as part of the mass transport corridors, eventually representing approximately one third of the passenger capacity of the corridors.	Quantify the extent to which the funding is supporting the deployment of low carbon vehicle technologies

Arrangements for Results Monitoring

4. Institutional arrangements. BANOBRAS will be responsible for the overall management and implementation of the Project Monitoring and Evaluation Framework. This will include maintaining the databases, managing the flow of information, and producing periodic monitoring reports to be furnished to the Bank. The UC will support BANOBRAS in the preparation of the Progress reports and the results-based M&E.

5. At the sub-project level, the eligible cities or the sub-project implementing agencies, will have the main responsibility for data collection and reporting on their sub-project results. The UC will promote knowledge sharing among beneficiary cities/sub-projects and will integrate results to evaluate results for a wider policy analysis and dissemination of best-practices. To the extent possible, common indicators will be used to permit comparison and aggregation. The participating cities will furnish reports to the UC and BANOBRAS. Hence, the project M&E will be the result of aggregating the individual sub-project result frameworks.

6. Bank supervision teams will provide technical assistance for the implementation of the monitoring tools and for the design and analysis of the information.

7. The monitoring and evaluation (M&E) framework will track progress in implementation, measure outcomes, and outputs and evaluate project impacts, when possible. The framework outlines key performance indicators, data collection methods, a timetable for collection, and responsible agencies. This framework will be used to supervise and monitor the implementation of the project. The UC will develop the required monitoring and evaluation capabilities and provide supervision reports to make possible for BANOBRAS assuming its coordinating role.

8. The following tools are to be used for monitoring and evaluation of the project:

9. Progress Reports. BANOBRAS with the reports prepared by the UC, based on the information prepared by the participating cities, will submit to the Bank not later than 45 days after the end of each calendar semester Interim Progress Reports for the Project covering the semester, in form and substance satisfactory to the Bank. These reports will be based on the formats established in the operational manual of the UTTP, and should be delivered following the Financial Reports (IFR's) schedule.

10. Results-Based Monitoring and Evaluation. The UC will carry out periodical reports using this tool including information on results such as actual use of the transport services, user satisfaction with the quality of the infrastructure and services, tariffs, reduction of travel time, and indicative GHG reduction, among other indicators. For this purpose the cities will prepare a base-line and will carry out participatory focus group discussions, consumer satisfaction surveys or any other participatory method to assess users' satisfaction with public transport.

11. Baseline will be obtained from planning exercises during PIMUS, ITP or equivalent preparation and other such studies conducted as part of sub-project preparation studies. The UC with the support of the GTC, will develop guidelines for developing such baselines, and will offer capacity building workshops. GHG emissions will be estimated using approved methodologies as discussed in ANNEX 15, and baselines will be prepared with technical assistance from the carbon finance group.

Arrangements for Results Monitoring

		Target Values (*)							Data Collection and Reporting		
Project Outcome Indicators	**Baseline**	**YR1**	**YR2**	**YR3**	**YR4**	**YR5**	**YR6**	**YR7**	**Frequency and Reports**	**Data Collection Instruments**	**Responsibility for Data Collection**
Approximately 1.96 million tons of CO2 emissions avoided per year once all the proposed investments enter into operation at 30 dollars per ton	0	0	0.20	0.40	0.70	1.10	1.50	1.96	Semester Progress reports	Project Monitoring by UC supported by CPF methodologies	UC in close coordination with cities
18 new Integrated Mass Transit Corridor Equivalents in operation moving 3.96 million passengers per day	0 0	0 0	2 0.4	4 0.9	7 1.5	10 2.2	14 3.1	18 4	Semester Progress reports	Regular Project Implementation Monitoring by UC	UC in close coordination with cities
Leverage of US$2344 million of investment from other public and private sources of financing, representing 87% of total cost**	0	130	260	520	910	1300	1820	2344	Semester Progress reports	Regular Project Implementation Monitoring by UC	UC in close coordination with cities

		Target Values (*)							Data Collection and Reporting		
Results Indicators	**Baseline**	**YR1**	**YR2**	**YR3**	**YR4**	**YR5**	**YR6**	**YR7**	**Frequency and Reports**	**Data Collection Instruments**	**Responsibility for Data Collection**
Component 1:											
Number of cities with updated Integrated Transport Plans that include climate change mitigation considerations	0	2	3	4	5	6	7	8	Semester Progress reports	Regular Project Implementation Monitoring by UC	UC in close coordination with cities
Component 2:											
Minutes saved in total travel time for public transit users on a corridor with mass transit interventions	0	7	7	8	8	9	9	9	Semester Progress reports	To be determined	UC in close coordination with cities
% of users of the new mass transit system that were formerly private vehicle users	0	0%	2%	5%	10%	10%	10%	10%	Semester Progress reports	To be determined	UC in close coordination with cities
Cities/municipalities that have a bus scrapping program in place that is leading to a reduction in oversupply of buses	0	0	1	2	3	4	4	5	Semester Progress reports	Regular Project Implementation Monitoring by UC	UC in close coordination with cities

		Target Values (*)							Data Collection and Reporting		
Cities/municipalities where the private sector deploys low carbon vehicle technologies as part of the mass transport corridors, eventually representing approximately one third of the passenger capacity of the corridors*	0	0	1	2	3	4	4	5	Semester Progress reports	Regular Project Implementation Monitoring by UC	UC in close coordination with cities

*These indicators relate to the key criteria for CTF funding (high abatement potential, scale, cost effectiveness and development impact).

**Figure refers to expected contributions from other sources for the seven year duration of the project. Other sources include (federal, state, municipal, and private sector).

Annex 4: Detailed Project Description

MEXICO: URBAN TRANSPORT TRANSFORMATION PROJECT

1. IBRD funding will complement CTF funding. The blending of these two resources enlarges the pool of low-cost available financing, and therefore, reduces the financial barriers associated to this type of investments and facilitates the decision to adopt low-carbon systems. Blending CTF resources with IBRD and other financing sources would make available investment capital for the development of integrated mass transit corridors, or would facilitate the speed of adoption and scale-up of these city-wide mass transit corridors. The low-cost financing would be instrumental in decisions taken to adopt advanced and cleaner drive systems, and scrapping projects, internalizing some of the climate benefits that are not typically rewarded by the financial markets.

2. Components were chosen to maximize the chances of implementing well-prepared, technically-solid sub-projects that have political support (components 1 and 3). This approach facilitates disbursement. Component 2 was chosen because empirical evidence shows the benefits of mass transit (2a), implemented under a comprehensive approach (2b), at efficiently reducing GHG emissions. Component 2b is innovative by making affordable low-carbon transit technologies (2bi). This component also builds on empirical evidence that shows the need to scrap the old bus fleet (2bii) to achieve more significant and sustainable emission reductions, instead of just adding low-carbon buses. Component 4 will be entirely financed with counterpart funds (see annex 5).

Project Components

Component 1 - Capacity Building (CTF: US$5 million, IBRD: US$5 million)

3. Provision of technical assistance and training to the Eligible Beneficiaries for the development and/or strengthening of the local urban transport development process in the Participating Entities, including, inter alia:

(i) the preparation, update or completion of Integral Transport Plans (ITP), which will include climate change mitigation considerations;

(ii) the development of plans for modernizing traffic management and for efficient allocation of public space for transport and non-motorized modes;

(iii) support to urban transport institutions or regional transport coordination commissions which are responsible for sector coordination, modal and fare integration promotion and updating of ITPs; and

(iv) training of local government staff and other civil servants in areas such as transport system inventory, urban transport planning and programming, traffic management, formulation of urban transport projects including bus rapid transit projects, traffic safety, non-motorized transport modes, environmental and social evaluation and rehabilitation and maintenance of roads.

4. The CTF resources under this component will only be used to finance the services required in pre-investment studies related to the infrastructure for the integrated mass transit corridors.

Component 2 - Development of Integrated Transit Systems that Reduce CO2 Emissions (CTF: US$195 million, IBRD: US$145 million)

5. Development of integrated transit systems that contribute to the reduction of CO2 emissions in the Borrower's cities within the context of the ENAC and the PECC, by approximately 1.96 million tons per year beginning in 2017, through the carrying out of the following Bank-financed activities:

Component 2a - Mass Transit Corridors and Ancillary Investments (CTF: US$106 million, IBRD: US$110 million).

(a) Provision of financing for the development of Integrated Mass Transit Corridors (IMTC) in the Participating Entities, including, inter alia: the preparation, design, construction, supervision, maintenance and rehabilitation of roads for trunk lines and feeder roads, terminals, yards, transfer and access stations, mixed traffic lanes, and the acquisition of rolling stock, signaling, control centers, information systems, environmental monitoring equipment, and fare collection systems.

(b) Provision of financing for ancillary carbon-reduction transport investments, including, inter alia: the adoption of traffic management measures, non-motorized transport, design of and implementation of universal access facilities, carrying out of studies and design of facilitates for bike-transit integration, parking space and transfer stations, vehicle use restriction, public space improvements, including sidewalks, adoption of safety and security programs, design of land use density and clustering plans, intelligent transportation, transport demand management marketing and promotion, freight management and car free planning.

6. CTF resources will be deployed to cofinance integrated mass transit corridors with an emphasis in the required infrastructure to induce low carbon behavior.

Component 2b - Low Carbon Bus Technologies and Scrapping of Displaced Buses (CTF: US$89 million, IBRD: US$35 million).

(a) Provision of financing for the acquisition of low-carbon rolling stock to be operated in the Participating Entities.

(b) Provision of finance for programs concerning the scrapping of old and displaced buses, including, inter alia: (i) building institutional capacity to develop and/or adopt clean and environmentally sound scrapping strategies (collection, dismantling and final disposal); (ii) the purchasing of displaced rolling stock; and (iii) financing of the scrapping process, defined as the collection, destruction and recycling of steel scrap and disposal of non recyclable materials.

Component 3 - Project Management (CTF: US$0 million, IBRD: US$0 million)

7. Provision of support (including the implementation of a technical monitoring system) to the Eligible Beneficiaries for the supervision and monitoring of the implementation of the Subprojects in the Participating Entities.

Preliminary pipeline of Projects

8. The following table shows a partial list of the projects in PROTRAM that potentially can seek financing from the UTTP. Once this loan is effective, BANOBRAS will advertise the lines of credits available for project financing. The UC has agreed to help in this effort.

Project Preparation Status	Type of Project	Project Name	Estimated Cost (mill Mex$)	Length (KM)
A. Preparation in the final stages	BRT	Guadalajara Fase II	3.357	38.0
	BRT	Monterrey	2.000	19.5
	BRT	Cd Azteca – Tecamac Villahermosa	1.350	16.0
	Rail	Tren Suburbano 3	14.467	32.0
	Rail	Tren Suburbano 1	4.028	2.1
Subtotal			**25.202**	
B. Final engineering studies	BRT	Leon 2 y 3 etapa	1.600	30.0
	BRT	Chihuahua	1.360	22.0
	BRT	Mexicali	590	18.5
	BRT	Cd Azteca –Lecheria	1.325	28.0
	BRT	Cd Juarez	1.464	20.0
	Rail	Tranvia Veracruz-Boca del Rio	2.732	9.5
Subtotal			**9.071**	

The UTTP and the Green Growth DPL

9. The recently approved energy and transport, $1.504 billion Green Growth DPL (P116808), supported the development of a policy level foundation to the PROTRAM and UTTP (See figure below). Specifically, without the financing mechanisms of FONADIN and PROTRAM, the CTF Investment Plan cannot be expected to be able to cover the financial gap of the additional climate-related investments.

Green Growth DPL Policy Matrix

Policy Area Objective	Prior Actions	Outputs (at DPL ICR date)	Medium Term Outcomes
Policy Area 1 **Comprehensive Policy Framework for the Reduction of Emissions Across Sectors** Implement a verifiable, targeted and cross-sectoral strategy for emission reductions.	1. Approval and publication of the *Special Program for Climate Change* (PECC) in the *Diario Oficial de la Federación.*	1a. Completion of the National Emissions Inventory (*Inventario Nacional de Emisiones*) which serves as basis of 4th Communication. 1b. Submission by the Government of the 4th National Communication to the UNFCCC.	1. Reduction of emissions of $MtCO_2e$ according to PECC plan. For the electricity sector, the goals are defined in M.14-18 of the PECC for RE and in M.36-37 and 44 for EE. In the transport sector, goals are defined in M.24-M.35 of the PECC. [9]
	Urban Transport		
Policy Area 2 **Enabling and Monitoring Framework for the Reduction of Emissions in Transport and Energy.** Establish institutions, regulations and monitoring capacity to allow for the reduction of emissions in urban transport, energy generation and efficiency.	2a. Resolution for the establishment of PROTRAM in accordance with PROTRAM Guidelines and FONADIN's participation in the Consultative Working Group (*Grupo de Trabajo Consultivo*) of PROTRAM.	2a(i). PROTRAM has adopted guidelines for urban transport planning that mainstream climate change. 2a(ii). PROTRAM has adopted methodology guidelines for developing corridor emission baselines.	2a. Municipalities' programs for urban transport incorporate sustainability and climate change considerations.
	Energy		
	2b. Energy Efficiency Law passed; CONUEE created. 2c. Renewable Energy Law passed.	2b&c. Regulations defining the terms of the two laws. 2b&c. Development of methodologies for the quantification of GHG for the exploitation, production, transformation, distribution, and consumption of energy, as well as for the avoided emissions.	2b&c. An effective regulatory framework that promotes energy efficiency and renewable energy. 2b&c. Annual Evaluation Report by SEMARNAT of GHG emissions in the energy sector.

[9] "M." = "*Meta*" or "Goal" as defined in the PECC.

Policy Area Objective	Prior Actions	Outputs (at DPL ICR date)	Medium Term Outcomes
Policy Area 3 ***Establishment of Financing Mechanisms to Facilitate the Reduction of Emissions in Transport and Energy.*** Institutionalize the appropriate financing mechanisms to allow for the reduction of emissions in urban transport, energy generation and efficiency.	***Urban Transport***		
	3a. Presidential Decree, Fourth Modifying Agreement, and Operating Rules establishing FONADIN.	3a. FONADIN's technical committee approves funding for urban transport programs that incorporate climate change considerations.	3a. FONADIN has evolved into a source of funding that facilitates sustainability and climate change considerations for municipalities preparing their mass transit support programs.
	Energy		
	3b. Establishment of the Fund for Energy Transition & the Sustainable Use of Energy; and the promulgation of regulations to define the Fund's operations.	3b. The Fund has been capitalized so as to finance at least one pilot project in Energy Efficiency. 3c. The Technical Committee, chaired by SENER, has developed a publicly available inventory, including geographical mapping, of projects eligible for financing from the Fund.	3b. Increase electricity generation from renewable sources as established in M. 14-18 of the PECC by end-2012.

Annex 5: Project Costs

MEXICO: URBAN TRANSPORT TRANSFORMATION PROJECT

Indicative Project Cost By Component and/or Activity	Local	Foreign to Private sector*	Foreign to Public Sector*	Total
	Local US $million	Foreign US $million	Foreign US $million	Total US $million
IBRD Loan		$28	$122	$150
CTF Loan		$76	$124	$200
FONADIN/PROTRAM	$768			$768
States and Municipalities	$738			$738
Private Sector	$839			$839
Total Baseline Cost	$2,344	$104	$246	$2,694

*Distribution of foreign funds between private and public sector is indicative only and might change during implementation

Project Components	CTF (M)	IBRD (M)	Fonadin/ Protram (M)	State/Municipalities (M)*	Private Sector (M)*	TOTAL (M)
1. Capacity Building	$5	$5		$15		$25
2. Development of Integrated Transit Systems that reduce CO2 emissions						
2a. Mass transit corridors and ancillary investments	$106	$110	$768	$664	$128	$1,776
2.b.i Low carbon bus technologies	$76	$28			$696*	$800
2.b.ii Scrapping of displaced buses	$13	$7		$46		$66
3. Project Management	$0	$0		$27		$27
Total	$200	$150	$768	$752	$824	$2,694

*The private sector counterpart funds, will finance both low carbon bus technologies and conventional technologies.

*The distribution between components might change with prior no-objection from the Bank.

Annex 6: Implementation Arrangements and Operating Regulations
MEXICO: URBAN TRANSPORT TRANSFORMATION PROJECT

A. Introduction

1. This Annex presents the project implementation arrangements and operating regulations for granting credits. The UTTP is part of PROTRAM and will follow the procedures and guidelines of PROTRAM as well as the operating regulations proposed for the UTTP agreed upon by SCHP and the Bank. The Operational Manual and its adoption by the PROTRAM is a condition for effectiveness. Also, to make operational the UTTP, there is an Addendum to PROTRAM that needs to be approved by FONADIN and it is also a condition for effectiveness.

2. The Operating Regulations as laid out in the Operational Manual govern the design, selection and execution of the UTTP sub-projects, covering all the operational aspects applicable to Credits under the Project (IBRD and CTF). These include both the city and sub-project eligibility criteria, safeguards requirements, credit terms, conditions and on-lending arrangements, procurement arrangements, disbursements and financial management arrangements.

B. KEY INSTITUTIONS INVOLVED

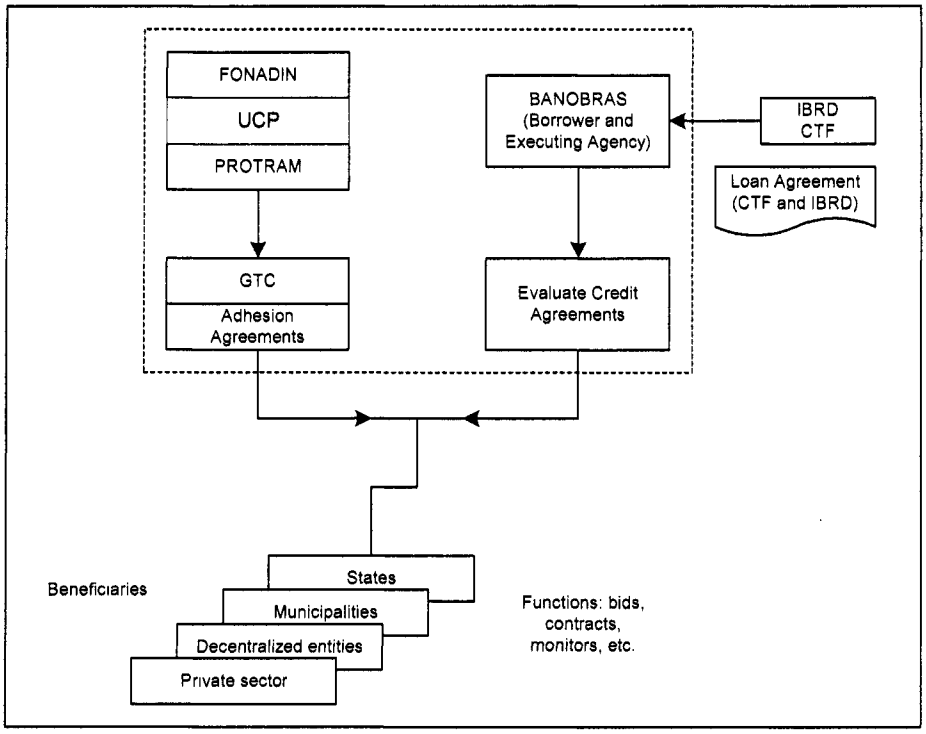
3. Figure 1, outlines the institutional arrangements for the execution of sub-projects under the UTTP. Key institutions involved and their roles are presented below:

4. **Banco Nacional de Obras y Servicios Públicos S. N. C. (BANOBRAS)** is a federal development bank responsible for managing development-related sub-projects that receive both national and external financing. BANOBRAS will be the project executing entity, the borrower and the recipient of the IBRD and CTF loans. BANOBRAS also houses and manages the funds of FONADIN and PROTRAM.

5. **The National Infrastructure Fund (Fondo Nacional de Infraestructura or FONADIN),** managed by BANOBRAS, is entrusted with financing, through grants and loans to municipalities and loan guarantees to the private sector, planning studies as well as capital expenditures on infrastructure and equipment. FONADIN results from an unprecedented effort of the Government of Mexico to promote economic competitiveness in the areas of health, education and public services, as well as promoting the modernization of urban transport, highways, ports, airports, energy, and the hydraulic sector. FONADIN funding comes from proceeds from the concessioning of a package of inter-municipal roads, namely the Trust for Supporting the Recovery of Licensed Highways (Fideicomiso de Apoyo al Rescate de Autopistas Concesionadas or FARAC) and the Infrastructure Investment Fund (Fondo de Inversión en Infraestructura or FINFRA). This first capitalization of FONADIN amounted to over US$ 3 billion. As part of FONADIN, PROTRAM follows the funds guidelines in combination with its own implementing rules and regulations enacted in December 2008, leveraging various forms of private sector participation in developing mass transit programs.

6. BANOBRAS, through the UC within FONADIN, will coordinate and monitor the UTTP and will have responsibility for analyzing credit capacity of the recipients as well as financial management and procurement when applicable, closely supervising project implementation, and ensuring compliance with Bank Guidelines and agreed operational procedures. The technical aspects of the sub-projects will be the responsibility of BANOBRAS through the UC with the advice of the GTC. BANOBRAS will be responsible for procurement and financial management oversight, and credit monitoring and evaluation of sub-projects. BANOBRAS will also be responsible for all formal correspondence with the Bank as well as performing prior review for terms of reference, consultants' services, civil works and other procurement activities carried out by the recipient of the credits.

Figure 1. Institutional Arrangements of the UTTP



7. Sub-project technical evaluation will be carried out by the UC with the advice of the GTC. The UC will coordinate the inputs from SCT and/or SEDESOL for urban transport and urban development; SEDESOL for social safeguard issues; and SEMARNAT for environmental safeguard issues. With the inputs from the aforementioned agencies, the GTC will advice BANOBRAS that urban transport sub-projects comply with technical and financial standards, and social and environmental safeguards. Once the subproject has been registered in the Investment Unit of SHCP (if applicable), and once approved from a technical point of view, the business unit of BANOBRAS presents the sub-project to BANOBRAS' internal decision committees for the approval of the credit to the beneficiary.

8. **The Secretaria de Desarrollo Social (SEDESOL)** is a federal agency with some responsibilities for urban transport in Mexico, through its Directorate of Infrastructure and Transport. SEDESOL (and SCT) could provide the technical input for GTC to give no objection to the PIMUS, ITP or equivalent, and various studies produced along the project cycle, the Project Concept Document, the Project Evaluation Document and the Project Evaluation Report. SEDESOL will also give no objection to the social impact categorization, the resettlement plans, the historic monuments protection plan, among others as described in the MASTU.

9. **The Secretaria de Medio Ambiente y Recursos Naturales (SEMARNAT)** is a federal agency responsible for the protection of the ecosystems and of the natural resources. As a member of GTC, SEMARNAT will supervise the fulfillment of the MASTU procedures in the sub-projects during sub-project preparation, approval and implementation. SEMARNAT will also approve the Environmental Assessment Studies and will provide no objection to the environmental impact categorization of the sub-projects. Overall, SEMARNAT can also asses all environmental-related issues to sub-project finance under the UTTP.

10. **The Secretaria de Comunicaciones y Transporte (SCT)** is a federal agency responsible for transport in Mexico. SCT (or SEDESOL) as sector coordinator will give its opinion on technical feasibility of subprojects and will be in charge of sending the cost-benefit analysis of sub-projects for registration in the Investments Unit of SHCP (when applicable). The SCT could provide the technical input for GTC to give no objection to sub-projects, specifically the approval of the Project Concept Document, the Project Evaluation Document and the Project Evaluation Report, documents described in detail in the Operational Manual. Also, the SCT could also provide technical inputs for urban transports projects and supervise sub-project implementation, when appropriate.

11. **Credit Agreements:** The credit agreement will define the objective of the sub-project, financing allocations, terms and conditions of credits for CTF as well as for IBRD funds, the roles and responsibilities, resource requirements, FONADIN and other co-financing resources if applicable, and the expected result indicators. The recipient of the credits will manage and implement the sub-projects, and will: (i) comply with safeguards (as established in the MASTU see Annex 10 for details) in sub-project preparation and implementation; and (ii) follow the procurement regulations and fiduciary procedures set in the Operational Manual approved by the Bank and CTF, including the Bank's anticorruption guidelines. Every credit agreement will be prepared and submitted by BANOBRAS for Bank's no objection.

12. **Coordination with the UC, GTC and BANOBRAS.** The UC and the GTC have been formalized as part of operation entities of UTTP in the Operational Manual and in the Addendum to PROTRAM guidelines. The UC will review and clear technical and economic studies prepared by the beneficiary cities and will incorporate reviews and recommendations about urban planning, transport matters and safeguards aspects, discussed and approved in the GTC by SEDESOL, SEMARNAT, and SCT, according to

their defined roles in the PROTRAM's guidelines and the Operational Manual of the project. The UC with the advice of the GTC, will submitted approved sub-projects for the assessment of BANOBRAS.

13. **The credit Recipients/Beneficiaries** (States, Cities, Decentralized entities, and the Private Sector) through their promoter will be specifically responsible for:

- Preparing required documentation: (City Summary, PIMU, Project Concept Document (DCP), Project Evaluation Document (DEP), Project Evaluation Report and CTF related summary, see below and Appendix to Annex 6).
- Social and environmental impact assessment and related studies along the project cycle as established in the MASTU.
- Signing the contracts with FONADIN and BANOBRAS.
- Carrying out procurement processes for consulting services, goods and works, in accordance with credit agreements and the Operational Manual.
- Making payments to consultants and contractors.
- Sub-project credit administration and accounting.
- Supervising contracted services and evaluation of outputs and outcomes.
- Compliance with the UTTP operating regulations and the operational manual of the Project.

C. AREAS ELIGIBLE FOR BANK SUPPORT

1. General World Bank Criteria

14. Documentation submitted for enrolling in the project, should include: (i) environmental and social sustainability (all environmental impacts assessments and required studies according to impact category following MASTU guidelines), (ii) economic viability (ERR of at least 12%), (iii) financial capacity and affordability, (iv) institutional and financial arrangements, and (v) other criteria specified in the operating regulations.

2. Areas for Action Under this Project

15. Projects eligible for bank support must contribute to the transformation of urban transport in Mexican cities to a lower-carbon growth path by improving the quality and sustainability of urban transport systems and services. The areas for action under this project include:

I. Institutional strengthening at the state/metropolitan/municipal level to effectively plan, develop and implement projects under this project;
II. Preparation, update and/or completion, of PIMUS, ITP or equivalent to include climate change considerations;
III. Planning, design, construction, supervision and maintenance of integrated mass transit systems and public transport reform, including but not limited to: trunk lines, feeder roads, terminals, yards, transfer and access stations, adjacent mixed

traffic lanes, rolling stock, signaling, control centers, information systems, environmental monitoring equipment, fare collection systems, and no motorized transport systems;

IV. Improvement of sector-wide environmental and social frameworks for analysis;
V. Assessments of urban transport legal framework.
VI. Mainstreaming air quality and climate change considerations into state/metropolitan/municipal urban transport planning and project implementation (including the implementation of environmental monitoring systems and actions to bring about environmental improvements);
VII. Development and implementation of financial mechanisms for bus replacement and vehicle scrapping programs;
VIII. Studies to address and action to improve special Mexican issues such as: organization of private operators, suburban trains, metro viability, pricing and subsidies issues, among others; and
IX. Road improvement in poor urban areas in the city fringes to serve feeder lines.
X. Development of financial, legal and administrative mechanism to insure project sustainability and of the services provided as well as to comply with conditions of efficiency and high technical standards.

3. Financing of Low Carbon Technologies (Hybrid or Equivalent Technology in Terms of GHG Reduction Potential).

16. The Financing Scheme for Low Carbon Technologies is as follows:

(i) Banobras on-lending for low carbon technologies (Hybrid or equivalent technology in terms of GHG reduction potential).

(ii) Banobras can use repayments of these credits for the same purposes -- i.e. financing to replace the 30% of the fleet consisting of vehicles that are no more carbon intensive than the original hybrids or equivalent technology in terms of GHG reduction potential that were financed from the CTF loan.

(ii) The proposed arrangements for financing buses must be consistent with Bank policies and procedures.

4. Scrapping of Old Buses

17. The beneficiary cities, whose BRT's project is being financed by the UTTP, may scrap the buses with an age more than 10 years in order to access to the financing for the Hybrid Buses.

5. Long-Term Sustainability of the Sub-Projects

18. In order to ensure sustainability of sub-projects developed under the areas aforementioned, a vision of long-term planning is required. The sub-project cycle,

described in Annex 6, will describe some of the tools that credit beneficiaries can use to gauge the sustainability of their sub-projects.

D. PROJECT DOCUMENTATION, PLANNING AND REPORTING

19. The Operational Manual of the UTTP is under preparation and the final version will require no objection by the Bank. The Operational Manual details the rules and regulations, and framework organization for granting the credits. Also, it details: (i) the sub-project cycle; (ii) the technical, financial, environmental, social and procurement aspects; (iii) the responsibilities of BANOBRAS; UC and GTC; and (iv) the sub-project implementation unit minimal requirements (organizational structure for sub-project implementation, procedures for using and complying with MASTU, procurement norms (prior and ex-post reviews), monitoring and evaluation, institutional arrangements, environmental reviews, human resources, and financial management, among others).

E. CREDIT OPERATING REGULATIONS

1. Lending Instruments

20. The Credits shall be offered to candidate cities by BANOBRAS making use of the long-term financing being made available from the IBRD and the CTF funds in accordance to both Bank and BANOBRAS requirements.

2. Modality of Operation

21. The overall UTTP modality will be to provide IBRD and CTF long-term finance to eligible states, cities, agencies and the private sector to finance preparation and execution of urban transport sub-projects. The relevant agency (city, region, state, etc) will commit to or submit a PIMUS, ITP or equivalent that will set out the broad rationale and key elements of their urban transport transformation project. The city can seek funding for carrying out the studies necessary to craft a PIMUS, ITP or equivalent. The candidate agency can also request for financing for the preparation studies of a sub-project, in which case it will submit a Project Concept Document (DCP in Spanish). Finally, if the city has a project that is ready for implementation then it can request financing by submitting a Project Evaluation Document (DEP in Spanish) and required safeguards documents as established in the MASTU. These sub-projects represent the priority elements of the PIMUS, ITP or equivalent and will be laid out in terms of financial and technical requirements, and indicators to be achieved during the sub-project investment period. The design of the sub-projects will follow PROTRAM/UTTP guidelines and the MASTU guidelines, as detailed in the Operational Manual of the UTTP that is being prepared by BANOBRAS.

22. The loan amount allocated to each sub-project shall be assessed by BANOBRAS and must receive no objection from the Bank, when there are IBRD and CTF funds. The credit amount will be based on the financing share requested by the city, the total size of urban transport investment needs, the associated estimated financing gap –between

FONADIN, CTF, IBRD, and the local counterpart– after taking into account other sources. Details of the procedures are presented in the Project Operational Manual.

23. In screening sub-project proposals, BANOBRAS, through the UC, shall verify that candidate cities have prepared satisfactory, coherent and well integrated urban transport sub-projects that comply with sub-project eligibility criteria, including the MASTU requirements. BANOBRAS will verify also that the Credit recipients have the capacity to execute sub-projects as well as the capacity to comply with fiduciary and procurement aspects of the financed sub-projects.

3. Types of Sub-Projects

24. Mexican cities meeting the criteria, described below, will be eligible for financing: (a) the studies to prepare an PIMUS, ITP or equivalent and project concept document; (b) preparation of feasibility studies and Project Evaluation Document (DEP, in Spanish), including final designs of bus corridors and other related investment actions to resolve specific urban transport problems; (c) sub-project implementation proposals and any PIMUS, ITP or equivalent recommendations (e.g. bus fleet replacement and scrapping), among others; (d) social and environmental assessment and preparation of follow up studies according to subproject category as established in the MASTU, and (e) any other activity detailed in this annex in the section "Areas for action under this project," above.

25. In general the UTTP will provide credit to cover the financial gap of PROTRAM's eligible sub-projects. In addition, the UTTP will finance sub-projects that do not meet the 35% private sector participation requirement proposed under the PROTRAM guidelines as well as line of credit for the purchase of low carbon technologies (Hybrid buses or equivalent in GHG reduction potential). Furthermore, the project will finance private sector investment activities.

4. City Eligibility Criteria

26. Participation in the PROTRAM/UTTP by Mexican cities (represented by the municipal or state government) will depend on the fulfillment of eligibility criteria. The financing of any credit with Bank and CTF funds will require the prior approval by the Bank of the DCP and the DEP. Notwithstanding these criteria for city eligibility, a city can still access the project by requesting funding for preparing a PIMUS, ITP or equivalent. The following are the criteria for city eligibility, based on the sub-project cycle presented below in the appendix.

At the Identification and Preparation Phases

a) **Commitment to Prepare or Availability of an Integral Mobility Urban Plan (PIMUS), ITP or Equivalent.** The PIMUS, ITP or equivalent will show how the city will transform its urban transport sector to a lower-carbon growth path. Specific terms of reference for each city, acceptable to the Bank, will be prepared by the city

with the assistance of the SCT (or SEDESOL) and UC. These Terms of Reference will include among others requirements to analyze and make recommendations with respect to: (a) institutional and legal reform; (b) public transport reform including mass transit and fare schemes; (c) traffic management; (d) improvements to corridors serving low income areas; (e) infrastructure maintenance; (f) road rehabilitation and improvement, and (f) environmental issues related to road transport, including climate change considerations. The state or municipalities will be required to make a commitment to use their transport planning office. In many cases the city will only need to update an existing PIMUS, ITP or equivalent and expand it to include an assessment of its climate change implications and to design the strategy for low-carbon growth path.

b) **Preparation of the Project Concept Document.** Prior to financing feasibility studies, the cities, municipalities and states, must prepare a DCP, whose contents are described in the Operational Manual. The DCP will be approved by the UC and BANOBRAS, and will require having the no objection from the Bank.

c) **Subproject Environmental and Social Category.** Based on preliminary social and environmental studies, the cities or municipalities must evaluate and determine the sub-project environmental category, which will be presented to the UC and GTC for their approval. Sub-project Proposals must comply with the environmental and social requirements of the MASTU.

At the Evaluation Phase

a) **Preparation of the Project Evaluation Document (DEP, in Spanish).** Prior to credit approval, the cities, municipalities and states must prepare a DEP, whose outline and contents are described in the Operational Manual. The DEP must be approved by the UC, with the support of GTC, and receive no objection from the Bank.

b) **Credit Financial Capacity to Repay Debt.** BANOBRAS will evaluate the city's capacity to undertake the debt through its internal procedures, when applicable.

At Conditions for Subproject Credit Effectiveness

a) **Administrative Capacity and Ability to Undertake the Sub-Project**, when appropriate by the creation of a fully staffed sub-project management unit, and to meet all the on-going conditions of participation, and demonstrate that a credit agreement with BANOBRAS will be executed in line with the standard requirements of the Bank for such agreements, including the fiduciary aspects proposed in the Operational Manual.

b) **Approval of Procurement Plan.** The sub-project procurement plan will require a no objection from the Bank. The procurement is an annex to the DEP.

5. Sub-Project Eligibility Criteria

27. Financing will be considered on the basis of comprehensive well integrated sub-project proposals and the sub-projects must comply with eligibility criteria. Detailed eligibility criteria for sub-projects finance with CTF and IBRD funds are:

a) Sub-projects must comply with the objectives of the PIMUS, ITP or equivalent of the city.
b) Sub-projects must ensure: (i) an ERR of at least 12%; and (ii) that any significant negative environmental impacts are identified and necessary mitigating measures proposed as prescribed under the MASTU. For social aspects, when resettlement is expected, all reasonable alternatives to any sub-project component which involves the displacement of population should have been reviewed and found to be inferior to that proposed, and that the affected community should have been given an adequate opportunity to comment on the proposed sub-project.
c) Investment sub-projects must have final engineering and bid documentation for investment components comprising a minimum of 20% of the sub-project, to reduce the risk of slow implementation of sub-projects.
d) Include any necessary complementary institutional and policy actions plan for successful implementation and operation of the subprojects.

28. Bank and CTF funds can finance one or several investment activities of a given PIMUS, ITP or equivalent in which there is a mass transit intervention, including financing for private sector participation. However, it will be required that the subproject be evaluated as a whole even when financing one component or subcomponent, the subproject will follow only the procurement norms of the activity that is being financed; the subproject as a whole must comply with the MASTU and its mitigation measures and consultation procedures.

6. Financing Blend

29. Once sub-projects are prepared according to UTTP requirements, they can be financed entirely by IBRD and CTF using a 43:57 blend at the project level (For details on blending by component refer to Annex 5). Or the municipalities/state/private sector can contribute part of the investment costs, for example, 40:40:20 as sourced from the CTF, IBRD and the municipality/state/private sector, respectively. For cities of Federal emphasis, that have more than 500,000 inhabitants, and when there will be private sector participation of 35%, up to 50% of the costs for its mass corridor improvement can be provided as a grant by FONADIN/PROTRAM. Hence, various blends of FONADIN, CTF and IBRD financing are possible. For the IBRD/CTF there are neither city size or private sector requirements nor a focus on financing the main corridor.

30. Financing only for bus replacement subprojects as recommended in their PIMUS, ITP or equivalent is acceptable, provided that the buses to be introduced will have substantially higher fuel efficiency per passenger-km than those being replaced. that the

displaced fleet, whose age is more than 10 years old is scrapped, and the scheme contributes to substantial modal shift, for example as part of BRT project. Applicants may need to post a significant Bond or other financial instrument with BANOBRAS that may only be returned to them upon adequate evidence that the old buses have been scrapped.

7. Credit Agreement

31. Once the sub-project is deemed technically, financially, economically and environmentally viable and a Credit is approved by BANOBRAS and has no objection of the Bank, this will be reflected in the form of: (i) a formal Credit agreement between the Credit recipient and BANOBRAS for making available specified amounts; and (ii) the terms and conditions of financing the sub-project. The credit agreement will mention also the finally agreed blending or "mezcla de recursos" and the Bank no objection.

8. Sub-Project Cycle

32. Cities will be encouraged to follow a logical sub-project cycle. During earlier Project preparation, several seminars and workshops will take place with candidate cities to explain the Bank's sub-project cycle and PIMUS, ITP or equivalent to encourage them to develop their own so as to help mainstream safeguards procedures and also to produce their own DCPs and DEPs. A recommended sub-project cycle is summarized at the end of this section as an appendix.

9. Fiduciary Aspects of Sub-Project

33. The city executing agencies will perform the following activities once a credit is approved: prepare Terms of Reference and procurement plan, procure and execute bid processes, sign contracts and supervise contracts and consulting services, disburse funds, implement financial management and other technical and fiduciary aspects. The operational manual for the UTTP will also contain for the credit beneficiaries: (a) financial management, disbursement, and procurement arrangements; (b) description of the sub-project team organization or requirements to administer and execute sub-projects approved; and (c) applicable safeguard documents, including the social aspects and environmental management plan (MASTU), among others.

10. Monitoring and Evaluation

34. The monitoring and evaluation (M&E) framework will track progress in implementation, measure intermediate outputs, outcomes, and evaluate sub-project impacts, when possible. The project framework outlines key performance indicators, data collection methods, a timetable for collection, and responsible agencies. This framework will be used to supervise and monitor the implementation of the project. BANOBRAS with the support of the UC will develop the required monitoring and evaluation capabilities so it can assume this coordinating role.

35. BANOBRAS (supported by the UC) will be responsible for the overall management and implementation of the Project Monitoring and Evaluation Framework. This will include maintaining the databases, managing the flow of information, and producing periodic monitoring reports. It will be responsible directly for the Progress reports and the results-based M&E. The beneficiary cities will have a key role in providing timely information and monitoring reports with operational data. Bank supervision teams will provide technical assistance for the implementation of the tools and for the design and analysis of the information.

36. Moreover, each credit or approved sub-project would have its own Results Framework of objectives, end-of-sub-project outcome indicators, and intermediate indicators. The eligible cities or the entities, as sub-project implementing agencies, would have the main responsibility for data collection and reporting on their sub-project results. The knowledge sharing among beneficiary cities/sub-projects would be aggregated to evaluate the indicator data at the project level for wider policy analysis and dissemination. To the extent possible, common sub-project indicators would be used to permit comparison and aggregation.

APPENDIX to ANNEX 6
CITY SUB-PROJECT CYCLE

1. The development of a sub-project financed by the UTTP must follow certain guidelines and procedures to guarantee its successful implementation. The traditional sub-project cycle comprises six phases: (1) Identification, (2) Preparation, (3) Evaluation, (4) Revision, (5) Implementation, and (6) Evaluation. In order to complete the sub-project cycle, it is important for a city to understand where it stands. For that it is critical to make sure that basic elements of sustainability exist and that the identification, preparation, evaluation, revision, implementation and evaluation phases are completed in a way that maximizes the chances of achieving the project development goals. The identification phase describes the tools to correctly identify and assess the potential sub-projects and the state of readiness. See sub-project cycle diagram at the end of this appendix.

1. Identification Phase

2. **Preparation of an Institutional Diagnosis.** The complexity of urban transport projects calls for highly coordinated institutional arrangements. Therefore, during sub-project preparation a major requirement is carrying out an Institutional Diagnosis that examines the institutions involved in the urban transport sector and their role, to determine what agencies will have the leadership role over the different aspects of the sub-project. The cities complete this diagnostic through the preparation of a questionnaire that among others will address: (i) which are the major public and or private institutions involved in the provision of urban transport at the different government levels and what are their responsibilities: (ii) which are the various jurisdictions involved; (iii) capacity of staff within the various organizations; (iv) what are the processes and procedures that operate between agencies and how do they work; (v) what are the instruments agencies have such as budgets, studies, plans, etc.; (vi) how are these institutions financed and how to these finance their sub-projects.

3. **Completion of the "Ficha de Autodiagnóstico".** The completion of a "Ficha de Autodiagnostico" will allow cities to identify at which stage within the sub-project cycle they are and to plan the aspects where they will need to request assistance from the designated technical agency. The "ficha de autodiagnostico" will outline in the form of a checklist the key milestones throughout the various phases in the sub-project cycle in key areas (technical, institutional, financial, economic, operational, social, environmental, legal, fiduciary, procurement, and deliverables). A model of the "ficha de autodiagnostico" is in the project file. The UC will provide the Ficha as well as technical assistance to complete it.

4. For example, at the *identification phase,* the "Ficha de Autodiagnostico" will verify the completion of key milestones such as: the readiness of the PIMU, the completion of an origin-destination survey, the preparation of a procurement plan for the studies and consulting services required, and the preparation of a project concept

document (DCP). At the *preparation phase,* the "Ficha de Autodiagnóstico" will go over more specific things such as: the completion of conceptual designs, the preparation of workshops with stakeholders, the preparation of EIA following MASTU guidelines, and the configuration of a technical team of the city responsible for implementation. At the *evaluation phase* the "ficha de autodiagnostico" will go over aspects such as: conclusion of EIAs, financial and economic model for system operation, procurement plan for the subsequent 18 months, among others. Along the same line, the "ficha de autodiagnostico" will highlight the need for completing milestones through the *approval, implementation and ex post evaluation phase.*

5. **Update of PIMUS, ITP or Equivalent.** The backbone of an integrated urban transport, land use, climate and air quality strategy is the PIMUS, ITP or equivalent. Given that any major transport decision has a direct impact on land use, air quality and climate, it is important that municipalities be aware of the long-term nature of these inter-relationships and plan accordingly. The evaluation of different packages of infrastructure investments and policies is crucial in arriving at a PIMUS, ITP or equivalent which provides basic guidance and vision for the future development of the urban transport sector in the municipality or metropolitan region. PIMUS, ITP or equivalent should address at least: (a) institutional and legal reform; (b) public transport reform including mass transit and fare schemes; (c) traffic management; (d) improvements to corridors serving low income areas; (e) infrastructure maintenance; (f) road rehabilitation and improvement, and (f) environmental issues related to road transport, including climate change considerations.

6. **Project Concept Document (DCP)[10].** A Project Concept Document should be prepared during the identification phase, which includes information on key aspects such as: institutional arrangements, financial plan, tentative schedule, city and sector background, analysis of alternatives considered, scope of the sub-project, sub-project objectives, description and components, and sub-project impacts among others. The DCP should focus on concept, not on design so that there is still space to introduce significant improvements during preparation. This document is prepared by the city.

2. Preparation

7. The local implementing agency or agencies are responsible for the sub-project preparation phase, which involves the development of certain outputs such as feasibility studies and engineering designs, to name only a few. During this phase, the World Bank generally takes an advisory role and offers analysis and advice when requested. The key document to be completed during preparation phase is the DEP.

[10] The Project Concept Document is equivalent to the "Resumen de Plan Integral de Movilidad Urbana Sustentanble"as described in the Guia de Presentación y Evaluación de Proyectos de Infrasestructura de Transporte Masivo (Annex 1 to the Lineamientos del Programa de Transporte Masivo) and in the Lineamientos del Programa de Transporte Masivo

8. **Project Evaluation Document (DEP)**[11]**.** A Project Evaluation Document will be prepared during this phase, building upon the DCP, and it will summarize: (i) general aspects of the sub-project such as institutional arrangements for implementation and definition of the implementing agency; (ii) identification and justification of the sub-project including city diagnosis, current urban transport situation, sub-project objectives, and alternatives assessment; (iii) sub-project formulation which comprises the technical, economical, financial, and operational description of the sub-project, as well as risk, sustainability, environmental and social assessment and plan. This document is prepared by the city.

3. Evaluation and Approval Phase

9. The evaluation phase gives stakeholders an opportunity to review the sub-project design in detail and resolve any outstanding questions. BANOBRAS, through the advice of the GTC, the UC, and the World Bank, reviews the work done during the identification and preparation phases and confirms that: (i) the sub-project is aligned with the Urban Transport Transformation Project; (ii) the sub-project is consistent with BANOBRAS and PROTRAM guidelines, with the MASTU, and World Bank operation regulations; and (iii) the institutional arrangements and procurement and fiduciary aspects are in place to implement the sub-project efficiently.

10. At the end of the approval phase the sub-projects have an approved DEP, a registration number in the investment unit of SHCP, when there is financing of subproject with federal funds, a positive evaluation of credit capacity by BANOBRAS, and a positive evaluation of financing structuring by UC. UTTP's subprojects that have federal financing will require to be approved by the Technical Committee of FONADIN.

4. Implementation Monitoring and Supervision

11. The implementation, monitoring and supervision phase starts with a credit agreement between the sub-project promoter and BANOBRAS that has the no-objection from the World Bank. During this phase executive projects are prepared, terms of reference for works, goods and service contracts are developed, bidding processes are procured and executed, contracts are signed, and funds are disbursed. The World Bank, BANOBRAS, and UC will supervise the compliance of the sub-project with social and environmental safeguards, as well as with financial and procurement guidelines. Monitoring as described on annex 3 is carried out by the UC supported by the city executing agencies. Aggregated biannual reports are submitted by BANOBRAS to the World Bank.

[11] The Project Evaluation Document is equivalent to the "Estudio de factibilidad del Proyecto de Infraestructura del Transporte Masivo " described in the Guia de Presentación y Evaluación de Proyectos de Infraestructura de Transporte Masivo (Annex 1 to the Lineamientos del Programa de Transporte Masivo) and in the Lineamientos del Programa de Transporte Masivo

5. Evaluation Phase

12. The evaluation phase will help the World Bank and the BANOBRAS to measure each sub-project outcomes against its objectives at the technical, institutional, financial, economical, environmental, and social level. Two types of documents will be developed at this phase: (i) Project Evaluation Report, which is the responsibility of each sub-project promoter and will be submitted to UC; and (ii) the Consolidated Project Completion Report which is prepared by the BANOBRAS and submitted to the World Bank for its approval.

PROTRAM/UTTP Sub-Project Cycle

Phase 1: Identification and Promotion	Phase 2: Preparation	Phase 3: Evaluation and Approval	Phase 4: Implementation, Monitoring and Supervision	Phase 5: Evaluation
1.1. Promotion of PROTRAM/PTTU (UCP)	2.1 DCP approval (GTC-No Objection BIRF)	3.1. DEP Approval (GTC-No Objection BIRF)	4.1. Credit approval (No Objection BIRF)	5.1. Preparation of Project Completion Report (Promoter)
1.2. Development of "Ficha de Autodiagnóstico" (Promoter)	2 2. Financing approval for studies (FONADIN-BANOBRAS)	3.2. Socioeconomic evaluation, registration at Investment Unit SCHP * (SEDESOL-STC)	4.2. Supervision of compliance with effectiveness conditions (BANOBRAS)	5.2. Approval of individual Project Completion Report (UCP)
1.3. Preparation/update of ITP/PIMUS (Promoter)	2 3 1. Signing of Agreement to Support Studies (FONADIN) 2.3.2. Signing of credit agreement for preparation and studies (BANOBRAS)	3.3. Evaluation and financing structuring (FONADIN and UCP)	4.3. Preparation of projects, technical specifications and ToRs for worksk, goods and services contracts (Promoter)	5.3. Consolidated Program Completion Report send to BIRF (UCP)
1.4. Approval of ITP/PIMUS (GTC)	2.4. Preparation of preliminary project studies (Promoter)	3.4. Credit evaluation (BANOBRAS)	4.4.1. Technical support (UCP, GTC and BIRF) 4.4.2. Supervision of compliance with social and environmental safeguards (GTC, BIRF) 4.4.3. Supervision of compliance with procurement and financial management (BANOBRAS, BIRF)	
1.5. Preparation of Project Concept Document-DCP (Promoter)	2.5. Evaluation of EIA and mitigation plans (GTC) Preparation of further studies based on category (Promoter)	3.5.1. Approval of support agreement (FONADIN) * 3.5.2. Approval of credit agreement (BANOBRAS)	4.5.1. Monitoring and evaluation reports (Promoters) 4.5.2. Disbursements (FONADIN, BANOBRAS, BIRF) 4.5.3. Monitoring and evaluation report to BIRF (UCP)	
1.6. Approval of social, technical and evironmental studies and selection of project category (GTC)	2.6. Preparation of Project Evaluation Document - DEP (Promoter)			

* Only if sub-project is cofinanced by FONADIN.

Annex 7: Financial Management and Disbursement Arrangements
MÉXICO: URBAN TRANSPORT TRANSFORMATION PROJECT

1. **Introduction**. This annex documents the results of the Financial Management (FM) Assessment of the Mexico: Urban Transport Transformation (UTT) Project (the Project), as conducted by Bank staff in accordance with OP/BP 10.02 and Guidelines for Assessment of Financial Management Arrangements in World Bank-Financed Projects. It also takes account the considerable experience of BANOBRAS to manage Bank's resources.

2. **Summary**. The fact that project expenditures will be carried out by the eligible beneficiaries (States, Municipalities and transport operators, which will be granted with credit facilities by BANOBRAS), with no relevant experience with Bank-financed projects, poses a challenge in terms of financial management design. In light of the size and complexity of the proposed operation, the inherent FM risk is deemed Substantial.

3. The mitigating control factors described in this Annex include:

(i) Strong country Public FM arrangements;
(ii) The subprojects' budget will be controlled and monitored through an Annual Operations Plan (POA, according to its acronym in Spanish), prepared by each of the eligible beneficiaries and approved by the Bank;
(iii) Loan withdraws and Project Account activity will be included in BANOBRAS' central accounting system and incorporated in Project financial statements and audit;
(iv) The eligible beneficiaries will be responsible for keeping files of all the supporting documentation of the project's expenditures;
(v) Project Financial Statements, and Bank/Project Accounts will be subject to external audits on an annual basis, performed by auditors acceptable to the Bank;
(vi) BANOBRAS will prepare and submit to the Bank quarterly non-audited Interim Financial Reports (IFRs);
(vii) BANOBRAS' Internal Audit Unit is responsible for following up all findings identified by external auditors; the project is subject to internal auditing procedures according to Public Audit Standards and Guidelines;
(viii) In some specific cases, as described in the project operational manual, once the participation of an eligible beneficiary is confirmed, a specific FM assessment will be carried out in accordance with the Bank policy by BANOBRAS and reviewed by the Bank (this will be a condition for disbursement);

4. The supervision strategy from the Bank to this project will include at least one full FM supervision mission per year. At the end of each mission a FM rating for the Implementation Status and Results (ISR) will be recommended and the FM-related risk will be updated as needed. Therefore, the residual FM risk, i.e. the inherent risk as mitigated by project-specific controls and Bank supervision, will be moderate after mitigation.

5. The Project FM arrangements, as described herein, are consistent with Bank policy. The agreed pending actions are: (i) Define and agree a methodology for the FM Assessments that will be applied in some cases as established in the operational manual, which will be carried out by

BANOBRAS before granting a credit facility, and subject to Bank's review [as disbursement condition]; (ii) preparation of the Project Operations Manual, which must include a specific FM section acceptable by the Bank [the operational manual will be a condition for effectiveness].

Description and Assessment of Project FM arrangements

6. **Country issues relevant to the Project.** In general, public financial management in the Mexican Federal Administration relies on strong budgeting, treasury, accounting and control systems. These FM country systems partially apply to the Project, because BANOBRAS will be the recipient of the project funds, which later would be transferred to eligible beneficiaries through BANOBRAS' credit program. Moreover, specific financial reporting and auditing arrangements for subprojects financed by BANOBRAS have been agreed with the government.

7. **Implementing entity.** The loan recipient will be BANOBRAS, and the loans will be granted to eligible beneficiaries based on a technical and debt capacity analysis. Previous to the disbursement of sub-loans BANOBRAS will conduct a specific FM Assessment (FMAs) in accordance with Bank policy and subject to the Bank's review, by the application of a methodology agreed between the Bank and BANOBRAS, which will be documented in the operational manual.

8. As an exception of the above mentioned policy, the Bank and BANOBRAS have agreed that the FMA will not be applied to the States and Municipalities that: (i) have been rated by at least one of the three following rating agencies: Standard & Poor's, Moody's and Fitch, and (ii) the rating does not implies that the entity is on default or with a possibility of default. These conditions will need to be demonstrated by BANOBRAS to the Bank previous to the disbursement of the specific sub-loans, and the methodology will be also reflected in the operational manual.

9. **Financial administration**. As borrower, BANOBRAS will manage loan disbursement processes, prepare consolidated financial quarterly reports and annual audited financial statements and provide other implementation support and oversight, based on its many years of experience with Bank-financed projects.

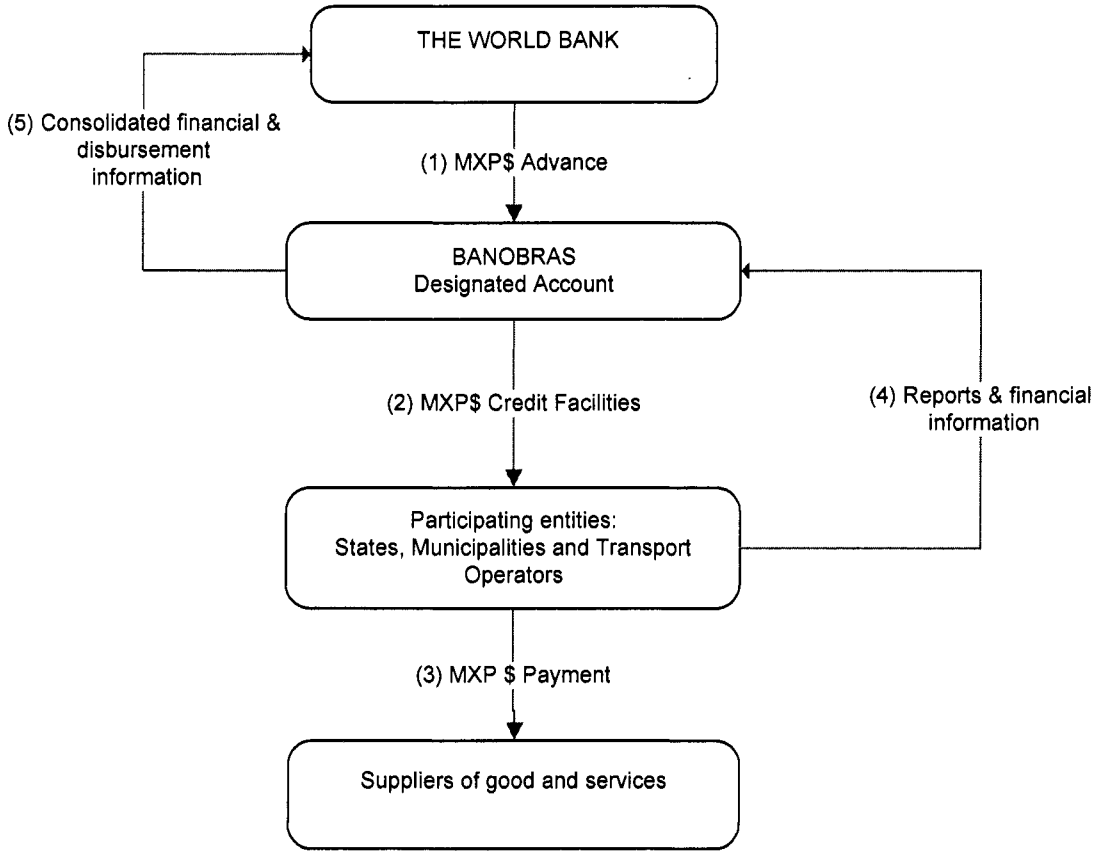
10. **Budgeting arrangements.** The eligible beneficiaries –State, Municipalities, except for the private sector operators– will prepare, among other documents and as condition to be financed by the project an Annual Operations Plan (POA); according to its acronym in Spanish) that will include technical specifications and budget for each subprojects. The POA should be prepared following the functional classification in terms of categories, components, sub-components and activities, defined for such subprojects, and it must be approved by the Bank.

11. **Accounting system.** All the eligible beneficiaries will need to maintain separate records and accounts for the individual subprojects in accordance with the cash basis of accounting relevant to project financial reporting. Administrative procedures will be put in place to ensure that financial transactions are made with consideration to safeguarding assets and ensuring proper entry in the accounting/monitoring systems. In the applicable cases, BANOBRAS will confirm the existence and operation of such systems through the application of the FMAs.

12. The eligible beneficiaries will be responsible for keeping files of all supporting documentation for the project's expenditures. Loan withdraws and Designated Account activity will be included in BANOBRAS' central accounts and will be incorporated in Project financial statements and audit.

13. **Internal control and internal auditing.** BANOBRAS as loan recipient is subject to the Federal Public Administration Internal Control Standards issued by the Public Administration Ministry (SFP, according to its acronym in Spanish), which as a whole provide for sound internal control arrangements. The internal auditing function is carried out by BANOBRAS' Internal Control Unit (OIC, according to its acronym in Spanish), which reports to SFP and must follow the Public Audit Standards and Guidelines issued by SFP. The latter also approves the OIC's work programs on quarter basis, oversees its operation, and receives its audit reports. Acceptable systems are in place for timely follow-up to internal audit observations and implementation of recommendations.

14. **General flow of funds.** The general arrangements, proposed at this stage, are described in the following chart and explained below.



15. With regards to the Designated Accounts for the project, depending on the type of funding mechanism, BANOBRAS will do the following:

- IBRD funds. BANOBRAS may open one or two Designated Accounts: in Mexican Pesos (MXN) and/or in United States Dollars (USD). In the event the borrower chooses to open two accounts – one in USD and another in MXN, and if there is an unutilized balance, in MXN or in USD, at the end of each reporting period, such balance will be deducted from the next advance into the respective Designated Account. The Borrower may submit, together with a signed Application, a duly completed Request (as defined in the Conversion Guidelines) for Conversion of the currency and/or interest rate applicable to the specific withdrawal amount requested in the Application, further details on this process will be included in the Disbursement Letter.
- CTF funds. BANOBRAS will maintain a specific project designated account in MXN.

16. In both cases the funds must follow Bank's disbursement policies and procedures, as they are described in the legal agreement and Disbursement Letter.

17. The disbursement process will be as follows:

- The Bank will disburse against quarterly IFRs. At the outset of the project BANOBRAS will make a request according to the cash projections for the following 6 months.
- In the subsequent periods quarterly advances may be made by the World Bank, on the basis of signed subproject agreements (credit line contracts) between BANOBRAS and eligible beneficiaries, up to an amount equivalent to 30% of each individual subproject, and subject to a satisfactory assessment of the recipient's financial management capacity (when applicable).
- Each quarter, BANOBRAS may request, through a withdrawal application, advances for subsequent periods, taking into consideration: (a) Actual expenditures for the period under review; (b) previous advance and (c) cash-flow forecast for one quarterly period, which will be prepared taking into consideration new, signed, subproject agreements or credit line contracts. Outstanding (non-documented) advances to eligible beneficiaries will not exceed the equivalent of 30% of each subproject amount.
- For purposes of IFRs and disbursements the project will document eligible expenditures – that is, actual costs, such as Goods, Works, and Consultant Services (as opposed to transfers, or payment made to eligible beneficiaries by BANOBRAS) incurred by cities/entities – through quarterly IFRs.

18. The IFRs will be prepared on a quarterly basis, the content of this report will be agreed between the Bank and BANOBRAS, but at least should contain the following information (on a consolidated basis): (i) the first advance, (ii) if it is the case, the second/subsequent advances, (iii) actual costs/eligible expenditures for the period (iv) accumulated expenses (v) a specific report showing commitments entered into by BANOBRAS and credit line recipients (vi) a projection of the resources needed for the following period. IFRs must include actual expenses, on a cash basis,

19. BANOBRAS will prepare the IFRs using the financial information provided by the eligible beneficiaries using a format that will be agreed between the Bank and BANOBRAS.

20. All the supporting information of the expenses will be kept by the eligible beneficiaries, and will be available for review by the external auditors and Bank staff at all time during project implementation, until at least the later of: (i) one year after the Bank has received the audited Financial Statements covering the period during which the last withdrawal from the Loan Account was made; and (ii) two years after the Closing Date. The Borrower and the Project Implementing Entity shall enable the Bank's representatives to examine such records.

21. **Disbursement arrangements.** The loan disbursement arrangements[12] are hereby summarized:

Disbursement methods	• Advance (no more than 4 disbursements per year). The primary method for this project will be Advance to a Project Designated Account in MXP or USD (as indicated in paragraph 15), which will be opened in a commercial bank acceptable to the World Bank. • Reimbursement – if retroactive is allowed, it must coincide with the first advance into the Designated Account.
Supporting documentation	Request for reimbursements and reporting on the use of advances will be made in a summary report in the form of the interim unaudited financial report used for financial reporting.
Retroactive expenditures	Should the retroactive financing be required, the eligible payments will need to fulfill the following conditions: ▪ That do not exceed 20 percent of the loan amount. ▪ Made by the borrower 12 months and before the date of the Loan Agreement. The retroactive expenditures will be subject to the same systems, controls and eligibility filters described above in this Annex. Those expenditures will also be subject to the regular project external audit (see below).
Other procedures	Other disbursement procedures are not expected to be required; however, upon request from BANOBRAS and subject to Bank's approval, direct payments may be made for eligible expenditures to a third party (supplier or consultant).
Ceiling of the Designated Account.	Forecast for 2 quarters as provided in the quarterly Interim Financial Report, for the first advance; cash-flow forecasts as per subsequent Interim Financial Reports.
Disbursement condition	Conclusion of the specific FM Assessment to each participating entity by BANOBRAS using a methodology satisfactory to the Bank in the required cases.

[12] For details, please see the Disbursement Handbook for World Bank Clients.

Disbursement Table.

a) **CTF Loan**

Category	Amount of the CTF Loan Expressed in dollars	Percentage of Expenditures to be financed (inclusive Taxes)
1 Consultants' services and training for Part 1 of the project	$5,000,000	100
(2) Goods, works and consultants' services for Part 2.A of the Project	$106,000,000	100
(3) Goods, works and consultants' services for Part 2.B (a) of the Project	$76,000,000	100
(4) Goods, works and consultants' services for Part 2.B (b) of the Project	$13,000,000	100
(5) Management fee	-	
5 Unallocated	-	
Total	$200,000,000	

b) **IBRD Loan**

Category	Amount of the Loan Allocated (expressed in USD)	Percentage of Expenditures to be financed (inclusive Taxes)
(1) Consultants' services and Training for Part 1 of the Project	5,000,000	100%
(2) Goods, works and consultants' services for Part 2.A of the Project	110,000,000	100%
(3) Goods, works and consultants' services for Part 2.B of the Project	35,000,000	100%
(4) Front-end Fee		
(5) Premia for Interest Rate Caps and Interest rate Collars (amounts due under section 2.07 (c) of this Agreement)	- 0 -	
TOTAL AMOUNT	150,000,000	

22. **Financial reporting.** BANOBRAS, based on the information provided by the eligible beneficiaries, will prepare and submit to the Bank not later than 45 days after the end of each calendar quarter Interim unaudited Financial Reports (IFRs) for the Project covering the quarterly period, in form and substance satisfactory to the Bank. These reports will be based on the formats of the annual financial statements, established in the general framework for the audit of all national level Bank-financed projects (the technical MOU on auditing), which was agreed between the GOM and the Bank, and will be prepared in the local currency (MXP).

Report	Due date
Quarterly unaudited project IFRs	Within 45 days after the end of each calendar quarter.
Annual audit report on project financial statements and eligibility of expenditures	Within six months after the end of each calendar year of loan disbursements (or other period agreed with the Bank).

23. **External audit**. Based on the information provided by the eligible beneficiaries, BANOBRAS will prepare one consolidated audit report that will include the financial information of the project. Annual audits on project financial statements and eligibility of expenditures will be performed in accordance with Bank policy, as reflected in the audit terms of reference and memorandum of understanding agreed between the Bank and SFP. An independent audit firm selected by SFP and acceptable to the Bank will conduct the project audits. The audit report will be furnished to the Bank by BANOBRAS (as financial agent) as soon as available, but in any case not later than six months after the end of each audited year/period.

24. **Information systems.** Due to the dispersion of Project activity in the various eligible beneficiaries, there will be no single information system in place to track every transaction. Instead, the information systems employed for Project financial management will be those used within the eligible beneficiaries, and those used by BANOBRAS to consolidate the Project information. The municipality-level systems will be evaluated by BANOBRAS as part of the FM assessment for entities seeking funding from the BANOBRAS credit program.

25. BANOBRAS uses an integrated accounting system, which chart of accounts allows for the registration of different projects using separate accounts, both for the recording of sources and uses of funds.

26. **Written Procedures.** Project financial procedures will be documented in an Operations Manual (condition for negotiations) that will define the roles and responsibilities of BANOBRAS and the eligible beneficiaries. The OM should include, among other financial procedures: (i) accounting and budgeting policies and procedures; (iii) formats of the consolidated IFRs for the Project, to be prepared by entities and consolidated by BANOBRAS; (iv) internal controls including BANOBRAS' criteria and procedures for managing the bank and designated Accounts, and for processing disbursements to the states; (v) records, management, and (vi) audit arrangements.

27. In addition the OM, will describe the requirements in terms of Financial Management (e.g. accounting, financial information, internal control and auditing) for each participating entity as well as the guidelines to conduct the FMA in the applicable entities. The OM will be sent for the no objection of the Bank (condition for effectiveness).

28. **Risk assessment.** Project implementation will require plenty of coordination with different actors at both federal and sub-national levels to carry out the proposed activities. On such basis, inherent risk of the project would be rated as substantial.

29. In spite of BANOBRAS' experience in the implementation of multi-site projects, the control risk at this stage would be rated as substantial too, while the specific arrangements for the proposed operation are formalized and in place to support implementation for specific activities.

FM Risk Table			
Risk type[13]	**Risk Rating**	**Comments / Risk mitigating measures incorporated into project design**	**Residual Risk Rating**
Inherent risk	**S**		**S**
Country level	M		M
Entities	S	The project will be implemented by eligible beneficiaries that might not have previous experience in Bank-financed projects. Specific FM assessments will be conducted before subprojects are approved in the applicable cases (e.g. entities no rated by a Rating Agency). BANOBRAS will be the recipient of the project funds.	M
Project	S	The fact that project expenditures will occur within the eligible beneficiaries, through BANOBRAS credit program, poses a challenge in terms of financial management design. This factor, together with the size and complexity of the proposed operation, makes the inherent FM risk substantial.	S
Control risk	**S**		**M**
Budgeting	S	The project budget will be controlled and monitored through POA, prepared by the eligible beneficiaries and approved by the Bank.	M
Accounting	S	Loan withdrawals and Designated Account activity will be included in BANOBRAS' central accounting system and should be incorporated in Project financial statements and audit. The eligible beneficiaries will be responsible for keeping files of all supporting documentation for expenditures they make.	M
Internal Control	S	The BANOBRAS' Internal Audit Unit is responsible to follow-up all findings identified by external auditors on both levels and local.	M
Funds Flow	S	Project supervision and audit will ensure that BANOBRAS has transferred funds to the participating cities according to the Loan Agreement and that these funds were used for intended proposes and project objectives.	M
Financial Reporting	M	BANOBRAS will consolidate and submit to the Bank project quarterly unaudited Interim Financial Reports (IFRs) and annual audited financial statements.	M
Auditing	M	An independent audit firm selected by SFP and acceptable to the Bank will conduct the annual audit on Project financial statements and expenditure eligibility at State and municipal levels.	M
Overall risk	**S**		**M**
Non-standard conditions		Once the eligible beneficiaries are defined, the conclusion of its specific FM Assessment by BANOBRAS satisfactory to the	

[13] The **FM inherent risk** is that which arises from the environment in which the project is situated. The **FM control risk** is the risk that the project's FM system is inadequate to ensure project funds are used economically and efficiently and for the purpose intended. The **overall FM risk** is the combination of the inherent and control risks as mitigated by the client control frameworks. The **residual FM risk** is the overall FM risk as mitigated by the Bank supervision effort.

FM Risk Table			
Risk type[13]	**Risk Rating**	**Comments / Risk mitigating measures incorporated into project design**	**Residual Risk Rating**
		Bank will be a disbursement condition. The entities rated by a Rating Agency will be exempted from this rule.	
Bank FM supervision		BANOBRAS will prepare and submit for the Bank's no objection a Project Operations Manual that will be condition for effectiveness. At least one full FM supervision mission per year, which will look into the operation of the control systems and arrangements, described in this annex, including but not limited to the flow of funds from BANOBRAS to eligible beneficiaries to suppliers of goods and services. Desk reviews of IFRs and audit reports.	
Residual risk	**S**		**M**

H – High; S – Substantial; M – Modest; L - Low

Annex 8: Procurement Arrangements
MEXICO: URBAN TRANSPORT TRANSFORMATION PROJECT

A. General

1. Procurement for the proposed project would be carried out in accordance with the World Bank's "Guidelines: Procurement under IBRD Loans and the International Development Association Credits" dated May 2004 reviewed October 2006; and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004, revised October 2006, and the provisions stipulated in the Legal Agreements. The various items under different expenditure categories are described in general below. For each contract to be financed by the Loan, the different procurement methods or consultant selection methods, the need for pre-qualification, estimated costs, prior review requirements, and time frame are agreed between the Borrower and the Bank in the Procurement Plan. The Procurement Plan for each participating entity will be included and updated in SEPA as required to reflect the actual sub project implementation.

2. **Procurement of Works:** Civil works would include urban roads, bus rapid transit infrastructure systems and other eligible infrastructure works. Contracts with estimated cost above US$ 15.0 million equivalent shall be procured under International Competitive Bidding procedures, using the Harmonized Standard Bidding Documents (SBDs) agreed between the Secretaría de la Función Pública (SFP), IADB and the Bank. Contracts with estimated cost below the agreed threshold for ICB (US$ 15.0 million equivalent) shall be procured using NCB procedures and the Harmonized Standard Bidding Documents (SBDs) agreed between the Secretaría de la Función Pública (SFP), IADB and the Bank. Works estimated to cost less than US$ 500,000 equivalent per contract may be procured through price comparison of quotations of at least three contractors, received in response to a written invitation. The invitation will include a detailed description of the small works, including basic specifications, required completion dates, and a basic contract form acceptable to the Bank. When needed and if the requirements of paragraphs 3.1, 3.6 and 3.7 of the Procurement Guidelines are met, direct contracting of small works may be undertaken, with prior agreement of the Bank. The proposed Loan will not finance works carried out by force account.

3. **Procurement of Goods:** Goods under this project would include: High-technology buses, low carbon or hybrid buses and hybrid convention systems and other eligible goods. Contracts with estimated cost above US$ 3,000,000 million equivalent shall be procured under International Competitive Bidding procedures, using the Harmonized Standard Bidding Documents (SBDs) agreed between the Secretaría de la Función Pública (SFP), IADB and the Bank. Contracts with estimated cost below the agreed threshold for ICB (US$3,000,000) may be procured using NCB procedures, using the Harmonized Standard Bidding Documents (SBDs) agreed between the Secretaría de la Función Pública (SFP), the IADB and the Bank. For contracts estimated to cost less than $ 100,000 shopping procedures may be followed, through price comparison of quotations of at least three suppliers, received in response to a written invitation. The invitation will include a detailed description of goods, including, *inter alia,* technical specifications, required completion dates, and a basic contract form acceptable to the

Bank. When needed, and if the requirements of paragraphs 3.1, 3.6 and 3.7 of the Procurement Guidelines are met, direct contracting of goods may be undertaken with prior agreement of the Bank.

4. **Procurement of Non-Consulting Services:** All contracts for services not related to consultant services as logistics, organization of seminars, workshops, and printing services may be procured under same methodologies specified for goods above.

5. **Selection of Consultants:** All the components of the project will require the assistance of consultants to carry out specialized studies, analysis and technical assistance including technical assistance to beneficiaries in project preparation and implementation; demonstration and validation of energy efficient technologies; assistance for policy development to address issues related to climate change and the environmental impact of project; audits and institutional strengthen. These consultant services would be procured following Bank's policies and using Harmonized Standard Documents.

6. Most contracts for firms are expected to be procured using Quality and Cost-Based Selection methods (QCBS). Fixed Budget Selection (FBS) and Least Cost Selection (LCS) would be used as agreed in the Procurement Plan. Short lists of firms for consultants services estimated to cost less than $500,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines. For technical assistance purposes, individual consultants may be hired as per Section V of the Bank's Consultants Guidelines. Universities, government research institutions, public training institutions, NGOs, or any special organizations may be engaged as consultants during project implementation. Consultant assignments of specific types, and previously agreed with the Bank, may be exceptionally procured using Single Source Selection (SSS) methods, under the circumstances explained in paragraph 3.9 of the Consultants' Guidelines.

7. **Operating Costs:** Not Applied.

8. **Others**: Sub-loans. The loan is expected to provide funds to an intermediary institution, be re-lent to beneficiaries such as private sector enterprises, small and medium enterprises, or autonomous commercial enterprises in the public sector for the partial financing of subprojects. In this case, the procurement is undertaken by the respective beneficiaries in accordance with procurement procedures acceptable to the Bank. However, even in these situations, ICB may be the most appropriate procurement method for the purchase of large single items or in cases where large quantities of like goods can be grouped together for bulk purchasing.

9. Bank procurement and consultants' guidelines apply to all contracts for services, goods and works financed in whole or in part from Bank resources. For the procurement of those contracts for goods and works not financed from a Bank loan, the state, municipality or private sector entity may adopt other procedures.

10. The procurement procedures and (harmonized or not) SBDs to be used for each procurement method, as well as model contracts for works and goods procured, are presented in the Operational Manual. IBRD's anti fraud and anti corruption guidelines and policies are

reflected both in the Operations Manual and in the procurement documents harmonized and agreed between the Secretaría de la Función Pública (SFP), IADB and the Bank.

B. Assessment of the Agency's Capacity to Implement Procurement

11. An assessment of the capacity of each state, municipality or private sector entity to be selected to implement procurement actions for the project will be carried out by the PAS assigned to the Project together with BANOBRAS as the implementing agencies are selected. The assessments will review the organizational structure for implementing the project and the interaction between the project's staff responsible for procurement.

12. Due the nature of the Project, before each credit BANOBRAS will conduct a State Risk Assessment & Mitigation of each candidate state, municipality or private sector entity, and will provide the necessary training and coaching in procurement under IBRD rules (BANOBRAS will forward to the Bank a copy of these assessments and the training data, and sign Credit Agreement with the participating state, municipality or entity with terms and conditions satisfactory to the Bank. If the Bank has any comments or objections to these assessments, they will be promptly sent to BANOBRAS for discussion and resolution. In the case of the private sector enterprises, the assessment will include an analysis of their procedures and their acceptability to the Bank, procurement-wise. All Credit Agreements will specify the conditions and procedures to carry out procurement and disbursement, based on the results of the corresponding State Risk Assessment and Mitigation and the Procurement Plan. BANOBRAS will be responsible for: (i) reviewing all State, Municipality or Entity Procurement Plans (SPPs) and contract documentation prepared for prior review for the Bank; (ii) for issuing no objection notices to bid and RFPs documentation and proposal for awards submitted by the States, Municipalities or Entities which fall below the Bank's prior review threshold, (iii) establish and maintain all documentary and electronic registries; and (iv) ensure at all times that the fiduciary responsibility vested by the Bank pertaining to procurement is totally fulfilled.

13. The assessment of procurement capacity reviewed the organizational structure of BANOBRAS vis-a-vis implementation of the project at BANOBRAS central level and its future interaction with the states and found it fully satisfactory.

14. The assessment indicates that central BANOBRAS headquarters in Mexico has well trained staff with experience in Bank procurement and has the capacity needed to supervise the procurement implementation in the participating states, municipalities and private sector entities. The risk rating for BANOBRAS is LOW.

15. On the other hand, due to the potential participation of states, municipalities and private sector entities that are not familiar with the Bank's procurement rules, BANOBRAS will conduct separate procurement capacity assessments of each participating state, municipality and private sector entity, including the risk rating for each one, and, together with the Bank, recommend action plans to mitigate the risk in procurement implementation. The key issues and risks concerning procurement for implementation of the project will be identified and discussed with the sub-beneficiaries separately during the processes of assessment.

C. Procurement Plan

16. BANOBRAS, as negotiations with the states, municipalities and private sector entities are conducted, will develop a procurement plan for project implementation which will include, *inter alia,* the procurement methods, relevant dates and indicate the contracts subject to prior review by the Bank. BANOBRAS and the Project Team will agree upon this plan and it will be available in SEPA (Sistema de Ejecución de Planes de Adquisiciones). It will also be available in the project's database and in the Bank's external website. These Procurement Plans 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. The approval by the Bank of the Procurement Plan must be an effectiveness condition for each participating state, municipality and private sector entity sub-loan.

D. Frequency of Procurement Supervision

17. In addition to the prior review supervision to be carried out from Bank offices, the capacity assessment of BANOBRAS has recommended one supervision mission annually to visit the field and to carry out post review of procurement actions at the implementing entities. Besides, BANOBRAS has the responsibility of conducting procurement oversight with respect to all the sub-borrowing entities.

E. Details of the Procurement Arrangements Involving International Competition

1. Goods, Works, and Non Consulting Services

(a) List of contract packages to be procured following ICB and direct contracting:

1	2	3	4	5	6	7	8	9
Ref. No.	**Contract (Description)**	**Estimated Cost US$ Million**	**Procurement Method**	**P-Q**	**Domestic Preference (yes/no)**	**Review by Bank (Prior / Post)**	**Expected Bid-Opening Date**	**Comments**
1	BRT Fase "II" (Zapopan-Centro-Tonalá)	150	ICB	No	No	Prior	01/15/2010	
2	BRT Av. Lincoln y Ruíz Cortines	70	ICB	No	No	Prior	01/15/2010	
3	BRT Línea Express # 1	35	ICB	No	No	Prior	02/01/2010	
4	BRT Optibús 2a Etapa	45	ICB	NO	No	Prior	03/31/2010	

(a) ICB contracts for works estimated to cost above $15,000,000 and goods estimated to cost above $3,000,000 per contract and all direct contracting will be subject to prior review by the Bank as agreed in the Procurement Plan for each beneficiary city.

2. Consulting Services

(a) List of consulting assignments with short-list of international firms (not expected).

1	2	3	4	5	6	7
Ref. No.	**Description of Assignment**	**Estimated Cost US$ Millions**	**Selection Method**	**Review by Bank (Prior / Post)**	**Expected Proposals Submission Date**	**Comments**
1	Estudio para BRT	**3**	**QCBS**	**Prior**	12/04/2010	
2	Estudio Integral de transporte	**0.5**	**QCBS**	**Prior**	12/04/2010	

(b) Consultancy services estimated to cost above $500,000 per contract and single source selection of consultants (firms) will be subject to prior review by the Bank as agreed in the Procurement Plan for each beneficiary city

Annex 9: Economic and Financial Analysis

MEXICO: URBAN TRANSPORT TRANSFORMATION PROJECT

1. The objectives of this annex are: (i) to conduct a standard Cost Benefit Analysis (CBA) for a mass transit project that will be financed by the project; (ii) to conduct a standard financial evaluation of the typical private sector investment associated with the project; and (iii) to assess the role of CTF concessional financing in the project.

2. The benchmark mass transit project involves an infrastructure or civil works component and a vehicle component. The civil works comprise exclusive lanes for buses in the case of Bus Rapid Transit or tracks in the case of Rail Rapid Transit. It also includes stations, yards to store and maintain the vehicles, and occasionally transfer terminals to link feeder buses to the trunk service, among others. The vehicle component consists in the case of BRT of large, articulated buses for the trunk service, and single-body buses for the feeder service. Depending on the project standard 12 meter buses could also be used for the trunk service. In the case of rail transit, the vehicle component consists of trains, which vary in size and range from tramways and light rail to heavy rail. In rail transit, buses also provide the feeder service. The infrastructure element entails large investments and in any case larger than the investment in the vehicles. Total investments are therefore large.

3. While transit users pay a fare it usually covers only part of the vehicle capital and operation and maintenance costs and rarely does the fare cover some of the infrastructure costs. This practice is standard internationally because given the high costs of transit systems, fares would have to be too high to cover all associated costs. Full cost recovery transit fares would: (i) punish transit users, which tend to have lower income than car users; (ii) aggravate the price distortion that promotes car use, because car-related infrastructure does not recover its costs in the absence of ubiquitous tolls; and (iii) increase emissions of local pollutants and GHG.[14]

4. In light of this reality, governments typically subsidize the capital costs of the infrastructure component and frequently also its O&M and expect little or no revenue from it. The vehicle component, on the other hand, lends itself more to having a revenue source, the fare, associated with it. Fares can cover part or all of the O&M costs and occasionally part or all of the capital costs. Rail transit is illustrative of the first case, in which an operational subsidy is needed, and bus rapid transit, particularly in developing countries, shows that the fare-box can cover O&M and capital costs of the buses.

5. Clearly, in a mass transit system, the infrastructure and the vehicle components are inseparable in that the infrastructure without the vehicles provides no service and vice versa. But only the vehicle component has a revenue side. Consequently, to evaluate the transit project as a whole an economic or Cost Benefit Analysis—from the point of view of society at large—was carried out. CBA is a methodology that values the costs and benefits of a project and their impacts on social economic wellbeing. Benefits valued do not necessarily reflect market transactions.[15] For instance, for a transit project, a key benefit is the time saved thanks to the

[14] See World Bank, "Cities on the Move: A World Bank Urban Transport Strategy Review." And World Bank "A Framework for Urban Transport Projects: Operational Guidance for World Bank Staff."

[15] See Belli et a. 1996. "Handbook on Economic Analysis of Investment Operations." The World Bank.

project. A value of time is estimated using standard practices that calculate willingness to pay for a minute saved[16] and hence monetize the amount of time saved, which can now be compared against the costs of the project. In CBA the fare-box is actually excluded from the analysis because it reflects from an economic standpoint some of the costs of the system, such as O&M costs, and those are considered in the cost side of the analysis. For the vehicle component, on the contrary, a financial analysis can be performed because the fare is an actual source of revenue in financial terms for the investor. Therefore, the financial analysis was carried out from the point of view of the private investor in the vehicles, which expects a minimum return on its equity and faces a risk associated to the investment. In this annex, in sum, CBA will be used to analyze the entire project, and financial analysis will be used to analyze in more depth the vehicle component of mass transit project.

The Benchmark Mass Transit Project Evaluated

6. The UTTP is a project in which the CTF and the World Bank lend resources to BANOBRAS a Mexican development bank. BANOBRAS, in turn, on lends the funds after factoring in a spread to cover its costs to municipalities that are implementing transit projects as part of Mexico's mass transit program, PROTRAM. As such, the UTTP is demand driven and at the time of appraisal there is no certainty about the exact projects that will be financed. However, based on PROTRAM's pipeline of projects and based on the initial results of the México GEF STAQ Grant, the benchmark project will resemble the Bus Rapid Transit systems (BRTs) that are in operation in the city of León and under preparation in Monterrey.

7. With data from these cities, it is assumed that a benchmark BRT project will consist of 15 km of exclusive lanes for buses, plus stations at which passengers board the buses at grade, transfer terminals, and bus depots. Passengers will pay upon entering the station, which saves time when passengers board the bus. These savings, in turn, reduces the quantity of buses needed. (The projects could also be rail rapid transit, but data was not available for an urban rail project in Mexico to carry out an evaluation.)

8. The benchmark bus rapid transit line will carry 154,000 rides per day, provided there are feeder buses that bring passengers to transfer terminals. However, it is assumed based on international experience, that this basic or benchmark BRT will not eliminate all the competition with old buses and will not build all the necessary facilities that induce more people to shift from using the car to using transit. Both measures are expensive and given the already large investment required to implement a transit system, cities typically do not implement them. For example, removing competition from existing buses is always an assumption made while planning the project. But the costs are high because existing bus operators demand compensation for the lost business,[17] just to mention one of the costs. If these costs are covered and the

[16] The cost benefit analysis used in this annex follows established cannons for transport projects. See for example: Cole, Stuart. 2005. "Applied Transport Economics: Policy, Management, and Decision Making;" Small, K. "Project Evaluation," in Gomez Ibañez et al (eds) "Essays in Transportation Economics and Policy;" Button, 2003. "Transport Economics."

[17] See Allport, R. and J. Thomson. 1989. "Study of Mass Rapid Transit in Developing Countries."

measures undertaken, the result would be an increase in ridership beyond the 154,000 figure,[18] For instance, the additional investments increase the level of service, making transit more desirable for car users. Similarly, investments in facilities that promote a larger physical integration between the new transit line and other modes, including the car, are also rarely implemented in part because of their cost. If implemented, ridership will increase even more. Therefore, the benchmark project is the baseline to model what happens when the project receives support from the UTTP and transforms into an "enhanced BRT", as detailed in the next paragraph. While the benchmark BRT carries 154,000 rides per day, the "enhanced BRT" would carry up to an estimated 220,000 depending on the mix of additional measures implemented (see Table 9.1).

9. Therefore, once a city joins the UTTP, it is assumed that through access to concessional finance and technical assistance the project would be able to, first, finance complementary works that contribute to inducing additional modal shift. Second the city would implement measures to reduce even further the competition from old operators with the new system, such as reorganizing bus service and compensating old operators to move to less lucrative routes. Thirdly, the city would finance the scrapping of old buses to further reduce competition, for those units that are old enough to justify also on environmental grounds this measure.[19] Bus scrapping also reduces emissions from old engines. Table 9.1 shows by type of intervention the estimated cost and the estimated additional demand, above the 154,000 rides per day. Each additional intervention has extra costs, which the concessional financing would help materialize more easily, and results in an increase in passengers using the service. For instance, the construction of 75 Km of pedestrian routes, translates into 1% demand increase or 1,540 additional passengers per day[20]. The addition of these interventions to the benchmark BRT corridor, therefore, results in an enhanced BRT corridor that maximizes modal shift and overall demand, up to an estimated 220,000 passengers per day.

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[18] Ardila, A. 2008. "The Limitation of Competition in and For the Market in Public Transportation in Developing Countries: Lessons From Latin American Cities." Transportation Research Record, Journal of the Transportation Research Board. No. 2048, pp. 8-15.

[19] A clarification is in order. Competition is desirable to reduce prices. The argument here is to reduce the so called "competition in the market" in which buses compete against each other in the street. Ample evidence shows that this arrangement leads to larger bus fleets than desired, higher fares for users to finance the additional fleet, higher congestion, and larger emissions. The competition that is desirable and that the mass transit lines supported by the UTTP promote is called "competition for the market," in which would-be transit operators bid competitively for the right to operate the service under given conditions and for a certain period of time. During that period, the government or grantor of the bid protects the transit operator from competition along the same alignment. See Cities on the Move: A World Bank Urban Transport Strategy Review.

[20] Although the 1% demand increase associated to the investment in sidewalks might seem not cost effective, improving sidewalks is good for society overall. It is good for businesses, and is a substantial improvement on accessibility for those people that had no option before but transit, and had to use the unsafe, uncomfortable sidewalks. Moreover, good quality sidewalks dramatically improve accessibility, mobility and overall quality of life for the handicapped. Furthermore, in addition to the 1% increase in transit users, there might be also an increase in sidewalk (non-motorized - zero emissions) users from other polluting modes.

Table 9.1 Additional Demand for Transit System by Intervention and Approximate Cost

I. Modal Shift	Length (km)/ Quantity	Demand increase (%)	Demand Increase (Pass. per day)	Cost (US$) (approx.)
* Result from the construction of Bike-paths	75	1.5%	2,310	$7,500,000
* Result from the construction of pedestrian routes	75	1.0%	1,540	$11,250,000
* Result from the construction of intermediate feeder routes	75	2.2%	3,388	$7,500,000
* Result from the construction of intermediate Integrated Stations	6	1.8%	2,772	$1,200,000
* Result from the construction of Secured Bicycle Parking at certain stations	10	1.0%	1,540	$1,500,000
* Result from the implementation of Parking restrictions	1	1.5%	2,310	$150,000
Result from the implementation of other TDM strategies	1	1.0%	1,540	$1,000,000
I. Total modal shift		10.0%	15,400	$30,100,000
II. Bus route restructuring to reduce competition		**17.0%**	**26,180**	$5,619,000
III. Old Bus Scrapping to further reduce competition		**16.0%**	**24,640**	3,645,000

Estimations based on Fulton and Wright (2005) and other international experience. Estimations for II and III from model built for this annex and in particular the results in Table 9.3. Specifically, the results for II come from subtracting the investment costs for scenario 1 from scenario 2 and for III, by subtracting the investment costs for scenario 2 from those for scenario 3. The 220,00 passengers per day of the "enhanced" BRT is obtained by adding 154,000 of the benchmark BRT plus the totals for I, II, and III.

10. Finally, the UTTP also has funding for low GHG emission buses, for instance hybrid buses. Up to 30% of the trunk fleet and the feeder fleet can be hybrid. As a new technology, hybrid buses cost more, but empirical evidence suggests the operations and maintenance costs are lower.[21]

[21] See Clinton Climate Initiative Report and the World Bank 2007 Climate and Transport in Mexico Report.

The Model

11. A model was built to carry out in parallel the cost benefit or economic evaluation of the entire project and the financial evaluation of the concession to the private sector of the bus fleet. The incremental analysis compares with-project and without-project alternatives on a 20-year planning horizon. All infrastructure elements are estimated to have a useful life of at least 20 years, coinciding with the evaluation horizon. Buses, on the other hand, are estimated to have a useful life of 10 years and hence investment in buses takes place twice during the evaluation horizon.

12. The basis of the economic and financial evaluation models is a demand model that assumes 154,000 rides per day in year 1. Demand grows at 1% per year. The model also estimates year by year the fleet required as a function of demand. Fleet acquisition costs are a function of the number and type of buses purchased by the concessionaire. Hybrid buses are assumed to be 43% more expensive to purchase than conventional buses. Bus operation and maintenance is a function of the number of kilometers logged by each bus. O&M costs for hybrid buses are 12% lower than for conventional buses. The buses have no residual value. The bus concessionaire is also responsible for purchasing and operating the fare collection system and the operations control center. Passengers are assumed to pay a fare of 5 pesos per ride (equivalent to US$0.38 per ride at an exchange rate of 13.2 pesos per dollar). For the financial model, the fare times the demand constitutes the gross income. The fare is assumed to remain constant in all scenarios, so for example the introduction of hybrid buses does not translate into higher fares despite the higher cost of the buses. The model works in constant pesos of the initial year. A simple and conservative tax model is developed to incorporate the tax benefit of depreciation. An after tax cash flow is used to estimate profitability. The financial model also contemplates a cost for setting up the new bus company and estimates a working capital requirement. Working capital is recovered in year 10, at the end of the concession.

13. For the cost benefit or economic analysis model, market prices were used because no shadow prices were available for Mexico. User fares represent a transfer and hence do not enter into the economic model. In addition to the costs considered in the financial model, the economic model considers the following initial costs: (i) cost of preparing the project (planning, engineering, and safeguard studies); (ii) land acquisition, for example for transfer terminals; and (iii) infrastructure construction (busways, transfer terminals, and bus depots). These costs are assumed to be incurred during the first year (year 0). For this reason, these initial costs weigh more heavily in the flow of resources because no fraction of the cost is discounted as it would be, for example, if construction was assumed to last 3 years. This assumption is conservative. The economic model considers the O&M costs of the buses and of the infrastructure, i.e. busways, terminals, and yards. The following benefits were estimated in the cost benefit analysis:

14. Travel time savings for users of the mass transit system: obtained from comparing the with and without project situations. In the "with" project situation an increase of 7 kilometers per hour is estimated. This value is consistent with other BRT projects and that estimated for Leon and Monterrey. The value of time used is the one recommended by the Instituto Mexicano del Transporte. Specifically, for peak hour trips the value of time is 30% of 20.63 pesos. For off peak travel, the value of time is 30% of 12.38 pesos. No distinction is drawn between car and

transit users because this could lead to regressive choices (i.e. highways over mass transit, because of the higher value of time of car owners).

15. Operating cost savings from substituted buses: if buses are scrapped, then society saves on O&M costs of these buses.

16. Travel time savings for private cars on mixed lanes in the transit system: by building exclusive lanes for buses, BRT systems also improve speed for cars in the remaining lanes. In mixed traffic, cars and buses compete for road space, Buses want to stop and go in order to drop passengers off and pick them up. Cars, on the contrary, want to travel with as fewer stops as possible. This generates a conflict for scarce road space that lowers the speed for both buses and cars. A BRT, however, provides buses and cars with exclusive lanes for each in which this conflict does not exist. Typically speed increases for both flows. O&M savings due to this speed increase were not calculated for lack of data.

17. Generalized costs savings due to modal shifts: once the project is part of the UTTP, an additional 10% of users would come from cars, as shown in the table above. These people choose to take the BRT because it is more convenient, offering a travel time savings. Also, the trips not done by car save society O&M expenses. The two benefits were estimated.

18. Welfare increases due to generated trips: it is assumed following other experiences, that 3.5% of the trips are generated, that is, they happen only because of the project. Travel time benefits are considered.

19. GHG reductions: the BRT project contributes to reducing GHG gases because of the modal shift, the innovative technology of the buses, and because of speed improvements. The reductions are valued at US$8 per ton, which is the estimated value a facility such as the Carbon Partnership Facility will pay.

20. Disbenefits during construction: public transit and car users are negatively affected during construction. The value of time loss is estimated for both types of users of the corridor.

The Scenarios

21. A series of scenarios emerge by combining different ways in which the project can be implemented. The results table below shows the scenarios, which are briefly explained in what follows.

22. Scenario 1: The base case is when the BRT is built but it is not part of the UTTP. No complementary works take place and modal shift is minimum (1.5% additional demand to reach the 154,000 passengers per day baseline). Competition from the previous bus system is minimally curbed for example through simple route restructuring. Diesel buses are used for trunk and feeder buses.

23. Scenario 2: The project enters the UTTP, in order to maximize modal shift and more careful route restructuring a deeper route restructuring takes place and some buses are sent to

other areas of the city, which represents a cost to compensate owners. Demand increases, which increases benefits for society (economic evaluation) and for the investors in the buses (financial evaluation). At the same time, however, there are additional costs in infrastructure (US$ 30.1 million) and in compensating old bus owners. Diesel buses are used for trunk and feeder buses.

24. Scenario 3: in addition to what happens in scenario 2, a number of old buses is scrapped to eliminate all chances of competition from those buses with the new system. Demand increases. But scrapping has an additional cost. Diesel buses are used for trunk and feeder buses.

25. Scenario 4: the same as scenario 3 but 30% of the trunk bus fleet is with hybrid technology. The trunk fleet runs in exclusive lanes for buses in the areas of higher demand. Typically, the trunk fleet is composed of high-capacity buses such as articulated, 160 passenger ones.

26. Scenario 5: the same as scenario 3 but 30% of the feeder bus fleet uses hybrid technology. The feeder fleet runs in mixed traffic lanes, experiencing more stop and go, through neighborhoods to collect passengers and bring them to a terminal where they transfer to the trunk service. The feeder fleet is usually composed of standard, one body buses.

The Rates of Discount

27. The cost benefit analysis or economic evaluation—that is, from the point of view of society at large—uses a 12% annual discount rate. This rate is consistent with World Bank and GoM standards. The economic rate of discount does not change in any of the scenarios used, because the on-lending by Banobras to the public or private sectors does not affect society's rate of discount.

28. For the financial analysis, a weighted average cost of capital or WACC is estimated as a function of the blend of financing sources. The WACC is used to discount the cash flows of the concessionaire. For example, it was assumed that 35% of the capital required would be equity. Private investors expect a 16% return after taxes. The rest of the needed capital comes from debt from a commercial bank loan at 11% per year (before taxes). The WACC is calculated assuming a tax benefit

Results and Analysis of the Economic Evaluation

29. Table 9.2 shows the results of the economic evaluations for the scenarios in terms of Net Present Value and Economic Rate of Return for each scenario. The table also shows the initial investment costs. As said, the economic evaluation looks at the entire project from the point of view of society at large. In all scenarios the project has a positive NPV and therefore an ERR larger than the discount rate. The project is consequently beneficial for society at large. The additional investment costs demanded by scenarios 2 to 5 translate into higher NPVs with respect to scenario 1. Therefore, the investments in measures such as infrastructure to promote modal shift are beneficial for society. However, as explained, given the large costs of mass transit infrastructure, there is a disincentive to invest in these additional features. Moreover, the additional benefits from these investments are not captured by governments because the benefits

are impossible to monetize or tax. For example, time saved by users cannot be taxed. Therefore, CTF Concessional financing will motivate governments to undertake those investments.

Table 9.2 Summary Results of the Economic Evaluation

Scenario No.	Scenario	Investment Costs (000's)	NPV (000's)	ERR (%)
1	Base case: projects is not part of UTTP, no modal shift, Diesel BRT buses	$96,750	$84,193	22.9%
2	Project is part of UTTP: modal shift, route restructuring, no scrapping of old buses, Diesel BRT buses.	$134,133	$182,279	28.9%
3	Project is part of UTTP: modal shift, route restructuring, scrapping of old buses, Diesel BRT buses.	$139,873	$239,624	33.1%
4	Project is part of UTTP: modal shift, route restructuring, scrapping of old buses, 30% of BRT trunk (articulated) fleet is hybrid, rest is Diesel.	$142,886	$238,756	32.6%
5	Project is part of UTTP: modal shift, route restructuring, scrapping of old buses, 30% of BRT feeder fleet is hybrid, rest is Diesel.	$140,961	$239,543	32.9%

NPV: Discounted Flow of Benefits Minus Discounted Flow of Costs (Discount Rate: 12%).
ERR: Economic Rate of Return of the Project for Society at Large

Results and Analysis of the Financial Evaluation

30. Table 9.3 shows the results of the financial evaluation for the scenarios in terms of Net Present Value and Internal Rate of Return. The table also shows the initial investment costs undertaken by the private sector. As explained, the financial evaluation looks only at the element of the project that lends itself to private sector participation. In all scenarios the private sector recovers its investment, hence the positive NPV and the IRR larger than the discount rate. Scenarios 2 and 3 show that the private sector benefits from measures to increase modal shift and to reduce competition from the old bus system. The private investor reaches the maximum profitability when the city government finances also the scrapping of old buses, to curb even further competition with the new system. (Society at large also benefits, as shown in Table 9.2.) Scenarios 4 and 5 reflect the introduction of novel technologies such as hybrid buses. However, the private sector has to undertake larger investments that are not compensated. The NVP and IRR drop with respect to scenario 3. The private sector, therefore, will not purchase hybrid buses unless a subsidy is in place to compensate the loss in profitability. CTF concessional financing can compensate and make the investment in hybrid buses attractive for the private sector.

Table 9.3 Summary Results of the Financial Evaluation

Scenario No.	Scenario	Investment Costs (000's)	NPV (000's)	ERR (%)
1	Base case: projects is not part of UTTP, no modal shift, Diesel BRT buses	$31,050	$7,051	15.3%
2	Project is part of UTTP: modal shift, route restructuring, no scrapping of old buses, Diesel BRT buses.	$36,669	$12,471	17.6%
3	Project is part of UTTP: modal shift, route restructuring, scrapping of old buses, Diesel BRT buses.	$40,313	$15,732	18.7%
4	Project is part of UTTP: modal shift, route restructuring, scrapping of old buses, 30% of BRT trunk (articulated) fleet is hybrid, rest is Diesel.	$43,294	$14,330	17.5%
5	Project is part of UTTP: modal shift, route restructuring, scrapping of old buses, 30% of BRT feeder fleet is hybrid, rest is Diesel.	$41,401	$15,595	18.4%

NPV: Discounted Flow of Benefits Minus Discounted Flow of Costs (Discount Rate: WACC).
IRR: Internal Rate of Return of the Project for the Private Investor.

The Role of CTF Financing the Gaps in Infrastructure and Buses

31. Because of the nature of mass transit projects—large investments in infrastructure and buses or trains—governments subsidize infrastructure and even the rolling equipment. However, the basic project analyzed in this annex does not maximize modal shift, because governments under-invest in infrastructure. These additional elements of infrastructure need to be subsidized. Likewise for the scrapping of old buses, when needed. The concessional rates and terms of the CTF can attract cities and states to invest in these additional elements. On the bus side, the private sector will be reluctant to invest in hybrid buses unless a subsidy is offered. Again, the CTF rates and terms can serve this purpose.

32. The funding gaps to cover these elements that emerge can be estimated as follows. On the infrastructure side to maximize modal shift, the funding gap is estimated at approximately US$ 30.1 million per mass transit project. Bus scrapping, to be financed also by governments, has a funding gap estimated at US$ 3.65 million per enhanced benchmark BRT project. These two funding gaps were measured by looking at the additional cost of each in the model built for this annex. Notice that the economic evaluation indicated that investing in these elements yields a higher economic NPV. This shows that for society at large, these investments are convenient. However, state or municipal governments cannot capture, or monetize, the additional benefits, which are for instance savings in time and operations and maintenance. While savings in operations and maintenance accrue to the private owners of the buses, governments if at all see a reduction in tax collection given these savings. The gap, therefore, remains under-funded and

governments are less likely to invest in the additional infrastructure and bus scrapping. A financial incentive is needed.

33. Finally, the funding gap for hybrid buses was estimated at US$ 217,230 per unit. Given that approximately one third of the articulated fleet will be hybrid – a total of 350 buses for 18 corridors – the total gap is estimated at 76 million. In this case, the model was used to estimate the subsidy needed using CTF rates to compensate the loss profitability of purchasing the hybrid buses by the private sector. Specifically, the private investor will only invest in hybrid buses if the financing blend it receives, which includes CTF financing, and a standard commercial bank loan, takes its NPV back to the levels of scenario 3, which is the maximum. CTF terms were modeled as an interest rate of 0.75% per year, plus 3.00% from Banobras' markup to cover its operational costs.

34. Table 9.4 summarizes the above discussion by showing the financing gap by project component for the enhanced benchmark BRT project analyzed here. The table also estimates the total financing gap for the UTTP project, by multiplying the gap by 18 transit systems, which is the estimated output of the project. A gap of US$683 million emerges. The CTF contribution to the project, US$ 200 million, will cover a portion of the entire estimated gap, the remaining resources are expected to be provided by local governments given the socio-economic benefits of these investments.

Table 9.4 Financing Gap by Project Component and Total UTTP Financing Gap

Project Component	Funding Gap Per Enhanced Benchmark BRT (000's)	Total UTTP Project (000's)
Infrastructure	$30,100	$541,800
Scrapping	$3,645	$65,604
Hybrid Buses*	$217	$76,030
Total	$34,109	$683,435

* Gap for hybrid buses is expressed as per bus. Total gap for project is estimated by multiplying the gap per bus (US$217,000) by the total number of hybrid buses expected to be financed by the UTTP, which is 350.

35. To apportion among components the CTF contribution, it is assumed that no other source of concessional financing will be available for the hybrid component. Therefore, the financing gap in this component will have to be financed entirely by the CTF, or US$ 76 million. For infrastructure and bus scrapping it is assumed that the PROTRAM will contribute to financing part of the gap. To allocate among these components, the 124 million left after financing the hybrid buses are split proportionally according to the estimated gap. Table 9.5 shows the final allocation of CTF funds by component. In addition 5 million dollars have been allocated for pre-investment studies. PROTRAM is contributing grants for the preparation of projects in an amount not to exceed 50% of these costs. States and municipalities will cover the remaining share. Discussions with Mexican counterparts and the Bank's extensive experience in urban

transport in Mexico indicate the convenience of allocating a small amount of CTF concessional funds to trigger key investments that are in line with the development objectives of this project.

Table 9.5 Allocation of CTF Funds by Component

Project Components	CTF (M)
1. Capacity Building	$5
2.A.Infrastructure (BRT, Light Rail)	$106
2.B. i Financing of Buses (hybrids or equivalent technology in terms of GHG reduction potential)	$76
2.B.ii Scrapping of buses	$13
3. Project Management	$0
Total	$200

Annex 10: Safeguard Policy Issues

MEXICO: URBAN TRANSPORT TRANSFORMATION PROJECT

1. INTRODUCTION

1. The Urban Transport Transformation Project seeks to transform urban transport in Mexican cities to a lower carbon growth path by improving the quality and sustainability of urban public transport systems and services. This will significantly reduce the transport sector carbon footprint and related air toxics.

2. As a means to mitigate any social and/or environmental impact, the project will follow international best practices defined in the Social and Environmental Management Framework (MASTU). The MASTU is a tool to be used by subproject planners and it is based on federal/state/local Mexican law and regulations and complemented by necessary procedures to ensure that World Bank's safeguard requirements are met.

3. The main features of the MASTU are summarized below. An original draft version was posted for consultation at BANOBRAS' web-site on February 3rd 2009, and also posted at the Infoshop on January 29th 2009, and it is also available in the project's files. Consultations were held in Mexico City among key stakeholders on March 19th 2009, including municipal authorities, private sector operators, research institutions and universities as well as NGOs operating in urban transport. With the feed-back received during this process a final version was prepared incorporating the results from this consultation. The final version discussed and agreed with the borrower will be sent to the Infoshop and disclosed in BANOBRAS web-page before project approval by the Board.

2. SCOPE AND OBJECTIVES

4. The MASTU has been designed as a tool to facilitate the inclusion of environmental and social management procedures in the design, implementation and operation of urban transport subprojects of Eligible Beneficiaries willing to participate in the UTTP. It includes: (i) information about the Project's legal and institutional framework; (ii) procedures and responsibilities of the different stakeholders involved; (iii) screening mechanisms to categorize subprojects; (iv) general guidelines to prepare environmental assessments (environmental impact assessment and environmental management plans) and social impact assessments that can be easily adapted to conditions of each Eligible Beneficiary; (v) guidelines for subproject consultation at the local level; and (vi) mechanisms to address grievances and solve conflicts.

5. The MASTU main objectives are the following:

a) Identify and assess social and environmental impacts derived from subprojects;
b) Mainstream social and environmental procedures from an early stage in the subproject cycle;
c) Guide the preparation as needed of Environmental Assessments and Social Management Plans to avoid or mitigate impacts as well as management plans and other documents according to subproject category; and

d) Introduce consultation procedures that ensure broad stakeholders' participation.

3. INSTITUTIONAL FRAMEWORK

6. Eligible Beneficiaries willing to participate in the project will be responsible for the implementation of the environmental and social procedures set up in the MASTU. At the national level technical, economic and safeguards processes will be managed by the representatives of SEMARNAT and SEDESOL within the GTC. Information of safeguards will flow from the GTC to BANOBRAS through the UC. The UC is led by a Coordinator and comprises transport and economic specialists. The GTC includes SEDESOL and SEMARNAT that according to their own functions will be responsible for supervising the MASTU for all subprojects in the PROTRAM.

7. Eligible Beneficiaries should prepare and submit, after approval by the local relevant environmental and social authorities, a preliminary evaluation of likely environmental and social impacts and suggested subproject rating to the representatives of SEMARNAT and SEDESOL to the GTC. Based on the approved category the Eligible Beneficiary will prepare studies as established in the MASTU. Once the subproject is approved, including management environmental and social management plans duly approved by SEDESOL and SEMARNAT (as part of the GTC), the UC will send the proposed subproject to BANOBRAS for financial evaluation.

8. Eligible Beneficiaries are expected to implement the procedures described in the MASTU and through this process, to mainstream social and environmental criteria in their subproject cycle. This means that each subproject should have technical management capacity, including adequate instruments (e.g. environmental manuals, adequate regulations, and specialized social units) and qualified staff. Subproject planners will follow due diligence procedures, including monitoring and tracking of key aspects of the process, to provide assurance that the procedures of the MASTU are being implemented. The GTC will provide assistance and monitor MASTU application.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT

9. In accordance with MASTU's methodology, the following environmental and social safeguards should be taken into account by participating cities.

Environmental Policies		Social Policies
OP 4.01 Environmental Assessment		OP 4.12 Involuntary Resettlement OP 4.11 Cultural Assets
World Bank Safeguard Tools - Pollution Prevention and Abatement Handbook - Environmental Assessment Sourcebook (and up dates) - WB Participation Sourcebook (1996) - Disclosure Hand Book - Electronic Resettlement Guidebook		

10. Social and evaluation procedures begin by defining subproject categorization in accordance with each subproject's expected impacts and risks. Once specific subprojects have been identified, Eligible Beneficiaries will assess the possible environmental and socioeconomic impacts as well as cultural sensitivity of each subproject to categorize subprojects using the following general guidance. Specific guidance for social and environmental categorization is presented in the full text version of the MASTU:

Category A: Subprojects with high environmental and social impacts on cultural property and causing resettlement affecting more than 200 people and/or 10% of the assets. These impacts may affect an area broader than the sites or facilities subject to physical works.

Category B: Subprojects with moderate environmental and social risks. The subproject presents certain risks given the civil works planned, but its potential adverse impacts, lower than those of Type A subprojects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigation measures can be designed readily.

Category C: Subprojects likely to have minimal or no adverse environmental and social impacts.

11. The MASTU establishes the procedures that each Eligible Beneficiaries should follow based on the category of each specific subproject. Specifically, the MASTU provides guidance on the social and environmental studies (e.g. EIAs, Resettlement plans, etc) that are required. Equally, the MASTU states the consultation process to be followed for each subproject based on the assigned category. The MASTU includes guidelines for preparation of social and environmental studies as well as the principles and procedures for consultation.

12. The consultation process is divided into two levels: project and subproject level. The project consultation refers to the consultation of the MASTU itself, which was carried out on March 2009 in Mexico City involving key stakeholders: local authorities, transport operators, research and academic institutions, federal government entities and NGOs. The second level is the consultations that should be carried out by each participating Eligible Beneficiary with the general public and with stakeholders directly involved in specific subprojects; this process involves several stages which are also described in the MASTU (e.g. Environmental impact assessments, Social impact assessments, Resettlement plans, etc.).

13. The MASTU comprises also mechanisms to address grievances and solve conflict at the local and federal level for each participating Eligible Beneficiaries. Each Eligible Beneficiaries will appoint an entity independent of the subproject implementing agency and with decision capacity to attend grievances and solve conflicts. The representatives of SEMARMAT and SEDESOL within the GTC can provide support and act as a mediator in cases that was not possible to solve at the local level.

14. SEDESOL and SEMARNAT according to their role in the GTC will review environment and social assessment and other required studies as defined in the MASTU; both entities according to their functions will supervise compliance with the MASTU at the various phases of the project cycle. Once this process is completed the UC will send the subproject package to BANOBRAS among other documents for its financial assessment. BANOBRAS will submit reviewed subprojects for Bank's no-objection as per MASTU requirements.

5. TECHNICAL ASSISTANCE AND BANK SUPERVISION

5.1 Technical Assistance

15. The UTTP is an opportunity to mainstream Bank's social and environmental policies in transport projects. The Bank will support this effort providing technical assistance to strengthen the institutional capacity for environmental and social management at the national, state and local level, for all institutions participating in the UTTP. Capacity building will focus on: (i) safeguards processing and tools (EA, resettlement plans, etc.); (ii) consultation procedures; (iii) screening procedures; (iv) design of ToRs for environmental and social impact studies required for Category A and B subprojects; (v) preparation of baseline analysis; (vi) procedures to implement environmental and social management plans, and; (vi) monitoring and evaluation procedures.

5.2 World Bank Supervision

16. In addition to the monitoring and evaluation conducted by the UC and the GTC through SEDESOL and SEMARNAT, the Bank will conduct subproject supervision, particularly of high risk subprojects (Category A), but will also include subprojects classified as Categories B or C as deemed necessary. Supervision activities will include: (i) prior review of EAs and Resettlement plans documentation; (ii) reviews of EAs and resettlement plans of select Category B subprojects, to determine the adequacy of the environmental and social assessment and management plans implemented; and (iii) field supervision of all Category A and selected Category B subprojects.

17.

Readiness from a Safeguards' perspective

18. Field visits to Monterrey and Leon allowed for a better understanding of the status of readiness and compliance of candidate cities regarding environmental and social safeguards. These two cities had participated in the design of the original version of the MASTU under the previous Medium Cities Urban Transport Project in Mexico. Bank's specialists visited these cities and corroborated that both cities have started to mainstream social and environmental management into their project cycle. Both cities have developed institutional capacity for safeguard management and their staff is capable to conduct procedures to ensure compliance with Bank's environmental and social safeguards as presented in the MASTU. In general, both cities are in a good track in this mainstreaming process.

19. Main observed features of these two cities regarding safeguards are the following: (i) both have developed their own methodologies to incorporate social considerations into the

design and implementation phases of urban transport projects based on lessons learnt from previous experiences; (ii) environmental management has generally been institutionalized, and project teams include social management units capable of managing social impacts associated to the projects. However, the two cities recognize their need for further technical assistance to address social and environmental matters systematically; and (iii) they both understand the benefits of embracing the consultation process formulated in the MASTU and are very willing to adopt it. Complaints have been resolved in an ad hoc basis.

Monterrey

Background Information

20. Monterrey has approved its long-term Strategic Transport and Roads Development Plan (Plan Sectorial de Transporte y Vialidad del Area Metropolitana de Monterrey (PSTV)), and it is currently conducting consultations with relevant stakeholders (e.g. academia, governmental institutions, etc). This plan has a horizon until 2030 and identifies the trunk routes that will be required to satisfy transport demand in the metropolitan area within this time frame. The PSTV was developed on the basis of the State Plan of Urban Development which was published last year also.

21. The agencies responsible to prepare the PSTV are: (i) the Urban Development Planning Agency; (ii) the decentralized State Transport Agency (Agencia para la Racionalizacion y Modernizacion del Sistema de Transporte Publico de Nuevo Leon), and; (iii) the Consejo Estatal de Transporte y Vialidad (CETYV).

22. CETYV has been working on the development of the corridor Lincoln-Ruiz Cortinez that consists of a segregated bus lane to be used as an "open" BRT system of approximately 21 kms. The CETYV is finalizing the study of the technical, legal and financial structuring of the proposed BRT corridor. The environmental and socioeconomic study for the corridor has already been finalized. The PSTV is planning the development of a trunk route in the area proposed by this corridor.

23. In parallel to CETYV's initiatives, Metrorrey, the agency responsible for the metro operation TransMetro, Metrobus and Metro Enlace, is working on the development of three transport projects. Metrorrey's projects include two BRT corridors – Lincoln of nearly 5 kms., and Romulo-Garza of almost 18 kms, and an Urban Light Rail project (Tren Metropolitano) nearly to 40 kms; however, no studies have been undertaken so far. All three projects will need to be submitted for approval by CETYV and the State Transport Agency. Of these three projects, Corridor Lincoln will most probably not be pursued because of its proximity to the Lincoln-Ruiz Cortinez Corridor, which is already being studied and is part of the PSTV.

24. Metrorrey is mainly focused on the development of the urban light rail project, and is currently applying for FONADIN grants to finance the feasibility studies. The PSTV envisions the modernization of rail infrastructure as an option for the development of mass transport solutions; therefore, if the studies show that the urban light rail project is feasible, it would be included within the plans set out in the PSTV.

Institutional Capacity

25. Monterrey has the legal and institutional framework and the capacity to manage environmental aspects of urban transport projects. Both agencies, Metrorrey and CETYV, have been able to incorporate good environmental practices, based on national and state regulations, in their project development processes. In the case of Metrorrey the safeguard aspect is present in the procedures applied in the extension of the Metro line project that finalized last year; and in the case of CETYV, it is reflected in the process followed in the development of the Lincoln-Ruiz Cortinez corridor. In the latter case, CETYV hired a group of consultants to undertake an environmental and social assessment based on the environmental and social management framework produced for a previous transport Bank project in Monterrey.

26. There are also social procedures in place that could be enhanced with the support of the Bank, especially in topics such as institutionalization of social management and consultation procedures. In the case of the extension of the Metro line, the project team included a social specialist, who was responsible for undertaking a social assessment and a social strategy to address impacts. There was no need for resettlements, only one person got affected as part of his plot of land had to be purchased, and this purchase followed established procedures (the purchasing price was determined as the average of the assessments provided by three independent Schools of real estate appraisers). Procedures to mitigate the negative impacts on businesses associated with the construction phase were put in place in order to keep open access to the public during business hours. In addition, a Citizens Committee with representatives from Metrorrey, CETYC, State Transport Agency, Urban Development Agency, Secretary of Public Works, Neighbors, Businesses, Hoteliers, School of Architect and Engineers, and School of Real Estate Appraisers among others was created. This Committee was the link between the citizens and Metrorrey, participated in visits to the construction site becoming some type of monitoring agent ensuring the use of good construction practices.

27. In the analyzed projects the Metro Line and Corridor Lincoln-Ruiz Cortinez stakeholders consultation was carried out. However, this process could be strengthened by formalizing the consultation process within the project development process, including proper documentation and retro-feedback to stakeholders. Both -CECYT and Metrorrey- are willing to adopt the consultation procedures presented in the MASTU. These provisions would especially apply to the consultation of the environmental assessment of the Corridor Lincoln-Ruiz Cortinez that was already developed, and the environmental and social management plans of the same corridor given that the project is close to initiate its bidding process.

28. Public consultation process about the PSTV was also carried out to receive feed-back from the public and from main stakeholders, to complement a initial consultation carried out on 13 of March, 2009.

Leon

Background Information

29. The Transport Integrated System (SIT) in Leon known as Optibus has been developed as part of the broader Transport Master Plan of 1998. The first phase of Optibus is currently under operation and includes two BRTs routes with a total 55 articulated buses in addition to feeder and auxiliary routes. Leon is currently developing the second phase of the SIT, which will consist of 5 BRTs routes with 110 articulated buses, 63 feeder routes and 12 auxiliary routes.

30. The second phase includes the construction of the Corridors San Juan Bosco, Torres Landa, and Hidalgo, the construction of the bus station, bus stops, and a transfer station. It also includes additional resources to maintain some lateral accesses to complement the current charge system, and to provide a fleet management system. State and municipal funding as well as some private financing is available for the first two corridors and related investments (i.e. station, bus stops, etc). However, there are no resources to complete the Corridor Hidalgo, implement the improvements to the fare-collection system and purchase and implement the fleet management system among others.

31. Leon also has a Bike Roads Master Plan from 2003, which has been updated, and it is part of the broader transport integrated vision of the city. The current administration has restored 70 of the total 150 kilometers of bike roads.

Institutional Capacity

32. Leon has the legal and institutional framework and the capacity to manage environmental and social aspect associated to the SIT. The Mobility Directorate (Direccion de Movilidad) within the Secretariat of Sustainable Development of the municipality is the agency in charge of the SIT development. The staff of the Secretariat includes environmental and social experts who are supporting the development of the second phase of the SIT. The SIT also receives the support of the Environment Secretariat.

33. Leon has undertaken a process that reflects good environmental and social management practices which are based on the federal, state, and mainly municipal legal framework, covering a wide range of topics associated to transport projects such as waste management, emission control and construction of infrastructure. Both phases of the SIT have presented environmental assessments. In the case of the San Bosco Corridor, the environmental assessment identified the impact that the construction will cause on a significant number of trees. The project budget already identifies the resources needed to dig out and transplant these trees, and finance forest compensation. A public consultation process was also carried out among key stakeholders. Local authorities recognized that the process can be strengthened with the principles and procedures presented in the MASTU and with the support of the Bank.

34. The Social Communication Unit within the Sustainable Development Secretariat is supporting the development of the SIT in all tasks related to stakeholders' information, consulting process and handling social impacts. During the first phase of the SIT there was no need for resettlement, but business along the corridor were affected during construction. Management of social impacts was done on a more reactive rather that systematic basis, resulting in some conflicts that were finally resolved and provided lessons learnt that are being applied to in the second phase. Social assessments are currently being prepared, and information programs as well as consultation with those stakeholders expected to be negatively affected by the corridor

are being scheduled with the hope to receive feedback to design the appropriate mitigation measures. Despite the progress seen on social management in this case, human and monetary resources devoted to these tasks are still limited and further capacity building and technical assistance are required. The Secretariat recognizes the benefits of the proper management of social considerations.

35. In the case of Leon, there are many lessons to be learnt from the transformation process from "hombre-camion" to consolidated transport companies grouped under two main organizations. Main lessons include, for instance, selection criteria to define the conditions to transform a bus owner (hombre-camion) into a company's shareholder, the process undertaken by the same concessionaries to determine the division of the bus routes, and the facilitator role played by the local authority.

Annex 11: Project Preparation and Supervision

MEXICO: URBAN TRANSPORT TRANSFORMATION PROJECT

	Planned	Actual
PCN review	04/11/2008	04/11/2008
Initial PID to PIC	12/22/2008	12/22/2008
Initial ISDS to PIC	12/22/2008	12/22/2008
Appraisal	07/28/2009	07/28/2009
Negotiations	10/26/2009	02/18/2010
Board/RVP approval	12/08/2009	
Planned date of effectiveness	03/01/2010	
Planned date of mid-term review	03/01/2013	
Planned closing date	09/31/2017	

Key institutions responsible for preparation of the project:
Secretaría de Hacienda y Crédito Público, BANOBRAS, SEDESOL and SEMARMAT

Bank staff and consultants who worked on the project included:

Name	Title	Unit
Aurelio Menendez	Sector Manager	LCSTR
Emmanuel James	Lead Transport Specialist	LCSTR
Arturo Ardila Gomez	Urban Transport Specialist	LCSTR
Walter Vergara	Lead Chemical Engineer	LSSEN
Gustavo Saltiel	Sector Leader	LCSSD
Maria Elena Castro	Senior Social Scientist	LCSSO
María Catalina Ochoa	Junior Professional Associate	LCSTR
Oswaldo Patiño	Consultant	LCSTR
Carla della Maggiora	Consultant	LCSEN
Jorge Rebelo	Lead Transport Specialist (Peer Reviewer)	LCSTR
John Rogers	Consultant (Peer Reviewer)	
Samuel L. Zimmerman	Senior Transport Specialist	
Ralf-Michael Kaltheier	Senior Transport Economist	LCSTR
Georges B. Darido	Young Professional	LCSTR
Gabriela Elizondo	Consultant	LCSEN
M. Dolores Lopez-Larroy	Senior Financial Officer	BDM
Seraphine Haeussling	Consultant	LCSEN
Juan Carlos Serrano	Financial Management Analyst	LCSFM
José M. Martínez	Senior Procurement Specialist	LCSPT
Tomás Socias	Senior Procurement Specialist	LCSPT

Bank funds expended to date on project preparation:

- Bank resources: US$502,918.00
- Trust funds:
- Total: US$502,918.00

Estimated Approval and Supervision costs:

- Remaining costs to approval: US$50,000
- Estimated annual supervision cost: US$65,000

Annex 12: Documents in the Project File

MEXICO: URBAN TRANSPORT TRANSFORMATION PROJECT

1. Improving Air Quality in Metropolitan Mexico City: An Economic Valuation, Policy Research Working Paper, World Bank, February 2002.

2. Air Quality Management Report, National Institute of Ecology, Mexico, 1996.

3. Audit of Transportation and Air Quality Program for Mexico City, Final Report, ICF Consulting, 2000.

4. Estudio de Prefactibilidad para la Introduccion de Autobuses Hibridos para el Servicio de Transporte Público de la ZMVM e Identificaci6n de Barreras a ser Superadas, UNAM, Mexico, 2000.

5. Estudio Integral de Transporte y Calidad del Aire en la Zona Metropolitana del Valle de Mexico,

6. COMETRAVI, Volumes 1-8, México, 1999

7. GEF Strategy for Development of Fuel Cell Buses for the Developing World, United Nations Development Programme, New York, 2001.

8. Hybrid-Electric Drive, Heavy-Duty Vehicle Testing Project, Final Emissions Report, West Virginia University, February 2000.

9. Implementation Completion Report Mexico Transport Air Quality Management Project for the Mexico City Metropolitan Areas, World Bank, Washington D.C., June 2000.

10. Inventario de Emisiones a la Atmósfera en la Zona Metropolitana del Valle de Mexico, CAM (Comision Ambiental Metropolitana), Mexico, 1999.

11. Llegando Tarde al Compromiso: la Crisis del Transporte en la Ciudad de Mexico, El Colegio de Mexico, Victor Islas Rivera, Mexico 2000.

12. Metropolitan Mexico City Mobility & Air Quality. White Paper for the MIT Integrated Program on Urban, Regional and Global Air Pollution, Zegras, C. et al., 2000.

13. Mexico 3a. Comunicación Nacional ante la Convención Marco de las Naciones Unidas sobre el Cambio Climático, Secretaria de Medio Ambiente y Recursos Naturales (SEMARNAT) e Instituto Nacional de Ecología (INE), Mexico 2008.

14. NYCT Operating Experience with Hybrid Transit Buses, World Bus & Clean Fuel Summit, Los Angeles, June 2000.

15. Programa para Mejorar la Calidad del Aire de la Zona Metropolitana del Valle de Mexico 2002-2010, Secretaria de Ecología del Gobierno del Estado de Mexico, Secretaria de Medio

Ambiente del Gobierno del Distrito Federal, Secretaría de Medio Ambiente y Recursos Naturales y Secretaría de Salud, Mexico 2002.

16. Propuesta Preliminar: Diseño Funcional y Proyecto del Corredor Eje Central, Urbanismo y Sistemas de Transporte, SA de CV, Mexico, 2001.

17. Reducing Greenhouse Gases and Air Pollution: A Menu of Harmonized Options, STAPPA and ALAPCO, October 1999.

18. Study for Bus-Colectivo Substitution Program and 33 Bus Corridors, SETRAVI, Mexico, 1999.

19. Transportation in Mexico City, Sheinbaum, C. and Meyers, S., Energy for Sustainable Development, Volume 2, No. 3, 1995.

20. Transportation Policy in Mexico City, Wirth, C., Urban Affairs Review, Vol 33, No 2., 1997

21. Urban Structure, Energy, and Environmental Quality in the Metropolitan Area of Mexico City: Indicators of Sustainability, Secretary of the Environment of Mexico City, 1999.

22. COLMEX. Social Framework for the Corridor Program

23. GETINSA. Diseño Ejecutivo del Corredor Insurgentes

24. GETINSA. Environmental Impact Assessment of Insurgentes Corridor

25. PDD: Project Design Document: Mexico, Insurgentes Avenue Bus Rapid Transit Pilot Project. Document version: 1.4; Document date: 31-Oct-05.

26. NMB: CLEAN DEVELOPMENT MECHANISM PROPOSED NEW METHODOLOGY: BASELINE (CDM-NMB): Version 02 - in effect as of: 15 July 2005; GhG emissions reductions in urban transportation projects that affect specific routes or bus corridors or fleets of buses including where fuel usage is changed. Document version number: 1.2; Document revision date: 31-Oct-05.

27. NMM: CLEAN DEVELOPMENT MECHANISM - PROPOSED NEW METHODOLOGY:

28. MONITORING (CDM-NMM): Version 01 - in effect as of: 1 July 2004. GhG emissions reductions in urban transportation projects that affect specific routes or bus corridors or fleets of buses including where fuel usage is changed. Document version number: 1.2; Document revision date: 31-Oct-05.

29. Monitoring Plans: Mexico, Insurgentes Avenue Bus Rapid Transit Pilot Project; October 2005, 2006, 2007.

30. Project Appraisal Document: Introduction of Climate Friendly Measures in Transport, World Bank, 2002.

31. Project Appraisal Document: MEXICO CITY INSURGENTES BUS RAPID TRANSIT SYSTEM CARBON FINANCE PROJECT, World Bank, 2006.

32. Pruebas en Campo de Autobuses de Tecnologías Alternativas En la Ciudad de México Reporte Final Equipo de Transporte y Cambio Climático, SMA and World Bank, 2006;

33. Introducción de medidas ambientalmente amigables, SMA, 2009. Informe final.

34. Transport and Climate: Lessons from the Partnership between Mexico City and the World Bank; Walter Vergara. Seraphine Haeussling. The World Bank, 2007.

Annex 13: Statement of Loans and Credits

MEXICO: URBAN TRANSPORT TRANSFORMATION PROJECT

			Original Amount in US$ Millions					Difference between Expected and Actual Disbursements	
Project ID	FY	Project Name	IBRD	IDA	Grants	Cancel	Undisb.	Orig.	Frm Rev'd
P116965	2010	MX Influenza Prevention and Control	491	0.00	0.00	0.00	491.00	8.33	0.00
P114271	2009	MX Customs Institutional Strengthening	10.03	0.00	0.00	0.00	10.03	0.25	0.00
P106589	2009	MX IT Industry Development Project	80	0.00	0.00	0.00	80.00	29.82	0.00
P112258	2009	MX Priv Housing Finance Markets Strngth	1,010.00	0.00	0.00	0.00	7.48	0.50	0.00
P106528	2009	MX Results-based Mgmt. and Bugdeting	17.24	0.00	0.00	0.00	17.24	7.54	0.00
P115067	2009	MX Support to Oportunidades Project	1,503.76	0.00	0.00	0.00	66.67	-1437.10	0.00
P106261	2009	MX Sustainable Rural Development	50	0.00	0.00	0.00	49.90	0.00	0.00
P088996	2008	MX (CRL2) Integrated Energy Services	15	0.00	0.00	0.00	14.96	7.63	0.00
P085593	2006	MX (APL I) Tertiary Educ Student Ass	180	0.00	0.00	0.00	60.35	52.72	0.00
P087038	2006	MX Environmental Services Project	45	0.00	0.00	0.00	10.23	4.56	0.00
P091695	2006	MX Modernization Water & Sanit Sector TA	25	0.00	0.00	0.19	5.33	5.52	3.75
P074755	2005	MX State Judicial Modernization Project	30	0.00	0.00	16.5	13.50	30.00	0.00
P089865	2005	MX-(APL1) Innov. for Competitiveness	250	0.00	0.00	0	39.91	28.15	0.00
P087152	2004	MX (CRL1)Savings & Rurl Finance(BANSEFI)	154.5	0.00	0.00	0.38	36.82	-41.81	30.53
P070108	2003	MX Savings & Credit Sector Strengthening	85.6	0.00	0.00	0.00	14.44	-6.56	6.77
		Overall Result	**3,947.13**	**0.00**	**0.00**	**17.07**	**917.86**	**-1310.45**	**41.05**

MEXICO

STATEMENT OF IFC's - Held and Disbursed Portfolio

In Millions of US Dollars

As of December 31, 2009

		Committed IFC				Disbursed IFC			
FY Approval	Company	Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic
2008	Agrofinanzas	0.00	1.70	0.00	0.00	0.00	0.00	0.00	0.00
2008	Alta Growth Fund	0.00	20.00	0.00	0.00	0.00	2.53	0.00	0.00
2007/ 2008	Banco Amigo	0.00	2.22	0.00	0.00	0.00	2.22	0.00	0.00
2006/ 2008/ 2009	Banco del Bajio	0.00	49.96	0.00	0.00	0.00	49.47	0.00	0.00
2003/ 2005/ 2010	Banorte (Mex)	0.00	217.70	0.00	0.00	0.00	150.00	0.00	0.00
1995-96/ 1998-99	Baring MexFnd	0.00	1.70	0.00	0.00	0.00	1.70	0.00	0.00
2008	Bioparques	7.00	0.00	5.00	0.00	7.00	0.00	5.00	0.00
2005/ 2008/ 2009	CMPDH	34.71	0.00	4.08	0.00	28.71	0.00	4.08	0.00
2006	Carlyle Mexico	0.00	3.83	0.00	0.00	0.00	3.46	0.00	0.00
2009	City Express Hol	12.85	0.00	5.14	0.00	0.00	0.00	0.00	0.00
2004	DTM	2.13	0.00	0.00	0.00	2.13	0.00	0.00	0.00
2002	Ecomex	2.40	0.10	0.08	0.00	2.40	0.10	0.08	0.00
2005/ 2007	FINEM	23.18	0.76	0.00	0.00	13.71	0.76	0.00	0.00
2010	Finterra	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005-06/ 2009-10	GMAC Financiera	0.60	0.00	0.00	0.00	0.60	0.00	0.00	0.00
1998/ 2004/ 2008/ 2010	Grupo Calidra	54.23	0.00	0.00	0.00	49.23	0.00	0.00	0.00
1992/ 1993/ 1996/ 2000	Grupo Posadas	0.00	0.00	8.00	0.00	0.00	0.00	8.00	0.00
2006/ 2009	Grupo Su Casita	0.00	10.16	0.00	0.00	0.00	10.16	0.00	0.00
2008-09	Hipotec Vertice	21.44	6.53	0.00	0.00	14.20	6.26	0.00	0.00
2007	Infrainvest	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	Interoyal	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00
2007	Irapuato	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998/ 1999	Merida III	19.96	0.00	0.00	31.64	19.96	0.00	0.00	31.64
1995/ 1997/ 1999	Mexplus Puertos	0.00	0.80	0.00	0.00	0.00	0.80	0.00	0.00
2007/ 2009	MicroCred Mexico	0.00	0.59	0.00	0.00	0.00	0.59	0.00	0.00
2009	Nasoft	0.00	8.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	Nexxus III Fund	0.00	20.00	0.00	0.00	0.00	10.56	0.00	0.00
2003	Occidental Mex	15.00	0.00	0.00	20.00	15.00	0.00	0.00	20.00
	Occihol	0.00	7.50	0.00	0.00	0.00	7.50	0.00	0.00
2010	Optima Energia	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000/ 2004/ 2008	PanAmericanSilv	0.00	2.18	0.00	0.00	0.00	2.18	0.00	0.00
2007	Petstar	7.23	0.00	5.56	10.40	7.23	0.00	5.56	10.40

2009	Progresemos	3.06	0.00	0.00	0.00	2.29	0.00	0.00	0.00
2002	Puertas Finas	4.88	0.00	0.00	0.00	4.88	0.00	0.00	0.00
	Savoy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sierra Nevada	6.56	0.00	0.00	0.00	6.56	0.00	0.00	0.00
2001/ 2002/ 2004-2007	Su Casita	163.77	0.00	0.00	0.00	143.94	0.00	0.00	0.00
1997	TMA	0.59	0.00	3.92	2.06	0.59	0.00	3.92	2.06
2008	Vinte	10.36	7.06	0.00	0.00	8.61	7.06	0.00	0.00
2006	Vuela	40.00	0.00	0.00	0.00	25.82	0.00	0.00	0.00
2002	ZN Mexico II	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
1999/ 2000	ZN Mxc Eqty Fund	0.00	0.80	0.00	0.00	0.00	0.80	0.00	0.00
Total Portfolio:		**441.08**	**411.70**	**31.78**	**64.10**	**352.86**	**256.17**	**26.64**	**64 353**

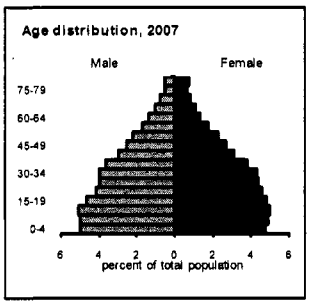
Annex 14: Country at a Glance

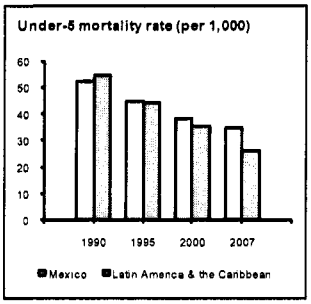
MEXICO: URBAN TRANSPORT TRANSFORMATION PROJECT

Mexico at a glance

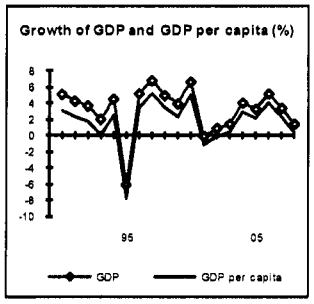
1/25/10

Key Development Indicators	Mexico	Latin America & Carib.	Upper middle income
(2008)			
Population, mid-year (millions)	106.4	561	824
Surface area (thousand sq. km)	1,964	20,421	41,497
Population growth (%)	1.0	1.2	0.7
Urban population (% of total population)	77	78	75
GNI (Atlas method, US$ billions)	1,062.1	3,252	5,854
GNI per capita (Atlas method, US$)	9,990	5,801	7,107
GNI per capita (PPP, international $)	13,910	9,678	12,072
GDP growth (%)	1.3	5.7	5.8
GDP per capita growth (%)	0.3	4.4	5.0
(most recent estimate, 2003–2008)			
Poverty headcount ratio at $ 1.25 a day (PPP, %)	<2	8	..
Poverty headcount ratio at $ 2.00 a day (PPP, %)	5	17	..
Life expectancy at birth (years)	75	73	71
Infant mortality (per 1,000 live births)	29	22	21
Child malnutrition (% of children under 5)	3	4	..
Adult literacy, male (% of ages 15 and older)	94	92	95
Adult literacy, female (% of ages 15 and older)	91	90	93
Gross primary enrollment, male (% of age group)	114	120	112
Gross primary enrollment, female (% of age group)	111	116	109
Access to an improved water source (% of population)	95	91	95
Access to improved sanitation facilities (% of population)	81	78	83





Net Aid Flows	1980	1990	2000	2008 [a]
(US$ millions)				
Net ODA and official aid	55	156	-56	121
Top 3 donors (in 2007):				
United States	9	23	24	84
Germany	15	9	15	28
France	15	51	-11	15
Aid (% of GNI)	0.0	0.1	0.0	0.0
Aid per capita (US$)	1	2	-1	1



Long-Term Economic Trends	1980	1990	2000	2008	1980–90	1990–2000	2000–08
					(average annual growth %)		
Consumer prices (annual % change)	26.3	26.7	9.5	5.1			
GDP implicit deflator (annual % change)	33.4	28.1	12.1	6.6			
Exchange rate (annual average, local per US$)	0.0	2.8	9.5	11.1			
Terms of trade index (2000 = 100)	194	106	100	116			
Population, mid-year (millions)	67.6	83.2	98.0	106.4	2.1	1.6	1.0
GDP (US$ millions)	194,851	262,710	581,428	1,088,128	1.1	3.1	2.7
		(% of GDP)					
Agriculture	9.0	7.8	4.2	3.8	0.8	1.5	2.1
Industry	33.6	28.4	28.0	37.1	1.1	3.8	1.9
Manufacturing	22.3	20.8	20.3	18.8	1.5	4.3	1.8
Services	57.4	63.7	67.8	59.1	1.4	2.9	3.1
Household final consumption expenditure	65.1	69.6	67.0	65.5	1.4	2.3	3.8
General gov't final consumption expenditure	10.0	8.4	11.1	10.3	2.4	1.8	0.4
Gross capital formation	27.2	23.1	23.9	26.4	-3.3	4.7	1.5
Exports of goods and services	10.7	18.6	30.9	28.3	7.0	14.6	5.7
Imports of goods and services	13.0	19.7	32.9	30.5	1.0	12.3	6.3
Gross savings	22.0	20.3	20.5	24.9			

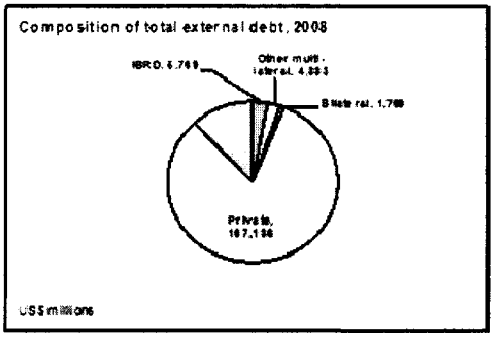
Note: Figures in italics are for years other than those specified. 2008 data are preliminary. .. indicates data are not available.
a. Aid data are for 2007.

Development Economics, Development Data Group (DECDG).

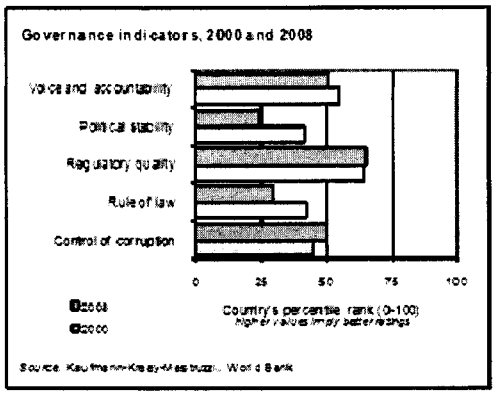
Balance of Payments and Trade	2000	2008
(US$ millions)		
Total merchandise exports (fob)	166,121	291,343
Total merchandise imports (cif)	174,458	308,603
Net trade in goods and services	-10,661	-24,340
Current account balance	-18,884	-15,806
as a % of GDP	-3.2	-1.5
Workers remittances and compensation of employees (receipts)	6,573	25,137
Reserves, including gold	35,577	95,298

Central Government Finance		
(% of GDP)		
Current revenue (including grants)	21.4	23.7
Tax revenue	10.6	8.2
Current expenditure	21.4	19.8
Overall surplus/deficit	-3.4	-2.1
Highest marginal tax rate (%)		
Individual	40	28
Corporate	35	28

External Debt and Resource Flows		
(US$ millions)		
Total debt outstanding and disbursed	150,501	203,984
Total debt service	58,509	41,332
Debt relief (HIPC, MDRI)	–	–
Total debt (% of GDP)	26.0	18.7
Total debt service (% of exports)	30.4	12.1
Foreign direct investment (net inflows)	18,466	18,978
Portfolio equity (net inflows)	447	-3,503



Private Sector Development	2000	2010
Time required to start a business (days)	–	13
Cost to start a business (% of GNI per capita)	–	11.7
Time required to register property (days)	–	74
Ranked as a major constraint to business (% of managers surveyed who agreed)	**2000**	**2007**
Anticompetitive or informal practices	..	19.0
Corruption	..	17.8
Stock market capitalization (% of GDP)	21.5	38.8
Bank capital to asset ratio (%)	9.6	14.4



Technology and Infrastructure	2000	2007
Paved roads (% of total)	32.8	50.0
Fixed line and mobile phone subscribers (per 100 people)	27	82
High technology exports (% of manufactured exports)	22.4	17.1

Environment		
Agricultural land (% of land area)	55	55
Forest area (% of land area)	33.7	33.0
Nationally protected areas (% of land area)	..	5.3
Freshwater resources per capita (cu. meters)	4,090	3,885
Freshwater withdrawal (billion cubic meters)	78.2	..
CO2 emissions per capita (mt)	3.9	4.1
GDP per unit of energy use (2005 PPP $ per kg of oil equivalent)	7.9	7.7
Energy use per capita (kg of oil equivalent)	1,533	1,702

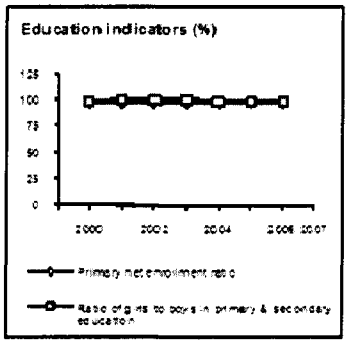
World Bank Group portfolio	2000	2009
(US$ millions)		
IBRD		
Total debt outstanding and disbursed	11,444	10,142
Disbursements	1,748	4,882
Principal repayments	1,330	654
Interest payments	892	204
IDA		
Total debt outstanding and disbursed	–	–
Disbursements	–	–
Total debt service	–	–
	2000	**2007**
IFC *(fiscal year)*		
Total disbursed and outstanding portfolio	1,234	1,184
of which IFC own account	723	798
Disbursements for IFC own account	179	209
Portfolio sales, prepayments and repayments for IFC own account	66	134
MIGA		
Gross exposure	–	–
New guarantees	–	–

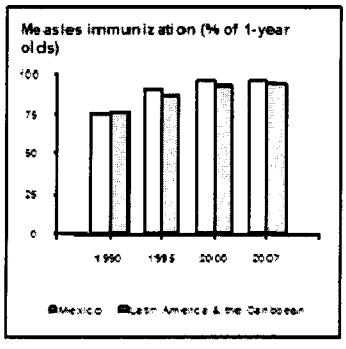
Note: Figures in italics are for years other than those specified. 2008 data are preliminary. 4/25/10
.. indicates data are not available. – indicates observation is not applicable.

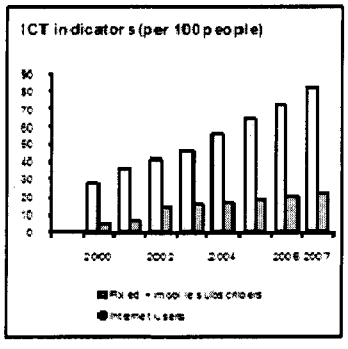
Development Economics, Development Data Group (DECDG).

With selected targets to achieve between 1990 and 2015
(estimate closest to date shown, +/- 2 years)

	Mexico			
Goal 1: halve the rates for extreme poverty and malnutrition	**1990**	**1995**	**2000**	**2007**
Poverty headcount ratio at $1.25 a day (PPP, % of population)	7.7	7.0	4.8	<2
Poverty headcount ratio at national poverty line (% of population)	..	..	24.2	17.6
Share of income or consumption to the poorest quintile (%)	3.2	4.3	3.9	4.6
Prevalence of malnutrition (% of children under 5)	13.9	..	6.0	3.4
Goal 2: ensure that children are able to complete primary schooling				
Primary school enrollment (net, %)	98	..	97	98
Primary completion rate (% of relevant age group)	88	96	99	104
Secondary school enrollment (gross, %)	56	58	72	87
Youth literacy rate (% of people ages 15-24)	96	96	97	98
Goal 3: eliminate gender disparity in education and empower women				
Ratio of girls to boys in primary and secondary education (%)	97	..	99	99
Women employed in the nonagricultural sector (% of nonagricultural employment)	37	36	37	39
Proportion of seats held by women in national parliament (%)	12	14	18	23
Goal 4: reduce under-5 mortality by two-thirds				
Under-5 mortality rate (per 1,000)	52	45	38	35
Infant mortality rate (per 1000 live births)	42	36	32	29
Measles immunization (proportion of one-year olds immunized, %)	75	90	98	98
Goal 5: reduce maternal mortality by three-fourths				
Maternal mortality ratio (modeled estimate, per 100,000 live births)	..	..	..	60
Births attended by skilled health staff (% of total)	..	86	..	98
Contraceptive prevalence (% of women ages 15-49)	..	67	70	71
Goal 6: halt and begin to reverse the spread of HIV/AIDS and other major diseases				
Prevalence of HIV (% of population ages 15-49)	0.2	0.3	0.3	0.3
Incidence of tuberculosis (per 100,000 people)	81	44	32	30
Tuberculosis cases detected under DOTS (%)	..	13	64	99
Goal 7: halve the proportion of people without sustainable access to basic needs				
Access to an improved water source (% of population)	88	90	93	95
Access to improved sanitation facilities (% of population)	56	66	76	81
Forest area (% of total land area)	35.5	34.6	33.7	33.0
Nationally protected areas (% of total land area)	..	..	..	5.3
CO2 emissions (metric tons per capita)	4.5	4.0	3.9	4.1
GDP per unit of energy use (constant 2005 PPP $ per kg of oil equivalent)	6.8	6.9	7.9	7.7
Goal 8: develop a global partnership for development				
Telephone mainlines (per 100 people)	6.4	9.7	12.6	18.8
Mobile phone subscribers (per 100 people)	0.1	0.8	14.4	63.2
Internet users (per 100 people)	0.0	0.1	5.2	22.7
Personal computers (per 100 people)	0.8	2.6	5.8	14.4







Note: Figures in italics are for years other than those specified. .. indicates data are not available. 1/25/10

Development Economics, Development Data Group (DECDG).

Annex 15: Clean Technology Fund

MEXICO: URBAN TRANSPORT TRANSFORMATION PROJECT

Mexico's Commitment to Economic Growth Along a Low-Carbon Path.

1. **The GoM is committed to Reducing its Carbon Footprint and has taken several** significant measures. First, Mexico ratified the UN Framework Convention on Climate Change (UNFCCC) on March 11, 1993. Subsequently, Mexico's congress ratified the Kyoto Protocol (April 2000) by unanimous consent. Mexico has also launched an effort to strengthen its institutional capacity through the development of a Climate Change Office (CCO). The CCO has been supported through an IDF (Institutional Development Fund) grant from the World Bank. The IDF also supported the identification of economic instruments for the internalization of climate change concerns in economic planning.

2. As a non-Annex I country, Mexico is not mandated to limit or reduce its GHG emissions under the Kyoto Protocol. Nonetheless, the country has firmly adopted the UNFCCC principle of "common but differentiated responsibilities" and pledged to reduce its GHG emissions voluntarily. Mexico's leadership in the climate change arena has been recognized in the independent Climate Performance Index, which ranks countries based on (a) per capita GHG emission trends in the energy, transport, residential and industrial sectors; (b) absolute energy-related GHG emissions; and (c) climate policy. In this assessment released at the end of 2007, Mexico ranked fourth in the world.[22]

3. In 2007, the Government announced the National Climate Change Strategy (Estrategia Nacional de Cambio Climático – ENACC), thereby committing the country to place climate change at the heart of the country's national development policy.23 The ENACC sets the long-term climate change agenda, together with medium to long-term goals for adaptation and mitigation. The Bank is supporting its implementation through the Climate Change Development Policy Loan (P110849). In the Strategy, the country commits itself to reducing GHG emissions on a voluntary basis. The Strategy identifies options for decoupling GHG emissions from economic growth. It also proposes a long list of potential climate change mitigation activities, as well as ways to reduce vulnerability to climate change and raise public awareness.

4. At the Conference of the Parties of the UNFCCC, in Poznam (December 2008), Mexico became one of the first developing countries to commit to a specific carbon reduction target, with a pledge to halve greenhouse gas emissions by 2050, based on 2002 levels through the use of clean and efficient technologies. Mexico also plans a domestic cap-and-trade system by 2012 to abate emissions from point sources.

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[22] See http://www.germanwatch.org/klima/ccpi2008.pdf

[23] See www.semarnat.gob.mx/Documents/Estrategias_libro_completo_compress2.pdf for the complete Strategy in Spanish. An executive summary in English can be found at http://www.semarnat.gob.mx/queessemarnat/politica_ambiental/cambioclimatico/Documents/enac/sintesis/sintesisejecutiva/Executive%20Summary.pdf.

5. Mexico recently adopted the Special Climate Change Program (Programa Especial de Cambio Climático – PECC). The PECC is considered to be part of the 2007-2012 National Development Plan (NDP), in particular the environmental sustainability pillar of the NDP.[24] The PECC defines how to make effective the ENACC, in particular by identifying priorities and financing sources, both domestic and international.[25] The PECC identified two sectors as particularly central to its climate change agenda: transport and energy. The recently approved energy and transport, Green Growth DPL (P116808) highlighted the cross-cutting measures embedded in the objectives of the PECC that focus on climate change mitigation more specifically, such as the monitoring framework for emissions and the sectoral prioritization of interventions.

6. At the request of GOM, the Bank is supporting the low-carbon country case study for Mexico (MEDEC) which is a comprehensive analysis of options and alternatives to promote economic growth within a national low carbon footprint. The study will be completed during 2009 and its initial results are being used in the formulation of this project.

C. Mexico's Investment Plan for the CTF

7. The proposed project is derived from the investment plan (IP) approved recently, by the CTF Trust Committee. The Clean Technology Fund (CTF)[26] Investment Plan is a "business plan" agreed among, by the Government of Mexico, the International Bank for Reconstruction and Development (IBRD), the Inter-American Development Bank (IADB) and the International Finance Corporation (IFC) to provide support for the low-carbon objectives contained in Mexico's 2007-2012 National Development Plan, its National Climate Change Strategy and Special Climate Change Program. This multi-year business plan identifies the programs that are proposed to be co-financed by the CTF jointly with the IBRD, IADB and IFC.

8. The prior actions under the Green Growth DPL (P116808) established the policy framework that enables the promotion of cost-effective reductions in the growth of GHG emissions the CTF seeks to achieve. Also similarly to the Green growth DPL, Mexico's IP for the CTF is closely aligned with the ENACC and the PECC. Specifically, capturing the Regulatory and Institutional, Financial and Monitoring elements required for the high impact interventions Mexico's IP is seeking in the Urban Transport sector. Additionally, the proposed UTTP builds upon the Mexico GEF STAQ project (P114012) which offers grants for preparing sub-projects.

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[24] The main initiative in this pillar is to turn the concept of environmental sustainability into a transversal element of public policies and assure that all public and private investments are compatible with environmental protection. Objectives and strategies are structured in areas such as water, forests, climate change, biodiversity, solid waste and transversal environmental sustainability policy instruments.

[25] See the PECC draft at http://www.semarnat.gob.mx/queessemarnat/consultaspublicas/Documents/pecc/PECC_VCP.pdf. At the President's request, this draft is being revised by the CICC and a new version is expected in the first months of 2009.

[26] 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.

Mexico's Carbon Profile.

9. According to its Third National Communication to the UNFCCC, Mexico emitted 643 million tons of carbon dioxide equivalent (Mt CO2e) in 2002 of which almost 400 Mt CO2e came from combustion of fossil fuels. Mexico ranks thirteenth in the world based on total GHG emissions and is the second largest emitter in Latin America after Brazil. It accounts for 1.4% of global CO2 emissions from fossil fuels, excluding other GHGs and land-use change and forestry (LULF). Mexico's CO2 emissions have been growing steadily over the past 25 years.[27]

10. The sources of Mexico's GHG emissions are energy generation (24%), transport (18%), forests and land-use change (14%), waste management (10%), manufacturing and construction (8%), industrial processes (8%), agriculture (7%), fugitive emissions (6%), and other uses (5%). The oil and gas sector is responsible for about 12% of GHG emissions, about half of which is classified under energy generation. Mexico's total GHG emissions are equivalent to about 6 t CO2e per capita, or about 4 t CO2e per capita if one considers only the CO2 emissions from fossil fuel combustion.

Sectors Targeted by the CTF in Mexico.

11. The sectors proposed to the CTF were identified by the various studies completed or underway. The measures were thus prioritized in three subsectors, namely (i) urban transport, (ii) renewable energy, and (ii) energy efficiency. These resulted from several months of discussions between the government of Mexico and the IBRD, IADB and IFC, and build on years of development experience and policy dialogue between these institutions and the government of Mexico. The choice of programs reflects a combination of the government's priorities and sector implementation readiness, the development banks' capacity and focus, and priorities established by the CTF. The paragraphs below present the rationale for the programs put forward.

12. The programs proposed for CTF support do not involve new technology per se. They involve technology that is readily available to Mexico today, but face institutional, regulatory, or cost barriers (especially upfront investment cost barriers) which must be overcome for large-scale deployment. Support from the CTF would help overcome these barriers.

Urban Transport

13. Transport is an important contributor to the carbon footprint of the country and its GHG emissions are growing at more than 2% per year. Thus, changing the sector's carbon path has the potential to alter the overall footprint of the Mexican economy. The new path would be centered on a massive effort to adopt integrated urban transport projects that affect modal share towards energy efficient, low carbon mass transport systems. These are further enhanced through the application of low carbon drive systems (such as hybrid, articulated, high capacity vehicles),

[27] The difference between total GHG emissions and CO_2 emissions from the consumption and flaring of fossil fuels is due to other GHG than CO_2, and emissions from land-use change.

effective 100% scrapping of displaced rolling stock, and implementation of transport integration and transfer systems that promote harmonized urban development, climate and transport policies. Support for such modal shift toward public transport systems is proposed to be applied, starting with large metropolitan areas with a significant potential for GHG reductions. Even more important, the induced changes in infrastructure, equipment and behavior would lock these and additional savings for the long term.

14. Unless a transformation of the sector is undertaken that maximizes a modal shift toward integral urban transport systems, and fuel efficient vehicles, the business-as-usual scenario will produce significant increases in the carbon footprint of the sector.

15. The government's effort to address climate change issues in transport has led to the formulation of citywide climate change strategies in selected urban areas, the restructuring of regulatory and business structure frameworks for surface transport, and the implementation of the first Bus Rapid Transit (BRT) System demonstration projects in Mexico City and Leon. A major challenge for Mexico is to accelerate the modal shift towards energy-efficient, low-carbon mass transport systems, in order to change the transport sector's carbon path, and thereby the overall footprint of the Mexican economy by 2050.

D. Assessment of Proposed Project with CTF Investment Criteria

Potential for GHG Emissions Savings

16. Investment in activities to promote a modal shift in urban areas, including those associated with an improvement in the efficient allocation of public space for transport, such as bus rapid transit systems and associated measures (urban densification, the use and linkage with non motorized transport, and demand management actions), rank amongst the most cost effective in the sector.

17. **Cumulative Emissions Savings.** The program for scaling up public transportation through the implementation of low carbon intensity transport systems and associated measures (BRTs, expansion of metro systems based on low carbon power supply, low carbon vehicle technologies, low carbon or non motorized integrated measures, integration with other modes of transport, travel demand management actions and other activities) is anticipated to result in a reduction of about 2.0 Mt CO2e per year once all the project co-financed by the CTF are in place. Over the 20 year lifetime of the investment the accumulated reductions will be around 30 Mt CO2e. CTF resources would promote the adoption of policy and regulatory frameworks needed to remove barriers to the implementation of urban transport sector transformation projects.

18. **Technology Development Status.** The BRT systems to be supported under the project are relatively established with commercial installations in operation in Mexico City, Bogota and other urban centers in the region. The BRT along Insurgentes Avenue in Mexico City has been in operation of three years and has documented significant reductions in emissions, along with concomitant reductions in local airborne pollutants as well as gains in efficiency of transport as

measured by reduced travel times and reduced congestion. Similar gains have been documented at the BRT systems operating in Bogota.

19. Hybrid buses such as those proposed under the project have been in commercial operation in several cities in the continent, including a large fleet in new York City, a commercial fleet in Sao Paulo, Brazil as well as smaller fleets in other cities in the region. Hybrid articulated vehicles are available commercially and it is expected that the project would trigger a fast market entry in urban areas in Mexico and other countries. Hybrid vehicles have the potential to reduce by up to 40% the emissions of similarly sized conventional vehicles.

Cost-Effectiveness

20. CTF investment per ton of CO_2-equivalent reduced: The direct emission reductions potential of about 2 $MtCO_2$ per year of the proposed Project, once all investments are operational, translates into 30 $MtCO_2$ over the expected 20-year investment life for the proposed CTF funding of US$ 200 million. The interventions result in cost-effectiveness of CTF resources of about US$7/ tCO_2 saved.

21. Expected cost reduction of technologies. The CTF intervention has the potential to reduce the costs of articulated hybrid buses. It is expected, based on discussion with manufacturers that as a result of the project reductions of up to 33% in the additional cost of systems could be realized for the Mexican market.

Demonstration Potential at Scale

22. Scope for avoided GHG emissions through replication: Changing the sector's carbon path has the potential to alter the overall footprint of the Mexican economy. The new path would be centered on a massive effort to affect modal share towards energy efficient, low carbon mass transport systems. This modal shift can be secured through the deployment of BRT (bus rapid transit systems), light rails and similarly efficient transport modes. These are further enhanced through the application of low carbon drive systems (such as hybrid, articulated, high capacity vehicles), effective 100% scrapping of displaced rolling stock, and implementation of transport integration and transfer systems that promote harmonized urban development, climate and transport policies. Such a modal shift toward public transport systems is proposed to be applied in three stages, starting with large metropolitan areas with a significant potential for reductions and eventually applied to all urban areas over 500,000 inhabitants, as foreseen by PROTRAM. If similar innovations are deployed nationally by 2040, the carbon footprint of the country's transport system would remain at the 2007 levels. Even more important, the induced changes in infrastructure, equipment and behavior would lock these and additional savings for the long term (See Figure 1).

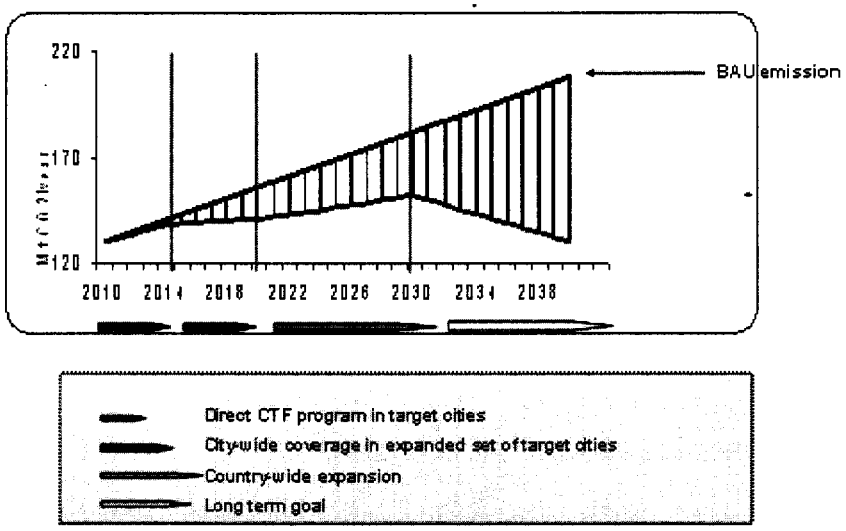

Figure 1 Mexico Transport Sector BAU and CTF Option

23. Transformation Potential: On a scaled up basis, as discussed above, the CTF co-financed project is expected to result in emission reductions of 2 $MtCO_2$ per year. Over the long term, it is expected that the investments supported under the project would have a transformational ratio of about 1:5. More importantly however, the actions taken under the project and the technologies deployed will place the transport sector under a low carbon path.

E. Development Impact

24. The proposed Project is a cornerstone of Mexico's strategy for climate change, and will have significant sustainable development impacts. With the help of CTF resources, it aims to make a major contribution to three critical development objectives: (1) reducing the carbon footprint of the transport sector; (2) promoting efficient allocation of public space and thus contributing to ease congestion and local pollution; and (3) increasing private sector involvement – in the development and financing of transport investments, through the participation of the private sector in PROTRAM.

25. Through its transformative impact, the use of CTF is expected to significantly reduce the energy intensity of the transport sector by 2020 by about 10 percent from present levels. Further, and perhaps more importantly, by low carbon transport investments, the use of CTF will help ensure sustainable transport, improvements in air quality in urban areas and sustainable urban development.

Environmental Co-Benefits:

26. Adoption of CTF supported measures would result in reduction in exposure to airborne pollutants. The experience in Mexico City has demonstrated that the operation of well run and designed BRTs have the potential to reduce exposure to airborne pollutants and air toxics. Mexico's National Institute of Ecology, in collaboration with the Sustainable Transport Center,

conducted a study to estimate the impacts of the METROBUS operation on local pollutants. Concentrations of CO, PM2.5, PM10, and benzene were measured before and after the implementation of the corridor (see Table 1). The results of the measurements are summarized in the table below. Similarly, the operation of Insurgentes (the main BRT artery) has resulted in a 95% reduction in accidents, which represent an additional economic benefit.

Table 1: Reduction of Exposure to Airborne Pollutants along Insurgentes Corridor

	Transport Modes		
	Microbus	Autobus	Metrobus
Number of runs	36	37	68
Concentrations of:			
Carbon monoxide (ppm)	15.8	11.4	7.5
Particulate matter PM2.5 (μg/m3)	152	129	99
Particulate matter PM10 (μg/m3)	196	202	183
Benzene (ppbv)	10.2	8.9	4.2

Source: INE 2006

27. The reasons for this significant reduction related to the operation of METROBUS are threefold including: (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. As a case in point, the Mexico City Metropolitan Area (MCMA) now constitutes the largest area source of airborne pollutants and GHGs in the country and it is one of the largest in the Americas. These are produced by the 50,000 industries and 4 million vehicles operated within the MCMA, which results in emissions of GHG and local pollutants, e.g., hydrocarbons, ozone, nitrogen oxides, particulate matter and carbon monoxide. Exposure to these airborne pollutants has serious health and environmental implications[28].

F. Implementation Potential

Country and Sector Strategies: Policies and Institutions to Support Achievement of Sector Objectives.

28. Mexico has submitted three National Communications to the UNFCCC establishing the National GHG Inventory (including from land-use change), reporting on the first studies on Mexico's vulnerability to climate change and laying out future emission scenarios.[29] Mexico is the only non-Annex I country to have submitted a Third National Communication and is currently preparing its Fourth National Communication.

[28] Under the IBRD-funded Formulation of the Third Air Quality Management Plan, an economic assessment of air quality impacts was undertaken. The assessment estimates that obtaining air quality compliance with World Health Organization standards yields health and environmental benefits of approximately US$2 billion per year.

[29] See http://unfccc.int/resource/docs/natc/mexnc3.pdf

29. Recognizing the multi-sectoral dimension of the climate change challenge, Mexico established the Intersecretarial Commission on Climate Change (Comisión Intersecretarial de Cambio Climático – CICC) in April 2005. The CICC's key mandates include the formulation and coordination of national climate change strategies and their incorporation into sectoral programs. The CICC is chaired by the Minister of Environment and Natural Resources with the following Ministries serving as members: Agriculture; Communication and Transportation; Economy; Social Development; Energy, and Foreign Affairs. The Ministry of Finance is a permanent invited member to the CICC's deliberations. The CICC contains several working groups, namely on mitigation, adaptation, as well as the Designated National Authority on Climate Change. Associated with the CICC is a Consultative Council on Climate Change, which creates a link between the CICC, the scientific community and civil society.[30]

30. On May 25, 2007, President Calderón announced the National Climate Change Strategy (Estrategia Nacional de Cambio Climático – ENACC)[31], thereby committing the country to place climate change at the heart of the country's national development policy. The ENACC sets the long-term climate change agenda, together with medium to long-term goals for adaptation and mitigation. In the Strategy, the country commits itself to reducing GHG emissions on a voluntary basis.

31. Mexico is currently developing a Special Climate Change Program (Programa Especial de Cambio Climático – PECC), which is expected to be adopted in the first half of 2009. As all government programs, the PECC is considered part of the 2007-2012 National Development Plan, in particular the environmental sustainability pillar of the National Development Plan. This pillar considers environmental sustainability as a transversal element of public policies to assure that all public and private investments are compatible with environmental protection. The PECC defines how to operationalize the ENACC, in particular by identifying priorities and financing sources, both domestic and international.

Institutional and Implementation Arrangements: Capacity to Implement Large-scale Low-Carbon Projects.

32. BANOBRAS will be the recipient and implementing agency for the IBRD and CTF loans. BANOBRAS also houses and manages the funds of FONADIN and its PROTRAM. BANOBRAS was involved since 1999 in the transport and climate program for the City of Mexico and has demonstrated institutional and technical capability to implement a large scale low carbon projects in the transport sector. BANOBRAS was also the implementing agency for the zero carbon power plant in the city of Monterrey.

33. As borrower BANOBRAS will coordinate UTTP implementation and will have direct responsibility for analyzing credit capacity of the recipients and their financial management and procurement capacity, ensuring compliance with Bank Guidelines and agreed operational

[30] See http://www.semarnat.gob.mx/queessemarnat/politica_ambiental/cambioclimatico/Pages/c4.aspx.

[31] See www.semarnat.gob.mx/Documents/Estrategias_libro_completo_compress2.pdf for the complete Strategy in Spanish. An executive summary in English can be found at http://www.semarnat.gob.mx/queessemarnat/politica_ambiental/cambioclimatico/Documents/enac/sintesis/sintesisejecutiva/Executive%20Summary.pdf

procedures. The technical aspects of the projects will be the responsibility of the Project Coordinating Unit (UC) and the GTC In sum, BANOBRAS will have the roles of procurement and financial management oversight when applicable, and credit monitoring and evaluation of projects. BANOBRAS will also be responsible for all formal correspondence with the Bank as well as performing prior review for terms of reference, consultants' services, civil works and other procurement activities carried out by the recipient of the credits.

Sustainability: Evidence of Commitment and Ownership, as well as Arrangements for Long Term Operations and Maintenance.

34. The GoM is committed to the project's successful implementation as indicated by recent policy actions intended to transform the urban transport sector. On the urban transport side, the government recently created the National Trust Fund for Infrastructure (FONADIN). FONADIN's objective is to help states and municipalities finance infrastructure investments. The GoM will subsidize up to 50% of the cost of the infrastructure and other investment. With FONADIN, the GoM created the PROTRAM, based in part on the results of the Mexico Massive Urban Transport Federal Program (P110474). PROTRAM will finance municipal investments in urban transport infrastructure, including mass transit systems as well as preparatory studies and designs. To participate in PROTRAM, a city must have a PIMUS, ITP or equivalent that reflects a holistic view of the transport planning process. The GoM is committed to transforming the urban transport sector.

35. The sustainability of the project will be based on the technical, financial and economic viability of the sub-projects approved and financed through BANOBRAS. The Bank, jointly with BANOBRAS and SHCP has designed accordingly operating regulations and criteria for selecting sub-projects and granting credits to eligible cities (Annex 6 and ANNEX 15). The UTTP will assist federal agencies such as BANOBRAS, SEDESOL, and SEMARNAT create technical capacity to coordinate planning and decision making on transport, environment and urban development throughout the Country. The Project will also help strengthen the institutional capacity of States and Municipalities to prepare, plan, implement, monitor and evaluate the technical and operational performance and environmental and social benefits of urban transport sub-projects, mitigating possible undesirable impacts. Operation and maintenance plan would be assessed during project evaluation to guarantee protection of assets over time. In the case of clean technology buses, bidding documents will require technical assistance of bus providers for maintenance during implementation.

G. Additional Cost/Risk Premium

36. The additional funds from the CTF are required to facilitate the market entry of a low carbon fleet for operation in the corridors, the costs of scrapping of old vehicles and the costs associated to additional infrastructure required in the mass transport corridors to encourage modal shift (transfer stations to other modes of transport, sidewalks, bike lines and garages, parking places). Specifically, the CTF funds will be used to facilitate:

- The introduction of hybrid articulated buses, and or other advanced vehicles, which would further reduce by an estimated 40% the emissions from standard articulated

diesel, and which would otherwise not be achieved as these buses represent an additional financial commitment, not justified by current regulations.

- The introduction of a scrapping program to eliminate the rolling stock displaced by low-carbon measures, which otherwise would just be moved to other areas of the cities involved or other urban areas. This program would assure the emission reductions achieved through the introduction of new vehicles.
- The consolidation and acceleration of Integrated Urban Transport Transformation sub-projects in the target cities, without which the project would be scaled down and delayed over time with significant opportunity costs related to delaying emissions reductions in the fastest growing sector in terms of emissions, as well as delayed health benefits.
- The additional expenditures required to facilitate physical integration and optimization of public transport systems, seeking an optimization of modal shift toward low-carbon modes of transport. This additional expenditures typically include transfer stations to other modes of transport, sidewalks, bike lines and garages, parking places
- The adoption of a project to reduce congestion through traffic management measures geared to maximize modal shift (land zoning, parking lots, access routes for non motorized transport, links to other high capacity modes) that would add to the cost of BRTs and would not be undertaken under a business as usual scenario.

The CTF funding is expected to trigger these additional expenditures while representing just a small fraction of the total costs (about 10% of the total project costs).

37. The benchmark mass transit project involves an infrastructure or civil works component and a vehicle component. The civil works comprise exclusive lanes for buses in the case of Bus Rapid Transit or tracks in the case of Rail Rapid Transit. It also includes stations, yards to store and maintain the vehicles, and occasionally transfer terminals to link feeder buses to the trunk service, among others. The vehicle component consists in the case of BRT of large, articulated buses for the trunk service, and single-body buses for the feeder service. Depending on the project standard 12 meter buses could also be used for the trunk service. In the case of rail transit, the vehicle component consists of trains, which vary in size and range from tramways and light rail to heavy rail. In rail transit, buses also provide the feeder service. The infrastructure element entails large investments and in any case larger than the investment in the vehicles.

38. While transit users pay a fare it usually covers only part of the vehicle capital and operation and maintenance costs and rarely does the fare cover some of the infrastructure costs. This practice is standard internationally because given the high costs of transit systems, fares would have to be too high to cover all associated costs. Full cost recovery transit fares would: (i) punish transit users, which tend to have lower income than car users; (ii) aggravate the price distortion that promotes car use, because car-related infrastructure does not recover its costs in the absence of ubiquitous tolls; and (iii) increase emissions of local pollutants and GHG.[32]

[32]World Bank, "Cities on the Move: A World Bank Urban Transport Strategy Review." And World Bank "A Framework for Urban Transport Projects: Operational Guidance for World Bank Staff."

39. In light of this reality, governments typically subsidize the capital costs of the infrastructure component and frequently also its O&M and expect little or no revenue from it. The vehicle component, on the other hand, lends itself more to having a revenue source, the fare, associated with it. Fares can cover part or all of the O&M costs and occasionally part or all of the capital costs. Rail transit is illustrative of the first case, in which an operational subsidy is needed, and bus rapid transit, particularly in developing countries, shows that the fare-box can cover O&M and capital costs of the buses.

40. The benchmark bus rapid transit line will carry 154,000 rides per day, provided there are feeder buses that bring passengers to transfer terminals. However, it is assumed based on international experience, that this basic or benchmark BRT will not eliminate all the competition with old buses and will not build all the necessary facilities that induce more people to shift from using the car to using transit. Both measures are expensive. and given the already large investment required to implement a transit system, cities typically do not implement them. For example, removing competition from existing buses is always an assumption made while planning the project. But the costs are high because existing bus operators demand compensation for the lost business,33 just to mention one of the costs. If these costs are covered and the measures undertaken, the result would be an increase in ridership beyond the 154,000 figure,34 For instance, the additional investments increase the level of service, making transit more desirable for car users. Similarly, investments in facilities that promote a larger physical integration between the new transit line and other modes, including the car, are also rarely implemented in part because of their cost. If implemented, ridership will increase even more. Therefore, the benchmark project is the baseline to model what happens when the project receives support from the UTTP and transforms into an "enhanced BRT", as detailed in the next paragraph. While the benchmark BRT carries 154,000 rides per day, the "enhanced BRT" would carry up to an estimated 220,000 depending on the mix of additional measures implemented (see Table 16.1).

41. Therefore, once a city joins the UTTP, it is assumed that through access to concessional finance and technical assistance the project would be able to, first, finance complementary works that contribute to inducing additional modal shift. Second the city would implement measures to reduce even further the competition from old operators with the new system, such as reorganizing bus service and compensating old operators to move to less lucrative routes. Thirdly, the city would finance the scrapping of old buses to further reduce competition, for those units that are old enough to justify also on environmental grounds this measure.[35] Bus

[33] See Allport, R. and J. Thomson. 1989. "Study of Mass Rapid Transit in Developing Countries."

[34] Ardila, A. 2008. "The Limitation of Competition in and For the Market in Public Transportation in Developing Countries: Lessons From Latin American Cities." Transportation Research Record, Journal of the Transportation Research Board. No. 2048, pp. 8-15.

[35] A clarification is in order. Competition is desirable to reduce prices. The argument here is to reduce the so called "competition in the market" in which buses compete against each other in the street. Ample evidence shows that this arrangement leads to larger bus fleets than desired, higher fares for users to finance the additional fleet, higher congestion, and larger emissions. The competition that is desirable and that the mass transit lines supported by the UTTP promote is called "competition for the market," in which would-be transit operators bid competitively for the right to operate the service under given conditions and for a certain period of time. During that period, the government or grantor of the bid protects the transit operator from competition along the same alignment. See Cities on the Move: A World Bank Urban Transport Strategy Review.

scrapping also reduces emissions from old engines. Table 9.1 shows by type of intervention the estimated cost and the estimated additional demand, above the 154,000 rides per day. Each additional intervention has extra costs, which the concessional financing would help materialize more easily, and results in an increase in passengers using the service. For instance, the construction of 75 Km of pedestrian routes, translates into 1% demand increase or 1,540 additional passengers per day[36]. The addition of these interventions to the benchmark BRT corridor, therefore, results in an enhanced BRT corridor that maximizes modal shift and overall demand, up to an estimated 220,000 passengers per day.

Table 16.1 Additional Demand for Transit System by Intervention and Approximate Cost

J. Modal Shift	Length (Km)/ Quantity	Demand increase (%)	Demand Increase (Pass. per day)	Cost (US$) (apprx.)
Result from the construction of Cycleways	75	1.5%	2,310	$7,500,000
Result from the construction of pedestrian routes	75	1.0%	1,540	$11,250,000
Result from the construction of intermediate feeder routes	75	2.2%	3,388	$7,500,000
Result from the construction of intermediate Integrated Stations	6	1.8%	2,772	$1,200,000
Result from the construction of Secured Bicycle Parking at certain stations	10	1.0%	1,540	$1,500,000
Result from the implementation of Parking restrictions	1	1.5%	2,310	$150,000
Result from the implementation of other TDM strategies	1	1.0%	1,540	$1,000,000
I. Total modal shift		10.0%	15,400	$30,100,000
II. Bus route restructuring to reduce competition		**17.0%**	**26,180**	$5,619,000
III. Old Bus Scrapping to		**16.0%**	**24,640**	3,645,000

[36] Although the 1% demand increase associated to the investment in sidewalks might seem not cost effective, improving sidewalks is good for society overall. It is good for businesses, and is a substantial improvement on accessibility for those people that had no option before but transit, and had to use the unsafe, uncomfortable sidewalks. Moreover, good quality sidewalks dramatically improve accessibility, mobility and overall quality of life for the handicapped. Furthermore, in addition to the 1% increase in transit users, there might be also an increase in sidewalk (non-motorized - zero emissions) users from other polluting modes.

further reduce competition				

Estimations based on Fulton and Wright (2005) and other international experience. Estimations for II and III from model built for this annex and in particular the results in Table 9.3. Specifically, the results for II come from subtracting the investment costs for scenario 1 from scenario 2 and for III, by subtracting the investment costs for scenario 2 from those for scenario 3. The 220,00 passengers per day of the "enhanced" BRT is obtained by adding 154,000 of the benchmark BRT plus the totals for I, II, and III.

42. The UTTP also has funding for low GHG emission buses, for instance hybrid buses. Up to 30% of the trunk fleet and the feeder fleet can be hybrid. As a new technology, hybrid buses cost more, but empirical evidence suggests the operations and maintenance costs are lower.[37]

43. Table 16.2 summarizes the financing gap by project component for the enhanced benchmark BRT project that was estimated and analyzed in annex 9. The table also estimates the total financing gap for the UTTP project, by multiplying the gap by 18 transit systems, which is the estimated output of the project. In the case of hybrid buses, the gap by unit, $217,230 (to achieve the same NPV as the without-hybrid scenario) was multiplied by 350 buses, which is the intended output. A total investment gap of US$686 million emerges.

Table 16.2: Financing Gap by Project Component, Total UTTP Financing Gap, and Allocation of CTF Funds by Component

Component	Total Investment Cost (per BRT) ('000s)	Investment Gap per BRT (additional costs) ('000s)	Total Investment Gap for 18 BRTs ('000s)	CTF Loan Amount*
Infrastructure	$134,133	$30,100	$541,800	$106,147
Scrapping	$3,645	$3,645	$65,604	$12,853
Hybrid ** buses	$8,994	$4,562	$76,030	$76,000
Total	$146,772	$33,962	$683,435	$195,000
* In addition, the total for the CTF loan amount will include USD 5 million allocated to Capacity Building. This component will support cost-shared pre-investment activities for the 18 BRTs. ** Refers to hybrids or equivalent technology in terms of GHG reduction potential				

44. To apportion among components the CTF contribution, it is assumed that no other source of concessional financing will be available for the hybrid component. Therefore, the financing gap in this component will have to be financed entirely by the CTF, or US$ 76 million. For infrastructure and bus scrapping it is assumed that the PROTRAM will contribute to financing part of the gap. To allocate among these components, the 124 million left after financing the hybrid buses are split proportionally according to the estimated gap. Table 16.2 shows the final allocation of CTF funds by component. In addition US$5 million have been allocated for pre-

[37] See Clinton Climate Initiative Report and the World Bank 2007 Climate and Transport in Mexico Report.

investment studies for the 18 BRTs. PROTRAM is contributing grants for the preparation of projects in an amount not to exceed 50% of these costs. States and municipalities will cover the remaining share. Discussions with Mexican counterparts and the Bank's extensive experience in urban transport in Mexico indicate the importance of allocating a small amount of CTF concessional funds to trigger key investments and ensure sound engineering and project management.

H. Carbon Financing Contribution to the Transformation Project

45. Some of the eligible cities are expected to be able to tap into carbon finance through the regular carbon funds and the Carbon Partnership Facility. These funds will reimburse for emissions reductions that are documented through the use of registered CDM methodologies of the proposed NM0258, already used in the Insurgentes Corridor in Mexico City. The carbon fund amounts are quite modest, will be provided after sub-project completion, and will cover partially the costs associated with the monitoring and evaluation of the performance of GHG reduction measured. Hence it will contribute to the transformation project by helping to improve the analytical basis for the justification of activities that yield emission reductions and also to thereby help to mainstream such considerations into the sub-project cycle. Carbon revenues will be recognized until 2022 and up to 25% of their net present value could be advanced as capital at the start of the sub-project. The Emission Reduction Purchase Agreements (ERPAs) would be entered directly between the World Bank and the eligible cities. The cities to be eligible and the scope of the carbon funding proposals will be refined further during sub-project preparation.

Barriers Faced by Low Carbon Investments in Transport

46. Low-carbon transport systems face a number of barriers:

a. City-wide transport systems, while typically cheaper than investments in new highways or underground systems, require massive public sector investment which is normally not readily available from municipal or regional authorities facing a multitude of demands for public funds in education, health and other sectors;

b. Adoption of low-carbon technologies (such as hybrid drives) is currently 30-40% more capital expensive than regular drives, even though their use would typically reduce maintenance expenditures by a similar margin. The additional upfront capital costs thus constitute a significant financial barrier. Additionally articulated hybrid technology is at a very early stage of development and there is still uncertainty regarding supply aspects such as costs and availability;

c. Scrapping programs are also capital intensive, involving the purchase of many old vehicles and large transaction costs;

d. Modal shift measures, while representing significant reductions in carbon intensity over the long run, also face strong institutional and political economy barriers, requiring fiscal measures that may not prove popular in the absence of financial and regulatory incentives;

e. Harmonization of sector plans and policies in urban development, air quality planning, transport planning and climate change, requires an additional effort that will

not be undertaken unless there is a strong program that coalesces these different sectors toward common goals.

47. The availability of low-cost financing would facilitate decisions to adopt low-carbon systems and reduce the initial financial barriers. Blending CTF resources with IBRD and other financing sources would make available investment capital in infrastructure and rolling stock, which may otherwise not be readily available, or facilitate the speed of adoption and scale-up of city-wide systems. The low-cost financing would be instrumental in decisions taken to adopt advanced (such as hybrid drive) systems, and scrapping programs, internalizing some of the climate benefits that are not typically rewarded by the financial markets.

MAP SECTION

NOVEMBER 2008

IBRD 33447R