



# PROJECT IDENTIFICATION FORM (PIF)<sup>1</sup>

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

## PART I: PROJECT IDENTIFICATION

Project Title:	Low-Carbon Urban Mobility for Large Cities in Brazil		
Country(ies):	Brazil	GEF Project ID: <sup>2</sup>	4949
GEF Agency(ies):	IADB (select) (select)	GEF Agency Project ID:	TBD
Other Executing Partner(s):	Ministry of Cities, Brazil	Submission Date:	2012-09-07
GEF Focal Area (s):	Climate Change	Project Duration (Months)	36
Name of parent program (if applicable): ➤ For SFM/REDD+ <input type="checkbox"/>	N.A.	Agency Fee (\$):	600,000

### A. FOCAL AREA STRATEGY FRAMEWORK<sup>3</sup>:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
CCM-4 (select)	Sustainable transport and urban policy and regulatory frameworks adopted and implemented	Cities adopting low-carbon programs for transport	GEFTF	2,450,000	3,570,000
CCM-4 (select)	Increased investments in less GHG intensive transport and urban systems	Investments mobilized for low-carbon transport	GEFTF	3,264,000	70,000,000
(select) (select)			(select)		
(select) (select)			(select)		
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(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)	Others		(select)		
Sub-Total				5,714,000	73,570,000
Project Management Cost <sup>4</sup>			GEFTF	<b>286,000</b>	3,600,000
<b>Total Project Cost</b>				6,000,000	77,170,000

### B. PROJECT FRAMEWORK

Project Objective: To develop and demonstrate the inclusion of climate change considerations in the design and assessment of urban transport investments in Brazil						
Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Cofinancing (\$)
1: Sustainable Urban Mobility Framework for Brazilian Large Cities	TA	1.1 A technical and regulatory framework to promote sustainable urban mobility is designed and operational	1.1 Guidelines for the inclusion of climate change considerations in the assessment of transport investments  1.2 Technical guidelines, standards and regulatory framework for, inter alia,	GEFTF	1,700,000	3,070,000

<sup>1</sup> It is very important to consult the PIF preparation guidelines when completing this template.

<sup>2</sup> Project ID number will be assigned by GEFSEC.

<sup>3</sup> Refer to the reference attached on the [Focal Area Results Framework](#) when filling up the table in item A.

<sup>4</sup> GEF will finance management cost that is solely linked to GEF financing of the project. PMC should be charged proportionately to focal areas based on focal area project grant amount.

			<p>non-motorized transport (NMT), integrated land use and sustainable urban transport planning, transport demand management (TDM), low-carbon vehicle technologies and fuels</p> <p>1.3 Guidelines for assessing and monitoring GHG emissions from urban mobility</p> <p>1.4 National system for collecting and monitoring information on transport activity and transport GHG emissions</p> <p>1.5 Technical backstopping to municipalities in large cities</p>			
2: Pilot demonstrations	Inv	<p>2.1 Parameters for modal shifts and emissions reductions in 4 cities selected</p> <p>2.2 Strategic mobility plans including considerations on GHG emissions in two large cities.</p> <p>2.3 Investments in demonstration projects on sustainable urban mobility measures in one city (e.g. integration of bicycle paths, pedestrian sidewalks, BRT stations, bicycle parking and public space). The city will be selected in collaboration with Brazilian authorities during the project preparation phase.</p>	<p>2.1 Four cities will develop parameters for modal shifts and associated emissions reductions</p> <p>2.2 Pilot projects in two large cities demonstrate the operation of the framework to promote sustainable urban mobility through strategic mobility plans</p> <p>2.3 Reduction of GHG emissions from urban transport</p> <p>2.4 Pilot project: Increase in the number of km of bicycle paths in one city as showcase of low carbon transport network</p> <p>2.5 Increase in number of non-motorized trips</p> <p>2.6 Increase in number of km of BRT</p>	GEFTF	<p>2,764,000 (Inv)</p> <p>500,000 (TA)</p>	<p>68,700,000 (Inv)</p> <p>1,000,000 (TA)</p>
3: Capacity building and dissemination	TA	3.1 Increased capacity for planning, designing and implementing sustainable urban mobility systems at national and local levels	3.1 Three training courses for government officials and relevant stakeholders at national and local level on transport GHG emissions assessment and monitoring	GEFTF	750,000	800,000



(select)	(select)(select)	(select)				0
(select)	(select)(select)	(select)				0
(select)	(select)(select)	(select)				0
(select)	(select)(select)	(select)				0
<b>Total Grant Resources</b>				6,000,000	600,000	6,600,000

<sup>1</sup> In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table

<sup>2</sup> Please indicate fees related to this project.

## **PART II: PROJECT JUSTIFICATION**

### **A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:**

A.1.1 the [GEF focal area/LDCF/SCCF](#) strategies /[NPIF](#) Initiative:

The proposed project is thoroughly aligned with the GEF strategic program “CCM-4: Transport/ Urban: Promote energy efficient, low-carbon transport and urban systems”, by incorporating GHG emissions considerations in mobility strategies and plans for large Brazilian cities. The proposed project is strongly aligned with focal area objective CCM-4, as it focuses on activities that have a transformative impact in helping the GEF-recipient country move towards a low-carbon development path through public transportation and investment in environmentally sound technologies (EST). The proposed GEF project aims at creating an enabling regulatory and technical framework in Brazil that will systematically assess investments in urban transport in large cities and promote the adoption of sustainable transport measures and practices. Ultimately, the framework sought should facilitate the transition to a path of low-carbon sustainable development by the Brazilian urban transport sector.

A.2. National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NIPs, PRSPs, NPFE, etc.:

The Government of Brazil (GoB) is committed to addressing the challenges presented by climate change. In 2009, during the 15th Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC), Brazil expressed the decision to contribute to an ambitious international effort to combat climate change. In December 2009, the GoB launched the Brazilian Climate Change Law (Federal Law No. 12,187) that provides the principles, objectives, guidelines and implementation mechanisms for climate change public policies. The law creates a supportive environment for Federal, State and Local Governments actions on Climate Change. In this context, the GoB has established a national voluntary commitment of reducing Brazil’s GHG emissions by 36.1% - 38.9% by 2020, compared to a business as usual (BAU) scenario. According to Brazil’s second National Communication to the UNFCCC (2010), road transport is the largest contributor to the country’s carbon dioxide emissions from the energy sector (39% in 2005), therefore making it imperative to take decisive actions to limit GHG emissions from this sector.

The Government of Brazil considers the promotion of sustainable transportation a high priority, as stated in Law No. 10.257 of 10<sup>th</sup> June 2001 (“*Estatuto da Cidade*” in Portuguese). This law established that all cities with more than 500 thousand inhabitants should develop a Mobility Master Plan (MMP) that integrates environment and social considerations. However, to date, most cities in Brazil in this category do not have such a plan due to financial and technical limitations and most cities lack this framing document to guide project identification, selection and implementation. One exception is the city of Belo Horizonte, which in the past years developed its MMP. The city of Belo Horizonte can serve as guidance to other cities. The Ministry of Cities (MoC), which is the authority on urban transport in Brazil, has published guidelines for developing MMPs. The proposed GEF project will support MoC efforts to complement the existing MMPs guidelines to include specific considerations on climate change and GHG emissions.

### **B. PROJECT OVERVIEW:**

B.1. Describe the baseline project and the problem that it seeks to address:

#### **Problem:**

Brazil has some of the largest cities in Latin America and in the world – Sao Paulo is the world’s seventh largest city, and 15 other cities have more than one million people. Due to Brazil’s fast growing economy, motorization has grown at an accelerated rate and coupled with unsatisfactory public transport, congestion, air pollution, GHG emissions and the other negative effects from automobile use have increased dramatically. 57.8% of Brazilians live in cities served by public transport systems that use

buses. Brazil's vehicle fleet, including automobiles, motorcycles, light commercial vehicles and buses reached 44 million in 2011.

Road safety is a major issue; in 2010, 40,610 people were killed in traffic accidents, the highest number in the last fifteen years, and more than 146,000 were hospitalized.

In São Paulo, as an example, 61% of the population and most jobs are concentrated centrally, resulting in long commutes and major traffic congestion. It is estimated that every day 1,000 new cars are added to the fleet and its traffic congestion has been ranked as the worst in the world. Estimates show that economic losses from traffic congestion in Brazil reach several billion dollars a year. It is clear that simply adding more roads is not an answer – what is needed is a marked shift from private cars to public transit. But achieving such a shift is difficult, and the public transit needs to be of a certain standard to entice private motorists to consider another option.

The rapidly increasing motorization is also escalating the emissions of Green House Gases (GHG) and measured by final energy consumption, the transport sector is the largest producer of CO<sub>2</sub> in the country, due to its use of fossil fuels, which increases every year. According to Brazilian Inventory of Anthropogenic Emissions and Removal of Greenhouse Gases, in 2005, the transport sector was responsible for 43% of the CO<sub>2</sub> emissions.

The Sectoral Plan for Transport and Urban Mobility for the Mitigation of Climate Change - PSTM, prepared recently by the Ministry of Cities, estimated that the trend of CO<sub>2</sub> emissions from the transportation sector of passengers will reach 150 Mt in 2020, representing an increase of 65.9% compared to base year 2010. In this emerging scenario, individual transport will be responsible for 67% of CO<sub>2</sub> emissions and public transportation will total 33% of CO<sub>2</sub> emissions.

### **Baseline project:**

To cope with some of these issues, Brazil is currently carrying out several large-scale transport infrastructure projects, such as the FIFA World Cup Urban Mobility (*“Investimentos em Mobilidade Urbana para a Copa de 2014”*, in Portuguese) that aims to support the 12 FIFA World Cup host cities improve mass transit systems. The project has a US\$6.9 billion (R\$12 billion) lending budget to finance the infrastructure civil works of selected urban transport projects in the World Cup host cities, such as BRT and light rail.

The baseline project for this particular GEF project falls under the Growth Acceleration Program (*“Programa de Aceleracao do Crescimento”*, or PAC), a major investment plan launched in 2007. *PAC Mobilidade Grandes Cidades* (Urban Mobility Projects for Big Size Cities), launched in 2011, will invest US\$15 billion (R\$32 billion) in the 24 largest cities in the country (those with over 700,000 inhabitants). The projects under this PAC will expand the capacity of transportation infrastructure and improve public transportation, benefitting 39% of the population living in metropolitan areas. The projects may include a variety of transportation systems, such as BRT, light rail, commuter trains, and metro (246 km of BRT will be constructed under the PAC Large Cities. This comes in addition to the approximately 300 km of BRT that is being constructed under the PAC Copa, of which 169 km is BRT and 52 km corridor.)

Nevertheless, urban transport projects under the PAC only include the financing of their infrastructure, these are not articulated to any transportation plan or urban sustainable mobility strategy that includes alternative measures such as those designed under the paradigm *Avoid-Shift-Improve* (A-S-I). Taking this under consideration, PAC urban transport projects do not incorporate demand management measures (TDM) or mechanisms to ensure the integration of transportation plans with the planning and regulation of use and occupation of the land, neither include the reorganization of bus routes to feed the massive systems, nor complementary investment plans to promote non motorized transport.

This GEF program will be articulated to transport projects financed by the PAC in four cities to be selected as pilots, contributing to increase their potential to reduce Green House Gases (GHG) through the implementation of complementary measures that include the integration of public transport systems, the promotion of non-motorized transport, the development of mobility plans to regulate and implement TDM measures and the interrelationship between transportation and land use. The expectation is that this GEF project will help to reduce additional emissions of GHG, beyond those generated by the infrastructure projects financed by the PAC, therefore maximizing the benefits to be achieved by public investments in Brazil in the next 10 years.

Within this context, the baseline project for this project will be 4 pilot cities where urban transport projects financed by the PAC are going to be implemented. Since the final pilot cities will be selected during the project preparation phase, to estimate the baseline financing to be used as counterpart for the project, a calculation was made looking at the city among the potential cities for the pilot with the smallest amount of approved funding from the PAC Mobilidade Urbana. The smallest potential counterpart financing is therefore estimated at US\$50 million for the 4 cities (loan made by the federal government to participating states and cities).

It is expected that PAC projects will start in 2012 and will have an average execution time of about 4 to 5 years taking into consideration the time required to complete studies, bidding processes and execution of works. In this context, the development and implementation of this GEF will be held in parallel to the implementation of urban transport projects to be financed by the PAC, to enable the maximization of benefits in terms of GHG reduction promoted by these investments.

GEF resources will allow estimating emissions reduction as a result of the decrease in the number of individual motorized trips and the number of modal transfers. Based on users surveys and the analysis of emissions reduction to be carried out in the selected cities (4), estimation parameters for GHG reduction will be defined and applied to the remaining 20 (twenty) cities with projects financed by the PAC.

In addition, the IDB is supporting the GoB with urban transport loan projects in the order of US\$358,000,000, of which US\$21,400,000 will count as counterpart financing, and technical cooperation projects in urban transport for US\$2,700,000. The IDB will continue to support the GoB to finance new lending operations for urban transport programs in the cities of Sao Paulo, Fortaleza and Sao Bernardo de Campo and also non reimbursable technical cooperation's to develop mobility plans in Rio de Janeiro, Belo Horizonte and Joao Pessoa.

#### **Problems addressed by the GEF intervention:**

While PAC projects invest large sums in infrastructure, they often are lacking when it comes to integrating sustainable transport and climate changes issues:

1. PAC projects are limited to the physical infrastructure and are generally not accompanied by or related to sustainable mobility plans or strategies that integrate Avoid-Shift-Improve measures to maximize the social, economic and environmental benefits, such as reducing GHG emissions.
2. Public entities on the federal, state and municipal levels lack capacity to assess, develop, and implement plans and measures to promote low-carbon transport infrastructure projects associated to PAC investments.
3. Although the MoC developed guidelines for the development of mobility plans, there is still insufficient knowledge and adequate guidance for the promotion of sustainable transport measures such as non-motorized transport (NMT), transport demand management (TDM), integrated land use and transport planning, etc.
4. MoC and participating cities do not have methodologies and sufficient data to assess the effects on GHG emissions from PAC financed investments.

- B. 2. [incremental /Additional cost reasoning](#): describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated [global environmental benefits](#) (GEF Trust Fund/NPIF) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

The GEF funding is necessary to support MoC and participating cities ensure that PAC financed projects are in line with sustainable urban mobility plans and maximize GHG emissions reductions.

In accordance with recent Brazilian legislation, municipalities with over 20,000 inhabitants are required to elaborate master plans on urban transport; however, few cities have the technical, institutional and operational conditions necessary to create these plans, especially as they relate to environmental issues.

The GEF grant will allow MoC to develop, based on best international practice, a national technical and regulatory framework for the promotion of sustainable urban mobility in large Brazilian cities, thus optimizing the large PAC investments in mass transit systems (BRT, underground and commuter trains) and maximizing the benefits that can be achieved in reducing GHG emissions. In this context, the GEF grant will support MoC in the development of regulations, guidelines and methodologies (component 1) and training and capacity building of officials at national and local governments (component 3) in the areas of NMT, TDM, land use and transportation planning, and GHG accounting and monitoring for the urban mobility. The assessment of GHG emissions and GHG emissions reductions from PAC financed infrastructure is currently not part of the required evaluation by MoC of investment proposals by Brazilian municipalities. MoC needs support to increase its technical capacities and financial resources to conduct such assessments and to support local authorities in the preparation of investment proposals that address questions on GHG emissions and GHG emissions reductions. The requested GEF grant is required to cover the incremental cost of developing a regulatory and technical framework to incorporate considerations on GHG emissions in the PAC's investments preparation and approval cycle.

The requested GEF funding will be used to leverage investments from PAC, municipalities and the IDB, directing it to sustainable, low-carbon transport measures. The GEF funding will help ensure interconnectivity between different modes of transport, especially between urban transport (BRT, metro, etc.) and NMT. The GEF funding will specifically focus on NMT and other components that are required to optimize the investments from a sustainability and climate change mitigation perspective, but that usually fail to be included in PAC financed investments. These best practices would be shared with the large cities that are implementing mass transit projects through the PAC.

The lack of awareness and adequate information at the national and municipal levels is a massive barrier to achieving sustainable urban transport systems in Brazilian cities. It is expected that by developing capacities and showcasing practical experiences, future plans and investments would integrate all components of low-carbon transport planning and maximize global and local environmental benefits.

Without the GEF project, it is likely that large PAC investments will be limited to a BAU scenario, where the ability of cities to plan and design integrated measures for sustainable mobility will remain limited, the deployment of NMT and other modes of public transport will continue to be done on an ad-hoc basis, limiting the possibilities for achieving sustainable results over time. In addition, without the GEF support, it is very likely that innovative measures that are infrequent in Latin America, such as TDM and integrated land use and transport planning will not be implemented or will remain limited to a few isolated initiatives. It is expected that the activities funded by GEF will promote a transition from the current development of isolated public mass transportation infrastructure to a more integrated and holistic approach to sustainable urban mobility, thus ensuring maximization and long-term sustainability of social and environmental benefits.

### **Project components:**



## Component 1: Sustainable Urban Mobility Framework for Brazilian Large Cities

This overarching component will provide the guidelines and frameworks that the national and municipal levels need to carry out low-carbon, integrated transport planning. A key element of the proposed urban mobility framework will improve the national and local capacities to assess, account for and monitor GHG emissions and GHG emissions reduction from urban transport in Brazil. Furthermore, the activities under this component will strengthen the technical and institutional ability of the national level to provide technical assistance to the cities in the development of sustainable urban mobility plans and investments.

The framework developed in this component will be applied to all projects seeking support from the federal government, and once approved, they will have to follow the guidelines and apply the norms and procedures regarding emissions.

The component will finance:

1. Guidelines for the inclusion of climate change considerations in the assessment of transport investments.
2. Technical guidelines, standards and regulatory framework for, inter alia:
  - NMT planning, design and implementation
  - TDM measures in large cities
3. Guidelines for assessing and monitoring GHG emissions from urban mobility
4. National system for collecting and monitoring information on transport activity and transport GHG emissions. The Information System will consist of systematization and analysis of data from research applied to infrastructure projects to quantify the reduction of GHG emissions and SLGs. This system will contribute to the quantification and qualification of the social return from public investments in infrastructure, mobility, consider the profile of demands and the savings provided in terms of reduced travel time, cost to the user, and avoided emissions.
5. Strengthening of the capacity of the national level to provide technological backstopping to municipalities in large cities.

Two main factors will ensure that the outputs produced in this component will be reflected on the PAC projects:

- The MoC will be in charge of executing this component (which will be finalized in the first year / year and a half of the GEF project) and it is also the Ministry in charge of providing technical approval of the PAC project proposals presented by each city.
- PAC projects lifecycle – GoB financing resources approval, engineering, social and environmental studies completion, bidding and awarding processes, civil works execution, is extensive in time (4 to 5 years on average), consequently it is expected that the GEF project can be developed in parallel to ensure its proper implementation.

## Component 2: Pilot demonstrations

This investment component will test the framework developed under component 1, demonstrating how transport investments can be carried out in an integrated manner with specific focus on integration of different modes.

1. Four cities will be selected (all with public transport investment projects from the PAC). The four cities will be studied regarding the stage of development and implementation of their municipal policies for urban mobility, and the stage of development of their urban transport infrastructure projects (BRT, trams, metro, bicycle paths, etc.) Then, the potential for modal shifts will be identified, parameters for modal shifts will be developed, and the associated emissions reductions

will be calculated. These parameters will then be used in the other cities involved in the PAC, and will have a multiplying effect.

Parameters for modal shifts refer to the quantities of individual motorized transport trips transferred to public transport after the implantation of infrastructure projects of a particular mode of transport (for example building a new BTR line results in a reduction of X% in the number of private car trips). The modal shift parameters will be calculated for the four pilot cities by type of mass transit (BRT, subways, light rail, etc.) and will be collected through surveys to be conducted to the users after the implementation of projects.

Brazil does not have information on the potential impact of modal shift from private motor vehicle to other modes resulting from the implementation of mass transit systems and non-motorized transport initiatives. The GEF project will allow estimating and calculating the new modal share induced by PAC investments on 24 major cities and also the effect of implementing complementary measures financed with GEF project resources to achieve the rationalization in the number of individual motorized trips in the four cities selected. New modal share estimation will be based on the results of surveys conducted specifically to users in the 4 pilot cities and the corresponding transposition of parameters to the remaining 20.

2. Out of these four cities, two cities will be selected to develop strategic mobility plans, with a special focus on transport demand management and on the integration of different modes, such as non-motorized transport. The main objective of these plans will be to define guides and regulations to be adopted by municipalities to successfully implement demand management measures (TDM), transport/transit oriented development projects, and non-motorized initiatives integrated to mass transit systems. These mobility plans will serve as input to other Brazilian cities, multiplying the effect of the intervention. At the end of this process, each municipality must be able to identify ways and appropriate infrastructure elements needed to improve its network of public transportation, how to incorporate the non-motorized transport, and the necessary tools for managing mobility. Better integration between different modes will allow for more efficient travel and more use of non-motorized transport, resulting in reductions in GHG emissions and pollution.
3. Of these two cities, one will be selected for a comprehensive intervention in non-motorized transport, demonstrating the integration of different sustainable transport measures in PAC financed investments, with bicycle paths. These paths would focus on functionality, network integration with public transport (such as BRT systems if applicable), bicycle parking, pedestrian access, etc. in order to encourage more use of non-motorized transport, promote a modal shift from private cars to bicycles, and thus result in less congestion and less emissions. Specifically, bicycle projects will be implemented in an integrated way to PAC urban transport projects (access cycle paths to stations and bicycle parking). The city will be selected among those that have PAC projects in planning or implementation already. The city will then serve as a model project for other PAC cities.

The MoC and the IDB are discussing the cities to be included and this will be formalized during the project preparation phase. Under the Project Preparation Grant, the project team will develop an appropriate baseline and project indicators to monitor the performance of pilot cities' projects.

### Component 3: Capacity building and dissemination

This component will finance a variety of capacity building measures:

1. Three training courses for government officials and relevant stakeholders at national and local levels on GHG emissions assessment and monitoring
2. Five training courses for national and local public officers on sustainable urban mobility measures (NMT, TDM, land use and transport planning, etc.)

3. Outreach material (e.g. publications, case studies, training material, etc.)
4. Dissemination activities and sharing of best practices to showcase the outputs of Components 1 and 2.

GEF resources will result in a cost-effective, long-term contribution to the reduction of GHG emissions from urban transport in Brazil, serving as a catalyst to direct massive federal and municipal investments towards sustainable, low-carbon transport in Brazil. The national framework to promote sustainable low-carbon transport to be created with GEF support will remain in place after the project's conclusion, thus extending in time and scale the project's positive impacts on GHG emissions and sustainability.

Emissions reductions – base project: The base project, the PAC Large Cities, will finance a variety of infrastructure investments in transportation, including:

BRT/bus corridors: 246 km

Light rail: 81 km (electric)

Light rail: 43 km (rubber)

Metro: 121 km

Monorail: 7.9 km

Bus way: 375 km

Urban train: 2.5 km

Bicycle paths: 40 km

The most conservative estimate of emissions reductions from the base project comes from the models of the GEF Manual for Calculating GHG benefits of GEF Transport Projects (TEEMP).

**BRT:** By using the BRT simple model (the so-called “short-cut 2”) and inputting the 246 km of BRT to be constructed, the project team found an estimated reduction of 516,541 tons of CO<sub>2</sub>eq per year, against Business-as-Usual, for the entire project. If we estimate a 20 year life span for the BRT systems in each city, this should lead to a total reduction of over 10 million tons of CO<sub>2</sub>eq for the total of the project, against Business-as-Usual, from BRT.

**Light rail and Monorail:** There is no specific TEEMP model for light rail and monorail, but if we use the BRT simple model, with 124 km, we get an estimated reduction of 260,370 tons of CO<sub>2</sub>eq per year, or 5.21 million tons of CO<sub>2</sub>eq for the total of the project. However, the actual emissions reductions will be significantly greater, since light rail and monorail in Brazil use electricity, which means that the emissions from the rail are lower than those from a bus system.

According to the calculations performed for the preparation of the Sectoral Plan for Transport and Urban Mobility for the Mitigation of Climate Change (PSTM) in 2012, investments in infrastructure for urban mobility in progress or planned in Brazil, involving the cities of PAC Large Cities provide an emission reduction of approximately 19.54 Mton/CO<sub>2</sub> accumulated by the year 2020. The GEF project will contribute to the improvement of the calculation parameters for the measurement of emissions reductions, based on the Brazilian reality.

Additional emissions reductions from the GEF project: As explained above, the activities funded by GEF will promote a more integrated and holistic approach to sustainable urban mobility. This comprehensive set of policies, capacity building, and infrastructure investments will boost both public transport and non-motorized transport, leading to a shift away from private car use and a consequent reduction in GHG emissions.

**NMT:** 10 km of bicycle paths will help reduce emissions: approximately 13,000 tons of CO<sub>2</sub>eq per year of reduced emissions can be expected according to TEEMP. In a 20-year period this would imply a

reduction of 260,000 tons of CO<sub>2</sub>eq. Note that this only includes 10 km that could be increased substantially if more resources in the PAC are shifted towards bicycle paths.

In addition, the project should have indirect positive impact, or *replication potential*, i.e. the ability to change also cities that are *not* part of the original program, as both local and national governments become more aware of the potential in sustainable urban mobility plans and barriers to implementation are removed (laws and regulatory frameworks are adapted to sustainable mobility projects, financing is easier to obtain, the tools and guidelines for emissions reductions studies are easily available to all, etc.) To estimate the replication potential, the original emissions reductions are often multiplied by 3 or 4..

Project execution: The Project Management Unit will be established in the Instituto de Energia e Meio Ambiente (IEMA), a Brazilian NGO (or Civil Society and Public Interest Organization, OSCIP) that works on air quality, urban mobility, vehicle emissions and climate politics. The exact project execution scheme will be designed during the project preparation phase, and will outline the specific tasks of IEMA, which will act as a technical and financial intermediary. These will include preparing, signing and issuing contracts, issuing payments, etc. All technical supervision will be by the Ministry of Cities, which will review all contracts and products and give the technical approval.

- B.3. Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund/NPIF) or adaptation benefits (LDCF/SCCF). As a background information, read [Mainstreaming Gender at the GEF.](#)":

In general, sustainable transport presents a win-win situation for all, including:

- Better public transport provides improved access to labor and educational opportunities
- Reduced congestion and travel times for all, both for those using public transport and those using private vehicles, as users shift towards public transit and free up space on the roads.
- Improved air quality which leads to health benefits such as reductions in upper respiratory infections, asthma, allergies, lung cancer, heart disease, etc.
- Safer roads and fewer accidents due to more organized traffic, new traffic patterns and increased focus on the safety of non-motorized transport users such as pedestrians and cyclists.

However, more sustainable transport also has specific benefits to the poor. The poor usually spend a higher percentage of their income on transportation and are more vulnerable to changes in prices which can limit their mobility. Therefore, integrated fares with transfers can make a big difference as passengers only have to pay one fare instead of paying several tickets. Also, the poor tend to have to travel longer distances to their places of employment (many can only afford to live far from the city center) and improved public transit allow them to spend less time traveling. Low-income groups are also more likely to walk or bike, so attention to NMT has a particular benefit for the poor. In addition, it is worth mentioning that traditional transport investments geared toward the use of private cars have not only *not* benefited the poor, but have had detrimental effects on their well-being, as less attention was given to the modes that the poor are dependent upon.

Studies have shown that BRT systems and well-integrated urban transport systems provide more equitable access throughout the city, reduce accidents and injuries, and generate increased civic pride and sense of community among the citizens (Wright, L., *Planning Guide: Bus Rapid Transit*. 2004, Eschborn: GTZ). The dedicated bus lines of a BRT system provides safer roads and an environment that is easier to navigate, and greater mobility allows people to apply for a wider range of jobs in different locations. Those most vulnerable in traffic (children, women, people with disabilities, and the elderly) will benefit from a safer traffic flow.

In Latin America, data shows that car ownership and bicycle ownership are unequally distributed between men and women, with men owning the majority of both modes of transportation (Deere, Carmen Diana, Gina E. Alvarado and Jennifer Twyman. 2009. *Poverty, Headship and Gender Inequality in Asset Ownership in Latin America*, Paper prepared for the Latin American Studies Association International Congress, Rio de Janeiro, June.) This means that well-integrated public transportation systems can be even more important for women than for men, as it allows them greater access to education, employment and other economic opportunities in the cities. In addition, women especially benefit from a well-designed, universally accessible BRT system where they can enter with small children and strollers. People with disabilities and the elderly also benefit from this greater access to transport, as BRT stations tend to provide platforms that are the same height as the buses, allowing wheelchair users to use the system, which they previously were excluded from.

**B.4 Indicate risks, including climate change risks that might prevent the project objectives from being achieved, and if possible, propose measures that address these risks to be further developed during the project design:**

<b>Risk</b>	<b>Rating</b>	<b>Mitigation</b>
Lack of transportation activity data, information on fleet composition and characteristics, emissions factors, etc.	Medium	This is most certainly the case in many cities. To manage this risk the project will develop methods, guidelines, default values, a communication platform, ongoing access to technical experts to facilitate consensus and to coach cities through the estimation and monitoring of GHG emissions impacts from transport interventions. In addition, the topic of transport data has received increasing attention over the last few years and the project will draw on data produced by other projects and initiatives as well.
Challenges that could arise in the coordination of activities with local government agencies and stakeholders in each city.	High	This risk will be mitigated through the establishment of a Project Management Unit. The PMU counts with the support of the IDB office in Brazil, which has three transport specialists on staff. In addition, MoC will play a crucial role as the liaison of the cities and to ensure compliance.
Delays in the adoption and execution of policies and measures identified within the project.	Low	The PMU will have access to finances, technical and management support to manage this risk and possible causes such as complex negotiation process with serving transport providers. Support will include the organization of project framing workshops with government agencies and other stakeholders directly involved in the projects; value assurance reviews at critical milestones of the projects; the disbursement of flexible funds to support necessary studies; among others.
Poor capacity to attract and retain qualified staff and experts	Medium	To a large extent, the success of the proposed project hinges on the ability to constitute and retain a solid and competent team at MoC to implement the framework for sustainable transport and to provide technical backstopping to municipal authorities. The project will manage this risk by means of documenting internal procedures, and supporting ongoing capacity building activities directed at MoC and other transport authorities.

B.5. Identify key stakeholders involved in the project including the private sector, civil society organizations, local and indigenous communities, and their respective roles, as applicable:

The key stakeholders involved in the project are:

- Ministry of Cities, national level (in Brazil, the Ministry of Cities is in charge of urban transport)
- The cities to be selected, municipal level
- Local public transport companies
- Universities and research institutions that work on transport and climate change
- Local communities that are benefitting from the project

The project will strive to achieve fruitful collaboration between national and local stakeholders from all sectors, working closely with stakeholders in the private sector as well as civil society, such as transportation companies, bicycle associations, and civil society organizations who take an interest in the project. In general, sustainable transport projects provide large social and economic benefits, but there can still be issues that arise, such as complaints about increase in bus traffic, concerns about new traffic patterns leading to decreased business, expropriation, etc. Both the IDB and GoB recognize the importance of civil society involvement and focus groups and discussions of the projects will be carried out in the involved communities. In addition, the Bank's Independent Consultation and Investigation Mechanism (ICIM) provides a forum that receives and addresses complaints from communities or individuals who allege that they are or might be adversely affected by IDB-financed operations.

In the civil society, organizations that work for non-motorized transport will be consulted and involved in the process, to ensure that the inhabitants of the cities are heard in the planning process, since these are often the ones left out of planning processes as NMT is often seen as less important. These groups have first-hand information on bottlenecks, issues of interconnectivity, etc.

B.6. Outline the coordination with other related initiatives:

This project will take into consideration lessons learned from other GEF projects, such as the GEF Large-City Congestion and Carbon Reduction Project in China, which was approved in 2011 and which shares many of the same goals. An older project, "Regional-LAC Regional Sustainable Transport and Air Quality Project", where Brazil is a participating country, will also be consulted closely.

In Brazil, the project will be coordinated with sustainable transport initiatives on the state level in Sao Paulo, Rio de Janeiro, and Belo Horizonte. In addition, the project team will coordinate with the Instituto de Energia e Meio Ambiente (IEMA), a Brazilian NGO (or Civil Society and Public Interest Organization, OSCIP) that works on air quality, urban mobility, vehicle emissions and climate politics, and with the international NGOs Institute for Transportation and Development Policy (ITDP) and Embarq-CTS. ITDP works on BRT implementation as well as non-motorized projects that seek to promote cycling and walking, and travel demand management. The IDB has a good relationship with ITDP and will coordinate with them particularly on issues of NMT and TDM.

## **C. DESCRIBE THE GEF AGENCY'S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:**

C.1 Indicate the co-financing amount the GEF agency is bringing to the project:

The IDB currently has the following loans and technical cooperation projects in sustainable transport in the cities that are part of the PAC Large Cities. While some are advanced in their implementation, such as the Urban Transport Program for the Federal District, the others are in the early stages and will be coordinated with the PAC program. The IDB has loans and technical cooperation projects in six of the four candidate cities. The total co-finance amount will be defined when the cities are picked, but the project team is certain that it will not be less than

US\$ 24 million. The loans are in Sao Bernardo (US\$ 125,000,000), Fortaleza (US\$ 57,000,000), and Brasilia (US\$176,000,000), while technical cooperation projects for a total of US\$2,700,000 are located in Joao Pessoa, Rio de Janeiro and Belo Horizonte. The technical cooperation projects in Rio, Joao Pessoa and Belo Horizonte will be closely linked with this GEF project and serve as counterpart for the technical assistance part of the project.

In total, approximately US\$ 24,100,000 will serve as co-financing from the IDB.

The project agency will apply for a Project Preparation Grant (PPG) to negotiate with the cities and reach commitments on the exact activities that will be carried out and the emissions reductions that can be expected.

C.2 How does the project fit into the GEF agency's program (reflected in documents such as UNDAF, CAS, etc.) and staff capacity in the country to follow up project implementation:

The Project is consistent with the objectives of the "IDB Integrated Strategy for Climate Change Adaptation and Mitigation, and Sustainable and Renewable Energy". The integrated strategy guides the bank's effort to scale-up support for climate change mitigation and adaptation activities in LAC. The integrated strategy calls for enhanced support along five priority intervention lines: (i) strengthening the Bank's knowledge base, (ii) strengthening institutions and private and public sector capacities, (iii) developing instruments to mainstream climate change mitigation and increase resilience in Bank-funded operations, (iv) expanding lending and technical assistance in key sectors, and (v) scaling-up investments, addressing financial gaps and leveraging private sector investments.

IDB's "Climate Change Strategy Action Plan", adopted in February 2012, sets priorities and specific actions for implementing the bank's strategy on climate change over the period 2012 – 2015. The action plan sets the priorities for IDB's engagement on climate change mitigation, focusing on the sectors with the largest contributions to the region's GHG emissions: land use and land-use change, power generation and demand, as well as transport.


The project is also consistent with the Bank's strategy with Brazil, especially area 3: (iii) living conditions and efficiency in cities, integrating measures to fight urban poverty with improvements in habitability, efficiency, and environmental quality. The IDB operates a large representation office in Brasilia, in which three transport specialists are based. The Bank has ample capacity for, and experience in, carrying out large-scale projects, both in country and at its headquarters in Washington, DC.

**PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**

**A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):** (Please attach the [Operational Focal Point endorsement letter\(s\)](#) with this template. For SGP, use this [OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Mr. Rodrigo Martins Vieira	Operational Focal Point	MINISTRY OF PLANNING, BUDGET AND MANAGEMENT	08/27/2012

**B. GEF AGENCY(IES) CERTIFICATION**

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for project identification and preparation.					
Agency Coordinator, Agency name	Signature	DATE (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Michael Collins, IDB-GEF Executive Coordinator		09/7/2012	Vera Lucia Vicentini, Principal Transport Specialist	(202) 623-1763	<a href="mailto:veraluciav@iadb.org">veraluciav@iadb.org</a>
			Francisco Arango, Climate Change Specialist	(202) 623-2393	<a href="mailto:farango@iadb.org">farango@iadb.org</a>