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Report No: 43049-AR

PROJECT DOCUMENT

ON A

PROPOSED GRANT
GLOBAL ENVIRONMENT FACILITY TRUST FUND

IN THE AGGREGATE AMOUNT UP TO USD $3.987 MILLION

TO

THE ARGENTINE REPUBLIC

FOR THE

ARGENTINA GEF PROJECT

IN SUPPORT OF THE

GEF SUSTAINABLE TRANSPORT AND AIR QUALITY PROGRAM

September 18, 2008

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

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CURRENCY EQUIVALENTS
(Exchange Rate Effective September 1, 2008)

Currency Unit	=	AR Peso
AR$1.00	=	US$0.32
US$ 1	=	AR$ 3.1

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ASIF	Activity, Structure, Intensity, and Fuel Choice
APO	Adaptable Program Operation
BRT	Bus Rapid Transit
CAI-LAC	Clean Air Initiative for Latin American Cities
CAS	Country Assistance Strategy
CNG	Compressed Natural Gas
CO	Carbon Monoxide
CO_2	Carbon Dioxide
EA	Environmental Assessment
EMP	Environmental Management Plan
ESMF	Environmental and Social Framework
GEF	Global Environmental Facility
GHG	Greenhouse Gas
GTZ	Gesellschaft für Technische Zusammenarbeit
IEA	International Energy Agency
ITDP	Institute for Transport and Development Policy
MTS	Mass Transit System
NMT	Non-motorized Transport
NO_x	Nitrogen Oxides
OP11	Operational Program # 11 of GEF
PAD	Project Appraisal Document
PM	Particulate Matter
PM_{10}	Particulate Matter less than 10 microns' diameter
SIL	Specific Investment Loan
STAQ	Sustainable Transport and Air Quality
UNDP	United Nations Development Program
UNEP	United Nations Environmental Program
VKT	Vehicle Kilometers Traveled

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ARGENTINA
LAC Regional Sustainable Transport and Air Quality Project

CONTENTS

Page

A. STRATEGIC CONTEXT AND RATIONALE 1

1. Country and sector issues 1
2. Rationale for Bank involvement 4

B. PROJECT DESCRIPTION 5

1. Grant instrument 5
2. Higher level objectives to which the project contributes 6
3. Project Objective and Key indicators 6
4. Project components 7
5. Alternatives considered and reasons for rejection 10

C. IMPLEMENTATION 10

1. Partnership arrangements 10
2. Institutional and implementation arrangements 10
3. Monitoring and evaluation of outcomes/results 11
4. Sustainability 12
5. Critical risks and possible controversial aspects 13
6. Effectiveness conditions 13

D. APPRAISAL SUMMARY 14

1. Economic, financial and fiscal analyses 14
2. Technical 14
3. Fiduciary 15
4. Social 16
5. Environment 17

Annex 1. Sector and Program Background 19

Annex 2: Major Related Projects Financed by the Bank and/or other Agencies 25

Annex 3: Results Framework and Monitoring 26

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Annex 4: Detailed Project Description **33**

Annex 5: Project Costs **42**

Annex 6: Implementation Arrangements **44**

Annex 7: Financial Arrangements and Disbursement Arrangements **53**

Annex 8: Procurement Arrangements **59**

Annex 9: Safeguards Policies **65**

Social 65

Environment 66

Annex 10: Economic Cost Analysis **69**

Annex 11: Incremental Cost Analysis **73**

Annex 12: Country at Glance **78**

Annex 13: Summary of City Proposals **80**

City Proposal: Córdoba 80

City Proposal: Posadas Metropolitan Area 83

City Proposal: Rosario Metropolitan Area 85

City Proposal: Tucumán Metropolitan Area 89

ARGENTINA
AR-GEF SUSTAINABLE AND TRANSPORT AND AIR QUALITY PROJECT
PROJECT APPRAISAL DOCUMENT
LATIN AMERICA AND CARIBBEAN
LCSTR

Date: September 3, 2008	Team Leader: Veronica Ines Raffo, Paul Procee
Country Director: Pedro Alba	Sectors: General transportation sector (60%);Health (25%);Sub-national government administration (10%);General energy sector (5%)
Sector Manager/Director: Jose Luis Irigoyen	
Project ID: P114008	
Focal Area: Climate change	Themes: Climate change (P);Pollution management and environmental health (P);Access to urban services and housing (S);Environmental policies and institutions (S)
Environmental Assessment: Partial Assessment	
Lending Instrument: Adaptable Program Loan	

Project Financing Data

[ ] Loan [ ] Credit [X] Grant [ ] Guarantee [ ] Other:

For Loans/Credits/Others:
Total Bank financing (US$m.): 3.987
Proposed terms:

Financing Plan (US$m)

Source	Local	Foreign	Total
BORROWER/RECIPIENT	7.73	0.00	7.73
Global Environment Facility (GEF)	3.99	0.00	3.99
Total:	11.72	0.00	11.72

Borrower:
Argentine Republic
Argentina
Responsible Agency:
Secretariat of Transport, Ministry of Federal Planning and Infrastructure
Av. Julio A. Roca 636 9 Floor
Buenos Aires
Argentina
C1067ABO
Tel: 54 11 4343-6124

Estimated disbursements (Bank FY/US$m)

FY	2009	2010	2011	2012	2013				
Annual	0.50	1.00	1.50	0.90	0.087				
Cumulative	0.50	1.50	3.00	3.90	3.987				

Project implementation period: Start January 1, 2009 End: December 31, 2012
Expected effectiveness date: January 1, 2009
Expected closing date: December 31, 2012

Does the project depart from the CAS 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.***	[ ]Yes [X] No
Have these been approved by Bank management?	[X]Yes [ ] No
Is approval for any policy exception sought from the Board?	[ ]Yes [X] No
Does the project include any critical risks rated "substantial" or "high"? ***Ref. PAD III.E.***	[ ]Yes [X] 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 Argentina Project follows the higher level objectives of the Regional Program, and have a common focus in assisting participant cities in: (i) towards reducing GHG emissions by increasing use of less energy intensive transport modes in cities; and (ii) inducing policy changes in favor of sustainable transport projects.

Global Environment objective ***Ref. PAD II.C., Technical Annex 3***
The Argentina GEF Sustainable Transport and Air Quality Program, as well as the STAQ Program, seeks to reduce the rate of growth of GHG emissions from transport in Latin America through the promotion of less energy intensive and cleaner modes of transport. In addition, it serves as an example of how cites can tackle environmental problems, and implement sustainable transport policies through a national program, which at the same time builds on a larger Regional Program consistent with the programmatic goals of GEF Operation Policy 11 and the GEF Strategic Priority in Climate Change focal area (CC-6).

Project description *[one-sentence summary of each component]* ***Ref. PAD II.D., Technical Annex 4***
The project will finance technical assistance and some pilot interventions in four selected metropolitan areas in Argentina to remove barriers for sustainable transport. The eligible activities vary from city to city, depending on the level of preparedness, institutional capacity, potential impact, and on-going activities. In Argentina, the project will build on on-going transport and land-use planning operations, helping introduce and reinforce solid sustainable transport concepts, and helping erase existing political, technical, economic, regulatory and financial barriers. In some other cases, the project will have to help introduce new concepts and potential benefits to policy makers and stakeholders.

The four proposed sub-projects will co-fund measures in the three (out five defined in the regional program) thematic "Windows":

Window 2: Better coordination and integration of transport and land-use planning and environmental management: technical assistance and measures to foster more integrated transport and land use planning to reduce the use of private motor vehicles, reduce trip lengths, and increase the accessibility to public and non-motorized transport. Funding is proposed for USD $205,000, to ensure adequate distribution of different types of technical assistance across a range of cities.

Window 3: Modal Interconnection, and Effectiveness and Efficiency of Public Transport: Pilot investments, and technical assistance to facilitate the improvement of public transport systems and/or improve the effectiveness and interconnectivity of those systems with other modes of transport and induce mode switching away from the use of private cars. Funding of USD $2.382 million for this Window is proposed, in order to ensure that cities with different levels of capacity and at different stages in the planning process for public transport systems are represented.

Window 4: Non-motorized transport: pilot investments and technical assistance to better integrate walking and biking into the culture and planning processes of cities, and to create incentives for their use. Funding is proposed at about USD $1.4 million, reflecting the absence of a cultural tradition of bicycle use in the region.

Which safeguard policies are triggered, if any? ***Ref. PAD IV.F., Technical Annex 10***
(i) Environmental Assessment; and (ii) Involuntary Resettlement.

Significant, non-standard conditions, **if any**, for:
Ref. PAD III.F.
Board presentation:
None.
Loan/credit effectiveness:
Effectiveness conditions are limited to formal actions that the executing agency cannot take until after grant signing (i.e. ratification of governmental action, and signature of necessary implementation agreements between PIU and CAI and PIU and participating cities).
Covenants applicable to project implementation:

A. STRATEGIC CONTEXT AND RATIONALE

1. Country and sector issues

Climate Change and Urban Transport Nexus

1. The transportation sector is currently responsible for more than one-third of the carbon dioxide (CO_2) emissions in Latin America, and is the fastest growing sector. The International Energy Agency projects that CO_2 emissions from vehicles will increase by a factor of 2.4 (or 140%); from about 4.6 gigatonnes in 2000 to 11.2 in 2050. The vast majority of this increase will take place in developing regions, especially Latin America and Asia, as a result of increased motorization and vehicle use.

2. Urban transport represents a key sector for long-run GHG mitigation efforts. Latin American cities are rapidly growing and about 80% of the people currently live in urban areas concentrating most of the vehicle kilometers of travel (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.

3. 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 to the wealthier car users.

4. Argentina fits this regional trend, and moreover, is one of the most urbanized countries in Latin America. Over 89 percent of its total population lives in urban areas of 2,000 or more inhabitants. Despite its high degree of urbanization, Argentina is still experiencing significant rates of growth in its urban population. Between 1980 and 1991 urban areas grew from 23.2 million to 28.4 million inhabitants (1.9 percent per year). Today 13 million people, or almost 38 percent of the country's population, are concentrated in the Buenos Aires Metropolitan Area (AMBA). Population densities are high with nearly 14,800 people per km2 in the city of Buenos Aires. The city's population (3 million) is growing at a rate of 0.7 percent a year. Yet some of the suburban municipalities are growing at a rate ten times faster (7 percent per year). Sound urban transport management is critical for meeting the growing transport needs of the fast growing-sprawling regions of Argentina.

5. The effects of increasing urban population, growing motorization, suburbanization, inadequate transport and traffic management, worsening congestion and air pollution have been evident in many metropolitan areas and medium size cities in Argentina. Bus transport is deteriorating and, suburban rail services have become overcrowded, unreliable and subject to much criticism regarding traffic safety and service quality

issues. Traffic safety and personal security have become serious issues that impact cities' transport systems. Because of these factors, and the 2001 economic crisis and subsequent reduction in investment, public transport has lost around 50% of its ridership since the early nineties, aggravating the problems of congestion and pollution in some areas, and those of poor access and mobility in others (the poverty zones).

6. To mitigate GHG emissions from transport it is important to mainstream environmental concerns into sectoral policies, programs, and investments. By working closely with the different sectors and stakeholders, GHG emission reductions can be achieved in the long-run, while ensuring other developmental goals are also met.

Opportunity for sustainable transport and sound land-use planning

7. There is still a strong basis to address the trend of growth in unsustainable energy intensive transport in Latin America. Despite the rapid growth in vehicles numbers, most Latin American cities are not yet locked into an absolute automobile dependence pattern. The current car ownership levels of 100 vehicles per 1,000 inhabitants in Latin America are low compared to international standards and provide a great opportunity for maintaining current modal split and seek policies and measures to reduce growth of private vehicle use in cities and create incentives for public and non-motorized transport.

8. Even though Argentina's urbanization and motorization rates are growing rapidly, public transport and alternative modes still play a significant role in providing transport. This gives ample space to design sound long term policies that reinforce the natural link between land use, transport, and environment, guiding urban area growth towards more sustainable patterns.

9. Given its federal nature, each Province has its own constitution and municipalities are autonomous. Each jurisdiction is responsible for transport activities that take place on its territory. Cross-jurisdictional transport activities are managed at the next upper government level. For example, in the greater Buenos Aires area, public transport services operating between the Autonomous City of Buenos Aires (which has quasi-provincial status), and other municipalities of the Province are under the Federal Government's jurisdiction, public transport services serving two or more municipalities within the Province are under the responsibility of the Province and public transport service routes entirely within the territory of a single municipality are under the responsibility of that municipality.

10. Air quality and land use policies are under the responsibility of the Municipalities, which are in charge of public transport services confined to their jurisdiction and which set the fares. However, the national government sets emission standards. Land use policies must be adopted by the legislative branch of the municipal government (consejo deliberante). This allows to build a national strategy to address environmental issues, more specifically to set climate change and air quality policies and goals, being implemented and monitored at local levels.

Strategic Approach

11. GEF will co-finance technical assistance and pilot investments that are part of comprehensive urban transport and land-use policies, programs and plans aimed at promoting climate friendly transport. The regional approach should foster the development of a critical mass of cities so a greater impact is obtained, but at the national and municipal level decision makers and professionals should focus on fully developing sustainable transport policies to broaden the reach and impact of GEF investments.

12. Contrary to other LAC countries such as Colombia, Chile, and Venezuela, Argentina has traditionally seen urban transport as a sector that lies outside the sphere of action of the National Government, in spite of its widely acknowledged externalities and impact both in terms of poverty reduction and competitiveness, especially taking into account that cities concentrate economic growth, and pockets of poverty and pollution. Other sectors in Argentina (e.g., education) have shown that although decentralization of expenditure and operation (*gasto y ejecución*) is efficient, there needs to be some federal support to make it work.

13. Therefore, the overall purpose of the projects will be to serve as an entry point for a country-wide intervention in the sector, promoting cross-fertilization between cities and the design of national policy guidelines in urban transport, land use and growth patterns, air quality and climate change, preparing the ground for deeper reforms.

Barrier Removal

14. The project will address the most common barriers at city and national level for sustainable transport already identified in Latin America, and others specific to Argentina.

15. One common barrier found in Argentinean urban transportation and environmental agencies is their staff's low capacity and technical skills. Some cities are willing to start working on sustainable transport projects, nevertheless staff and decision makers need technical assistance to commence. The mere fact of preparing the GEF proposals provided a convincing incentive for cities to focus their transport strategies on sustainability and air quality issues. Some cities are aware of their weaknesses in these issues and the support of the GEF project for their transport interventions will contribute to the development of their technical capabilities in the matter. In other places, the lack of technical skills in the municipality staff was overcome by contracting consultants who helped design sound transport projects and even prepared the corresponding STAQ proposal. This being said, the materialization of the conclusions of feasibility studies require some heavy investments that can be unaffordable for municipal finances or crowded out by other local priorities. The GEF project will kick-start these investments and promote the "clean" tendency in transport and land-use, whereas the local agencies will strive for more funds to continue that way and the private sector will be encouraged to join these investments as a result of the confidence supplied by the presence of the

GEF. This "faith" and confidence of the private sector in innovative projects that change the traditional way of thinking is another barrier that the STAQ will overcome.

2. Rationale for Bank involvement

16. The Bank's involvement in the urban transport sector is a response to the challenges raised by the rapid growth of Latin American cities, and by the need for a coordinated effort to address transport and environment issues at the regional level and to ensure that Latin American cities are well-positioned to meet the demands of an increasingly global economy. The World Bank aims at reducing transport costs – not only in a financial sense, but in terms of time and environmental damage as well – and increasing transport efficiency, enhancing urban productivity, competitiveness and contributing to the region's overall economic growth. By acting on several fronts such as public transport enhancement, freight management, coordination of public sector policies in land use and transport planning, promotion of environment-friendly transport solutions such as non-motorized transport, and traffic demand management, this project aims to reconcile mobility with quality of life and global and local environmental sustainability. It is also a partial response to some of the more intractable problems associated with urban poverty, not only in terms of access to economic opportunity, but also in terms of the broader dimensions of social inclusion through improved access to schools, health facilities, and wider social interaction.

17. The World Bank has a long and proven track record and in-house expertise in the design and implementation of transport, urban development, and environmental projects. Its presence in different sectors and various Latin American countries, including Argentina, provides a unique cross-referenced perspective which allows replication of good practices, while drawing from lessons learned and experience.

18. In the case of Argentina, there are several on-going operations that while not entirely linked to the GEF goals, may contribute to building sounder foundations for tackling transport and environmental challenges. In the Urban Transport Sector, the World Bank, building on an on-going project for Greater Buenos Aires (PTUBA), is currently initiating the preparation of a new Urban Transport operation (PTUMA) that would cover Greater Buenos Aires and several metropolitan areas, including all four metropolitan areas to be beneficiaries of the GEF project (Tucumán, Rosario, Córdoba and Posadas). This loan is part of the 2007-2009 CAS for an amount of US$200 million. In these four metropolitan areas, it will finance works to improve public transport services (segregated busways and feeder routes in Posadas, trolleybus extensions and segregated busways in Córdoba, mass transit system in Rosario) and technical assistance, all of which is fully consistent and complementary to the GEF Regional Program.

19. The strategy for the this CAS period is to deepen the Bank's participation in several areas, including sustainable transport, air quality, and climate change, primarily through lending for transport, land use planning, renewable energy and energy efficiency. The link of the GEF project with the Argentina's CAS is found both within the environmental

agenda of Argentina's CAS and in the main objectives of growth and poverty reduction, for which infrastructure investments will be crucial to achieve those objectives. One of Argentina's main challenges is the management of pollution associated with urban growth and industrialization. The Bank is already actively supporting a number of public-private partnerships related to cleaner technology and air pollution monitoring. The Argentina GEF project will improve the quality of life of urban citizens by providing adequate urban planning policies to guarantee sustainable urban growth, and coordinate these policies with transport plans. In addition, the GEF project would contribute to mainstream climate change under the PTUMA new operation for Argentina transport related projects. Effective land-use policies and transport plans will help manage pollution in urban centers, and greenhouse gas emissions from the transport sector. The project will foster environmental regulation and will facilitate the implementation and use of more efficient modes of transport. The projects will contribute to sustainable growth of urban areas and will promote air quality through non-motorized transport infrastructure plans, BRT lines, and transfer facilities studies, among others.

20. The CAS also lists as a priority institutional strengthening for better governance, and the GEF project will strengthen and link the different entities in charge of environmental management in a regional network for sharing experiences and enhancing the analytical tools available at institutional levels and make them accessible to all the cities.

B. PROJECT DESCRIPTION

1. Grant instrument

21. The Argentina GEF project is part of the Latin America GEF Sustainable Transport and Air Quality Program Horizontal APL. The Bank would enter into an individual Grant Agreement with the Argentine Republic to finance investments in sustainable urban transport and greenhouse gas emissions reduction, consistent with the overriding objective. The horizontal Adaptable Loan (APL) lending approach is well detailed in the Umbrella STAQ Program Appraisal Document.

22. Four metropolitan areas have been pre-identified, Tucumán, Rosario, Córdoba and Posadas, to participate in the Argentina GEF Project, on the basis of the following characteristics: (i) they are economic and governmental centers at the national or regional level, (ii) the municipal governments are committed to addressing environmental and sustainable transport issues, and (iii) they comply with the federal regulation and are entitled to prepare projects for the World Bank.

23. The Argentina GEF Project distribution under the APL approach is as follows:

Argentina Project	GEF US$	Co-financing US$	Total US$
Córdoba	1.450.000	2.726.000	4.176.000
Posadas	732.000	2.723.000	3.455.000

Rosario	1.600.000	1.668.000	3.268.000
Tucumán	205.000	615.000	820.000
Total Project	**3.987.000**	**7.732.000**	**11.719.000**

Projects in the selected cities would not be identical in design, to allow for tailoring to local priorities and conditions, but just as in the Regional Program, they would share common content in order to ensure optimal knowledge-sharing and the generation of a critical mass of lessons and results that would be useful for learning and policy development. The proposed Argentina GEF Project would be the first of three programs presented to the Board in this series.

2. Higher level objectives to which the project contributes

24. The Argentina GEF Sustainable Transport and Air Quality Program, as well as the STAQ Program, seeks to reduce the rate of growth of GHG emissions from transport in Latin America through the promotion of less energy intensive and cleaner modes of transport. In addition, it serves as an example of how cites can tackle environmental problems, and implement sustainable transport policies through a national program, which at the same time builds on a larger Regional Program consistent with the programmatic goals of GEF Operation Policy 11 and the GEF Strategic Priority in Climate Change focal area (CC-6). The approach includes that the project: (a) is country-driven and supports governments' efforts to promote sustainable development; (b) strives to leverage other funds; and (c) demonstrates cost-effectiveness of different measures to reduce GHG emissions associated with transport. The project aims at achieving a reduction of GHG emission growth rate, through interventions in sustainable, more efficient modes of transport. To this end, the project would support studies and pilot interventions to: (a) integrate urban land-use and transport planning; (b) induce sustainable transport policies, and programs in Argentinean cities that contribute to a long-term increase in patronage of more efficient modes of transport; (c) target research for environmental assessment (both local and global) of transport and land-use measures; (d) pursue political dialogue engaging different actors dealing with transport, land-use, and environment matters at all levels of government; (e) foster a national and regional common approach to sustainable transport, articulating land-use planning, and air quality policies; and (f) create a network of Latin American cities to allow sharing of regional experiences, enhance the analytical tools available at the institutional level, and make them available to all interested cities.

3. Project Objective and Key indicators

25. The Argentina Project follows the higher level objectives of the Regional Program, and have a common focus in assisting participant cities in: (i) towards reducing GHG emissions by increasing use of less energy intensive transport modes in cities; and (ii) inducing policy changes in favor of sustainable transport projects.

26. Key indicators linked to the first Development Objective are: (1) an increase in the number of trips in public transportation by 10% in the intervened corridors (sub-projects

under Window 3) in relation to baseline data for the relevant corridor; (2) an increase in the number of NMT trips by 5% in areas of intervention (sub-projects under Window 4) in relation to baseline data for the relevant corridor; and (3) a decrease by 5% of CO2-equivalent tons emitted by ground transport in intervened corridors resulting from improvements to modal split, where applicable. Linked to the second Development Objective are the following indicators: (4) number of transport and urban development plans and regulatory and financial incentives for sustainable transportation at local and national level are in place; and (5) number of internationally recognized validated methodologies to assess GHG and air pollutant emissions as a result of transport and land-use measures are applied.

4. Project components

27. Pilot investments, technical assistance, and capacity building activities in selected cities (USD3,987,000)[1] are divided by windows of opportunity briefly described below. The specific project component for the Argentina Project consists of pilot investments and technical assistance in 4 selected cities to remove barriers for sustainable transport. This Project and city-projects will co-fund measures in three thematic "Windows" (out of the five identified in the Regional Program[2]), following the World Bank's priorities and GEF priorities for climate change mitigation in the urban transport sector[3]:

Window 2: *Better coordination and integration of transport and land-use planning and environmental management*: technical assistance and measures to foster more integrated transport and land use planning to reduce the use of private motor vehicles, reduce trip lengths, and increase the accessibility to public and non-motorized transport. These activities are intended to address and mitigate barriers to better integrate planning, with the intended outcome of increasing the number of cities with integrated plans, institutional capacity and incentives to incorporate land-use considerations into transport planning processes and, potentially, capture resources from land valuation to finance sustainable transport improvements. Funding is proposed for USD $205,000, to ensure adequate distribution of different types of technical assistance across a range of cities.

Window 3: *Modal Interconnection, and Effectiveness and Efficiency of Public Transport*: Pilot investments, and technical assistance to facilitate the improvement of public transport systems and/or improve the effectiveness and interconnectivity of those systems with other modes of transport and induce mode switching away from the use of private cars. The intended outcome of these activities is to remove barriers that inhibit the development of more efficient and effective public transport systems,

[1] See Annex 4 for a detailed relation of activities in each city under each of the Windows or areas of intervention.

[2] Windows 1 and 5 are not being included in this specific project, but are addressed through other projects, such as the Infraestructura Puerto Rosario.

3 Karekezi, S. , L. Majoro, T. Johnson, 2003. *Climate Change Mitigation in the Urban Transport Sector: Priorities for the World Bank*. The World Bank.

and to implement additional measures that help attract mode-switching. Funding of USD $2.382 million for this Window is proposed, in order to ensure that cities with different levels of capacity and at different stages in the planning process for public transport systems are represented.

Window 4: *Non-motorized transport*: pilot investments and technical assistance to better integrate walking and biking into the culture and planning processes of cities, and to create incentives for their use. The intended outcome of these activities is to demonstrate and prepare cities to make further investments in non-motorized facilities and to undertake further activities to promote bicycle usage. Funding is proposed at about USD $1.4 million, reflecting the absence of a cultural tradition of bicycle use in the region.

Project Cost By Window and City in Argentina	GEF US $million	Co-financing US $million	Total US $million
Window 2: Integration of Land Use Planning, Transport Management and Environmental Management			
Tucumán	$ 205,000	$ 615,000	$ 820,000
Subtotal Window 2	**$ 205,000**	**$ 615,000**	**$820,000**
Window 3: Modal Interconnection and improved effectiveness and efficiency of public transport			
Córdoba	$ 750,000	$2,666,000	$3,416,000
Posadas	$ 732,000	$2,723,000	$3,455,000
Rosario	$ 900,000	$ 718,000	$1,118,000
Subtotal Window 3	**$2,382,000**	**$6,107,000**	**$8,489,000**
Window 4: Non-motorized Transport			
Córdoba	$ 700,000	$ 60,000	$ 760,000
Rosario	$ 700,000	$ 950,000	$1,650,000
Subtotal Window 4	**$1,400,000**	**$1,010,000**	**$2,410,000**
Total Argentina	**$ 3,987,000**	**$ 7,732,000**	**$ 11,719,000**

4. Lessons Learned and Incorporated in the Program Design

28. The Bank has a long-standing involvement in the sector of climate change and air quality management in general, and its interrelationship with urban transport in particular. The first loan in this regard, approved in 1992, had the objective of reducing traffic-generated air pollution in Mexico City. To disseminate lessons learned and involve other cities, the Bank, with support from other partners, created the Clean Air Initiative in Latin American Cities in 1998. Similar initiatives have now been launched in Asia and Africa. In addition, recent strategy papers on Pollution Management and Urban Transport discuss extensively the effects of urban traffic on air quality, and urban transport operations in Bogotá, Buenos Aires, Lima and Sao Paulo, which include air quality management components in their design.

29. Regional synergies and holistic approach. Cities and countries facing a similar array of transportation and air quality problems should not need to reinvent the wheel to confront these issues. The concern for a holistic approach to development call for greater integration in GEF funded projects, while separating execution of investments by country and city, lessons and experience across the region should be made available and shared in a common regional framework that leapfrogs advancements and reduces the learning curve for cities undertaking measures similar to those adopted elsewhere. It is expected that starting with Argentinean medium size cities, there will be a ripple effect that will influence policy change at the country level. This is especially important as other fast growing secondary cities in Argentina, and in Latin America as well, will soon reach unsustainable transport and urban development patterns that will be very difficult to change.

30. Specific to the ongoing PTUBA operation, several lessons can be drawn, including:

- Environmental and social assessment and management procedures in place have demonstrated to be effective in identifying, mitigating and/or preventing negative impacts. However, it is recommended to further integrate the public consultation process with the environmental and social assessment and management process. It might be advisable in some cases to involve an independent organization to mediate discussions between municipality and affected population and compile the results and include mechanisms to incorporate the environmental and social evaluations in the decision making, as well as design and technical evaluation process. Furthermore, the Environmental and Social Management Manual (ESMM) has to include measures to ensure access and minimize impacts on local population directly affected by the works.

- Regarding the public consultation process, most consultations took place several years prior to execution of the project (mainly due to the standstill that the project faced between 2000 and 2003). This greatly reduced the effectiveness of the consultation process and resulted in new complaints and conflicts. Therefore, it is important to establish a validation period for public consultation, after which a new consultation must be carried out or the existing one must be updated following clear procedures.

- One final recommendation is that the PTUBA Environmental Unit strengthens its capacity and maintains staff to supervise the environmental and social aspects of the project. It is also suggested that the municipalities should be more closely involved in environmental and social aspects of project preparation and supervision, and implement information programs and provide grievance procedures.

5. Alternatives considered and reasons for rejection

31. As mentioned previously, this Project is part of a regional program that has been prepared under an Umbrella APL Regional Program, whose framework could eventually be used for including new countries and cities interested in following the same framework and thematic windows for investments in sustainable transport and climate change. The Argentina Project is the result of evaluating the soundness of city proposals, which were assessed on technical quality, local capacity, commitment and political support. Although the projects in all cities may no be identical, the fact that they share common content allows the possibility for knowledge-sharing and creating a critical mass of lessons that need to be disseminated horizontally and vertically.

C. IMPLEMENTATION

1. Partnership arrangements

32. Argentina will form part of the learning community being put forth across the three countries that are participating under the Umbrella APL STAQ Regional Program as described in the Regional Program Appraisal Document. This learning component will draw in federal and municipal agencies, such as ministries and secretariats, as well as the World Bank, GTZ, WRI/EMBARQ, ITDP, and the Clean Air Institute to identify and disseminate best practices and strengthen municipal and federal capacity. More specifically, representatives of agencies involving environment, land use, and transport, along with a representative of the Project Implementation Unit (PIU) and from the cities involved, will constitute a Consultative Committee. Institutional arrangements and responsibilities will be defined in two Memoranda of Understanding or Cooperation/Implementation Agreements one signed between the CAI and the PIU, and the other one between the PIU and the Cities.

2. Institutional and implementation arrangements

33. The Grantee is the Argentine Republic and the Executing Agency the Secretariat of Transport within the Ministry of Federal Planning and Public Investment. The management of day-to-day matters related to all stages of project execution will be the responsibility of a Project Implementation Unit already set up for the PTUBA. This PIU is a well established unit, which has performed satisfactorily during the last years of project implementation and which is fully familiar with Bank rules, and will certainly maintain a close relationship with municipalities.

34. In addition, there is a satisfactory multi-year experience of the ongoing project execution with the PIU, which has continually increased its expertise in environmental and procurement issues. Therefore, it seems reasonable to extend the PIU implementation arrangements for the Argentina GEF Project. Nonetheless, as originally envisaged by the PTUBA, part of the staff currently working for the PIU would be gradually integrated into the urban transport planning agency for the Buenos Aires metropolitan area that is expected to be created in the coming years, with support from the new Urban Transport operation under preparation. Thus, the sectoral institutions will capitalize on the experience gained by some of the PIU staff.

35. The PIU will prepare progress reports every six months, replicating the current arrangements. The PIU is headed by a General Coordinator, assisted by various sub-coordinators in the Works, Accounting, Technical Assistance and Administrative areas, in addition to a GEF coordinator, as well as having support in the different municipalities involved. The composition of the PIU is submitted to the Bank's approval.

36. Supervision of activities will be done by the World Bank and the national PIU with support from the Consulting Committee and the regional executing agency, the Clean Air Institute. In the case of the Bank, it will benefit from the staff already involved in dialogue and urban transport and environment operations in Argentina and the selected cities. This will also ensure consistency with the overall development policies and activities on urban transport already taking place, and will enable economies of scale to be seized across cities.

37. Additionally, the Consultative Committee will provide support and guidance on policy matters that relate to urban transport, environment, land-use and urban development. The Committee will have a consultative role and will be a forum of debate and deliberation regarding cross-sectoral issues. Furthermore, it will be the recipient of experiences and information to be gleaned from the GEF program in other participating countries and cities. Finally, it is hoped that this entity will be at the forefront of developing an approach to integrated transport, environmental aspects, and land-use at a national level as a result of the lessons learned in Argentina through the GEF program and also through the experiences shared with other countries.

3. Monitoring and evaluation of outcomes/results

38. The Argentina GEF Project will have its own Results Framework of objectives, end-of-project outcome indicators, and intermediate indicators. Córdoba, Posadas, Rosario and Tucumán will have the main responsibility for data collection and reporting on project results to the PIU of the PTUBA at the national level, and to the Clean Air Institute, at the regional level. The knowledge sharing and policy component will aggregate and evaluate the indicator data at the program level for wider policy analysis and dissemination. Common project indicators will be used to permit comparison and aggregation (see the following table) between cities and countries. Annex 6 and the

Project Manual provide more specific procedures and monitoring and evaluation responsibilities at the local and regional level.

39. Overall monitoring and evaluation, as well as supervision activities will happen in all four cities, and the PIU will be overseeing these activities. With more research and technical approach, the Consultative Committee, the CAI and the Bank will do an in-depth assessment of outcomes and benefits using more detailed methodologies to link output and outcome indicators. This will advance development of more comprehensive methodologies and indicators. Once cost-effective outcome indicators have been developed, taking into account costs of their application, they can be replicated and applied in other cities. Application of outcome indicators methodologies in more cities may depend on the availability of additional (external) funding sources.

4. Sustainability

40. *Grantee's commitment to and ownership of the project.* All the city-projects recommended for inclusion in the Argentina GEF Project have undergone a rigorous review in the context of a national and international competition. While the guidelines of this competition established the broad windows to be funded, all specific activities in the competition were proposed by the cities, in the context of that competition. Proposals lacking clear political and institutional commitment were rejected by either Blue Ribbon Panel or subsequently the Bank. (See Annex 20 of Regional PAD for additional details).

41. The selected city proposals were assessed based on technical quality, local capacity, commitment and political support to assure that the four selected city projects are expected to have the highest direct GHG impact and indirect impact through dissemination of lesson-learned. There is a sound basis for successful implementation and there is a good change for long-term investments in follow up projects in the country. To ensure overall sustainability, the project will focus on strengthening institutional and regulatory frameworks and financial sustainability at the city and country level.

42. At city and metropolitan level, the Argentina GEF Project will assist in creating mechanisms and institutional frameworks to coordinate planning and decision making on transport, environment and urban development. The project will help strengthen the institutional and human capacity to prepare, plan, implement, monitor and evaluate the performance and environmental benefits of sustainable transport projects. The project will also help strengthen public private partnerships in financing and operation of urban transport systems. The project will foster the implementation of economic and regulatory incentives at national and regional to mainstream environmental considerations into the urban planning and transport planning process, as well as in specific bidding and contract documents for operators and contractors. Proposed policies at local and national level will provide the basis for long-term promotion of more efficient and cleaner transportation systems.

5. Critical risks and possible controversial aspects

Risks	Risk Mitigation Measures	Risk Rating with Mitigation
Municipalities may have difficulty providing adequate counterpart funding to the projects.	Each project has undergone a fiscal impact assessment during project preparation. This included debt capacity (partly due to co-financing capacity, and part due to the on going operations) and the ability to meet counterpart funding obligations. The composition of the individual projects will also take into account the source and availability of counterpart funds for specific investments.	Low
Fragmentation of institutional responsibilities at the federal level may hinder the program's knowledge sharing and policy development.	A governance structure will be put in place during year 1 of program implementation. The possibility of using CAI as technical secretariat for the knowledge and policy component lends strong credibility. Full representation of key stakeholders from federal entities will help assure effectiveness.	Moderate
Institutional bureaucracy may hinder planning efforts to link land use and transport.	A focus on more strategic decision-making level might help mitigate this risk.	Low
Measures to strengthen public transportation might meet stringent opposition from existing operators or other interested parties	Involve all stakeholders in the planning process and disseminate successful stories of operators that benefited from the implementation of BRT systems.	Moderate
Overall Program Risk		**Moderate**

6. Effectiveness conditions

43. Effectiveness conditions are limited to formal actions that the executing agency cannot take until after grant signing (i.e. ratification of governmental action, and signature of necessary implementation agreements between PIU and CAI and PIU and participating cities).

D. APPRAISAL SUMMARY

1. Economic, financial and fiscal analyses

44. Economic and financial: Each city project will include net incremental costs and benefit analysis, and 'with' and 'without' project scenarios would be constructed. Overall, the largest GHG emission reduction will be the result from long-term indirect benefits, since most of the activities undertaken focus on barrier removal. In all Argentinean selected cities, however, the project is expected to have a measurable short-term impact in terms of an increase in patronage of more climate friendly modes of transport such as public and non-motorized transport.

45. The analysis to estimate GHG emission benefits is largely based on a recent assessment by Wright and Fulton (2005) on the impact of sustainable transport investments in Bogotá on changes in mode shares. Details about the methodology for calculating this reduction are given in Technical Annex 12, and the methodology will be further refined as better assessment methodologies will become available.

46. Since there are many uncertainties involved in estimating GHG emission reductions from transport interventions, two scenarios were prepared, showing the low and high estimate of GHG emission reductions that can be expected from this project. The first "low" scenario assumes that only 25% of the cities will move forward with follow-up investment and that only 25% of these cities will be successfully in achieving the results achieved in Bogotá. The second "high" scenario assumes that all cities will achieve desired results towards implementing sustainable transport activities as a result of the Regional GEF Program. The first scenario produces a net reduction of about 2.4 megatonnes of CO_2 over 20 years, at a cost of about USD 6.15 per ton. In the second scenario, GEF investments lead to a reduction of about 38.8 megatonnes of CO2 over 20 years, at a cost of USD0.38 per ton for the Regional, and for the Argentina Project, are estimated between 435,000 to 750,000 CO_2 eq tones.

47. The uncertainties involved in estimating CO_2 emission reductions from transport projects are recognized and are themselves barriers to better mainstreaming climate change and environment considerations into transportation decision-making. As part of the project implementation, therefore, under Component 1, there will be a systematic effort to improve GHG emission reductions and other benefits estimations that can be obtained with the different set of measures.

2. Technical

48. The selection of cities and projects was, among others, based on the technical quality of the proposals and capacity of the local agencies to implement and supervise the sub-project and specific activities. The detailed designs and technical specifications of works will conform to Bank standards. The specific studies and technical assistance to be funded by GEF will follow general guidelines and principles of sustainable transport presented in documents such as the World Bank's Transport Strategy: Cities on the

Move, and the Sourcebook on Sustainable Transport released by GTZ. Locations for specific investments in works, particularly for Windows 3 and 4, will be screened for reasonableness and impacts assessment. In addition, specialists will be contracted to oversee the quality of the works.

3. Fiduciary

49. Financial Management. The Financial Management (FM) arrangements for the Argentina GEF Project meet Bank requirements. Those FM arrangements and mitigating measures, which are summarized in the present paragraph, are based upon the FM risk assessment and the lessons learnt from the implementation of the ongoing PTUBA operation.

- **Implementing entity and capacity.** The implementing unit of the Secretariat of Transport (PTUBA Implementing Unit) will be responsible for project accounting, FM reporting, internal control, disbursements and interaction with the Bank and the external auditors on FM issues. FM staff from PTUBA implementing unit is qualified; has gained experience from the implementation of the initial project; and has the capacity to manage additional GEF Project funds. Its capacity will have to be expanded to assure strong support to the local authorities in each municipality involved.

- **Flow of funds & Disbursement.** The project will operate a designated account in US dollars located at the *Banco de la Nación Argentina* and in which funds received from the Bank for payments of project eligible expenditure will be deposited. Payments will be made from an Operational Account in AR Pesos also managed by the PTUBA Implementing Unit and located at the *Banco de la Nación Argentina.* The recommended maximum authorized allocation for this operation is US$ 400,000. Replenishment of the Designated Account will be made in accordance with standard Bank procedures.

- **Accounting and Internal Control.** The accounting and internal control policies and procedures comply with Bank standards. Financial statements will be prepared using cash basis. All project funds will be processed in the Government-wide project execution system UEPEX, commonly used for externally funded projects in Argentina and acceptable to the Bank, and will be supported by documentary evidence for related works, goods and services procured in line with Bank guidelines for the proposed project. The Operational Manual of the project includes (i) the description of internal control system and procedures to be implemented; (ii) Chart of Accounts for the project; (iii) format and contents of the annual financial statements and semi-annual financial management reports; and (iv) terms of reference for the external auditing. The Operational Manual has also been updated with regards to relevant Bank policies currently applicable.

- **External Audit.** Project Designated Account, Statement of Expenditures and Financial Statements and accounts will be subject to annual audit carried out by

Auditoria General de la Nación. Audit report shall be presented to the Bank no later than six months after the close of the fiscal year.

- **Bank Supervision.** The project will be subject to annual Integrated Fiduciary Performance Assessment (IFPA) supervision missions as requested by the Argentina Fiduciary Action Plan. In addition, the Bank will carry out annual supervision missions focused on implementing audit recommendations and completing Action Plans addressing potential audit issues.

50. Fiduciary Risk. The Fiduciary Risk (combined FM and Procurement) of the project is rated as Modest. FM risk is rated as modest due to the overall adequate FM arrangements. The FM risk assessment is detailed in Annex 7 (Financial Management and Disbursement Arrangements Annex). Procurement risk is assessed as average.

51. Procurement. The PTUBA has a well established implementation unit that is fully familiar with the procurement rules of the Bank; no changes are expected in the unit during the implementation of upcoming operations (except the hiring of four to six additional experts, including a Technical Specialist who will support all procurement and filing activities of GEF). A Procurement Plan for the Argentina GEF Project will be prepared and will be posted in the SEPA. The thresholds for the procurement methods will follow the Bank's Guidelines of May 2004, and revised in October 2006; the specific packages, procurement methods, and prior review threshold by the Bank will be reviewed and approved in the procurement plan prepared according to the guidelines of May 2004, and revised in October 2006.

4. Social

52. The Project is expected to have positive impacts on living standards of the population as it is aimed at improving physical access and quality of public transport, enhancing non motorized infrastructure, and improving the built environment and urban furniture. The project is expected to enhance public transport systems and environmental quality, while also assuring social equity.

53. Social assessments will be conducted for the individual projects to identify ways in which the investments in city projects could minimize negative social impacts and maximize beneficial social impacts. Each of the participating cities have prepared Environmental and Social Management Manuals, following the PTUBA PIU's environmental and social management manual prepared for the ongoing urban transport operation. The manuals include guidelines for public consultation of the sub-projects and discussions regarding the social and environmental measures.

54. None of the proposed city projects require involuntary resettlements. The GEF resources will complement counterpart investments in civil works where resettlement issues are neither present nor potential. In general, the civil works under the project will follow the alignments of existing roads and right-of-ways which will prevent any involuntary displacements. During the screening process conducted in project

preparation no resettlement issues were identified. However, given the nature of the operation and that precise sitting alignments of works have not been determined, and in line with OP 4.12, a Resettlement Policy Framework was prepared and is part of the ESMMs, which include specific procedures and an abbreviated resettlement framework and public participation framework, to address any potential resettlement as a result of the definition of the sitting alignments (i.e. potential economic displacement related to the displacement of street vendors within the existing right-of-way).

5. Environment

55. The project is expected to have positive environmental impact in the long-run, since it aims at improving the quality of public transport and non-motorized transport systems and improve traffic safety. The project is designed to have a positive long-term impact due to the reduction of global and local emissions, as CO_2, Particles, NO_x, SO_x and other contaminants currently present in selected cities. The reduction will be directly linked to improved vehicle operation, reduced trip lengths, use of more efficient modes of transport and improved technologies. However, a number of short-term and long-term induced impacts trigger OP 4.01.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. 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. Additional negative impacts during construction will occur due to haulage and final disposal of materials. Most of these impacts can be mitigated by proper implementation of the environmental and social manuals that have been prepared for this project.

56. Given the interrelation between the social end environmental aspects in these projects, both dimensions are integrated in one comprehensive approach. The preparation of the social and environmental aspects included the following activities: (i) an assessment of the environmental and social management of the ongoing PTUBA project in order to identify lessons learned and improve these practices; (ii) an environmental and social analysis of the works included in the Components of the project in each city in order to determine the magnitude and nature of the impacts and define those that need social and environmental assessment; (iii) evaluation of the environmental management capacity of the PTUBA PIU and municipalities where the project will have an intervention; (iv) training workshops on environmental and social management processes for staff of the PIU and participating cities; and (v) screening of subprojects.

57. During project preparation, staff from participating cities carried out screenings of the proposed sub-projects/works, under supervision of staff from the PIU. The final review of the screening process confirmed that the proposed works will have minor negative impacts (mostly linked to the construction phase), which can be addressed through the measures provided for in the ESMMs and, more specifically, through the Environmental and Social Contract Clauses.

58. The Environmental and Social Management Manuals (ESMM) prepared by each participating city provide adequate and detailed prevention, mitigation and compensation measures to address the potential impacts identified during sub-project preparation, implementation and operation. The Manuals specify procedures and responsibilities of contractors and the environmental units in the municipalities involved and the PTUBA PIU to minimize the environmental and social impacts during preparation, construction and delivery of works. Contractors are required to submit environmental management plans and monitor works against this plan. The Environmental Unit of the PTUBA PIU jointly with local authorities will supervise the work of contractors for compliance and post-work operation.

59. The ESMMs include chance finding procedures in case archaeological or paleontological artifacts are encountered, which comply with Bank's policies.

6. Safeguard Policies

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP/GP 4.01)	[X]	[ ]
Natural Habitats (OP/BP 4.04)	[ ]	[X]
Forests (OP/BP 4.36)	[ ]	[X]
Pest Management (OP 4.09)	[ ]	[X]
Cultural Property (OPN 11.03, being revised as OP 4.11)	[ ]	[X]
Indigenous Peoples (OD 4.20, being revised as OP 4.10)	[ ]	[X]
Involuntary Resettlement (OP/BP 4.12)	[X]	[ ]
Safety of Dams (OP/BP 4.37)	[ ]	[X]
Projects on International Waterways (OP/BP/GP 7.50)	[ ]	[X]
Projects in Disputed Areas (OP/BP/GP 7.60)*	[ ]	[X]

60. Based on the assessments carried out during project preparation, the Project has been qualified as "Category B", following the Operational Bank Policy OP 4.01 and 4.12. The Environmental and Social Manuals provide adequate prevention, mitigation and compensation measures to address the potential impacts identified during project preparation, and specify procedures and responsibilities of contractors and the municipalities and PIU staff to minimize the negative environmental and social impacts during preparation, construction and delivery of works.

* *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. Sector and Program Background

ARGENTINA: Transport and Air Quality Project

Introduction to sector. Like most Latin American countries in the last few decades, Argentina has experienced a rapid transformation of its urban centers, with a sharp increase of urban population due to several economic and social factors. As a result, 89% of the total population of Argentina now lives in urban areas (more than 2,000 inhabitants). This concentration process has moved poverty issues away from rural areas and into the cities, as it is now estimated that 28.8% of the Argentinean households that are located in urban areas are living below the poverty line[4].

The cycle of increasing urban population, growing motorization, inadequate street networks, poor traffic management, and increasing congestion and air pollution is evident in many metropolitan areas and medium size cities. In the biggest cities, there is a heavy reliance on public transport but the service quality is poor and the cities are hard pressed to satisfy the demand. Partly as a result, public transportation, especially bus-based transit, is losing share and there are more frequent calls for governments to address the issues, some of which are discussed below.

Transportation has played a very important role in the urban structure adopted by many cities, and in Argentina, most of the cities' layout has been shaped by railway corridors. With the decline of railways and the predominance of road-based services, cities have started to suburbanize, decreasing the efficiency of transit and increasing dependence on private cars. Today, city streets capacity is unfairly and inefficiently distributed between modes, since private cars "consume" a disproportionate share of road space compared to transit and non-motorized transport. These operational characteristics are further worsened by the lack of maintenance and limited use of modern traffic management approaches in many cities.

The economic crisis of 2002 reached unprecedented levels, poverty levels increased from 37% in 2001 to a maximum of 58% in 2002, unemployment passed over 20%, many industries closed, giving informal and self-employment sectors a greater share among economic activities, and shifting mobility patterns of Argentineans. The crisis also affected deeply the transport sector, and mainly paratransit and informal private operators. From 1992 to 2002, public transport lost around 50% of its ridership, operator's profit dropped severely and de-capitalization was inevitable forcing a great number of them out of business. By 2002, 43% of the traditional operators had disappeared. Operational subsidies had to be introduced to alleviate losses and to allow the freezing of the fares in a crisis context. The quality of services provided decreased considerably, making it necessary to define new transportation policies, in order to guarantee better mobility and accessibility.

The proposed project will focus on four important urban areas in Argentina, where urban transport issues and air quality tend to be most acute. This set of metropolitan areas

[4] Totalized across 28 urban agglomerations from www.indec.mecon.ar for 2005

present a wide diversity of cases due to the variety of their spatial structure, socio-demographic characteristics, political context, among many other factors. This project will include a wide variety of sub-components such as building institutional capacity, providing technical assistance, enhancement of non-motorized modes --particularly bicycles--, paving of access streets, segregating existing lanes for public transport, extending trolleybus, lines, etc. As a result of this variety at both levels (the cities that will participate in the project, and the type of interventions), this project will provide the opportunity to draw lessons at a larger scale, that could be implemented in other regions of Argentina and Latin America.

Poor quality of public transport service provided. Continuous sprawl and expansion of urban agglomerations decrease the efficiency of transport systems. Low commercial speeds, high headways and poor reliability are deteriorating the competitiveness of the traditional bus system vis-à-vis other modes, such as informal paratransit (*charters*), even though the latter are not subsidized. Intermodal stations and transfer centers are too few and when existent, of poor quality, providing a low quality of service to its users, but also endangering them due to the lack of capacity and safety measurements. Many commuters need to transfer from one mode to the other, in the absence of fare integration and very often of adequate infrastructure, generating even more of a hassle to riders.

Personal security and traffic safety. Argentina's metropolitan areas face multiple safety issues, related to both road safety as well as crime-related personal security problems. Poor people, who often times have to walk or bike to a station or to their final destination, are much more likely to be victim of a traffic accident, or to be mugged or assaulted, for example at bus stops in poorly lit areas. Poor infrastructure and lack of pedestrian facilities increase the risk and vulnerability of the population.

Low air quality. Urban development and car use increase bring negative externalities. The transport sector is commonly the main source of air pollution in Latin American cities. Some of the direct and indirect pollution attributed to transport are carbon monoxide (CO), nitrogen oxides (NOx), hydrocarbons and volatile organic carbons (VOCs), and, most importantly, particulate matter (PM). Air quality and the contribution from mobile sources tend to be very complicated to measure and model given that depends on many different variables at various levels. Weather, topography, time of the day, fleet type, size and age, type of engines and fuels, are just some of the factors that affect air quality in urban areas, and across these range of combinations different contributors can be identified. As for mobile sources, heavy vehicles using diesel and light vehicles using gasoline have different emissions. The first group tends to be the main responsible of PM_{10} and nitrogen oxides emissions, while the latter group is the main source of carbon monoxide. A recent study (draft) for Latin America and the Caribbean done by the Bank shows that Argentina- even though it has similar standards as other South American countries- has strong deficiencies in air quality control and monitoring. Only one urban agglomeration in Argentina, Bahía Blanca, has an emissions inventory, and only Córdoba has a monitoring network defined, but which is not currently working. Furthermore, there are only three cities that have information available on air quality and have some capability of monitoring emissions: Mendoza,

Buenos Aires and Bahía Blanca. It is also worth to note that in Buenos Aires there is no data available for $PM_{2.5}$, a very important pollutant to human health risks.

Urban Transport in Argentina: Institutional and Normative Framework. Argentina's National Constitution establishes in its article 1 as form of government a representative regime based on republican and federalist principles. In such system of government, the provinces maintain all the powers that have not been expressly delegated through the National Constitution to the federal government. Correlatively, the provinces do not exercise the powers that have been delegated to the national government. At the same time, the National Constitution (as reformed in 1994) states that the provincial constitutions shall ensure the autonomy of municipal regimes.

As far as transport-related material and territorial jurisdictions of the federal and provincial governments are concerned, the National Constitution establishes that the Federal Congress shall regulate commerce amongst the provinces[5]. Consequently, inter-provincial transport falls within the exclusive jurisdiction of the national government. At the same time, provinces' jurisdictions in this matter include the regulation of intra-provincial transport that originates and finishes within their territorial jurisdictions, while municipal governments regulate transport services that do not go beyond their geographic limits.

Municipal governments are regulated by their respective Municipal Organic Act, which serves the purposes of a municipal constitution. All the functions related to the control of vehicular traffic fall within the jurisdiction of the municipal governments, as well as issues related to air pollution, land use and territorial regulation. In this respect, the Municipal Organic Acts of Argentina's municipal governments show quite a wide variety in the wording of these functions, but they generally include the following ones:

- ✓ To ensure and control passenger public transport within their jurisdictions and to fix fares in this field;
- ✓ To issue the transport regulatory framework and regulate the systems of noise control, toxic emissions, security and health issues related to means of transport;
- ✓ To issue the Code of Municipal Faults and Misdemeanors;
- ✓ To exercise law-enforcement powers on the matters under their jurisdiction;
- ✓ To ensure that the use of municipal territory has a social aspect as its priority function.

As far as the regulation of traffic is concerned, such regulation includes: vehicle circulation, transit speeds, school transport, urban transport planning (including exclusive or segregated lanes), prohibitions related to security issues, documentation required for driving, environmental pollution, traffic violation, among others. The use of territory is regulated through the Codes of Territorial ordering.

[5] This is called the "commercial clause" and includes transport in all its different modalities.

Municipalities regulate issues related to environmental pollution. However, the federal government controls emissions of transport vehicles that operate under its jurisdiction (such as for example, emissions from inter-provincial passenger buses). Such control is exercised as part of the technical controls of the transport units.

Córdoba is the second largest metropolitan area of Argentina, with almost 1,300,000 inhabitants and an extension of 576 square kilometers. It suffers severe social issues, and an estimated 30.7% of the population is poor. In addition to these social problems, urban sprawl has reinforced social exclusion and led to the inability of mass transit to guarantee mobility and accessibility for the least favored population that cannot afford a private vehicle. As any intermediate city, Córdoba has a multimodal network of transportation where buses and taxis are its most significant components, followed by non-motorized modes which play a significant role. Following the country's trend, Córdoba's transportation system started presenting serious problems towards 2000, which were aggravated by the crisis and a decrease in ridership due to high levels of unemployment and the decrease in purchasing power of transit users. In 2002, for the first time in over 40 years, a fleet of buses was handed over to the municipal government through the creation of a Municipal Agency, TAMSE, It was created initially to improve service in some corridors, and by 2004 it was facing major economic difficulties. To address these problems, the agency was given more autonomy and allowed to buy its own buses and contract out services. The municipal government has been thoroughly involved over the past 3 years trying to increase ridership levels, but several problems persist.
The municipality has created a program to favor the economically disadvantaged, covering more than 100,000 users, receiving direct discounts (students, elderly, veterans, and disabled).

Córdoba has recently elaborated its second urban strategic plan which aims at rehabilitating the central area of the city and at strengthening neighborhoods' identity. Said plan will improve access to infrastructure networks and public services, with the premise that sustainable transport and smart growth are essential features of the overall policy.

Urban expansion of Córdoba is a key challenge, the main effects of which are congestion in the city center, due to the high volumes of people coming to public and administrative buildings concentrated there, and uncontrolled growth on the periphery, which imposes time-consuming commutes. This situation leads to local air pollution and high levels of noise, especially in the central area and its main feeder routes.

Rosario, with over 1.2 million habitants and an extension of 760 square kilometers, is the third largest metropolitan area in Argentina. As an important port complex, it has traditionally been an industrial and commercial center for the country. Its urban form has clearly been influenced by two major elements: the Paraná river and the railway tracks that cross the region. Through and with them, Rosario has defined its semi-radial growth, utilizing these two elements for cargo transportation, where the river has acted as a link connecting the province with the country, and the rail lines, as corridors that have

clustered urban developments. Given its extension and its semi-polycentric structure, Rosario presents a fragmented urban structure with severe socio-economic disparities.

As other Argentinean regions, Rosario faces juxtaposition of different political (federal, regional, and municipal) levels, leading to lack of coordination and inefficient urban and regional planning. The freight rail system operational capacity needs to be expanded in order to seize the current and future demand of cargo managed by the region and by the port. Poor access to ports, congestion and low connectivity of the road network have hindered the region's competitiveness. Lack of infrastructure and adequate multimodal transfer centers have increased congestion, hence service levels for commuters have decreased noticeably. On the basis of origin-destination surveys carried out in 2002, the Municipality defined short-term proposals to address the newly identified travel patterns. A bidding process was organized to concession out public transport services for 7 years, including a restructuring of the bus routes and the fleet modernization to better address the needs of the users. The North-South corridor, for its high levels of potential and existing demand, was selected for the implementation of a new mass transit system.

Urban transportation in Rosario is provided by 9 operators, one being public and representing 13% of the market share. Not surprisingly, Rosario's ridership levels dropped severely between 1994 and 2002, recuperating somewhat during the following years. After 2000, the Municipal government took action and re-tendered some of the public transport services, but results were not satisfactory. In 2002, after the bankruptcy of one of the operators, the Municipality started operating transit services, creating a new agency, Semtur. After this, a new bidding process was opened to enable concessions for a 7-year period.

Over the past years Rosario has faced a significant decrease in the number of public transport passengers and of the relative importance of public transport, as well as an increase in motorization rates, accompanied by incipient congestion in the downtown area. In addition, Rosario lacks of adequate infrastructure for non-motorized transport, in spite of the relative importance of bike trips (12% of total trips) and presents high air pollution levels, especially in terms of NOx (45% above local maximum admissible levels).

Posadas. The city of Posadas is the capital of the Province of Misiones, and together with the cities of Garupá and Candelaria, its population stands at about 366.000 inhabitants, representing 40% of the total of the province. As other growing urban areas, Posadas has started to face transportation issues, mainly concerning quality of service, efficiency and social exclusion, followed by low air quality.

Population growth and migrations from the countryside to the capital increased the urbanized area and contributed to urban sprawl with new low-density, remote neighborhoods. This, combined with a lack of adequate public transport provision, has begun to affect air quality in the urban area. Additionally, the construction of a big hydroelectric project (Yacireta dam, which involved the necessary the resettlement of thousands of families in Posadas) together with new roads linking Posadas to these new

settlements, contributed to further expansion of the urban area and an increase in trip lengths, that affect public transport sustainability and attractiveness.

As other cities that had not implemented strict policies and institutions that regulate transportation, Posadas suffered directly from excessive supply, as well as of low quality of service and high costs. To address this and other increasing problems, in 2002 the Municipal Government of Posadas adopted a new Transportation Master Plan for the city, consisting of the progressive implementation of a BRT-type Transport Integrated System (TIS). The TIS is being implemented by a metropolitan transport agency, the first of its kind in Argentina, with active involvement and heavy commitment from local private operators. The efforts developed in the institutional framework make possible the execution of the system within a metropolitan dimension as a result of the effective adhesion to said agency of the Municipal Governments of Garupá and Candelaria and the Government of the Province of Misiones, ensuring its legal and institutional sustainability.

Tucumán. The province of Tucumán has a population of around 1.3 million habitants, and has traditionally been an important part of the commercial and industrial sectors. Its urban population, almost 55% of the region's, is mostly concentrated in its capital San Miguel de Tucumán and has been continuously increasing due to rural migrations and agricultural crisis. As in other regions in transition, infrastructure is responding deficiently. Migration settlements in poor areas have worsened these conditions.

Transit in Tucumán is one of the most expensive and of least quality of the country. Tucumán, as for 2004 accounted for 14 bus lines and a fleet of 357 vehicles, of which almost 50% are 10 or more years old. The provision of adequate public transport services in the metropolitan region of San Miguel de Tucuman is becoming extremely difficult, as the metropolitan area struggles with inadequate infrastructure, increasing transport-related pollution and informal and chaotic services. The absence of a legal framework that would enable the six different municipalities to enforce traffic rules and vehicle standards is seen as one of the main reasons for this situation. The CNG-powered taxis and local *remises* have lower fares than other formal transport services, mainly because of the CNG subsidy vis-à-vis diesel price. Under the current regulation, smaller units do not have to comply with strict and rigorous standards, such as years of service, maintenance and insurance. Predatory competition among service providers have resulted in low service standards, high rate of accidents and a chaotic and increasingly polluted environment.

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

ARGENTINA: Transport and Air Quality Project

Current Bank lending and grant funding operations in related sectors in countries proposed to receive funding under this Project are summarized in the table below.

Table A2.1 Current Bank Urban Transport Lending in Selected Countries

Country	Name	PO number	Approved	Status	IP rating	DO rating
Argentina	Buenos Aires Urban Transport Additional Financing	P104984	03/27/2007	Active	--	--
	Buenos Aires Infrastructure 1st Phase APL	P088032	12/07/2004	Active	N/A	S
	Buenos Aires Infrastructure 2nd Phase APL	P105288	06/28/2007	Active	S	S
	Buenos Aires Urban Transport	P039584	5/15/1997	Active	S	S
	Infrastructure Puerto Rosario	P101421	06/01/2008	Pre-Appraisal	--	--
	Logistics and Transport Sector Competitiveness	P089857	07/03/2006	Closed	N/A	N/A
	Basic Municipal Infrastructure	P060484	06/06/2006	Active	MS	MS

Annex 3: Results Framework and Monitoring

ARGENTINA: Transport and Air Quality Project

Results Framework

PDO	Project Outcome Indicators	Use of Project Outcome Information
(1) To foster long-term increase in the patronage of less energy intensive transport modes so as to promote reduction in the growth rate of GHG emissions patronage of less energy intensive transport modes	(1) Number of trips in public transportation increase in intervened corridors compared to corridor baseline (2) Number of NMT trips increase in intervened areas compared to corridor baseline (3) Decrease by 5% of CO2 equivalent tons emitted by ground transport in intervened corridors as derived by improvements in modal split	Results will be disseminated to the international community to help as guidance for other upcoming projects At local level, results will help build the case for replication in other cities Inclusion of results in national communications to UNFCCC and inform policy makers in charge of Climate Change mitigation plans
(2) Implementation of integrated urban transport, environment and climate change policies and regulatory frameworks in cities that foster sustainable transport systems at local and national level	(4) Number of cities that are integrating environment and climate change components, with urban transport, and land use into master plans and studies developed, including regulatory and financial frameworks that foster sustainable transport systems at local and national level	
Intermediate Outcomes	**Intermediate Outcome Indicators**	**Use of Intermediate Outcome Monitoring**
Pilot investments, technical assistance, and capacity building activities in select cities		
W2 – Transport and Urban Planning		
(i) Design of policies and regulations for sustainable land use and transport development	(i) Number of cities with land-use policies and regulations designed/proposed that create incentives for more efficient and sustainable transport oriented development	Periodical reports, creation of institutional bodies Dissemination of results Review of draft plans regulations to ensure consistency Promotion to private developers, articulation with corridor development
W3 – Public Transport Enhancement		
(i) Design and implementation of mass transit systems in cities	(i) Number of segregated BRT km planned and implemented in cities	Periodical reports

(ii) Strengthen capacity to promote interconnectivity with other transport modes	(ii) Number of cities preparing or implementing specific measures to promote inter-connectivity among transport modes	Dissemination material Promotion campaigns Review of draft plans regulations to ensure consistency Workshops to involve policy makers, budget planners Promote public participation
W4 – Non Motorized Transport		
(i) Increase public use, awareness and acceptance of cycling as mode of transport in cities	(i) Number of cyclists in intervened corridors/areas	Periodical reports Dissemination material Promotion campaigns Review of draft plans regulations to ensure consistency Workshops to involve policy makers, budget planners
(ii) Develop local capacity to design non-motorized facilities in selected cities	(ii) Number of km of pedestrian, bikeways and ancillary facilities built	

Monitoring of results.

Institutional issues. The project will be monitored by the selected municipalities but overall supervision is to be carried out by the PTUBA PIU.

Data collection. A simple household survey will be carried out to determine the baseline of transport mode use in the city and on the major corridors. This survey is being carried out by the World Bank PTUBA project and PTUBA Additional financing and will, thus, not be a cost to the GEF project. Additionally, a second series of household surveys using the same methodologies and sample will be carried out after the end of the GEF project to determine the impact of the GEF project and measure the relevant indicators. Since most of the project components address barriers to implementation of sustainable transport policies, additional attitudinal information will be gathered, through opinion surveys, seeking insight on a shift in attitudes. This will involve a combination of gathering reports from counterparts in cities participating in the program, telephone interview surveys, including some with cities not participating in the program, and culling information generally available on the internet and through other sources. Participation of Córdoba, Posadas, Rosario y Tucumán sub-projects will be guaranteed through the Implementation Agreements among municipalities and the Federal government. Participation of other cities will be voluntary.

Capacity. Because the data collection, analysis, and evaluation will be carried out by the PTUBA PIU, and funding for this activity has been assured, capacity to carry out the evaluation is not considered to be an issue.

Arrangements for results monitoring

		Target Values (*)				Data Collection and Reporting		
Project Outcome Indicators	**Baseline**	**YR1**	**YR2**	**YR3**	**YR4**	**Frequency and Reports**	**Data Collection Instruments**	**Responsibility for Data Collection**
(1) Number of trips in public transportation increase in intervened corridors compared to corridor baseline	O/D surveys on intervened corridors will be carried out under the existing operations	0	5% increase in number of trips in public transport in intervened corridors	0	10% increase in number of trips in public transport in intervened corridors	Bi-annually	User surveys, traffic counts, data from operators	Cities with support from CAI
(2) Number of NMT trips increase in intervened areas compared to corridor baseline	O/D surveys on intervened corridors will be carried out under the existing operations	0	2% increase in number of trips in public transport in intervened corridors	0	5 % increase in number of public transport modal share in intervened areas	Annual progress reports and Bi-annually surveys	User survey and traffic counts	Cities with support from CAI
(3) Decrease of CO2-equivalent tons emitted by ground transport in intervened corridors[6]	Baseline is defined as current emissions with no intervention	0	3% decrease in GHG emissions from ground transport in selected corridors	0	5% decrease in GHG emissions from ground transport in selected corridors	Annual progress reports and Bi-annually surveys	Traffic counts, fuel consumption, models, surveys	Cities with support from CAI
(4) Number of cities that are integrating environment and climate change components, with urban transport, and land use into master plans and studies developed, including regulatory and financial frameworks that foster sustainable transport systems at local and national level	Surveys to Cities will be conducted to define baseline	0	1 integrated transport and land use plan or study in preparation		At least 1 integrated transport and land use plan or study finalized	Annual progress reports	Information provided by participating cities	Cities and NEAs with support from CAI
Component 2 – Pilot Investments in Cities								

[6] Comparing with and without project scenarios

		Target Values (*)				Data Collection and Reporting		
Project Outcome Indicators	**Baseline**	**YR1**	**YR2**	**YR3**	**YR4**	**Frequency and Reports**	**Data Collection Instruments**	**Responsibility for Data Collection**
Window 2 – Land use and transport coordination								
(i) Development and preparation of policies and regulations for land-use and transit oriented development. Favorable policies and regulations for transit oriented development within selected cities								
(ii) Number of cities with land-use policies and regulations designed/proposed that create incentives for more efficient and sustainable transport oriented development	Surveys to Cities will be conducted to define baseline	0	2 cities preparing land-use policies and regulations	0	4 cities preparing land-use policies and regulations	Annual progress reports and Bi-annually surveys	Evaluation of training events and Information collected from cities	Cities supported by the CAI and NEA
Window 3 – Enhancement and promotion of public transport								
(i) Number of initiatives to improve public transport operations (segregated or non-segregated) through modernizing operations framework or complementary infrastructure in cities								
(ii) Number of cities preparing or implementing specific measures to promote inter-connectivity among transport modes. Strengthen capacity to promote interconnectivity with other transport modes	Surveys to Cities will be conducted to define baseline	0	Draft measures to promote inter-connectivity of transport modes developed in targeted cities; 3 cities preparing measures	0	At least 4 cities with measures in place or planned to promote inter-connectivity of transport modes; 3 cities implementing measures	Annual progress reports and Bi-annually surveys	Evaluation of training events and Information collected from cities	Cities supported by the CAI and NEA
Window 4 – Non Motorized Transport								
(i) Number of cyclists in intervened corridors/areas. Increased public awareness and acceptance of cycling as mode of transport in cities								
(ii) Number of NMT initiatives (km or facilities) including pedestrian, bikeway and ancillary infrastructure built. Develop local capacity to design and implementation non-motorized facilities in selected cities	O/D surveys on intervened corridors will be carried away under the existing operations				At least two cities implementing initiatives in non-motorized transport.	Annual progress reports and Bi-annually surveys	Evaluation of training events and Information collected from cities	Cities supported by the CAI and NEA

(*) See note below on Baselines and Targets

Baseline

Argentina has not had a formal Origin Destination Survey in the past 25 years; therefore estimations have yielded the following table. The GHG emissions baseline could be estimated as the direct result of the modal split, multiplied by the number of kilometers, and emission factors[7] (grams/km) of each mode. The following aggregate modal share was estimated from available information provided by cities and information found in the literature:

Modal Split in Buenos Aires (1996)	
Private automobile	36.55
Taxi	7.9
Conventional bus	33.48
Metro	2.94
Rail	6.1
Walk	8.64
Bicycle*	4.39

* Includes bicycle and motorcycle

Given the uncertainty of this information, to estimate a more accurate baseline in each city, a simple household survey will be carried out, as explained previously, in the *Data Collection* section. This methodology collects number of trips, mode, and average distance, among others and including some relevant socio-economic information, and will be used to obtain aggregated CO2 emissions, reducing assumptions previously used.

The modal share will be disaggregated at sub-project level (city) as information becomes available and to ensure proper monitoring of impact of GEF investments in each city.

Targets

The activities implemented by this project promote more energy efficient transport modes like public transport, walking and biking and the reduction of vehicles kilometers traveled in cities and the region. While the project will monitor modal share changes and reductions in km traveled, it is very difficult to set targets related to modal changes (and GHG emission reductions) within the life-time of this project (4-5 years).

Targets have been established for specific corridors and interventions that the GEF is helping implement in a number of cities. Through the removal of barriers, development of plans, proposed incentives, and demonstration projects, this GEF Project will support the institutional, regulatory, and social framework for modal changes over the longer term. Activities implemented by the project will have direct quantifiable outputs (pilot

[7] Based on information from Chile.

investments, implementation of BRTs, bikeways, mobility plans, policies, etc.) linked to outcomes (local and national regulations, financial incentives, post-project investments) that can be monitored and will provide the basis for future increases in patronage. The precise impact of these policies on GHG emission reductions will obviously be difficult to predict and to monitor within a multi-stakeholder and complex sector like urban transport. Added to this will be the complexity of working at a national level in 4 cities.

Recognizing these uncertainties related to emission reductions from different urban transport policies and interventions, this project aims to develop a better framework that can be used by GEF and other agencies to quantify expected GHG emissions reductions and monitor and evaluate effectiveness of policies and programs.

Annex 4: Detailed Project Description

ARGENTINA: Transport and Air Quality Project

Achieving an efficient urban transport system in Argentina is a major and difficult task and need sustained financial, institutional and political support in the long term. It also requires the participation of stakeholders, who play a key role in the selection of transport modes, and moreover in the intensity of transport use. Various barriers generally prevent the adoption of sustainable transport measures and policies at the national level. The most common are presented in the table below.

Table A4.1 Barriers categorized by thematic window

Windows	Barriers
2. Transport and urban planning	- Deficient coordination between environment, urban planning and transport planning - Legal requirements and constraints, as well as project development timelines under which these agencies operate are often incompatible - Lack of legal instruments and financial and economic incentives to implement densification and mixed land-uses - Lack of local institutional and technical capacity to implement projects - Lack of political support from national, state and local government levels - Inadequate tools and methodologies to assess impacts of land-uses and location of activities on transport system
3. Enhancement of public transport	Perception that achieving improved public transport is expensive, difficult, and will threaten our quality of life and lifestyle. Lack of support from private operators to rationalize public transport system Lack of regulatory framework and enforcement capacity to rationalize transport system - Lack of support from private operators to rationalize public transport system - Risks associated with investment in new technologies and improved fuels - Lack of financial resources to sustain investments in projects - Inadequate mechanisms for identifying improvements and disseminating resulting success stories, and beneficial trends are inadequate - Lack of technical capacity and experience to rationalize system and manage privately operated public transport systems - Outreach to current non-system-users for planning of and communication about the new system is inadequate - Connectivity with other modes (walking, cycling, etc.) is often poor, leading to perceptions that the system is difficult or burdensome to

Windows	Barriers
	use - Operational priorities in general traffic management can disadvantage movement of public transport vehicles, increasing time delays and degree of reliability of public transport relative to the private car - Involuntary Resettlements
4. Non-motorized transport	- Lack of public support as walking and cycling are often perceived as unsafe, undignified, or inefficient - Rights and responsibilities of cyclists and pedestrians vis-à-vis car drivers are often either poorly proscribed or poorly enforced - Allocation of resources for facilities for pedestrians and cyclists often overlooked; such facilities, if developed at all, are often the result of supplemental funding to other projects - Lack of local institutional and technical capacity to design adequate bikeways and public participation in process - Lack of financial resources for investments in projects - Involuntary Resettlements

Project Component - Pilot investments, technical assistance, and capacity building activities in select cities (USD3,987,000)

The project will finance technical assistance and some pilot interventions in four selected metropolitan areas in Argentina[8] to remove barriers for sustainable transport. The eligible activities vary from city to city, depending on the level of preparedness, institutional capacity, potential impact, and on-going activities. In Argentina, the project will build on on-going transport and land-use planning operations, helping introduce and reinforce solid sustainable transport concepts, and helping erase existing political, technical, economic, regulatory and financial barriers. In some other cases, the project will have to help introduce new concepts and potential benefits to policy makers and stakeholders.

The four proposed sub-projects will co-fund measures in the three (out five defined in the regional program) thematic "Windows" outlined in Table A4.1 above. These windows follow the World Bank's and GEF priorities for climate change mitigation in the urban transport sector[9].

The level of funding proposed for this component is **USD3.987 million**. Details about how the sub-projects were selected can be found in Annex 20 of the Regional Program. Details about the specific activities to be funded in each city can be found in Annex 13.

[8] ARGENTINA, Córdoba, Rosario, Posadas, Tucumán

[9] Karekezi, S. , L. Majoro, T. Johnson, 2003. *Climate Change Mitigation in the Urban Transport Sector: Priorities for the World Bank.* The World Bank.

The remainder of this section summarizes the types of activities funded under each window plus the capacity-building element.

Box 1: Windows of sustainable transport interventions

- Land-use and transport planning coordination
  - Comprehensive corridor development integrating various modes of transport
  - Urban upgrading and re-developments in conjunction with development of public transport systems
  - Financing mechanisms linking urban development with corridor development
  - Recuperation of urban centers (historic, symbolic) while promoting accessibility
- Non-motorized transport and urban space enhancement
  - Public awareness
  - Capacity building
  - Pedestrian and biking facilities
- Modernization of Public Transport
  - Promotion of Bus Rapid Transit Systems
  - Improvements to and reform of existing bus services
  - Enhancement of public transport
  - Fare and modal integration

Window 2: Integration of Land Use Planning, Transport Management and Environmental Management

1. *Background.* Subprojects in this area aim at mixing land uses incentives with transportation and environmental policies, thus reducing trip lengths and promoting increase in patronage of more efficient transport methods. One of the main reasons for the environmental and public transportation problems has been the lack of coordination between the planning, environmental and transportation agencies, when defining the cities' development goals. This has led to a disarticulation between urban centers (historic and other key areas) and main transportation nodes.

2. *Objectives.* The main focus of this window is to promote high-density and mix of land use along public transport (such as BRT) corridors and to prevent the type of urban sprawl which forces people to use their own motorized vehicle; this will be of particular relevance to currently medium-sized but rapidly growing cities. This window will also aim at revitalizing urban centers for their cultural, social, educational or economic importance by a combination of land use, public transport and environmental incentives, while helping to recover public spaces and promote more efficient transport modes. It will also help design instruments and incentives, including action plans for implementation of changes in current land-use patterns.

3. *Baseline.* Studies and plans of actions in relation to urban and transport development being undertaken usually do not fully integrate all aspects of urban planning and may not take into account the long term temporality inherent to city planning. Development plans and urban planning tools are commonly disconnected from the transport and mobility master plans, if any.

4. *GEF alternative*. The project will help reduce the total traveled km (by reducing the average trip length, but not the actual number of trips), without compromising mobility. GEF assistance will help expedite and co-finance studies to develop plans of action to create development - business/housing/educational - around major public transport corridors and non-motorized nodes, and create incentives to de-concentrate service areas that might lead to travel reductions. GEF funding will be complementing and leveraging locally available funding to carry out the studies and pilot interventions at the urban level. Also, GEF may help explore ways to co-finance the development of transport corridors through the use of land-use property value financing schemes, bringing forward future high property values into corridor re-developments. The GEF alternative will promote private investments and catalyze high population density and mixed land uses along transport corridors that will trigger higher demand for public transportation and NMT in the long term. The presence of the GEF will attract the support of other co-financing, including local government, real-estate agencies and land developers.

5. *GEF incremental financing*. The incremental activities that will be undertaken through GEF support for this Window amount **USD$205,000** with the following break-down by city:

City / Window $ USD	Window 2: Integration of Land Use Planning, Transport Management and Environmental Management		
	GEF	Co-financing	Total
Córdoba	$ -	$ -	$ -
Posadas	$ -	$ -	$ -
Rosario	$ -	$ -	$ -
Tucumán	$ 205,000	$ 615,000	$ 820,000
Total Window	**$ 205,000**	**$ 615,000**	**$ 820,000**

Through this window the GEF incremental finance will support: (i) the design of regulatory and financial incentives to facilitate private sector investments y generate higher densities along the mass transit system corridor; (ii) the definition of modifications in previous land use patterns and adaptation of existing land use norms; (iii) the development of a transit corridor including bus infrastructure, and improved access to public transport stops; (iv) a technical assistance for the creation of metropolitan coordination framework; (v) the elaboration of a Master Plan for Urban Mobility that is integrated with the environmental and social policies; and (vi) a technical assistance to help design and establish or strengthen institutional framework for coordination between land-sue and transport planning.

6. *Sustainability*. Land-use pattern change is a long term process that is likewise expected to last. It takes time to change people's preference and behavior and to consolidate them, but pilot interventions will *clearly* show the benefits. During the

preparation phase, measures to ensure project sustainability will be devised. Public demand will be the key to ensure sustainability of this window.

Window 3. Modal Interconnection and improved effectiveness and efficiency of public transport

1. *Background.* Many Latin American cities are in the process of modernizing their public transportation systems, some of them through the adoption of BRT systems, and some through other efficient public mass transport systems. As a result, public transport is being improved, but there is still need for technical assistance to ensure the best use of the new systems, and their complementarities to the other *transport* modes. Also, in many cases the BRTs operation is concessioned to the private sector, but there is a lack of experience and know-how to develop a sustainable business model and also to ensure the renewal of the fleet. In some other cases, the process to explore BRT or other efficient mass transit systems is just starting, but there is need for public acceptance, and moreover, for involving the current service providers. In addition, the adoption of cleaner technologies is seldom considered due to the large economic and political costs already involved in restructuring the public transport systems.

2. *Objectives.* The main objective of this window is to maximize the use of public transportation in medium-sized and large cities, by facilitating the modal exchange, and by supporting its efficiency and image of public transportation services. An important component of this area of work is integration of the public transport network, both as a system, and with complementary modes. In cases where there is already a BRT in place, the project will seek to maximize its potential as a sustainable mode of transportation. In other cities it will attempt to integrate different transportation modes such as cycling, car commuting, car pooling, walking, pedicabs, and taxis with existing or planned Mass Transit System. It will also support the implementation of such systems in specific corridors. Planning of the corridors will include special attention to inter-modal transfers and integration with bus feeder systems, densification and adoption of zoning and land-use regulations, and incentives for walking and biking facilities. Incentives for the use of modern, low-emission buses along the corridors will be studied as well. Special attention will be given to improving accessibility and mobility of the urban poor to efficient and clean public transport systems.

3. *Baseline.* Baseline situation in this window will widely vary from city to city. In cities where BRTs or other efficient mass transit systems are already in the process of being implemented, there is usually a lack of emphasis on modal integration, linking non-motorized transport, taxis and other modes to the new systems. In some other cases, the image of bus transport is poor and requires promotional and communication campaigns. In most other cities, the public transport systems are still inefficient, and restructuring has not been considered, or encounters political and economic barriers that need to be overcome.

4. *GEF alternative.* GEF funds will create conditions so local bikers, commuters and pedestrians combine their travel with public transport services, by connecting important trip generators and/or attractors with key links of the main transport systems. GEF funding will also help coordinate other forms of public transportation such as taxis and bike-taxis to the BRT system development and to promote non-motorized vehicles and reduce the use of private cars. Modal interconnection will result in a reduction of energy consumption per trip thus decreasing the overall GHG emissions from the transport sector.

5. *GEF incremental financing.* The incremental activities that will be undertaken through GEF support for this Window amount **USD2,382,000** and include:

City / Window $ USD	Window 3: Modal Interconnection and improved effectiveness and efficiency of public transport		
	GEF	Co-financing	Total
Córdoba	$ 750,000	$ 2,666,000	$ 3,416,000
Posadas	$ 732,000	$ 2,723,000	$ 3,455,000
Rosario	$ 900,000	$ 718,000	$ 1,618,000
Tucumán	$ -	$ -	$ -
Total Window	**$ 2,382,000**	**$ 6,107,000**	**$ 8,489,000**

Through this window the GEF incremental finance will support: (i) the assessment of the most efficient and optimal solutions for operation of bus corridors, including better vehicle technology, bus priority, monitoring, etc.; (ii) the engineering designs and implementation of BRT corridors, including planning of the integrated transport system, costs/tariffs studies, customizing of legal norms, complimenting law frame, institutional strengthening, monitoring and administrative costs; (iii) the technical and economic feasibility studies of BRT systems; (iv) a redesign of the current urban transport network based on the Master Plans, rationalizing the existing network, increasing modal and intermodal integration, reducing overlaps, increasing the mobility in the urban transport system, etc.; (v) improvements of busway infrastructure; (vi) accessibility improvements to tube stations, especially people with special needs; (vii) public awareness campaigns; and (viii) research to understand user preferences and valuation of different trip aspects and willingness and capacity to pay.

6. *Sustainability.* Where there is strong support by Government and civil society, this window is very likely to *sustain* itself after completion of the GEF project. Moreover, users and operators of other forms of transportation may begin to perceive BRTs and the complementary bus transport systems as complements not competitors, inducing a favorable perception that may in the future result in higher and more sustainable modal shifts. Finally, the experience in cities where BRTs and similar schemes have

been introduced has shown that operators will stick to the new business system, as their stream of revenues is secured, once concessions are awarded.

Window 4. Non-motorized Transport

1. *Background.* A large share of urban trips takes place on foot[10]. However, limited attention has been given to developing and *maintaining* proper walking facilities in most cities. Safe facilities and secure access to major corridors is needed to encourage walking trips. As for bicycles, experience in cities such as Bogotá, Lima and Santiago has shown that there is a good disposition to use this transport mode, provided that properly designed and safe bikeways are in place, and linked to the cities' activity centers, such as education and work areas. Also, it has been shown that infrastructure alone is not sufficient, and that communication campaigns are necessary to allow complementary measures, such as parking space for alternative modes and showers in buildings, to take place. The integration of non-motorized transport to public transport systems can be vital for the success of this window. *Even* a moderate shift to non-motorized modes of transport could provide substantial benefits. For the GEF-supported Marikina (a district of Metro Manila, Philippines) bikeway project, it was estimated that an increase of bicycle use from 1.6% in 2000 to 2.8% in 2015 will yield aggregate benefits of USD4 million for an initial investment of USD2.1 million.

2. *Objectives.* The objective of this window is to facilitate and promote walking and the use of bicycles as a viable and safe alternative to the use of private cars. It aims to promote a larger modal share of walking trips in Latin American cities, and provide improved access to the transport system, attract business investments, improve local pedestrian and bicycle facilities and integrate them with metropolitan transport corridors.

3. *Baseline.* At this time, biking is limited and there are usually no concrete plans to promote bikeways as part of the transport system. It is likely that without GEF intervention, the cities would continue to address walking and biking in a haphazard way. The current scenario has been to create sparse bikeways and pedestrian zones in the cities but without integrating them to the upgrading of public transport systems, thus reducing the potential of becoming effective alternatives for transportation.

4. *GEF Alternative.* The GEF project will help prepare overall guidelines for non-motorized transport facilities and bring these modes to the forefront of urban transport planning. The project will help promote non-motorized travel. GEF funds will also assist in developing walking and biking facilities in a selected neighborhood with access to public transport public transport and to help convince car drivers to consider walking and biking for short trips and use a combination of NMT and public transport for longer trips. The GEF alternative will promote private investments and catalyze mixed land use along transport corridors that will trigger higher demand for public transportation and NMT in the long term.

[10] In Sao Paulo's Metropolitan Area, walking trips represent about 6% of the total distance traveled.

5. *GEF incremental financing.* The incremental activities that will be undertaken through GEF support amount to **USD1,400,000** and include:

City / Window $ USD	Window 4: Non-motorized Transport		
	GEF	Co-financing	Total
Córdoba	$ 700,000	$ 60,000	$ 760,000
Posadas	$ -	$ -	$ -
Rosario	$ 700,000	$ 950,000	$ 1,650,000
Tucumán	$ -	$ -	$ -
Total Window	**$ 1,400,000**	**$ 1,010,000**	**$ 2,410,000**

Through this window the GEF incremental finance will support: (i) studies of the cycling network for the whole city, designs and works to implement the cycling paths in the northern part of the city; (ii) the enhancement of the pedestrian transit providing more quality and redesigning areas to improve transit of pedestrian and accessibility of pedestrian to public transport and widening of the sidewalks; (iii) promotion of bike use through communication plan and public dissemination plan; (iv) the design and pilot investments in bikeways; and (v) bike parking facilities, pedestrian areas and sidewalk improvements and support development of car-free zones and interconnectivity with public transport

6. *Sustainability.* It is also expected that the non-motorized transport window will have a positive *demonstration* effect which will strengthen political support for the bikeway and pedestrian programs.

Outcomes

The expected outcomes of investments in cities will depend on the preparedness and financial and political commitment of cities to the project. Therefore, we have sub-divided the cities into two broad categories:

- Category 1. Those cities where GEF investments are not only expected to remove barriers, but there will be an impact in reducing GHG emissions through the promotion of less energy intensive transport modes in a number of Argentinean cities, which are well advanced in the definition and preparation of their transport projects and programs, and where the project will fund investments that, once completed during the implementation period of the project, are expected to have an immediate impact on public transport and/or non-motorized transport attractiveness and hence increase in patronage and emissions levels. The list includes the following cities:
    - Rosario

- Posadas
- Cordoba

- Category 2. As for Tucumán, GEF investments are expected to remove barriers and induce policy changes for sustainable transport projects.

Annex 5: Project Costs

ARGENTINA: Transport and Air Quality Project

This project will have a total cost of USD11.719 million, out of which GEF will fund USD3.987 million. Co-financing from the different urban centers comes as a combination of investment resources, in-kind contributions, following the principles established in Table in A4.1 1. Project costs are summarized and presented here in different forms. Table A5.1 summarizes costs by city and window.

City / Window $1 000 USD	Window 2: Integration of Land Use Planning, Transport Management and Environmental Management			Window 3: Modal Interconnection and improved effectiveness and efficiency of public transport			Window 4: Non-motorized Transport			TOTAL		
	GEF	Co-financing	Total	GEF	Co-financing	Total	GEF	Co-financing	Total	GEF	Co-financing	TOTAL
Córdoba	$ -	$ -	$ -	$ 750	$ 2,666	$ 3,416	$ 700	$ 60	$ 760	$ 1,450	$ 2,726	$ 4,176
Posadas	$ -	$ -	$ -	$ 732	$ 2,723	$ 3,455	$ -	$ -	$ -	$ 732	$ 2,723	$ 3,455
Rosario	$ -	$ -	$ -	$ 900	$ 718	$ 1,118	$ 700	$ 950	$ 1,750	$ 1,600	$ 1,668	$ 3,268
Tucumán	$ 205	$ 615	$ 820	$ -	$ -	$ -	$ -	$ -	$ -	$ 205	$ 615	$ 820
Total Window	**$ 205**	**$ 615**	**$ 820**	**$ 2,382**	**$ 6,107**	**$ 8,489**	**$ 1,400**	**$ 1,010**	**$ 2,410**	**$ 3,987**	**$ 7,732**	**$ 11,719**

Annex 6: Implementation Arrangements

ARGENTINA: Transport and Air Quality Project

Implementation Overview

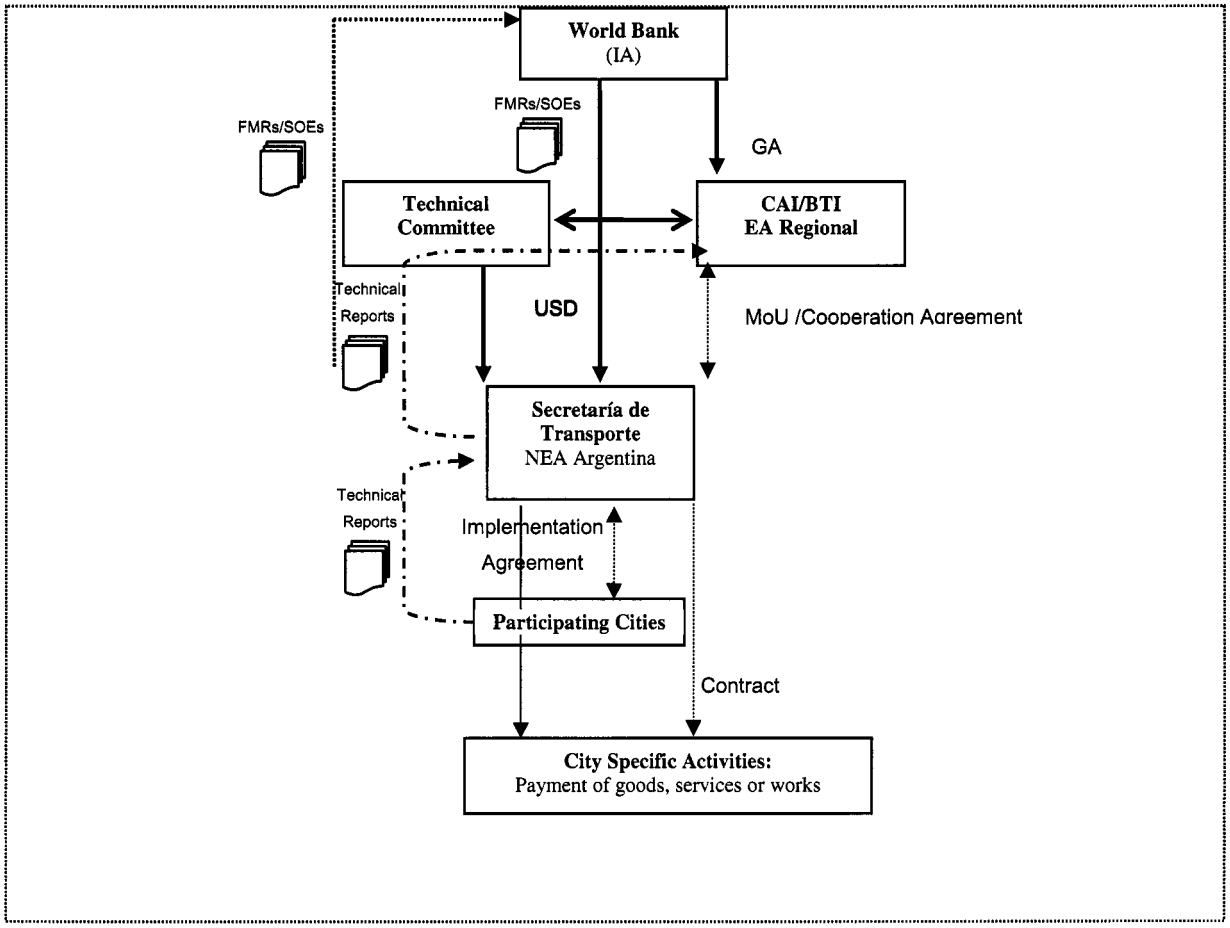
The Argentina Project represents the second component of the Regional Program: ***Pilot investments, technical assistance, and capacity building activities,*** but also contributes to build a holistic approach and bridge the individual Projects and city projects through analysis and learning. A mechanism would be established to carry out horizontal (across municipalities) and vertical (between municipal, national and regional levels) knowledge sharing on the preparation, appraisal, implementation, outcomes, and lessons of the individual projects.

The World Bank will sign: (a) a Grant Agreement with the Clean Air Institute (CAI), currently hosted by the Breakthrough Technologies Institute (BTI), based in Washington, DC. CAI will be the executing agency for the cross-cutting regional component; and (b) a separate Grant Agreement with the Argentine Republic (the Recipient). This Grant Agreement will include a covenant whereby the Argentine Republic, through the Argentine National Secretariat of Transport, will enter into a separate collaboration agreement with CAI for purposes of sharing data collection and knowledge-, as well as, for supervising tasks among the municipalities, PIU, and CAI.

The Secretariat of Transport, will therefore sign two memorandums of understandings or cooperation/implementation agreements with: (i) municipal governments, and (ii) CAI. This will allow the implementing unit to have a defined understanding of management and responsibilities, at the municipal, and national levels, among the different actors.

In addition, a Consulting Committee that brings together land use, transportation, and environment fields will be created to achieve sound interventions, close supervision at the national level, and which will have a strong political leverage to implement sustainable policies. This Committee, which will be integrated by representatives of the PIU, representatives of the Argentinean inherent agencies, and representatives of the participating cities will also have a direct interaction with the CAI and will participate in the Regional and International initiatives, gathering lessons learned and providing knowledge sharing.

Figure A6.1. Project Implementation Arrangements



The PIU will coordinate budget preparation, annual financial audits, and accounts/statements at the project level and for ensuring that project activities in each city are sustainable.

The project is grant-funded by a full-sized US$3.987 million GEF contribution, which will disbursed to the Argentine Republic (Secretariat of Transport) through the designated account for implementation of Project activities in participating cities.

Institutional Analysis

Argentina: the Secretariat of Transport, through the Project Implementing Unit (PIU) is currently implementing the Bank's urban transport project for Buenos Aires, as well as an additional loan for secondary cities in the provinces. The PIU has extensive experience with the Bank's financial and procurement procedures. It will support procurement and financial management of city specific projects, as well as providing technical support to cities.

Consulting Committee: this committee has not yet been established, but dialogue with the corresponding parties has been initiated, and they have expressed great interest towards this initiative, and the importance of its role.

CAI: As the project coordinator, CAI offers leadership and convening capacity, as well as direct access to information and expertise related to transport and environment issues, including: alternative fuels, energy efficiency, air quality and climate change, clean technologies and emission controls, improved public transportation, better management of travel demand, improved land use and transportation planning, and promotion of bicycle and pedestrian travel.

Table A6.1. Project Partnership Institutions and their Strengths

Institution	Strength
Argentina: Secretariat of Transport Municipality of: Córdoba Rosario Posadas Tucumán **Contacts:** • Jorge de Beláustegui, Project Coordinator • Alfredo Fernandez, Budget Officer • Sebastian Anapolsky	• Project implementation unit of the urban transport project in Buenos Aires (ongoing) and metropolitan regions in the country (under preparation) • Extensive experience with Bank's financial management, procurement and safeguard policies • Urban transport expertise • National agency responsible for urban transport • Capacity to involve other cities in Argentina and disseminate lessons learned nation-wide • Key in addressing national barriers
Argentina: Consulting Committee **Contacts:** • Jorge de Beláustegui,	• Regular interaction among all interested parties (transport, land use/urban growth and environment) at decision-making levels • Strong political leverage to implement sound policies and reforms beyond one sector • Gathers lessons learned at the National Level

Project Coordinator	• Provides knowledge sharing linkage between the city level and the regional level
CAI (Washington, DC) **Contacts:** • Sergio Sanchez, Executive Director CAI • Mario Molina, Board Member CAI • Robert Rose, Executive Director BTI	• Extensive experience working on air quality and climate change issues in Latin America • Strong relationship with major urban agglomerations in Latin America • Aggregates many development agencies and technical organizations on issues related to transport and environment • Overlapping goals and objectives, complementary to • Covers the entire Latin American Region • High level

Other Potential Partners

- Blue Moon Foundation
- EMBARQ/World Resources Institute
- Interface for Cycling Expertise (I-ce)
- The Hewlett Foundation
- Sustainable Urban Transport Project (GTZ SUTP)
- The Institute for Transportation & Development Policy (ITDP)
- United Nations Environment Program (UNEP)
- United States Department of Transport (DOT)

The CAI will seek to attract funding from Hewlett Foundation and Blue Moon Foundation to strengthen project supervision, knowledge dissemination and dialogues at the national and regional level to address key policy and regulatory barriers. Additional inputs will be sought from GEF/World Bank sustainable transport projects, and from the United Nations Environment Program (UNEP), which will implement one of the regional sub-components of the project.

Implementation Arrangements

The role of the CAI, through technical expert groups, is to oversee the technical execution of the different thematic areas ("windows") and monitor project progress. The CAI will advise the Bank on project progress and quality of execution.

The Argentine Republic is the recipient of the GEF grant. The Grant Agreement (GA) will be signed between the World Bank (acting as Implementing Agency of the GEF) and the Argentine Republic. The Argentinean National Secretariat of Transport will execute and supervise the execution of city specific activities (see Annex 4).

PTUBA PIU will be responsible for allocating funds according to approved and agreed work plans with the municipalities. Responsibility for execution at the city level will reside with the cities under the umbrella of Memorandums of Understanding (MOU) or Implementation Agreements between PTUBA PIU and participating cities. All procurement and financial management activities will be centralized at the national PIU level. There will be no transfer of funds to the participating cities.

Although the execution of projects through a PIU is not the most preferable solution, there are currently both institutional and legal constraints that limit the ability of the GOA to execute externally financed projects from line ministries, especially since staff recruitments are frozen and the Secretariat of Transport in-house skills required to execute this project are very scarce or already assigned to other tasks within the Ministry. In addition, there is a satisfactory multi-year experience of project execution with the PIU. Therefore, it seems reasonable to extend the implementation arrangements as the project financing is extended. Nonetheless, it should be noted that, as originally envisaged by the PTUBA, part of the staff currently working for the PIU would be gradually integrated into the urban transport planning agency for the Buenos Aires metropolitan area that is expected to be created in the coming years, with support from the new Urban Transport operation under preparation. Thus, the sectoral institutions will capitalize on the experience gained by some of the PIU staff.

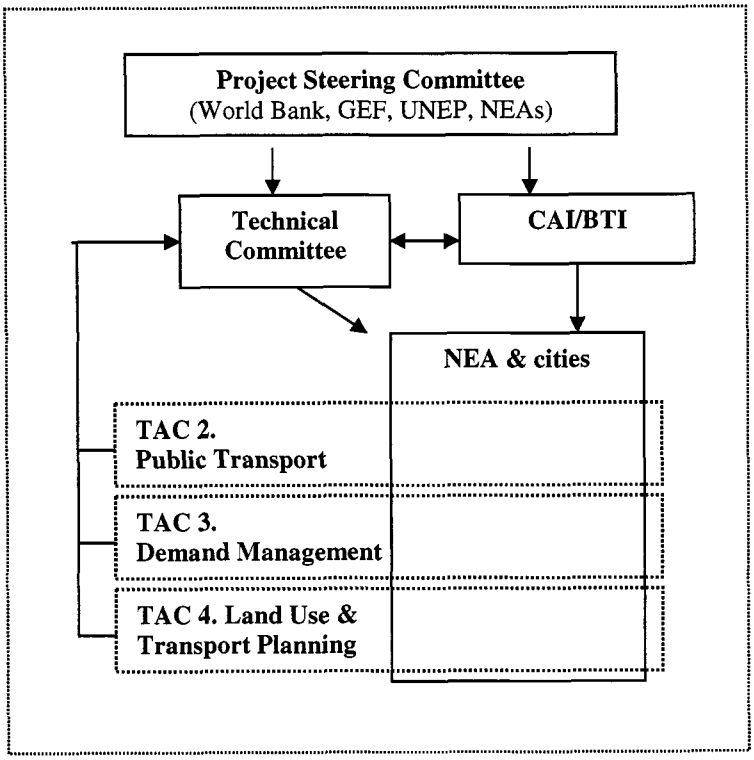
Project Technical Management

Project Steering Committee: Project technical oversight will be the responsibility of the Project Steering Committee (PSC), to consist of the GEF, CAI, UNEP and selected expert groups. The PSC will review and approve work plans, resource allocation and supervision and monitoring of project activities. The preparation of the annual Work Plan will be an iterative process whereby the CAI in coordination with the NEAs proposes regional and national plans for each component and in each city.

As mentioned previously, representatives of the Argentinean inherent agencies, regarding environment, transport and land use will participate in the Consulting Committee, counting with representatives of the UEP to ensure national level integration of city specific activities, involve other national government agencies, monitoring execution of the project for reporting to the CAI and PSC. Besides providing technical assistance, this committee will contribute to increase political leverage supporting sustainable growth, transport and environmental guidelines.

At the national level, the PTUBA PIU, in addition to assuming technical leadership, project coordination and M&E of all project activities, will be involved in the technical execution of the following project components: (a) strengthening of technical capacity for environmental risk assessment and management; (b) strengthening of technical capacity for socio-economic impact assessment; (c) training in environmental risk assessment, management and communication for competent authorities and practitioners; and (d) training in socio-economic benefit/cost assessment for competent authorities and practitioners.

Figure A6.2. Project Technical Management



Internal Coordination (Procurement, Financial Management and Information Exchange)

Procurement

The PTUBA PIU, under the Argentinean National Secretariat of Transport will have the responsibility for procurement at the national level, and will oversee procurement of city-specific activities. For details refer to Annex 10.

Financial Management

Project Funds for city-specific activities in Argentina will be disbursed directly to the National Executing Agency, the Secretariat of Transport, upon meeting the GEF Grant Agreement conditions of effectiveness. A separate Implementation Agreement between each participating city and the Secretariat will be signed before disbursements related to project activities in the respective city are made. The Project Implementation Unit of the Urban Transport Loan (PTUBA PIU), under the Secretariat of Transport, with support from the cities, will procure and contract the works and services, the PTUBA PIU will disburse directly to contractors. For details of financial management arrangements, see Annex 7.

Information Exchange

CAI is the depository of all information, technical, management and financial reports at the project level, provided by the PTUBA PIU and participating cities. The PIU is the depository of

all national project information and is responsible for maintaining records. Selected information may be published on a project website, which is hosted by the CAI. The project will create an intranet to facilitate information exchange within the project.

Intellectual Property Rights

The project is expected to deliver a number of outputs which are subject to various types of intellectual property rights (IPR), e.g., authors' rights, patents, trademarks, logos, knowledge, products, methodologies, databases (including β-versions) and other forms of intellectual property. All partners and subcontractors commit through the MoU's to freely and continuously share the outputs on which they have acquired such rights, with all other project partners and funding donors, while respecting authorship. Subcontractors commit to transfer all IPR they may obtain as part of their activities in this project, to the contractor.

Implementation Risks

Critical risk: Loss of focus and coherence. The participation of multiple cities with different agendas and capacities to implement the activities, and participation of multiple institutions within the country could make project implementation difficult. To counteract these risks, the following mitigation measurements will be taken: (a) Initial selection of entities was based on expertise, complementarities and work record of key countries/ institutions as entry points for each country to guarantee project commitment and execution; and (b) Governance arrangements will include a PSC with representatives from key partners to foster common approaches and ensure that participating entities focus on project objectives and outputs.

Critical risk: Deficient or slower-paced performance of cities may affect sequencing of project activities and financing. In this event, PTUBA PIU in consultation with the PSC and the World Bank/GEF would develop an alternative action plan for recouping city performance, and the pace of project execution. Further, funds will flow to PTUBA PIU in the first instance, not individual municipalities, permitting control over the flow of funds vis a vis performance.

Critical Risk: National and local elections will take place this year, and possible changes in administrations may result in changing priorities and shifting support away from the project. In this event, CAI, in consultation with the Secretariat of Transport and the Consulting Committee and World Bank/GEF, will develop a strategy consistent with project activities and objectives, to align new administration in project goals and methodologies.

Monitoring and Evaluation

The framework for the monitoring and evaluation (M&E) of outcomes and results has been fully developed. This framework takes into account that a well-designed system is critical to ensure timely and successful implementation of the Project, and to enhance its impact for the beneficiaries by the systematic and periodic analysis of lessons learned, and their effective dissemination. Project monitoring and evaluation will be the responsibility of the PTUBA PIU under the Secretariat of Transport. Performance indicators have been established for the Project and its components, and are presented in the Results Framework in Annex 3. The M&E system is based on a cascade of goals, purposes, results, and activities where higher-order activity, that is, components, become the purpose of the lower order, that is, the subcomponents. This approach will ensure the tracking of all activities to the developmental objective of the Project. The PSC will assist in keeping the national interests within the framework of implementation progress. The Project design includes baseline determinations and performance (milestones) indicators to monitor the implementation of the plan. Such monitoring will consist of an internal evaluation at the component level, and one at the Project level. The monitoring will be based on periodic reports.

By using a management information system (MIS) and the financial management system, Project activities will be kept on track and potential problems identified and appropriately addressed. CAI will design the MIS for M&E, reporting formats for each component which the PTUBA PIU will complete, according to the target annual performance objectives and monitoring indicators shown in Annex B. The quarterly reports will cover the progress in implementation, and milestones in the use of project funds and impact. Quarterly technical and financial reports will be consolidated by CAI into bi-annual progress reports to be submitted to the Bank within two months of the end of each six-month reporting period. These bi-annual reports will also include an implementation plan and activity program for the subsequent six months of the reporting period. A midterm review will assess the overall progress of the Project. The lessons learned and recommendations for any needed improvements would be used in restructuring or realigning the Project plans. Post-project impact assessments will be conducted to improve quantitative assessment of the Project outcome.

Data would be generated using a bottom-up approach, from the sub-projects at city and national level, through the PTUBA PIU, to CAI. CAI would provide standardized formats and templates for the different reports except for those which are the responsibility of the Bank. The project will have the following monitoring and evaluation instruments:

- Annual operational plan, procurement plan and training plan
- Semi-annual progress reports
- Semi-annual financial reports
- Twice yearly: World Bank supervision missions
- Annual progress reports
- Annual financial reports
- Mid-Term Review
- Implementation Completion Report

At the National level, M&E responsibilities are as follows: (a) the PTUBA PIU, under the Secretariat of Transport is responsible for collating elements at national level for all the reports called for by CAI's Projects Unit, identification of departures from plan (reporting to CAI, proposing solutions); and (b) ***Cities:*** responsible for preparing the data for all reports, early warning on problems (including proposals for solutions).

The project has established an M&E system consistent with the GEF program guidelines and the Bank's operational standards. This M&E system has been incorporated into the Operational Manual prepared by the PIU. See additional M&E conceptual details in Section C3.

Annex 7: Financial Arrangements and Disbursement Arrangements

ARGENTINA: Transport and Air Quality Project

Summary of the Financial Management Assessment

As required by OP/BP 10.02 a Financial Management (FM) assessment of the arrangements for the Regional Sustainable Transport and Air Project was performed in line with the Financial Management Practices in World Bank- Financed Investment Operations, a document issued by the FM Sector Board on November 3, 2005. The objective of the evaluation is to determine whether the financial management arrangements are satisfactory for the proposed Project.

The implementing unit of the Secretariat of Transport (Buenos Aires Urban Transport Implementing Unit) will be responsible for project accounting, FM reporting, internal control, disbursements and interaction with the Bank and the external auditors on FM issues. FM staff from Buenos Aires Urban Transport (PTUBA) implementing unit is qualified; has gained experience from the implementation of the PTUBA project; and has the capacity to manage the project funds.

The FM assessment included a review of the audit reports of other Bank funded Operations (Buenos Aires Urban Transport) executed by the Secretariat; a review of the capacity and processes of the implementing unit; and a review of the current project design and its fiduciary impact.

The proposed FM arrangements are considered adequate and the Recipient has sufficient capacity and resources to implement the proposed Project. Assigned staff is experienced and systems are adequate for the Project requirements. The overall FM risk for the Project is assessed as *Modest.*

Country Issues

The Government of Argentina (federal level) has a comprehensive Public Financial Management (PFM) legal framework and fully integrated budget, accounting, treasury, and public debt financial management systems. These systems control the funds received by the National Government from any source and provide sufficient information to determine if the funds have been utilized as planned. In the Country Assistance Strategy (CAS) approved by the Board in June, 2006, the country PFM risk for the federal level is rated modest. This diagnosis is in line with the 2007 CFAA currently under completion.

The CAS[11] includes a Fiduciary Action Plan (FAP) to help strengthen the operating environment for Bank projects in Argentina. The FAP consists of three main components: raising public awareness; bolstering Bank fiduciary monitoring; and increasing transparency and competition practices in public procurement. With regards to FM, the FAP aims at: i) improving the timeliness of external audit compliance for Bank-financed operations; ii) increasing the strategic

[11] Argentina's Country Assistance Strategy. Period 2006-2008; May 4, 2006; Box 8.

focus and coverage of supervision tools assessing fiduciary risk in operations; and iii) implementing complementary actions such as supporting the streamlining and harmonization of fiduciary processes and reliance on country systems when these meet adequate fiduciary standards.

Implementing Entity

The project will be implemented by a unit within the Secretariat of Transport that is currently implementing the Buenos Aires Urban Transport Project. The responsibilities of Project Implementing Unit (PIU) under this project will include: project accounting, reporting (including the preparation of Financial Reports), internal control disbursements and interaction with the Bank and the external auditors on FM issues. Job descriptions for FM staff of the PIU have been included in the Operational Manual.

Staffing

FM staff from PTUBA implementing unit is qualified, experienced and has the capacity to manage the project funds. FM staff working on the on-going project will continue to carry out the FM activities of the proposed GEF. According to the FM assessments carried out during the preparation missions for the PTUBA additional financing and the last supervision mission (carried out in February 2007 and December 2006 respectively), FM staffing is considered adequate.

Risk Assessment and Mitigation

The FM risk assessment aims at identifying FM risks so as to take appropriate measures mitigating those risks, including a level of supervision intensity consistent with assessed risks. Two major factors are taken into consideration for the FM risk assessment: the inherent risk linked to the Project environment and the control risk related to the specific Project FM control framework. The overall FM risk for the Project is assessed as *Modest.*

Table A7.1. Risk Assessment and Mitigation Measures

Risk	Risk Rating	**Comments / Mitigation Measure**
Inherent Risk	Modest	
Country Specific	*Modest*	- Project implemented at Federal Level (Modest Risk according to Country FM Assessments) - **Measure:** Implementation of the Bank Fiduciary Action Plan
Entity & Project Specific	*Modest*	- Experience in implementing Bank Funded Operations - Satisfactory Fiduciary performance in previous operation
Control Risk	**Modest**	
Implementing Entity PIU	*Modest*	- Existing adequate segregation of duties among FM/Administrative staff **Measure:** Staff job description included in the Operational Manual
Flow of Funds	*Modest*	- Adequate Flow of Funds mechanisms and related controls are in place
Staffing	*Modest*	- Qualified and experienced staff

Accounting, Budgeting & Internal Control	*Modest*	- Accounting on cash basis - Adequate internal control systems - Operational Manual updated -A specific line for the Project in implementing the SOT annual budget will be created and maintained during implementation
Internal Audit	*Modest*	The Internal Audit Unit of the Ministry of Planning has the authority to audit Bank funded projects and define its own annual audit plan.
External Audit	*Modest*	Project Financial Statements of the current project were unqualified for Designated Account opinions and qualified for the financial statements. The audit qualifications did not indicate substantial FM issues. This issue specific to BA Urban Transport Project is subject to a special supervision focused on audit follow up.
Reporting and Monitoring	*Modest*	- Adequate Reporting & Monitoring System
Information Systems	*Modest*	- Execution through UEPEX system complying with Bank requirements
Overall Risk rating	**Modest**	

Accounting & Internal Control

The accounting and internal control policies and procedures comply with Bank standards. Financial statements will be prepared using cash basis. Accounting standards acceptable to the Bank will be followed to keep project accounting records. The Operational Manual of the project includes (i) the internal control procedures; (ii) Chart of Accounts for the project; (iii) format and contents of the semiannual financial management reports; (iv) job descriptions and (v) terms of reference for the external auditing. The Operational Manual has also been updated with regards to relevant Bank policies currently applicable.

Financial Management Information System

1. All project funds will be processed in the Government-wide project accounting system (UEPEX) and will be supported by documentary evidence for related works, goods and services procured in line with Bank guidelines for the proposed project. The information system UEPEX manages and processes project budget execution accounts and accounting balances. The UEPEX system is commonly used for externally funded projects in Argentina and is acceptable to the Bank. Its level of internal control is satisfactory (budget line ceilings, protection and security of data), with the exception of the management and updating of the foreign exchange rate and the control of the stock of inputs. The UEPEX detailed operational manual is available on-line in the website of the Ministry of Economy and Production.

External Audit Arrangements

Current Project (PTUBA) External Audit. Acceptable audit reports of the BA Urban Transport Project were submitted to the Bank from the Ministry of Economy and Production. The audits were carried out by Argentina's Supreme Audit Institution, Auditoría General de la Nación (AGN) and project audit reports were reviewed by the Regional FM Team. 2004 to 2006 audit opinions for financial statements showed qualifications, whose nature do not indicate

substantial FM issues and are essentially related to accounting errors. Designated Account opinions for the same period were unqualified. In addition, an acceptable audit report for the year 2007 has already been received by the Bank and it is currently being reviewed by the FM Team.

Table A7.2: External Audit

Year	Auditor	Project Financial Statements & SOE	Special opinions (Designated Account)
		PTUBA - Loan 4163-AR	
2006	AGN	Qualified	Unqualified
2005	AGN	Qualified	Unqualified
2004	AGN	Qualified	Unqualified

External Audit for the "Regional Sustainable Transport and Air Project". The project annual financial statements will be audited according to Terms of Reference ensuring compliance with Bank Guidelines. The financial audit will be performed by an independent auditor following audit standards acceptable to the Bank. It is expected that the audit would be conducted by the Argentine Supreme Audit Institution, *Auditoría General de la Nación (AGN).* The annual audit will cover all funding and expenditures reported in the project financial statements and will be submitted to the Bank within six months after the end of the reported period. For audit purposes, the fiscal year will be the calendar year. The following chart identifies the audit reports that will be required to be submitted by the project and the due date for submission.

Table A7.3: Audit Reports Schedule

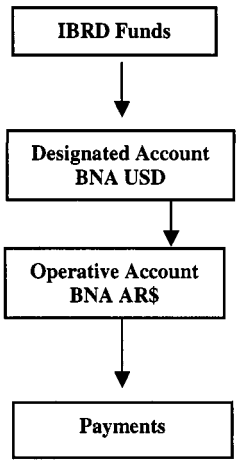
Audit Report	Due Date
1) Project Specific Financial Statements	June 30
2) Special Opinions	June 30
▪ SOE: Opinion on the eligibility of expenditures reported and the correct use of Grant funds	June 30
▪ Designated Account (Special Account)	June 30

Flow of funds

The project will operate a Designated Account in US dollars in which funds received from the Bank for payments of project eligible expenditures will be deposited. The Designated Account (DA) will be opened by the Recipient in the Banco de la Nación Argentina (BNA) and will be under control of the Project Implementation Unit established within the Secretariat of Transport.

As presented in the flow chart below, Grant proceeds will be transferred from the DA into a separate bank account opened by the PIU in the Banco de la Nación Argentina (BNA), from which payments of eligible expenditures will be made. Withdrawals from the Designated Account will be made only for payments of eligible project expenditures. The management of funds will not be delegated to sub-national governments, NGOs or any other entity.

Figure A7.1: Proposed Fund Flow



Monthly bank account reconciliations and foreign exchange reconciliations will be documented.

Disbursements Arrangements

The following Disbursement Methods may be used under the Grant:

- Advance
- Direct Payment
- Reimbursement

An Authorized Allocation (AA) for advances into the Designated Account (DA) will be established. The recommended maximum authorized allocation for this operation is US$400,000. The administrative unit will manage the DA and will be also responsible for preparing the bank account reconciliation on a monthly basis. Funds deposited into the DA as advances will follow the Bank's disbursement operating policies and procedures described in the Legal Agreement or in the Disbursement Letter. Withdrawals from the Designated Account will be solely made for payments of eligible expenditures. As eligible expenditures arise, funds will be converted to local currency and deposited into a dedicated payment account open in BNA in AR Pesos from which payments will be made as incurred. Project expenditure supporting documentation for the advances and reimbursement methods will be Statements of Expenditures (SOEs). All consolidated SOEs documentation will be maintained by the PIU for post-review and audit purposes for up to one year after the final withdrawal from the Grant account. Project expenditure supporting documentation for Direct Payments method will consist of records (e.g.: copies of receipts, supplier/ contractors invoices).

Reporting and Monitoring

Financial statements will be prepared on a cash basis of accounting and shall be in line with the Bank requirements. A draft format of the chart of accounts has already been provided to the Bank. This format is compliant with Bank standards and has been incorporated to the Operational Manual.

Semiannual Interim Unaudited Financial Reports (IUFRs) will also be prepared by the PIU and submitted to the Bank. They will include at least:

- Sources and uses of funds: source and uses of funds, for each semester and cumulative (uses by category), and uses of funds by component;
- Physical progress: Allocated budget and financial execution compared to physical progress and results achieved.

Annex 8: Procurement Arrangements

ARGENTINA: Transport and Air Quality Project

A. General

Procurement for the proposed project would be carried out in accordance with the World Bank's "Guidelines: Procurement Under IBRD Loans and IDA Credits" dated May 2004 and revised October 2006; and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004 and revised October 2006, and the provisions stipulated in the Legal Agreement. The various items under different expenditure categories are described in general below. For each contract to be financed by the Grant, 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 will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

Procurement of Works: The procurement of works would consist of the construction of bikeways, segregated lanes and other civil works for non motorized transport in four metropolitan areas to be beneficiaries of the GEF project (Tucumán, Rosario, Córdoba and Posadas). The use of ICB is not foreseen. Contracts for works would be procured using NCB and SBD satisfactory to the Bank. When the estimated cost is less than US$350.000 may be procured using shopping.

Procurement of Goods: Goods procured under this project would include IT equipment, office furniture and other minor items. The use of ICB is not foreseen. The procurement will be done using NCB and SBD satisfactory to the Bank. Contracts for goods estimated to cost less than $100,000 per contract, may be procured using Shopping.

Procurement of non-consulting services: all contracts for services not related to consultant services (logistics, organization of campaigns, printing services) may be using NCB and SBD satisfactory to the Bank. Contracts for non-consultant service estimated to cost less than $100,000 per contract may be procured using Shopping.

Selection of Consultants: Consultant services procured under this contract are expected to include: supervision of works, design of projects and design of campaign to promote non-motorized travel. Consulting Services under this project would also include services to be provided by individuals, such as: procurement assistance and supervision of smaller works (bikeway). All contracts will be procured using Bank's Guidelines for the hiring of consultants.

Short lists of consultants for services estimated to cost less than $500,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines. Specialized advisory services would be provided by individual consultants selected by comparison of qualifications of at least three candidates and hired in accordance with the provisions of paragraph 5.1 to 5.3 of the Consultant Guidelines. Individual consultants may be selected sole-source with prior approval of the Bank in accordance with provisions of paragraphs 5.4 of the Consultants Guidelines.

B. Assessment of the agency's capacity to implement procurement

Procurement activities will be carried out by Executing Agency the Secretariat of Transport (SOT) within the Ministry of Federal Planning and Public Investment through the Project Implementation Unit (PIU) which was created for the implementation of the PTUBA (4163-AR and 7442-AR).

An assessment of the capacity of the Implementing Agency to implement procurement actions for the project was carried by the Bank's procurement team. Even though the PIU has experience on implementing Bank financed projects, the procurement capacity needs to be strengthened to levels consistent with the heavy workload foreseen under this project and 7442-AR. .

The key issues and risks concerning procurement for implementation of the project have been identified and include: lack of procurement capacity to carry out the procedures for both projects and as consequence each procedure would require lengthy period of time to process procurement actions.

To address these, the following measures have been agreed upon: (i) before negotiations, a project operational manual would be developed including the implementation arrangements and the procurement procedures, and (ii) procurement staff would attend a procurement seminar delivered by the Bank.

The overall project risk for procurement is Average.

C. Procurement Plan

The Procurement Plans of the project for the first 18 months were discussed during Appraisal and the final version will be approved before negotiations.

The Procurement Plan approved will be available at the SEPA (www.iniciativasepa.org) within 30 days of Loan approval. The Procurement Plan will be updated in agreement with the Project Team every six months or as early as required to reflect the actual project implementation needs and improvements in institutional capacity.

D. Frequency of Procurement Supervision

In addition to the prior review supervision to be carried out from Bank offices, the capacity assessment of the Implementing Agency has recommended annual supervision missions to visit the field to carry out post review of procurement actions. The Bank's expost review shall cover no less than 1 in 10 contracts signed.

E. Details of the Procurement Arrangements

1. Works

(a) A list of works contracts for the first year.

Ref No.	Contract (description)	City	Estimated Cost	Procurement Method	P - Q	Domestic Preference	Review by Bank (Prior / Post)	Expected Bid-Opening	Comments
1	Civil works Avda. Uruguay (segregated lanes)	Posadas 1	$624,936	NCB	-		Prior	24-May-09	
2	Civil works Bvrd. Chacabuco-Maipú (segregated lanes)	Córdoba 2	$913,000	NCB	-		Post	09-Jun-10	
3	Civil works bikeways and non motorized transport	Córdoba 1	$123,450	SH	-		Post	01-May-09	
4	Civil works bikeways I) Av.Casiano Casas desde Av. Sorrento hasta Baigorria. II) Av. Mongsfeld entre Av. Alberdi y Gualberto Venecia.	Rosario 1	$246,900	SH	-		Prior	15-Jun-09	
5	Civil works extension Trolleybus.	Rosario 2	$469,150	NCB	-		Post	01-Set-09	

(b) ICB contracts estimated to cost above US$8,000,000 for works and above US$500,000 for non-consultant services per contract, the first contract for works and non-consultant services procured under NCB and shopping, regardless of their cost, and all direct contracting will be subject to prior review by the Bank.

(c) Contracts for works estimated to cost below US$8,000,000 and contracts for non-consultant service estimated to cost below US$500,000 may be awarded through NCB procedures.

2. Consulting Services

(a) List of consulting assignments for the first year.

Ref No.	Description of Assignment	City	Estimated Cost	Selection Method	P - Q	Review by Bank (Prior / Post)	Expected Date Proposal Opening
	Firms						
1	Supervision works extension Trolleybus..	Rosario	$47,850	CQS	-	Post	17-Sep-09

2	Supervision works segregated lanes Bvrd. Chacabuco-Maipú.	Córdoba	$87,000	CQS	-	Post	30-Jun-10
3	Supervision works Avda. Uruguay.	Posadas	$63,684	CQS	-	Prior	14-Jun-09
4	Feasibility study STM East/West Corridor .	Tucumán	$199,000	QCBS	-	Post	15-Dec-09
5	Executive project North/South Corridor First Tranche.	Rosario 1	$242,500	QCBS	-	Prior	26-Feb-09
6	Design of strategies for promotional campaigns for bicycles	Rosario 2A	$70,000	CQS	-	Post	15-Nov-08
7	Implementation of promotion campaigns towards bicycle use	Rosario 2B	$318,000	QCBS	-	Prior	11-Aug-09
8	Executive project Segregated Lanes Bvd. Chacabuco-Maipú and extension Line "A" del Trolleybus.	Córdoba 1	$200,000	QCBS	-	Prior	23-Jun-09
9	Design and implementation of promotion campaigns towards bicycle use .	Córdoba 2	$61,000	CQS	-	Post	18-Mar-09

	Individual Consultants	**City**	**Estimated Cost**	**Selection Method**	**P - Q**	**Type of contract**	**Expected Date - ToR Submission to the Bank**
1	Preparing bidding documents and technical review for executive project for bikeways works	Rosario	$18,000	3CV		Time-based	1-Oct-08
2	Preparing legal framework and technical review for executive project for bikeways network	Córdoba	$9,000	3CV		Time-based	1-Oct-08
3	Supervision of bikeway works	Rosario	$26,100	3CV		Time-based	08-Jul-09
4	Supervision of bikeway works	Córdoba	$13,050	3CV		Time-based	26-May-09
5	Executive Project: parking, signalizing, and urban infrastructure "Avda. Uruguay".	Posadas	$21,960	3CV		Time-based	1-Oct-08

6	Preparing bidding documents works extension trolleybus	Rosario	$16,500	3CV	Time-based	01-Feb-09

(b) Consultancy services estimated to cost $200,000 or more per contract, the first process under each selection method, regardless of their cost, and single source selection of consultants (firms) for assignments estimated to cost above $50,000 will be subject to prior review by the Bank.

E. Special Procurement Provisions

The following shall apply to procurement under the project:

General

- All procurement shall be done using standard bidding documents[12], standard requests for proposals, model bid evaluation forms, model proposal evaluation forms and contract forms previously agreed with the Bank. As for consultant services contracts, only the types of contracts listed in Section IV of the Consultant Guidelines may be used and "Convenios" will not be permitted.
- Foreign and local contractors, service providers, consultants and suppliers shall not be required: (a) to register; (b) or establish residence in Argentina; (c) or enter into association with other national or international bidders as a condition for submitting bids or proposals.
- The invitations to bid, bidding documents, minutes of bid opening, requests for expressions of interest and notifications of contract award of all processes aimed at the procurement of goods, works and services (including consultants' services), as the case may be, shall be published in the web page of Oficina Nacional de Contrataciones in a manner acceptable to the Bank.
- The Recipient: (a) will feed the Bank publicly accessible Procurement Plans Execution System (SEPA) within 30 days of Loan approval with the information contained in the initial Procurement Plan, (b) will update the Procurement Plan at least every six month or as required to reflect the actual project implementation needs and progress and will feed the Bank Procurement Plans Execution System (SEPA) with the information contained in the updated Procurement Plan immediately thereafter.
- Bidders and consultants shall not be allowed to review or make copies or others bidders' bids or consultants' proposals, as the case may be.

Goods, Non-consultant Services and Works

- A two-envelop system of procurement will not be used for the procurement of goods, services (other than consultants services) or works.
- Contracts of goods, services –other than consulting services- and works shall not be awarded to the "most convenient" bid but to the one that has been determined to be

[12] Bidding documents for NCB shall include Anticorruption Clauses, including those that give the Bank audit rights over bidders, suppliers, contractors and consultants, acceptable to the Bank. These clauses shall be substantially identical to those pertaining to Bank Standard Bidding Documents for ICB.

substantially responsive and the lowest evaluated bid, provided that further the bidder is determined to be qualified to perform the contract satisfactorily.

- Witness prices shall not be used as a parameter for bid evaluation, bid rejection or contract award.

Works

- Price Adjustment for Civil Works Contracts shall follow the Price Adjustment Methodology agreed between the Government of Argentina and the Bank.

Goods

- Inclusion of the bidder in lists published by specialized magazines will not be an acceptable criterion for determining the qualification of such bidder.
- Compliance with ISO standards shall not be required as a condition for contract award.

G. Procurement-related Covenants

(a) In order to disseminate project implementation requirements and procedures, and define roles, responsibilities, mechanisms, schedules and accountability arrangements, the Recipient will implement the project following the stipulations of an Operational Manual (OM) acceptable to the Bank. The OM will include, inter alia, the project's institutional arrangements and operational, accounting, procurement and disbursement procedures.

(b) The Implementing Agency will operate and maintain a web page to disseminate its most significant project information[13].

[13] For example, the Operational Manual, Bidding Documents and Standard Request for Proposal, technical background, designs, specifications and drawings of the works to be financed, terms of reference of the works to be executed with project funds; agreements with third parties and progress and monitoring reports.

Annex 9: Safeguards Policies

ARGENTINA: Transport and Air Quality Project

Introduction

This annex summarizes the key issues related to the Bank's environmental and social safeguard policies triggered by the Project and explains how these issues have been or are proposed to be addressed in this project.

Environmental and Social Assessment

Given the interrelation between the social and environmental aspects in this project, both dimensions were integrated in one comprehensive approach. The preparation of the social and environmental aspects included the following activities:

(i) Assessment of the environmental and social management of the ongoing PTUBA project in order to identify lessons learned and improve these practices;
(ii) Environmental and social analysis of the works included in the Components of the project in each city in order to determine the magnitude and nature of the impacts and define those that need social and environmental assessment;
(iii) Evaluation of the environmental management capacity of the PTUBA PIU and municipalities where the project will have an intervention;
(iv) Training workshops on environmental and social management processes for staff of the PIU and participating cities.
(v) Screening of subprojects.

The main objectives of these activities were to:

(i) Identify the actual environmental and social impacts (positive and negative) of the sub-projects and the measures that should be implemented to mitigate the negative impacts and their results;
(ii) Improve the methodology of the community consultation and participatory process and provide concrete inputs to the study of alternatives and to the comprehensive Environmental and Social Management Manuals; and
(iii) Assign clear roles and responsibilities to each actor in social and environmental management process and identify capacity needs.

These activities were the basis for the preparation of comprehensive Environmental and Social Management Manuals (ESMMs) by the participating cities, which have been revised by Bank staff, and have been found to reflect best practice in this field.

Social

Social assessments will be conducted for the individual projects to identify ways in which the investments in city projects could minimize negative social impacts and maximize beneficial social impacts. The project is expected to enhance public transport systems and environmental

quality, while also assuring social equity. The Project is expected to have positive impacts on living standards of the population as it is aimed at improving physical access and quality of public transport, enhancing non motorized infrastructure, and improving the built environment and urban furniture. Each of the participating cities have prepared Environmental and Social Management Manuals, following the PTUBA PIU's environmental and social management manual prepared for the ongoing urban transport operation. The manuals include guidelines for public consultation of the sub-projects and discussions regarding the social and environmental measures.

None of the proposed city projects require involuntary resettlements. The GEF resources will complement counterpart investments in civil works where resettlement issues are neither present nor potential. During the screening process conducted in project preparation no resettlement issues were identified. However, given the nature of the operation and that precise sitting alignments of works have not been determined, and in line with OP 4.12, a Resettlement Policy Framework was prepared and is part of the ESMMs for each city, which include specific procedures and an abbreviated resettlement framework and public participation framework, to address any potential resettlement as a result of the definition of the sitting alignments (i.e. potential economic displacement related to the displacement of street vendors within the existing right-of-way).

Environment

The project is expected to have positive environmental impact in the long-run, since it aims at improving the quality of public transport and non-motorized transport systems and improve traffic safety. The project is designed to have a positive long-term impact due to the reduction of global and local emissions, as CO_2, Particles, NO_x, SO_x and other contaminants currently present in selected cities. The reduction will be directly linked to improved vehicle operation, reduced trip lengths, use of more efficient modes of transport and improved technologies. However, a number of short-term and long-term induced impacts trigger OP 4.01.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. However, a number of short-term and long-term induced impacts trigger OP 4.01. 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. Additional negative impacts during construction will occur due to haulage and final disposal of materials. Most of these impacts can be mitigated by proper implementation of the environmental and social manuals that have been prepared for this project.

The Environmental and Social Management Manuals (ESMM) prepared by each participating city provide adequate and detailed prevention, mitigation and compensation measures to address the potential impacts identified during sub-project preparation, implementation and operation. The Manuals specify procedures and responsibilities of contractors and the environmental units in the municipalities involved and the PTUBA PIU to minimize the environmental and social impacts during preparation, construction and delivery of works. Contractors are required to submit environmental management plans and monitor works against this plan. The

Environmental Unit of the PTUBA PIU jointly with local authorities will supervise the work of contractors for compliance and post-work operation.

Screenings of Proposed Works

During project preparation, staff from participating cities carried out screenings of the proposed sub-projects/works, under supervision of staff from the PIU. The final review of the screening process confirmed that the proposed works will have minor negative impacts (mostly linked to the construction phase), which can be addressed through the measures provided for in the ESMMs and, more specifically, through the Environmental and Social Contract Clauses. The screenings confirmed as well that the proposed works will not cause involuntary displacement.

Environmental and Social training activities for municipalities

During project preparation, several workshops were carried out to train staff from the PIU and participating cities. The main objective was to involve the municipalities in the process and enhance their understanding and skills on the environmental and social aspects of the project. The Bank's Safeguard policies were presented and discussed. The screening instrument was analyzed and applied and the methodology for public consultation agreed upon.

Environmental and Social Management Manuals

Based on the environmental and social assessment during project preparation, ESMMs were prepared for each city by staff from participating municipalities and the PIU. The ESMMs contain: (i) analysis of institutional and regulatory frameworks in each participating city and the Bank's safeguard policies; (ii) explanation of the screening process during project preparation; (iii) responsibilities of involved actors; (iv) manual with measures and procedures to mitigate, prevent and manage environmental and social impacts associated with proposed works financed by the project; (v) a public consultation guide; (vi) grievance procedures; and, (vii) a resettlement framework.

The ESMMs include specific measures of environmental management for activities directly and indirectly related to each project phase such as: design guidelines to minimize impacts, removal of vegetation and required arborization, management of traffic, selection of camping sites, material lending, asphalt plants, machinery, qualification of personnel, the required inputs to carry out proposed work, soil movement, crossings of water channels, civil works in general, fuel storage, pesticides, paintings and grease removers, handling and disposition of solid and liquid waste, etc., and abandonment phase.

The ESMMs also include measures required for handling activities directly and indirectly related to maintenance and operation, including: road zone cleaning, pothole and shoulder repairing, sealing of pavement fissures and asphalt shoulders, repairing potholes in pavements and shoulders of superficial treatment, maintenance of horizontal signaling, etc.

As part of the ESMMs, a Public Consultation Guide has been prepared to ensure close involvement of relevant stakeholders during all project phases (design, construction and

operation). It is expected that the guide will allow a more accurate identification of possible, negative and positive, effects of the sub-projects, related to the population and their activities. It will also allow for improvements in the ESMM for prevention, mitigation and compensation of negative impacts and promote community participation and ownership.

Given the nature of the operation and that precise sitting alignments of works have not been determined, and in line with OP 4.12, a Resettlement Policy Framework was prepared and is part of the ESMMs, which include specific procedures and an abbreviated resettlement framework and public participation framework, to address any potential resettlement as a result of the definition of the sitting alignments (i.e. potential economic displacement related to the displacement of street vendors within the existing right-of-way).

Institutional Arrangements and Budget

Table A9-1
Institutional Arrangements

Task	Responsibility
Screening of the sub-projects/works	Municipality
Review of the screening	PTUBA PIU
Inclusion of the Manual in the Contract Clauses	PTUBA PIU
Application of the Manual in the Contract Clauses	Contractors
Supervision of the sub-projects/works	PTUBA PIU
Public Consultation and Communication	Municipalities & PTUBA PIU

The implementation costs of the environmental and social measures will be part of the overall contract costs. PTUBA PIU will assign staff/specialists to ensure implementation of the environmental and social measures and activities, coordinate activities with the municipalities and other stakeholders and supervise compliance by the contractors.

Annex 10: Economic Cost Analysis

ARGENTINA: Transport and Air Quality Project

LATIN AMERICA: Argentina Regional Sustainable Transport and Air Quality Program

For the purpose of preliminary economic analysis of the proposed GEF operation's investment, the cost-effectiveness of the indirect impacts of the GEF operation was selected as the primary indicator. While such an indicator does have some weaknesses (discussed in more detail in Section 2), it was considered appropriate for this operation, since the primary emphasis of the proposed GEF operation is to *enable* further action to be taken by cities and national governments. While some direct investments are occurring under the program Windows, for example in non-motorized facilities or facilities to coordinate inter-modal movements, these are primarily demonstrative, to show what kinds of outcomes are feasible.

The analysis adopted, therefore, does not consider the immediate program outcomes – that is, the reduction or elimination of barriers that impede adoption of policies that lead to structural reductions in CO_2 emissions from the sector – but rather, the indirect outcomes that will occur if the policies impeded by the barriers addressed by the program do, indeed, become adopted within a reasonable time frame following the completion of this program. Such an analysis assumes that these more substantive measures will, indeed, be effective.

The methodology draws primarily on previous work developed by Shipper et. al (2000) and Wright and Fulton (2005); it applies the model developed by the latter to the decomposition framework proposed by the former, to examine how aggregate populations have reacted in the past to aggregate changes in the Windows of interest. The interventions and investments in Bogotá at the end of the 1990's and early part of this decade represent the kinds of interventions contemplated through the five windows. If the barrier removal activities and fomentation of activity through pilot projects are successful, the cities participating in this program will adopt a range of measures that, in aggregate, resemble efforts undertaken in Bogotá. By examining the kinds of CO_2e emissions reductions that occurred in Bogotá during this period, it is believed that insight can be drawn on the kinds of changes that could be expected from widespread adoption of these measures in project-related countries, and these changes are used to estimate cost-effectiveness of the program.

Section 1 discusses the methodology and results. Section 2 discusses strengths and weaknesses in the indirect estimation methodology. Section 3 presents an alternative, direct estimation methodology.

1. Economic analysis of indirect emission reductions

1.1 Cost effectiveness analysis

The above analysis provides an initial assessment of the orders of magnitude of modal shifts that can be expected from different measures or package of measures. For the analysis of the GEF regional program, some of the educated assumptions in the Wright and Fulton spreadsheet model

have been replaced with actual information available from the cities participating in Component 2. Using modal share changes observed over seven years in Bogotá, a regional reference, to gauge the kinds of changes that might be expected from the GEF interventions.

Because the GEF investment actualizes these types of changes only if it causes *other* investments to occur as a result, we construct a second scenario that applies only 20% of the observed mode share change for Bogotá to each city. This limitation reflects an assumption that only part of the sustainable transport policies and investments will follow through in a timely manner and that only 20% of these would produce tangible, actionable results on the ground. Thus, two scenarios are analyzed: an upper limit scenario in which all cities accomplish the Bogotá mode share changes, and a lower limit (conservative) scenario in which a small portion of the potential mode share change will be accomplished, resulting in a mode share change of only 20% of what was observed in Bogotá. The GEF project is designed to support cities in achieving 100% of the potential mode share by creating incentives for well designed integrated transport systems complemented with land use and traffic demand management policies.

For both the baseline and the lower and upper limit scenarios, trip generation and distance per trip were assumed to be static over the 20 year period. More than likely, though, trip generation rates will increase, as will travel distances. However, assuming static trip distances probably results in a conservative estimate, since they undercount the number of vehicle kilometers traveled in the baseline, and probably underestimate the amount of CO_2 reduced as a result of the program. That said, if the predominance of new trips generated over that 20 year period would be in outlying areas and for mainly discretionary trips, the proclivity to switch modes may be somewhat lower than observed in Bogotá; without substantially more information, however, there is no mechanism to know how the actual vector of these countervailing tendencies.

Overall CO_2 emissions reductions numbers over 20 years, and their cost-effectiveness, were calculated for both scenarios, aggregating the 4 cities. The results of the analysis are presented below. The Baseline CO_2 emissions are 34.7 million tons over 20 years. The lower estimate shows an overall reduction of 684 thousand tons, while the upper limit scenario shows a reduction of more than 3.4 million tons. The cost range of USD 0.93 to USD 4.64 per ton of carbon removed reflect a highly leveraged set of investments, and are clearly contingent on the assumptions made and a series of follow-up actions by cities and potential lenders.

Table A10.1 Cost-Effectiveness of Lower and Upper Limit Scenarios

	Scenarios	
	Lower limit	**Upper limit**
Proportion of Modal Share Change of Bogotá	20%	100%
Megatons of CO_2 over 20 years, Baseline	34.8	34.8
Megatons of CO_2 over 20 years, GEF Scenario	34.1	31.3
Megatons of CO_2 over 20 years avoided:	0.7	3.4
GEF funding from BRT and NMT windows (USD million)	17.9	17.9
Cost per ton of carbon removed:	**USD 5.83**	**USD 1.17**

Source: World Bank Calculations

These results are indicative of the order of magnitude of emissions reductions that could be expected if the program results in adoption of Bogotá-like measures in the cities where the program will be investing, if those cities yield results similar to those measured empirically in Bogotá. These estimated CO_2 reductions are conservative in a number of respects. First, they do not take into account other sources of CO_2 emissions reductions beyond mode shifts, such as improved efficiency of vehicle operations, reductions in trip lengths, and improved passenger loading, all of which are likely outcomes from a BRT / NMT / land-use strategy. Third, they do not take into account any benefits from Window 1, changes in freight distribution. While the assumptions may not be realistic, therefore, the analysis does point to how even subtle changes in modal shares can produce substantial reductions in CO_2 emissions over 20 years.

Table A10.2 GHG Emission Reduction for Different Scenarios from Baseline

Argentina

City	Inhabitants	GHG Baseline	20% Scenario	100% Scenario
Cordoba	1,500,000	14,349,563	282,382	1,411,911
Posadas	366,000	3,501,293	68,901	344,506
Rosario	968,884	9,268,708	182,397	911,986
Tucumán	798,346	7,637,277	150,293	751,463
Argentina Totals	**3,633,230**	**34,756,841**	**683,973**	**3,419,866**

2. Economic analysis of direct GHG emissions reductions

2.1 Summary of results

Regarding the direct infrastructure investments financed by the GEF Grant, the GHG emissions reductions achieved by the program are estimated between 435,000 to 750,000 CO_2 eq tones. The results of the calculations for direct emissions benefits are presented in the tables below. We caution that these calculations were based on available information for each city, so the values given for both tons of CO_2 removed and costs per ton are not directly comparable, but are shown for orders-of-magnitude.

Table A10.3 Conservative estimate of direct emission reduction benefits of GEF program

City	NMT			BRT			Total	Average
		MT CO2	USD/MT		MT CO2		MT CO2	USD/MT
Córdoba	700,000	87,983	8.0	0	0		87,983	7.96
Posadas (2)	0	0		732,000	1,579	463.6	1,579	463.58
Rosario	800,000	2,245	356.3	0	0		2,245	356.35
TOTAL	**1,500,000**		**170.0**	**6,714,000**	**130,173**	**204.6**	**434,843**	**137.6**

City	NMT			BRT			Total	Average
		MT CO2	USD/MT		MT CO2		MT CO2	USD/MT
Córdoba	700,000	168,903	4.1				168,903	4.14
Posadas (2)				732,000	8,331	87.9	8,331	87.86
Rosario	800,000	22,455	35.6				22,455	35.63
TOTAL	**6,311,000**	**505,843**	**23.5**	**6,714,000**	**244,482**	**37.1**	**750,325**	**30.5**

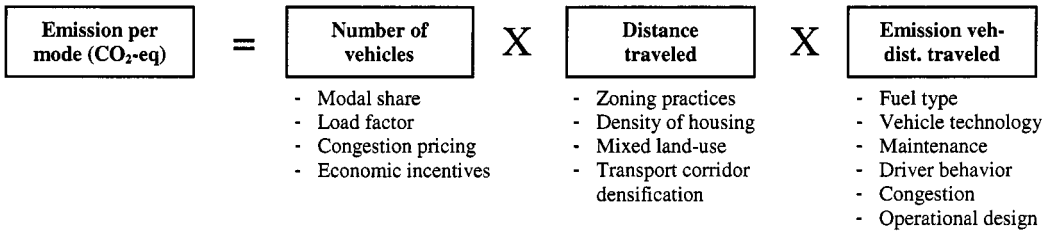
Annex 11: Incremental Cost Analysis

ARGENTINA: Transport and Air Quality Project

Overview

This program is designed to mitigate greenhouse gas emissions from urban transport by rationalizing the use of different motorized transport modes and promoting the modal shift to more efficient transport modes and seek additional benefits in terms of reducing local air pollution and congestion, improving efficiency of the transport system and increasing accessibility of the poor.

According to the figure below, the program is expected to reduce GHG emissions in one or more of the following ways: (1) number of vehicles, (2) distance traveled or (3) emission per vehicle distance traveled.



Baseline Scenario and Costs

The baseline scenario takes into account current transport programs being implemented in the cities, which varies greatly from one to the other. In many cases, the baseline scenario accounts for existing BRT's or BRTs under advanced level of implementation. In most cases there are no bikeways being built, or conceived as transport means. In the case of pedestrian transport, the baseline case accounts for current levels of infrastructure, including the custom width and technical specifications. For most studies aimed at advancing the inter institutional coordination of land-use and transport planning, or for developing and promoting the implementation of sound transport demand management measures, or for developing freight management plans, the baseline is practically inexistent. In the absence of GEF, all BRTs and Mass Transit Systems being developed would only focused on achieving a renewed plan for routes, concession schemes, and integrated fare for the bus system without much consideration of inter-connectivity to other modes, or the articulation to non-motorized transport development and local pedestrian facilities. At the upstream, studies to develop traffic restrictions or land-use incentives to reduce travel distances would not take place. In the same line, studies on incentives for school and housing location as a way to reduce the average traveled km would not take place with the needed celerity.

Alternative Scenario and Costs

The proposed alternative will seek to demonstrate the benefits of measures aimed at promoting a change to less carbon intensive transport modes; a reduction of average traveled distance (avgas vehicle-km for specific trips), a more efficient use of transport (more passengers per vehicle kilometer); and less energy intensive freight transport. In order to make these measures possible it is necessary to ensure an institutional coordination of sector policies and sustainable mainstreaming of the environmental dimension into land-use and transport planning. Most of the measures identified in the different windows of intervention interrelate to each other, posing significant synergetic effects. Combining BRT with sound pedestrian facilities can have an expansive effect on reducing GHG emissions; demand is increased for BRTs, modal shift from private vehicles generating reduction in car travel-km, and the multiplying effect on the land-use planning. According to Wright and Fulton[14], additional GHG reductions may double as a result of further modal shift, especially from cars, minibuses, motorcycles, and taxis, provided the right complementary measures are in place (i.e., regulation, accessibility, effective networks, effective land use planning). This means that modal shift from car vehicles alone may represent 5-6%.. The table below presents the incremental cost analysis for each window. The total cost of the GEF program alternative is estimated at USD11,719,000.

Incremental Costs

Implementation of the barrier removal strategy noted previously would require funding of incremental costs, which would be the difference between the costs of implementing the baseline scenario versus that of the alternative. GEF funds are sought to support incremental costs. The total cost of the GEF Program alternative is USD11,72 million, as compared with the baseline case of USD7,73 million. Thus, the incremental cost of the GEF Program alternative would be USD3,99 million.

The tables on the following pages show the contribution of GEF to the development of the alternative by window.

[14] Wright, L. and L. Fulton, 2005. Climate Change Mitigation and Transport in Developing Nations, *Transport Reviews,* Vol. 25, No. 6, pp-691-717

Table A11.2 Contribution of GEF to the development of the alternative program in Argentina.

Component 2, Window 2: Integration of Land Use Planning, Transport Management and Environmental Management

Baseline.	GEF alternative.	GEF incremental financing.	Domestic Benefits
Studies and plans of actions in relation to urban and transport development being undertaken usually do not fully integrate all aspects of urban planning and may not take into account the long term temporality inherent to city planning. Development plans and urban planning tools are commonly disconnected from the transport and mobility master plans, if any.	The project will help reduce the total traveled km (or average trip length). GEF assistance will help expedite and co-finance studies to develop plans of action to create business/housing/educational centers around major public transport corridors and non-motorized nodes, and create incentives to de-concentrate service areas that would lead to travel reductions. GEF funding would be complementing and leveraging locally available funding to carry out the studies and pilot interventions at the urban level. Also, GEF may help explore ways to co-finance the development of transport corridors through the use of land-use property value financing schemes, bringing forward future high property values into corridor re-developments. The GEF alternative will promote private investments and catalyze high-density land use along transport corridors that will trigger higher demand for public transportation and NMT in the long term. The presence of the GEF will attract the support of other co-financing, including local government, real-estate agencies and land developers.	The incremental activities that will be undertaken through GEF support in Rosario, and Tucuman, are the following: ▪ Design of regulatory and financial incentives to facilitate private sector investments y generate higher densities along the mass transit system corridor. ▪ Definition of modifications in previous land use patterns and adaptation of existing land use norms. ▪ Development of a transit corridor including bus infrastructure, and improved access to public transport stops. ▪ Technical Assistance for the creation of metropolitan coordination framework ▪ Elaboration of a Master Plan for Urban Mobility that is integrated with the environmental and social policies; ▪ TA to help design and establish or strengthen institutional framework for coordination between land-sue and transport planning	▪ Reduced congestion ▪ More attractive downtown areas ▪ Better access to jobs, services, ▪ Less traffic and pollution ▪ Opportunities for sustainable transport financing through private sector participation and land valuation Global Benefits ▪ Reduced GHG emissions ▪ Examples on how ▪ Basic methodologies to quantify GHG emission benefits from land use and transport interaction

Baseline (current situation)	Alternative/Removal of Barriers	Incremental costs
715,000	1,220,000	505,000

Component 2, Window 3. Modal Interconnection and improved effectiveness and efficiency of public transport

Baseline

Baseline situation in this window will widely vary from city to city. In cities where BRTs or other efficient mass transit systems are already in the process of being implemented, there is usually a lack of emphasis on modal integration, linking non-motorized transport, taxis and other modes to the new systems. In some other cases, the image of bus transport is poor and requires promotional and communication campaigns. In most other cities, the public transport systems are still inefficient, and restructuring has not been considered, or encounters political and economic barriers that need to be overcome.

GEF alternative

GEF funds will create conditions so local bikers, commuters and pedestrians combine their travel with public transport services, by connecting important trip generators and/or attractors with key links of the main transport systems. GEF funding will also help coordinate other forms of public transportation such as taxis and bike-taxis to the BRT system development and to promote a shift to non-motorized vehicles and reduce the use of private cars. Modal interconnection will result in a reduction of energy consumption per trip thus decreasing the overall GHG emissions from the transport sector.

GEF incremental financing.

The incremental activities that will be undertaken through GEF in Rosario, Posadas, and Cordoba, include the following:

- Assessment of the most efficient and optimal solutions for operation of bus corridors, including better vehicle technology, bus priority, monitoring, etc.
- Engineering designs and Implementation of BRT corridors, including planning of the integrated transport system, costs/tariffs studies, customizing of legal norms, complimenting law frame, institutional strengthening, monitoring and administrative costs.
- Technical and economic feasibility studies of BRT systems Redesign of the current urban transport network based on the Master Plans, rationalizing the existing network, increasing modal and intermodal integration, reducing overlaps, increasing the mobility in the urban transport system, etc.
- Improvements of busway infrastructure;
- Improve accessibility to tube stations, especially people with special needs;
- Public awareness campaigns;
- Research to understand user preferences and valuation of different trip aspects and willingness and capacity to pay

Global Benefits

- More efficient and attractive transport system
- Improved accessibility, especially for the poor
- Reduction of air pollution
- Better business model for operators

Global Benefits

- Reduction of GHG emissions
- Experience to be disseminated worldwide
- Improved methodology to assess GHG benefits

Baseline (current situation)	Alternative/Removal of Barriers	Incremental costs
6,007,000	**7,989,000**	**1,982,000**

Component 2, Window 4. Non-motorized Transport

Baseline
At this time, biking is limited and there are usually no concrete plans to promote bikeways as part of the transport system. It is likely that without GEF intervention, the cities would continue to address walking and biking in a haphazard way. The current scenario has been to create sparse bikeways and pedestrian zones in the cities but without integrating them to the upgrading of public transport systems, thus reducing the potential of becoming effective alternatives for transportation.

GEF Alternative
The GEF program will help prepare overall guidelines for non-motorized transport facilities and bring these modes to the forefront of urban transport planning. The program will help promote non-motorized travel. GEF funds will also assist in developing walking and biking facilities in a selected neighborhood with access to public transport public transport and to help convince car drivers to consider walking and biking for short trips and use a combination of NMT and public transport for longer trips. The GEF alternative will promote private investments and catalyze mixed land use along transport corridors that will trigger higher demand for public transportation and NMT in the long term.

GEF incremental financing.
The incremental activities that will be undertaken through GEF support in Rosario, and Cordoba, include:

- Studying of a cycling network for the whole city, designs and works to implement the cycling paths in the northern part of the city
- Enhance the pedestrian transit providing more quality and redesigning areas to improve transit of pedestrian and accessibility of pedestrian to public transport and widening of the sidewalks.
- Promotion of bike use through communication plan and public dissemination plan
- Design and pilot investments in bikeways; bike parking facilities, pedestrian areas and sidewalk improvements and support development of car-free zones and interconnectivity with public transport

Domestic Benefits

- Improved access of the poor
- Reduced pollution
- More attractive and pleasant streets environments
- More business in pedestrian areas downtown
- Better capacity of stakeholders to design and implement bikeways

Global Benefits

- Reduction of GHG emissions
- Guidelines for the design of bikeways

Baseline (current situation)	Alternative/Removal of Barriers	Incremental costs
1,010,000	**2,510,000**	**1,500 ,000**

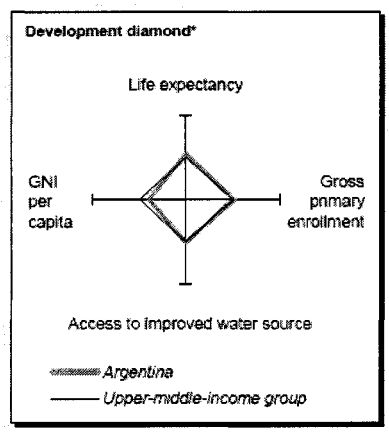
Annex 12: Country at Glance

ARGENTINA: Transport and Air Quality Project

Argentina at a glance

8/12/06

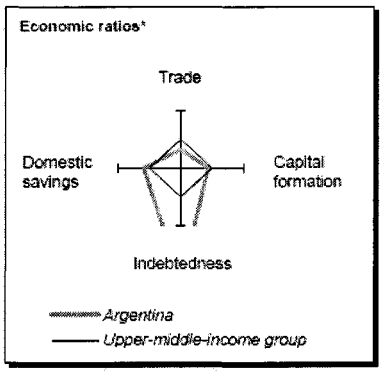
POVERTY and SOCIAL	Argentina	Latin America & Carib.	Upper-middle-income
2005			
Population, mid-year *(millions)*	38.7	551	599
GNI per capita *(Atlas method, US$)*	4,470	4,008	5,625
GNI *(Atlas method, US$ billions)*	173.2	2,210	3,368
Average annual growth, 1999-05			
Population *(%)*	1.0	1.4	0.6
Labor force *(%)*	2.5	2.2	1.2
Most recent estimate (latest year available, 1999-05)			
Poverty *(% of population below national poverty line)*	..	..	..
Urban population *(% of total population)*	90	77	72
Life expectancy at birth *(years)*	75	72	69
Infant mortality *(per 1,000 live births)*	16	27	23
Child malnutrition *(% of children under 5)*	..	7	7
Access to an improved water source *(% of population)*	96	91	94
Literacy *(% of population age 15+)*	97	90	94
Gross primary enrollment *(% of school-age population)*	112	119	107
Male	113	121	108
Female	112	117	106



KEY ECONOMIC RATIOS and LONG-TERM TRENDS

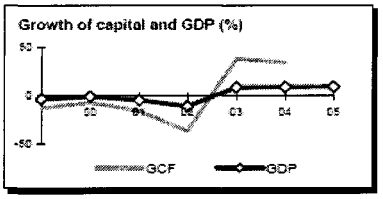
	1985	1995	2004	2005
GDP *(US$ billions)*	88.4	258.0	153.0	183.3
Gross capital formation/GDP	17.6	17.9	19.1	..
Exports of goods and services/GDP	11.7	9.6	25.3	..
Gross domestic savings/GDP	23.1	17.5	26.3	..
Gross national savings/GDP	..	15.9	20.9	..
Current account balance/GDP	-1.1	-2.0	2.2	-0.1
Interest payments/GDP	5.0	1.7	1.0	..
Total debt/GDP	57.6	38.2	110.6	..
Total debt service/exports	60.1	30.2	28.7	..
Present value of debt/GDP	..	..	125.1	..
Present value of debt/exports	..	..	443.5	..

	1985-95	1995-05	2004	2005	2005-09
(average annual growth)					
GDP	3.0	0.7	9.0	9.2	..
GDP per capita	1.6	-0.4	7.9	8.2	..
Exports of goods and services	6.3	4.9	8.2	..	..

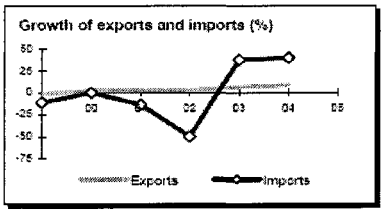


STRUCTURE of the ECONOMY

	1985	1995	2004	2005
(% of GDP)				
Agriculture	7.6	5.8	10.4	..
Industry	39.3	28.4	35.6	..
Manufacturing	29.6	18.7	24.1	..
Services	53.1	65.8	54.0	..
Household final consumption expenditure	..	69.1	62.6	..
General gov't final consumption expenditure	..	13.3	11.1	..
Imports of goods and services	6.3	10.1	18.1	..



	1985-95	1995-05	2004	2005
(average annual growth)				
Agriculture	2.7	1.6	-1.5	..
Industry	2.2	-0.5	13.3	..
Manufacturing	1.8	-0.9	11.9	..
Services	3.1	0.4	6.8	..
Household final consumption expenditure	..	-0.5	8.6	..
General gov't final consumption expenditure	..	0.6	2.7	..
Gross capital formation	4.5	-3.6	34.5	..
Imports of goods and services	16.3	-3.6	39.8	..

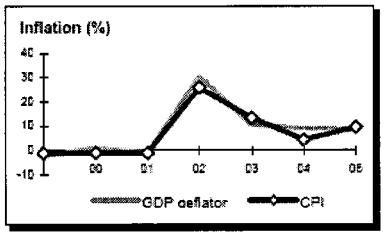


Note: 2005 data are preliminary estimates.

* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

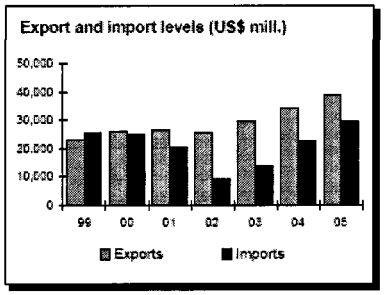
PRICES and GOVERNMENT FINANCE

	1985	1995	2004	2005
Domestic prices				
(% change)				
Consumer prices	672.2	3.4	4.4	9.6
Implicit GDP deflator	625.8	3.2	9.2	8.9
Government finance				
(% of GDP, includes current grants)				
Current revenue	0.0	18.6	23.5	23.1
Current budget balance	0.0	0.2	3.9	2.9
Overall surplus/deficit	0.0	-0.5	2.6	1.4



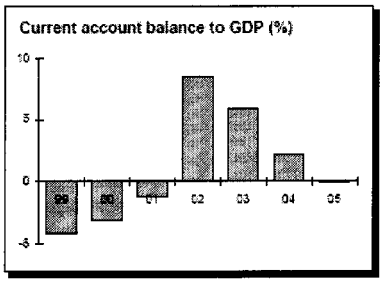
TRADE

	1985	1995	2004	2005
(US$ millions)				
Total exports (fob)	..	21,162	34,550	38,824
Food	..	1,863	3,058	3,436
Meat	..	1,229	1,228	1,380
Manufactures	..	6,504	10,304	11,579
Total imports (cif)	..	20,200	22,445	29,915
Food	..	..	..	..
Fuel and energy	..	873	643	856
Capital goods	..	8,894	10,473	13,958
Export price index *(2000=100)*	..	82	96	100
Import price index *(2000=100)*	..	69	84	98
Terms of trade *(2000=100)*	..	120	115	102



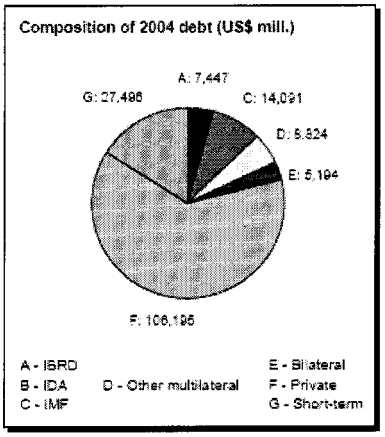
BALANCE of PAYMENTS

	1985	1995	2004	2005
(US$ millions)				
Exports of goods and services	10,039	24,987	39,697	44,080
Imports of goods and services	5,285	26,066	28,152	37,536
Resource balance	4,754	-1,079	11,546	6,545
Net income	-5,706	-4,636	-8,884	-7,500
Net current transfers	..	..	..	..
Current account balance	-952	-5,118	3,349	-142
Financing items (net)	2,200	5,118	-3,349	142
Changes in net reserves	-1,248	0	0	0
Memo:				
Reserves including gold *(US$ millions)*	3,273	14,288	..	..
Conversion rate *(DEC, local/US$)*	6.00E-5	1.0	2.9	2.9



EXTERNAL DEBT and RESOURCE FLOWS

	1985	1995	2004	2005
(US$ millions)				
Total debt outstanding and disbursed	50,946	98,482	169,247	..
IBRD	700	4,913	7,447	6,881
IDA	0	0	0	0
Total debt service	6,209	8,865	12,377	..
IBRD	114	565	1,065	1,216
IDA	0	0	0	0
Composition of net resource flows				
Official grants	6	36	28	..
Official creditors	217	1,437	-212	..
Private creditors	2,350	4,460	-1,494	..
Foreign direct investment (net inflows)	919	5,609	4,084	..
Portfolio equity (net inflows)	0	1,091	-86	..
World Bank program				
Commitments	0	2,272	336	..
Disbursements	144	941	771	362
Principal repayments	68	259	832	928
Net flows	75	682	-61	-566
Interest payments	46	306	234	288
Net transfers	30	376	-295	-854



The World Bank Group: This table was prepared by country unit staff; figures may differ from other World Bank published data. 8/12/06

Annex 13: Summary of City Proposals

ARGENTINA: Transport and Air Quality Project

City Proposal: Córdoba

I. GENERAL INFORMATION			
City and Country: CORDOBA, ARGENTINA	**Coordinating agency:** Municipalidad de Córdoba	**Implementing agency** Municipalidad de Córdoba	**Project Endorsed by:** Luis Juez, Intendente de Córdoba

II. TRANSPORT AND AIR QUALITY ISSUES

Key transport and air quality issues at a city level

Urban expansion of Córdoba is a key challenge, the main effects of which are congestion in the city center, due to the high volumes of people coming to public and administrative buildings concentrated in there, uncontrolled growth on the periphery, which imposes a daily transportation toll on people.

This situation leads to local pollution, excessive greenhouse gas emissions, and noise, especially in the central area and its main feeder routes.

What the city is doing to address those issues?

Cordoba just elaborated its second urban strategic plan which aims at rehabilitating the central area of the city and strengthening neighborhoods identity. Said plan will improve access to infrastructure networks and public services, with the premise that sustainable transport and smart growth are essential features of the overall policy.

III. DESCRIPTION OF THE PROJECT

General Objectives of the Project

The overall objective of the project is to give priority to energy-efficient and clean transport modes (public and NMT). The proposed sub-project contains 4 main sub-objectives: (i) increase available space for pedestrian circulation in the city center, and give priority to public transport vehicles, with the objectives of improving the quality of life of the inhabitants of the city through providing quicker and more reliable public transport services and offering better accessibility by foot to said services and other city amenities; (ii) increase the coverage of Cordoba's cleanest transport mode (trolleybuses) in the peripheral zones in order to improve the accessibility of low-income sectors; (iii) enhance the image, efficiency and attractiveness of public transport to increase public transport modal share and (iv) increase modal share of non-motorized transport through the extension of the bicycle route network and the improvement of pedestrian facilities.

Baseline conditions

- There are plans to increase the length and coverage of the trolley bus network.
- There is an extended bikeway network, but that includes quite a few isolated segments, and the overall connectivity of the network is quite poor,
- The government is looking for solutions to overcome the slow speed of bus services associated to congestion and increase km of busways to increase capacity and improve design..
- There is a commitment to improve walkability conditions to facilitate acces of pedestrians to transport services.

Incremental GEF contribution

- Feasibility studies for trolley bus network extension.
- Build cycling missing links to increase the connectivity of the bikeway network and link it to public attraction centers, with the objective of reducing motorized trips.
- Upgrade the existing busways and lay the groundwork for World Bank-funded extensions of the busway network to improve overall commercial speed and reliability of bus services.

III. DESCRIPTION OF THE PROJECT

- Improving walkability conditions to encourage walking, and enhancing accessibility by foot to public transport and city amenities, including better access for people with disabilities.

Project Risks

Some opposition may surge from car users when redistributing road space in favor of NMT and public transport services but this risk is assessed as low since the city already has a network of segregated busways and the inhabitants, recently consulted for the elaboration of the strategic urban plan, voiced their support to public transport friendly measures.

No risk identified with the NMT component, which complements an existing network that is satisfactorily maintained by the Municipality, and that will become more attractive and relevant through the completion of the proposed "missing links".

Window 3. Public Transport Enhancement

Objectives

Carry out of engineering, environmental and socio-economic studies for potential trolleybus line extensions.

"Trolebuses" produce no tailpipe emissions and in Argentina a growing share of the electricity is hydroelectricity (close to 50%), and a small share nuclear (close to 10%), i.e do not imply fossil fuel combustion.

Redistribute road space on three downtown conflictive axes in favor of public transport vehicles versus private cars in order to increase commercial speeds and raise public transport competitiveness

Activities financed by GEF

Engineering, environmental and socio-economic studies for potential trolleybus line extensions

Implementation and/or upgrading of selective lanes in three downtown corridors, including improved bus stops.

Outputs

Completed above-mentioned studies, to justify potential further World Bank's investments in the construction of the proposed extensions under new urban transport preparation currently under preparation (PTUMA, Proyecto de Transporte Urbano en las Áreas Metropolitanas de la Argentina).

Through the (re)-construction of segregated busways, solving of bottlenecks that substantially slow down public transport services.

Risks

Funding not available to move forward with trolleybus study results but said risk is strongly mitigated by WB involvement in the preparation of a loan to support urban transport initiatives.

Participating institutions

Municipalidad de Córdoba, Secretaría de Salud y Medioambiente, Secretaría de Transporte y Ordenamiento Territorial, Subsecretaría de Planeamiento Urbano.

Window 4. Non Motorized Transport

Objectives

Extension of the bicycle route network to increase its connectivity through the construction of "missing links" and link to the main cultural-administrative nodes. Promote bicycle use through promotional activities.

Increase available space for pedestrian circulation in the city center to offer better accessibility by foot to public transport services and other city amenities.

Activities financed by GEF

Interventions on the street network to widen sidewalks.

Construction of selected segments of bikeways

Bike use promotion campaign

Outputs

Construction and upgrading of bikeways

Improvement of pedestrian facilities in three key downtown corridors, providing more space for pedestrian and

III. DESCRIPTION OF THE PROJECT
better access to bus stops. **Participating institutions** Municipalidad de Córdoba, Secretaría de Salud y Medioambiente, Secretaría de Transporte y Ordenamiento Territorial, Subsecretaría de Planeamiento Urbano.

IV. SUBPROJECT BUDGET (CÓRDOBA)			
Window	**Expenditure category**	**GEF Contribution (USD)**	**Co-financing (USD)**
Window 3. Public Transport Enhancement	Goods & Non-consulting services	0	0
	Works	1,000,000	600,000[15] 2,000,000[16]
	Consulting Services	200,000	66,000[17]
	Operating costs	0	0
	Subtotal	**1,200,000**	**2,666,000**
Window 4. Non motorized Transport	Goods & Non-consulting services	100,000[18]	0
	Works	150,000[19]	0
	Consulting Services	0	60,000
	Operating costs	0	0
	Subtotal	**250,000**	**60,000**
Overall Project Budget	Goods & Non-consulting services	100,000	0
	Works	1,150,000	2,600,000
	Consulting Services	200,000	126,000
	Operating costs	0	0
	Total	**1,450,000**	**2,726,000**

[15] Trolleybus line extension (Line B, northbound), to be funded by World Bank loan (PTUMA, under preparation)
[16] Creation of a new 4-km segregated busway corridor (Humberto Primo – Sarmiento) to be funded by PTUMA
[17] Supervision of works in the three downtown corridors
[18] Bike use promotion campaigns
[19] Extension of bikeway network

City Proposal: Posadas Metropolitan Area

I. GENERAL INFORMATION			
City and Country: POSADAS, ARGENTINA	**Coordinating agency:** Municipalidad de Posadas	**Implementing agency** Secretaría de Obras y Servicios Públicos	**Project Endorsed by:** Municipalidad de Posadas Municipalidad de Gurupá Municipalidad de Candelaria

II. TRANSPORT AND AIR QUALITY ISSUES

Key transport and air quality issues at a city level

Population growth and migrations from the countryside to the cities increased the urbanized area and contributed to urban sprawl with new low-density, remote neighborhoods. This combined with a lack of adequate public transport provision starts affecting air quality in the urban areas. Additionally, the construction of a big hydroelectric project (Yacireta dam, which made necessary the resettlement of thousands of families in Posadas) together with new roads linking Posadas to these new settlements, contributed to further de-densification and an increase in trip lengths, that affect public transport sustainability and attractiveness.

What the city is doing to address those issues?

In year 2002, the Gobierno Municipal of Posadas adopted a Transport Plan for the city and started to implement an integrated transport system, the first phase of which is already completed. Garupá and Candelaria Municipalities adhered to the plan and it became a regional project. Posadas, these neighboring municipalities and the Province of Misiones were the first one in Argentina to set up a Metropolitan Transport Agency that, along with a strong involvement of the private sector, laid the groundwork for the implementation of the BRT system the GEF would be supporting.

In addition, Posadas has a Plan of "Reordenamiento Integral del tránsito y de la circulación" in order to increase transport efficiency and to rationalize traffic in the metropolitan area which aims at improving air quality.

III. DESCRIPTION OF THE PROJECT

General Objectives of the Project

Enhance the quality of life of the inhabitants of the city by increasing the quality and reliability of the public transport network, rationalizing routes and improving frequencies in peripheral neighborhoods. This project aims at encouraging the use of mass transit and hence, diminishing the private car use, achieving combustible savings and reducing noise in the downtown area. The Integrated Transport System will provide incentive to bus companies to improve their operation patterns, rationalizing routes and services, and consequently reducing GHG emissions from fuel consumption both by cars and by public transport vehicles.

Baseline conditions

- The private sector is already investing in vehicles, and transfer centers to improve public transport services.
- There is a Metropolitan Agency for Transport, the first one in Argentina, willing to invest in bus-dedicated infrastructure investments, but local financial resources are scarce.
- While most of the core studies for the system are basically carried out, some substantial ones are still missing and waiting for funding, especially everything related to the regulatory framework and the implementation of fare integration.

Incremental GEF contribution

- Accompany private sector investments and catalyze government investments for implementation of the Integrated Transport System.
- Co-finance the most needed kilometers of segregated busways that will ensure the system efficiency.
- Strengthen institutional capacity to plan and manage the Integrated Transport System.
- Improve regulatory framework and tariff structure.

III. DESCRIPTION OF THE PROJECT

Window 3. Public Transport Enhancement

Objectives

In order to expand the "*sistema integrado de transporte*" the project will swift from conventional units to fewer high-capacity articulated units (EURO III). Also, the project aims to eliminate the overlap of routes, to reduce noise in the Av. Uruguay and to establish fare integration at the transfer stations.

Activities financed by GEF

Civil works in the Av. Uruguay for the implementation of the segregated corridors. Monitoring and evaluation consultancies: Training, and institutional strengthening.
Technical assistance: definition of legal framework in accordance with legal norms, user perception surveys, fare structure studies, planning of the integrated transport system.

Outputs

(expected deliverables such as number of workshops, studies, km of cycling ways, etc)

3km of BRT corridor in the AV, Uruguay.
Completion of the overall planning of the integrated transport system.

Risks

Participating institutions

Municipalidad de Posadas, Municipalidad de Gurupá, Municipalidad de Candelaria

IV. SUBPROJECT BUDGET (POSADAS)

Window	Expenditure category	GEF Contribution (USD)	Co-financing (USD)
Window 3. Public Transport Enhancement	Goods & Non-consulting services	0	0
	Works	732,000[20]	643,000[21] 1,870,000[22]
	Consulting Services	0	210,000[23]
	Operating costs	0	0
	Subtotal	**732,000**	**2,723,000**
Overall Project Budget	Goods & Non-consulting services	0	0
	Works	732,000	2,513,000
	Consulting Services	0	210,000
	Operating costs	0	0

NB: parallel financing:

USD 1,620,000: Purchase, over the GEF project implementation period (2006-2009) of conventional buses, fully funded by the private sector and to be operated on the trunk routes

USD 2,520,000: Purchase, over the GEF project implementation period (2006-2009) of articulated buses, fully funded by the private sector and to be operated on the trunk routes

[20] Construction of the three first km of segregated busways in Avenida Uruguay in the most congested part of the city, with co-financing from a WB loan.

[21] Co-financing, via World Bank loan, of the above

[22] Construction of the three bus terminals for transfers between feeder routes and the trunk routes, fully financed by the private sector

[23] Engineering studies for the integration stations, funded by World Bank Loan.

City Proposal: Rosario Metropolitan Area

I. GENERAL INFORMATION			
Cities and Country: Rosario Granadero Baigorria Capitán Bermúdez ARGENTINA	**Coordinating agency:** Plan Estratégico Metropolitano Región Rosario	**Implementing agency** Municipality of Rosario, through the Secretaries of Public Services, Public Works and Planning.	**Project Endorsed by:** Mayors of the Municipalities of Rosario, Granadero Baigorria y Capitán Bermúdez

II. TRANSPORT AND AIR QUALITY ISSUES

Key transport and air quality issues at a city level

Significant decrease in the number of public transport passengers and of the relative importance of public transport.
Increase in motorization rates, accompanied by incipient congestion in the downtown area.
Lack of adequate infrastructure for non-motorized transport, in spite of the relative importance of bike trips (12% of total trips)
High air pollution levels, especially in terms of NOx (45% above local maximum admissible levels)

What the city is doing to address those issues?

On the basis of origin-destination surveys carried out in 2002, the Municipality defined short-term proposals to address the newly identified travel patterns. A bidding process was organized to concession out public transport services for 7 years, including a restructuring of the bus routes and the fleet modernization to better address the needs of the users. The North-South corridor, for its high levels of potential and existing demand, was selected for the implementation of new mass transit system.
In the context of the new bidding process for the urban transport services of Rosario, the Rosario Urban Transport Authority (**Ente del Transporte de Rosario**) will implement an urban transport management system based on GPS which will help monitoring the fleet activity, keeping buses on schedule and delivering real-time status information through s customer monitors. Said system would be tested under the GEF proposal.
The Municipality has been building the first links of a network of bikeways and is carrying out simultaneously outreach campaign targeting potential and actual bike users about traffic safety issues and with the objective of encouraging bike use.
The Sub-Secretariat of the environment is implementing an Air Quality Monitoring Plan and is defining the so-called Agenda 21, which aims at achieving environmental, economic and social sustainability on Rosario.

III. DESCRIPTION OF THE PROJECT

General Objectives of the Project

Develop in the long run a Sustainable Urban Transport System that will increase the overall accessibility and contributes to improve the quality of life through living priority to high and medium-capacity high-quality public transport services, aiming at increasing public transport and non-motorized transport modal shares.
Make compatible and coordinate urban transport and land use policies in order to reduce external costs related to transport, such as air pollution, noise, congestion and accidents.

Baseline Conditions

- Due to the liberation of freight rail corridors in the urban area (planned construction of a freight rail "beltway" to by-pass urban areas), the Municipality is willing to seize the opportunity to develop a mass transport corridor on the to-be-liberated rail right-of-way
- There exists a commitment to strengthen regulations and other instruments to contain urban sprawl.
- Citizens are used to ride bicycles and it will be enhanced by improving cycling infrastructure.
- There is a plan in place to increase reliability of public transport services.

Incremental GEF contribution

- Feasibility studies for the mass transit system to be implemented on the North-South corridor, in order to have the necessary information to leverage funds for its materialization.
- Improve land-use and transport policy coordination on the North-South corridor
- Expand the current bikeway network, especially as a feeder system to the North-South corridor
- Improve the operation of buses and trolleybuses through the implementation of GPS devices aboard vehicles and increase the quality of service through providing real-time information to users at bus stops on bus schedules.

Project Risks

The political commitment to the Project is strong and the local administrations that support it enjoy a solid popular support, which was reflected in the last elections, not only in Rosario but as well in Granadero Baigorria and Capitán Bermúdez. This ensures a stable political landscape, where changes that may impact the implementation of sustainable transport policies are unlikely to happen during Project execution.

As far as social risks are concerned, the Project is not expected to have negative impacts on any social sector and on the contrary should benefit most of the population.

As far as financial risks are concerned, the Municipality of Rosario has an ample experience in the management of projects funded by multilateral institutions and some of the sub-projects which are part of this proposal are expected to benefit from financial support from both the National Government and the World Bank.

Window 3. Public Transport Enhancement

Objectives

Implement a mass transit system in the North-South metropolitan corridor that through high-quality, short headways services, contributes to car use decrease and air quality improvements.

Modernize the current public transport fleet through pilot projects aiming at testing the new GPS technology to track buses.

Activities financed by GEF

Analyze the following for the North-South metropolitan corridor transit system

Transport demand and type of service required:

- Current and future transport demand, maximum peak loads, public transport modal share estimates, travel time savings, number of transfers, etc.
- Physical and operational characteristics of the possible transit options, comparison of available technologies, design of transfer terminals and stops, etc.

Environmental impact

- Reduction in local contaminants and greenhouse gas emissions

Financial and institutional analysis

- Investment costs
- Breakeven fare, potential need for subsidies, business model

Socio-economic analysis:

- Fare level impact on household expenses, users benefits, transit operators benefits

Urban impact

- Consistency of the proponed system with land use strategies, coverage of low-income neighborhoods, densification strategies, impact on land and real estate values, etc.

Outputs

(expected deliverables such as number of workshops, studies, km of cycling ways, etc)

Selection of the optimal technical solution for the corridor. The future transit system is expected to be partially financed by the World Bank under preparation (PTUMA, Proyecto de Transporte Urbano en las Áreas Metropolitanas de la Argentina).

Risks

III. DESCRIPTION OF THE PROJECT

Participating institutions
Plan Estratégico Metropolitano Región Rosario, Rosario's urban transport agency, Semtur, Municipality of Granadero Baigorria, Municipality of Capitán Bermúdez.

Window 4. Non Motorized Transport

Objectives
Increase non-motorized transport modal share

Activities financed by GEF
Prepare bidding documents for pilot bikeway
Works for construction of pilot bikeway
Analysis of the bikeway network taking into account the inclusion of bike parking facilities
Design and planning of bike use promotion campaigns
Public awareness raising workshops.

Outputs
(expected deliverables such as number of workshops, studies, km of cycling ways, etc)
Construction of 4.8 km of bikeways.
Study to expand the bikeway network especially in the North-South Corridor
Bike use promotion campaign

Risks

Participating institutions
Plan Estratégico Metropolitano Región Rosario, Municipality of Granadero Baigorria, Municipality of Capitán Bermúdez

IV. SUBPROJECT BUDGET (ROSARIO)

Window	Expenditure category	GEF Contribution (USD)	Co-financing (USD)
Window 3. Public Transport Enhancement	Goods & Non-consulting services	0	618.100[24]
	Works	550,000	0
	Consulting Services	250,000[25]	0
	Operating costs	50,000	10,000
	Subtotal	**800,000**	**618,100**
Window 4. Non motorized Transport	Goods & Non-consulting services	0	0
	Works	300,000[26]	300,000
	Consulting Services	400,000	0
	Operating costs	50.000	10.000
	Subtotal	**700,000**	**300,000**
Overall Project Budget	Goods & Non-consulting services	0	618,100

[24] Purchase, over the GEF project implementation period (2006-2009), of GPS (Global Positioning System) on-board equipments by the local private operating companies for 533 buses + purchase by the Municipal Government of the central equipments.
[25] Feasibility study for a mass transit system in the North South Metropolitan Corridor of Rosario Metropolitan Area. The funding of the corresponding project is secured under the World Bank urban transport loan currently under preparation (*PTUMA*)
[26] GEF-funded bikeways, which complement the existing network

IV. SUBPROJECT BUDGET (ROSARIO)			
Window	**Expenditure category**	**GEF Contribution (USD)**	**Co-financing (USD)**
	Works	850,000	300,000
	Consulting Services	650,000	0
	Operating costs	100,000	20,000
	Total	**1,600,000**	**938,100**

City Proposal: Tucumán Metropolitan Area

I. GENERAL INFORMATION			
City and Country: San Mi Metropolitan (Yerba Buen , Alder s, del Rio and Las a t ti:	**Coordinating agency:** - Municipality of the City of Tucuman	**Implementing agency** - Undersecretary of Transit and Public Transport, San Miguel de Tucuman	**Project Endorsed by:** - Municipality of San Miguel de Tucuman Metropolitan Area (Yerba Buena, Tafi Viejo, Alderetes, Banda del Rio Sali and Las Talitas)

II. TRANSPORT AND AIR QUALITY ISSUES

Key t and air li i i l l

The vision qu transport services Miguel Tucuman is extremely di the metropolitan area struggles with inadequate infrastructure, increasing ort- t ti d ti vices. t a legal framework that would the different municipalities to enforce t rules vehicle standar of tl tl The TN l l l *remises* have tl other transport i i l because of the subsidy di Un current regulation smaller ave t da such as years Predator p vice have resulted service t t t a chaotic and increasingly l l

t th t doing to

The governments of the six municipalities have started a joint program to tackle the illegal provision of transport service. Different studies have been commissioned as well as the recently concluded Strategic Urban Master Plan, which laid the foundations for the future spatial structure of the region. However there is no recent Transportation Master Plan (TMP) that sets the goals and priorities for investment. There is also a need to define] the competences between the Provincial and Municipal Government, and the current institutional framework does not establish the adequate requirements to enforce monitor, and regulate the public transport service.

III. DESCRIPTION OF THE PROJECT

General Objectives of the Project

The project is intended to lay the groundwork for the provision of adequate transport services by catalyzing good transport planning at the municipal level. The project will support the rationalization, planning and control of the public transport system developing a Transportation Management Plan (TMP) for the metropolitan region of San Miguel de Tucuman. The TMP will set the basis for how transport funding is invested, and what type of programs and specific projects should be implemented.

The goal is to set a plan that provides concrete and feasible actions that allow the current system to migrate towards a more rational, safe, secure and environmentally friendly transport system. A more efficient, clean and attractive service will reduce car use compared to the baseline, lowering the levels of air pollution, noise and congestion.

Baseline conditions

- Willingness to address urban transport issues but lack of basic data and need for technical assistance to do it properly
- There is an incipient plan to re-use degraded/abandoned rail corridors for passenger services

Incremental GEF contribution

- Co-finance the recollection of the date needed, elaborate an urban transport strategy and provide technical guidance to the Municipality
- Examine the feasibility of the re-conversion of rail corridors.

Project Risks

- Political risk: the management of the metropolitan transport service under a single entity could lead to difficult coordination and public backlash, since institutions with different levels of authority and intricate organization are complex to coordinate. This risk has been mitigated with the creation of the Council of Managers and Rural Commissioners of the Metropolitan Area (CICRAM), which congregates the local elected authorities of the six municipalities. The relation between the different CICRAM members is currently regarded as highly satisfactory.
- Social risk: the resistance to change from the current system towards a formalized and controlled transport service is perceived as a risk. To mitigate this risk, the TMP and the CICRAM will develop a program on which the companies and its affiliated operators, could bid and participate on the operation of the future system. Under such scheme, the operation of troncal and feeder routes could be awarded to companies formed by previous operators.

  Medium-sized vehicles currently used for the transport of passengers could be incorporated into feeder routes and for the routes serving end-terminal stations.
- Public dislike: integrated transport systems change the door-to-door service for a station-to-station approach. Users will have to transfer between routes, which is usually perceived negatively, but time spent transferring will be more than compensated by time savings on the trunk corridors. The integrated system will reduce total travel time, improve efficiency, comfort and safety.

Window 2. Land- use/Transport coordination

Objectives

To improve the public transport service and to strengthen the institutional capabilities of the San Miguel de Tucuman metropolitan area with the development of a Transportation Master Plan. The provision of a better, efficient, safe and sustainable service will reduce the dependence on private vehicles, reducing the levels of congestion, pollution and comfort.

Activities financed by the GEF

- A qualitative study showing the possible impacts and benefits of the TMP
- Transportation Master Plan for the Metropolitan Area of San Miguel de Tucuman

Outputs
(expected deliverables such as number of workshops, studies, km of cycling ways, etc)

- Inventory of existing public transport services, including maps of routes, and operators' roster.
- Analysis of the available information on urban and suburban transport services.
- TMP Operational Plan: analysis of the present operating characteristics of the system
- Recommendations for bus routes, frequencies, vehicle fleets, tariff structure, supporting infrastructure, size of operating companies.
- TMP Institutional Structure: analyses of current laws, financial mechanisms, present regulations and government agencies.
- Recommendations on desirable institutional structures.
- Development of the legal and institutional framework needed to implement the OP, including legislative changes, training, financial mechanisms and municipal government responsibilities.
- Analysis of a possible integration with the railroad urban system.

Risks

That the proposed system is not fully accepted by the users. Difficulties during negotiations with private operators. The implementation of the Public Participation Framework will mitigate this risk.

III. DESCRIPTION OF THE PROJECT
Participating institutions • Municipalities of San Miguel de Tucuma, Yerba Buena, Tafi Viejo, Alderetes, Banda del Rio Sali and Las Talitas.

IV. Subproject Budget (San Miguel de Tucumán)			
Window	**Expenditure category**	**GEF Contribution (USD)**	**Co-financing (USD)**
Window 2. Transport and Land Use Policies	Goods & Non-consulting services	0	0
	Works	0	0
	Consulting Services	199,000	800,000
	Operating costs	6,000	0
	Subtotal	**205,000**	**800,000**
Overall Project Budget	Goods & Non-consulting services	0	0
	Works	0	0
	Consulting Services	199,000	800,000
	Operating costs	6,000	0
	Total	**205,000**	**800,000**