



GLOBAL ENVIRONMENT FACILITY  
INVESTING IN OUR PLANET

**Naoko Ishii**  
CEO and Chairperson

August 04, 2014

Dear Council Member:

IADB as the Implementing Agency for the project entitled: ***Brazil: Low-Carbon Urban Mobility for Large Cities***, has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with IADB procedures.

The Secretariat has reviewed the project document. It is consistent with the proposal approved by Council in November 2012 and the proposed project remains consistent with the Instrument and GEF policies and procedures. The attached explanation prepared by IADB satisfactorily details how Council's comments and those of the STAP have been addressed. I am, therefore, endorsing the project document.

We have today posted the proposed project document on the GEF website at [www.TheGEF.org](http://www.TheGEF.org). If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

A handwritten signature in black ink, appearing to be 'Naoko Ishii', is written over a printed name.

Naoko Ishii

Attachment: GEFSEC Project Review Document  
Copy to: Country Operational Focal Point, GEF Agencies, STAP, Trustee



# REQUEST FOR CEO ENDORSEMENT

**PROJECT TYPE: Full-sized Project**

**TYPE OF TRUST FUND: GEF Trust Fund**

For more information about GEF, visit [TheGEF.org](http://TheGEF.org)

## PART I: PROJECT INFORMATION

Project Title: Low-Carbon Urban Mobility for Large Cities in Brazil			
Country(ies):	Brazil	GEF Project ID: <sup>1</sup>	4949
GEF Agency(ies):	IADB (select) (select)	GEF Agency Project ID:	BR-G1006
Other Executing Partner(s):	Energy and Environment Institute (IEMA)	Submission Date:	2014-07-18
GEF Focal Area (s):	Climate Change	Project Duration(Months)	36
Name of Parent Program (if applicable):	N.A.	Project Agency Fee (\$):	600,000
<ul style="list-style-type: none"> <li>➤ For SFM/REDD+ <input type="checkbox"/></li> <li>➤ For SGP <input type="checkbox"/></li> <li>➤ For PPP <input type="checkbox"/></li> </ul>			

### A. FOCAL AREA STRATEGY FRAMEWORK<sup>2</sup>

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount (\$)	Cofinancing (\$)
CCM-4 (select)	Sustainable transport and urban policy and regulatory frameworks adopted and implemented	Cities adopting low-carbon programs for transport	GEF TF	4,501,697	6,677,905
CCM-4 (select)	Increased investments in less GHG intensive transport and urban systems	Investments mobilized for low-carbon transport	GEF TF	1,498,303	137,903,733
<b>Total project costs</b>				6,000,000	144,581,638

### B. PROJECT FRAMEWORK

**Project Objective: The project's main objective is the development and implementation of sustainable mobility planning knowledge and tools aimed at the inclusion of climate change considerations in urban transportation projects in major cities, in order to contribute towards the achievement of Brazil's voluntary commitment of a reduction in GHG emissions between 36.1% and 38.9% by 2020. Specifically, the project will support the development of sustainable transport design and GHG emissions assessment tools, the implementation of pilot projects, and training and dissemination activities targeting major Brazilian cities.**

Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount (\$)	Confirmed 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 Draft of a regulatory framework for the inclusion of climate change considerations in the assessment of transport investments  1.2 Elaboration of six	GEF TF	1,076,330	765,000

<sup>1</sup> Project ID number will be assigned by GEFSEC.

<sup>2</sup> Refer to the [Focal Area Results Framework and LDCF/SCCF Framework](#) when completing Table A.

			Technical Guidelines to support urban sustainable mobility development  1.3 Capacity building course for federal government technical staff on GHG emissions and monitoring			
2. Pilot Demonstrations	TA	2.1 Parameters for modal shifts and emissions reductions in 4 cities (Belo Horizonte, Brasilia, Fortaleza, São Paulo)  2.2 Strategic mobility plans including considerations on GHG emissions in two large cities implemented	2.1.1 System to estimate, and evaluate the reduction of GHGs emissions in transportation projects 2.1.2 Interface to collect and monitor information of transportation activities and GHG emission 2.1.3 Ex-post modal shift evaluation methodology 2.1.4 Ex-post modal shift evaluation applied  2.2.1 Transport Demand Management (TDM) Strategy developed for Belo Horizonte 2.2.2 Non-Motorized Transport (NMT) Strategy developed for Brasilia	GEF TF	2,546,762	4,214,429
2. Pilot Demonstrations	Inv	2.3 Improved urban mobility systems in Fortaleza	2.3.1 Pilot project: 7 km of bicycle paths in one city as showcase of low carbon transport network 2.3.2 32,6 km of improved Bus Rapid Transit (BRT) in operation (BRT Antônio de Bezerra de Menezes/ Papicu and BRT BR116 - Aguanambi) 2.3.3 6 km of improved BRT in operation (Alberto Craveiro) 2.3.4 12,7 km of improved Light Rail Transit (LRT) in operation (Parangaba/ Mucuripe) <sup>3</sup>	GEF TF	1,409,047	131,338,733
3. Capacity Building and Dissemination	TA	3.1 Increased capacity for planning, designing and implementing sustainable urban mobility systems at	3.1.1 Capacity Strengthening Program courses for government officials and relevant stakeholders at	GEF TF	610,431	1,388,476

<sup>3</sup> Improved BRT and LRT corridors will be implemented with cofinancing resources, and are expected to attain higher quality with the use of the Project's knowledge and materials.

		national and local levels	national and local level on transport GHG emissions assessment and monitoring				
		3.2 Increased capacity for transport GHG emissions assessment and monitoring at national and local level	3.1.2 Capacity Strengthening Program courses for government officials and relevant stakeholders on sustainable urban mobility measures				
		3.3 Best practices shared with all cities in PAC Large Cities	3.2 Outreach materials published 3.3 Dissemination activities to showcase the outputs from Components 1 and 2				
4.M&E		M&E systems in place	Mid-term evaluation Final evaluation		101,650		
Subtotal					5,744,220	137,706,638	
Project management Cost (PMC) <sup>4</sup>					GEF TF	255,780	6,875,000
<b>Total project costs</b>					6,000,000	144,581,638	

### C. SOURCES OF CONFIRMED COFINANCING FOR THE PROJECT BY SOURCE AND BY NAME (\$)

Please include letters confirming cofinancing for the project with this form

Sources of Co-financing	Name of Co-financier (source)	Type of Cofinancing	Cofinancing Amount (\$)
National Government	Government of Brazil	Hard Loan	92,238,095
National Government	Government of Brazil (Ministry of Cities)	In-kind	1,068,000
Local Government	The cities involved in project	In-kind	4,761,905
GEF Agency	Inter-American Development Bank	Hard Loan	45,665,638
GEF Agency	Inter-American Development Bank	Grant	848,000
<b>Total Co-financing</b>			144,581,638

### D. TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY<sup>1</sup>

GEF Agency	Type of Trust Fund	Focal Area	Country Name/ Global	(in \$)		
				Grant Amount (a)	Agency Fee (b) <sup>2</sup>	Total c=a+b
<b>Total Grant Resources</b>						

<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. PMC amount from Table B should be included proportionately to the focal area amount in this table.

<sup>2</sup> Indicate fees related to this project.

### F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

<sup>4</sup> PMC should be charged proportionately to focal areas based on focal area project grant amount in Table D below.

Component	Grant Amount (\$)	Cofinancing (\$)	Project Total (\$)
International Consultants	621,507	848,000	1,469,527
National/Local Consultants	3,521,874		3,521,874

**G. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT?** No

(If non-grant instruments are used, provide in Annex D an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund).

**PART II: PROJECT JUSTIFICATION**

**A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF<sup>5</sup>**

A.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. 1 NBSAPs, national communications, TNAs, NCSA, NIPs, PRSPs, NPFE, Biennial Update Reports, etc. NA

A.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities. NA

A.3 The GEF Agency’s comparative advantage: NA

A.4. The baseline project and the problem that it seeks to address:

As indicated in the PIF, the baseline project for this particular GEF project will be four pilot cities where urban transport project are being financed under the Growth Acceleration Program (“Programa de Aceleracao do Crescimento”, or PAC), a major investment plan launched in 2007. This GEF program will contribute to increasing the potential of these projects 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. During project preparation, the four pilot cities were selected, namely: Belo Horizonte, Brasilia, Fortaleza and São Paulo. The MoC was responsible for the selection of these, according to the following selection criteria: number of PAC project financed by the Government of Brazil; impact of the PAC project in the transport network; status of the PAC project; quality and quantity of information available; impact of the project in other cities; participation of the society in the project; interest and compromise of the local government; local technical resources available; existence of cycle lanes network; existence of cycle lanes strategic plans.

A. 5. 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) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

The project will support the achievement of global environment benefits by promoting sustainable urban mobility solutions, through the development and implementation of knowledge and tools aimed at the inclusion of climate change considerations in urban transportation projects in major cities, in order to contribute towards the achievement of Brazil’s voluntary commitment of a reduction in GHG emissions between 36.1% and 38.9% by 2020. The project is expected to produce direct emissions reductions from the implementation of pilot projects totaling 155,113 CO2eq tons. In addition, indirect potential emissions reductions would amount to 1,481,863 CO2eq tons<sup>6</sup>.

The incremental cost reasoning remains the same as in the PIF. However, GEF and co-financing resources for all components have varied given some adjustments in project design, due to a better definition of the scope of each component and the revision of costs during project preparation.

<sup>5</sup> For questions A.1 –A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter “NA” after the respective question.

<sup>6</sup> Indirect potential emissions reductions were estimated from the TEEMP models for the MRT projects that are going to be implemented in the four cities, considering that they are going to be enhanced by the use of tools developed by this project. In a conservative scenario avoided emissions reductions would reach 32.741.705 CO2eq tons (1.481.863 CO2eq tons more than the baseline projects). Enhancements of MRT projects in other cities are expected to lead to greater emissions reductions, scaling up the contribution of the project towards the achievement of Brazil’s voluntary commitment of GHG emissions reduction. For further details, see attached document *Initial Emission Reduction Estimates*.

A.6 Risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and measures that address these risks:

<b>Risk</b>	<b>Rating</b>	<b>Mitigation</b>
Lack of communication among participating agencies	Medium	Clear and regular communication between the parts will be maintained, and will be monitored by the Bank. Project Execution Unit (PEU) will report on communications with the MOC, the cities and other actors on a regular basis and will identify major issues in quarterly report to be submitted to the Bank.
Low commitment of the Ministry of Cities	Medium	The Ministry of Cities will assign a team that will be responsible for reviewing and supervising all the Project's products to be developed under components 1 and 3, and will present the organizational arrangements for the future enforcement of the framework and the methodologies, as a condition prior to first disbursement.  Restructuring of the program to align it with the new federal political scenario, if or when required.  Rearrangement of the chosen demonstration projects, which will require the Bank's non-objection.
Low commitment of the Municipalities	Medium	Keep the municipalities updated to the project's progress.  The municipalities assign teams that will be responsible to apply the methodologies, through an agreement with PEU to be signed prior to the execution of activities under component 2 within the realm of each municipality.

A.7. Coordination with other relevant GEF financed initiatives NA

**B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:**

B.1 Describe how the stakeholders will be engaged in project implementation.

In compliance with the IDB's policies and local requirements, public consultations involving relevant stakeholders will be conducted for pilot demonstration projects. In addition, federal, state and local level government agencies will be involved in the development of the regulatory framework and the set of guidelines either in the conceptual definitions and initial versions, or through training and the provision of feedback towards the final versions.

The key stakeholders involved in the project are:

- The Ministry of Cities, national level (in Brazil, the Ministry of Cities is in charge of urban transport);
- The selected cities: Fortaleza, Belo Horizonte, São Paulo and Brasília;
- Universities and research institutions that work on transport and climate change;
- Local communities that are benefitting from the project.

The Ministry of Cities will act as a Project Technical Coordinator responsible for: (i) the overall strategic guidance and technical coordination of the Project; (ii) granting the non-objection to the Program Execution Plan (PEP) and corresponding Annual Operations Plans (AOPs), the Procurement Plan (PP) and semiannual progress reports; (iii) coordination with the Municipalities of the pilot projects to be financed by component 2, and with other governmental agencies involved in project implementation; (iv) the review of the products and technical reports resulting from project implementation ensuring that the Project's progress execution and results are timely, consistent and contribute to the attainment of Project's strategic objectives; (v) participation in the major events and seminars related to the Project; and (vi) monitoring and reporting on local parallel financing and local in kind counterpart to the PEU and the Bank. The municipal beneficiaries will be the recipients of goods and services acquired through component 2

Specifically for the construction of 7 km of bike lanes (the only civil works to be financed by the Project corresponding to subcomponent 2.3), the Fortaleza Municipality will act as the co-executing agency for the works activities set forth in subcomponent 2.3.

Universities, research institutions and other relevant technical stakeholders will take part in the development of technical guidelines through workshops that will be held during its development.

Other stakeholders may be involved in dissemination activities and strategies to be developed through Component 3.

B.2 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 (LDCE/SCCF):

At the local level, project benefits will include improved accessibility, reduced congestion and travel times, improved air quality and safer roads. Furthermore, the framework and guidelines to be developed by the project will take into consideration international best practices on gender issues and universal accessibility, in order to promote transportation systems that will be more inclusive of women, children, the elderly and people with disabilities.

B.3. Explain how cost-effectiveness is reflected in the project design:

A cost-benefit analysis (OEL#3) was carried out for this Project considering the additional benefits that would be attained through the proposed activities, over those benefits that would result from the associated financing alone. In light of this, the evaluation quantified: (i) indirect benefits in terms of the monetary value of potential emissions reductions over a 10-year period that would result from the implementation, in the four pilot cities, of frameworks, guidelines and strategies developed by the Project; and (ii) costs in terms of direct Project investments. The economic costs and benefits discounted at a rate of 12% have resulted in a NPV of R\$16.6 million. In addition, the Project has an Economic Internal Rate of Return (EIRR) of 38,55%. Several sensitivity analyses were carried out, all of them yielding positive results.<sup>7</sup>

<b>Indicator</b>	<b>Baseline</b>	<b>25% benefits reduction</b>	<b>25%costs increase</b>	<b>15% benefits reduction + 15% costs increase</b>
EIRR (%)	38.55	31.9	30.2	29.8
NPV (R\$)	16.596.780	10.313.090	14.462.290	11.545.870

Furthermore, considering indirect potential emissions reductions amounting to 1,481,863 CO<sub>2</sub>eq tons, this project would achieve a cost to reduce one ton of GHG emissions of US\$4.05/ton. While accounting for the full cost of expected investments and total emissions reductions, the cost to reduce one ton of GHG emissions is initially estimated to be in the range of U\$58/ton to U\$60/ton. With regards to the cost-effectiveness of future Mass Rapid Transit (MRT) investments that will be enhanced by the use of tools developed by this project, a study conducted by the Victoria Transport Policy Institute (VTPI) of Canada shows that MRT projects including improvements, such as greater accessibility to stations, modal integration, TDM measures and other complementary transport and land use policies, would result in greater benefit-cost ratios than the baseline projects<sup>8</sup>.

<sup>7</sup> Benefits considered in this evaluation are only referred to incremental emissions reductions from the implementation of the Project and its impact on the efficiency of mass transit investments. Individual investment projects, with or without Project-related improvements, will be economically viable based on reductions in travel times, operation costs and accidents. Such is the case of Corridor 4 in Fortaleza, which includes improvements and shows an EIRR of 24.3%, and an EIRR of 23.7% when internalizing the full cost of this project (though it should be prorated for multiple projects in at least 4 cities) and considering additional reductions of emissions.

<sup>8</sup> The study compares LRT vs. LRT Plus, among other options, showing benefit-cost ratios of 1.6 and 2.4, respectively. Todd Litman (2002), *Light Rail Economic Opportunity Study*, Island Transformations ([www.vtppi.org/LREO.pdf](http://www.vtppi.org/LREO.pdf)).

## **C. DESCRIBE THE BUDGETED M & E PLAN:**

Monitoring and evaluation will be undertaken at three levels: (i) project outcomes and impacts in relation to the results framework; (ii) delivery of project outputs in accordance with the annual work plans, and; (iii) monitoring of project implementation and financial performance. The project team will supervise the achievement of the outcomes and results associated to IDB/GEF funding and will incorporate them in the Project Monitoring Report (PMR); the project team will also incorporate all project outcomes and results associated to GEF financing and parallel financing into the Project Implementation Reports (PIR), to be reported periodically to GEF. The Annual Operation Plan (AOP) will be used to monitor progress in physical implementation according to planned schedules, and observations derived from this will constitute an input to the periodic evaluations, as well as to regular follow-up supervision missions to be undertaken by the project team during project implementation.

## **MONITORING**

### **Indicators**

Project tracking and monitoring will be performed in relation to the milestones scheduled, with semiannual and annual measurements during its implementation, to identify the status of the program with regard to its expected outputs and estimated time.

The Results Framework contains detailed outcome and output indicators and verifiable milestones. It considers the baseline against which the performance and operation of the project will be measured.

Progress Monitoring Reports (PMR) will consider the outputs, milestones, targets and associated costs as well as determining factors for project's execution and lessons learned.

The evolution of the product milestones will be submitted semiannually by the Project Executing Agency (IEMA).

### **Data Collection and Instruments**

Outcome indicators, proposed products and means of verification optimize the use of the information that the executing agency will collect or prepare during the execution of the project and those that will be obtained directly or indirectly during the execution of the activities. All the products and milestones will be verified directly from the monitoring reports of the works, which will be submitted semiannually.

The semiannual performance reports to be submitted to the IDB shall contain a summary of project's activities monitoring and supervision reports.

### **Reporting**

**Semiannual Progress Reports.** The executing agency will submit semiannual financial and technical reports, based on IDB and GEF reporting policies. The Project Monitoring Report (PMR), IDB's main tool for monitoring, will be updated semiannually to track the project's progress toward achieving the results indicated in the Results Framework. Additional supervision will entail missions to the pilot project areas, and meetings with project partners at the Federal and local and other relevant stakeholders. Nonetheless, the executing agency will inform the Bank about problems or delays in project implementation, so that appropriate measures can be adopted and timely support can be provided to overcome any challenges or difficulties.

**Annual Reports.** The executing agency will also develop an Annual Work Plan (AWP) as of 31st of December of the prior year, and submit it to the Bank for review and approval. Project progress will be examined at least once a year by all parties involved in execution and implementation. Project Implementation Reports (PIRs) will be submitted annually to the GEF and will be prepared based on GEF's Annual Monitoring Review guidelines. PIRs will be prepared by the executing agency, and will be reviewed by IDB before submission to GEF. The executing agency must submit audited financial statements of all allocations of funds from the program, as of the 31st of December of each year, within the first 120 days after the closing of that specific fiscal year.

### **Monitoring Coordination, Work Plan and Budget**



The executing agency will be responsible for the preparation of the reports to be submitted to the IDB and the GEF. The executing agency will deliver the reports within 60 calendar days after the end of each semester of the project's implementation. The reports will include information regarding the evolution of the indicators, as well as financial information regarding the use of project resources and the state of the project's account.

*Monitoring Work Plan and Budget*

Key Monitoring Activities/Products per Activity	YEAR 1				YEAR 2				YEAR 3				Responsible	Cost	Funding
	1	2	3	4	1	2	3	4	1	2	3	4			
Preparation of Annual Operation Plan													PEA	5 days/year x 2 people x 3 years x US\$250 = US\$7,500	Administrative and financial services (IEMA)
Preparation of Procurement Plan													PEA	5 days/year x 1 person x 3 years x US\$250 = US\$3,750	Administrative and financial services (IEMA)
Field Visits													PEA	24 days/year x 2 people x 3 years x US\$200 = US\$28,800	Administrative and financial services (IEMA)
Elaboration and Presentation of Semiannual Reports													PEA	10 days x 2 people x 5 x US\$200 = US\$20,000	Administrative and financial services (IEMA)
Analysis and Approval of Annual Operation Plan and Procurement Plan													IDB	4 days/year x 1 person x 3 years x US\$250 = US\$3,000	IDB
Analyze Progress Reports, hold monitoring and follow up meetings, if necessary develop recommendations													IDB	20 days/year x 1 person x 3 years x US\$300 = US\$18,000	IDB
Analyze and review disbursement requests													IDB	12 days/year x 1 person x 3 years x US\$300 = US\$10,800	IDB
Analyze and review audited financing													IDB	12 days/year x 1 person x 3 years x US\$300 = US\$9,000	IDB
Inspection Visits													IDB	45 days x 2 people x US\$100=US\$9,000	IDB
Administration Mission													IDB	1 mission x 2 people x 3 years x US\$2,500 = US\$15,000	IDB
<b>Total Cost PEA (included on the program)</b>														<b>US\$60,050</b>	
<b>Bank Supervision Total Cost</b>														<b>US\$64,800</b>	

## EVALUATION

**Impact Indicators.** As the main impact of the project is to help Brazil to reach its emissions reductions goals, the methodology being developed within the project to evaluate GHG emissions from urban mobility projects (Component 2.1.1 - Emission Reduction Estimator) as well as field surveys of modal shifts (Component 2.1.3 – Ex-post methodology) will be used to evaluate project's impact, by promoting robust calculation of GHG emissions and modal shift data from urban transport within Brazilian Large Cities context.

**Outcome Indicators: TEEMP Calculations.** To estimate the potential benefits of the technical enhancements provided by the program, some MRT (Mass Rapid Transit, such as BRT, LightRail and Metro) projects were evaluated considering their current specifications and the associated emission reductions estimates were considered as the baselines. These emission reduction volumes were compared to those of a scenario where future projects that will be implemented after this program are provided with enhancements and better planning, considering that the Ministry of Cities will have a stronger technical team and the municipalities more technical skills. For each of the selected cities, the projects that are currently being implemented and that present finish dates within the program's duration were analyzed to estimate additional emission reductions per kilometer of BRT that is influenced by these program's materials. These parameters were used to estimate the program's potential results by simply multiplying by the total amount of BRT kilometers that are going to be built in each city after the program (beyond 2018).

The outcome indicators were calculated with TEEMP as follows:

- a) Indicator 1: Emissions of CO<sub>2</sub>eq avoided with implementation of public transport projects with parallel investments in Fortaleza.
- b) Indicator 2: Emissions of CO<sub>2</sub>eq avoided with GEF pilot bikeways implemented and integrated with public transport of parallel investments in Fortaleza.
- c) Indicator 3: Emissions of CO<sub>2</sub>eq avoided with implementation of public transport projects in Fortaleza, Belo Horizonte, São Paulo and Brasília.

The direct results (Outcome Indicators 1 and 2 of the Table.3) obtained from the implementation of the BRT and cycle path can be verified and reviewed and emissions reductions recalculated in TEEMP based on real characteristics of the BRT and the cycle path implemented, that is, the score cards used in TEEMP calculations of the projects will be reviewed/ verified against the projects implemented, and recalculations will be made if necessary. Nevertheless, the potential future emissions reductions cannot be verified. As the outcome indicators are GHG emissions avoided, they will always be estimated, as GHG cannot be measured as local pollutants, for example. Therefore, it is not possible to "verify" the amount of GHG emissions avoided, only to verify entrance data of the estimation methodology used, or even the estimation methodology, and both will be used within the evaluation proposed here.

The ex-post methodology will be developed on Component 2.1.3 and will comprise the methodology (and its application) to evaluate implemented transportation project, focusing on modal shift impact of the scheme. It also includes the collection of data related to the project, as physical and operational characteristics. So, the verification of project characteristics against was initially used to TEEMP calculations will be made within the ex-post methodology. The PEA will be responsible for contracting the works related to that component, according to Plan of Activities (POA) and Annual Work Plan (AWP).

**Outcome Indicators: Ex-post evaluations and Emission Reduction Estimator calculations.** The methodology developed on Component 2.1.1 and 2.1.3 (Emission Reduction Estimator calculations for all the transportation investments, and Ex-post methodology) will be used to re-calculate GHG emissions reductions as developed for TEEMP calculations of baseline stated before.

From the ex-post evaluation methodology to be developed within the project, it will be also possible to understand modal split impact of infrastructure projects, and shall be used to evaluate project's impact as a whole. Nevertheless, the parameters for modal shift ex-post evaluation will only be available after the development of this activity.

As detailed in Optional Electronic Link 5 (OEL#7) of the agency document, the Emissions Reduction Estimator, to be developed on Component 2.1.1, aims at being a user-friendly tool to evaluate the future projects that will be submitted to the Ministry of Cities based on the results of the pilot demonstrations of this program. This system will be as straightforward as the TEEMP models, but it will use input and output parameters gathered from actual multi modal

transportation models built over scientific methods and local surveys rather than empirical knowledge, allowing a more accurate estimation of GHG emissions reduction impact of transportation projects.

### **Technical Aspects of Selected Methodology**

The details of the methodology used to calculate outcome indicators on TEEMP are available on Optional electronic Link 6 (OEL#6) of the agency document.

The ex-post and the Emission Reduction Estimator calculations methodology will be developed within the program, Components 2.1.1 and 2.1.3 during the first two years (year 1 and year 2) of the project, as showed in the Plan of Activities (POA).

### **Ex post evaluation of the project**

Ex post evaluation will include a socioeconomic evaluation and an assessment of the impacts of the project both in terms of the improvements in GHG emissions estimates and in GHG emissions reductions resulting from pilots and from the implementation of the proposed framework and guidelines in new urban transportation projects.

The assessment of the impacts will include: (i) the application of the Emission Reduction Estimator, using data from field surveys and the ex-post modal shift evaluation methodology when applicable, to pilot demonstration projects in order to conduct a before-after or with-without comparison to assess emissions reductions resulting from these pilots; (ii) the application of the Emission Reduction Estimator to estimate GHG emissions from urban transport in Fortaleza, Belo Horizonte, São Paulo and Brasília in a twenty year period 20 in order to assess the improvements in estimates, to conduct a with-without comparison of the implementation of the proposed framework and guidelines in future urban transportation projects, and to estimate the potential contribution to Brazil's emissions reductions goals.

### **Reporting Results**

The PEA will collect, store, and maintain all information, indicators and benchmarks, including semi-annual and annual reports, annual work plans, procurement plans, and final review required for: i) the impact assessment; ii) support to the Bank to prepare the Project Completion Report (PCR), and ii) support to the Office of Evaluation (OVE) of the Bank to assess the impact of this operation.

Two evaluations are planned for the project: a mid-term evaluation and a final evaluation. The Mid-term Evaluation will include the appropriate technical details of the methodology to evaluate final project outcomes as well as recommended adjustments in the distribution of project resources and other management or technical adjustments as needed. The Final Evaluation will focus on the overall achievement of results and the perceived impact of the project, as well as fulfillment of the project's objectives.

### **Evaluation Coordination, Work Plan and Budget**

The Bank Specialist will be responsible for the overall supervision of the implementation of the project in coordination with the PEA. The supervision will focus on compliance with the various products and milestones set out in the AOP, to ensure the project meets its goals and results.

The final evaluation of the project will be reflected in Project Completion Report (PCR) where the degree of fulfillment of the objectives of the program will be considered once the implementation of all components is complete. The PCR also serves to highlight the lessons learned to be considered in the design and implementation of future operations in the country and the region.

*Evaluation Work Plan and Budget*

Key Evaluation Activities/Products per Activity	Year 1				Year 2				Year 3				Responsibility	Cost	Financing
	1	2	3	4	1	2	3	4	1	2	3	4			
Elaboration of Mid-Term Evaluation Report													ST	15 days x 2 people x US\$400=US\$ 12.000	Administrative and financial services (IEMA)
Evaluation calculations and ex-post data analysis													ST	15 days x 2 people x US\$400=US\$ 12.000	Administrative and financial services (IEMA)
Elaboration and Presentation of Final Evaluation Report													ST	15 days x 2 people x US\$400=US\$ 12.000	Administrative and financial services (IEMA)
Analyze and approve reports and evaluations													IADB	30 days x 1 person x US\$600=US\$ 18.000	IADB
Elaboration of Project Completion Report (PCR)													IADB	10 days x 1 person x USD \$ 500 = \$5.000	IADB
<b>Total Cost PEA (included on the program)</b>													US\$36,000	Administrative and financial services (IEMA)	
<b>Bank Supervision Total Cost</b>													US\$23.000	IADB	


**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 form. For SGP, use this [OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
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 CEO endorsement/approval of project.

Agency Coordinator, Agency Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Michael Collins		07/18/2014	Vera Lucia Vicentini	+(5411) 4320-1841	veraluciav@iadb.org

**ANNEX A: PROJECT RESULTS FRAMEWORK** (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

<b>Project Objective:</b>	<b>The project’s main objective is the development and implementation of sustainable mobility planning knowledge and tools aimed at the inclusion of climate change considerations in urban transportation projects in major cities, in order to contribute towards the achievement of Brazil’s voluntary commitment of a reduction in GHG emissions between 36.1% and 38.9% by 2020. Specifically, the project will support the development of sustainable transport design and GHG emissions assessment tools, the implementation of pilot projects, and training and dissemination activities targeting major Brazilian cities.</b>		
<b>Impact Indicators</b>			
<i>Impacts</i>	<b>Base</b>	<b>Final (2034)</b>	<b>Means of Verification/ Comments</b>
Emissions of CO <sub>2</sub> eq avoided with implementation of tools developed by the project in public transport projects financed with parallel investments in Fortaleza Belo Horizonte, São Paulo and Brasília  Indicator : Tons of CO <sub>2</sub> eq	0 *	1,481,863 **	TEEMP Calculations (GEF4949_OPTIONAL6_InitialEmissionReductionEstimates.docx) and Emission Reduction Estimator calculations for all the transportation investments

\* The result of TEEMP models for the MRT projects that are going to be implemented in the four cities after the program.

\*\* The result of TEEMP models for the MRT projects that are going to be implemented in the four cities after the program, considering that they are going to be enhanced by the use of tools developed by this project in order to be more attractive transportation options. This was estimated by giving the MRT systems a higher level in the TEEMP scorecard, in this way the BRTs had 70 out of 100 points and all were raised to 80 points in a conservative scenario (which is presented as the target). This estimated emission reduction volume considers the effects of a potential extra mode shift in Belo Horizonte due to the TDM strategy that will be developed within the program, and also the effects of an additional attractiveness of the MRT systems in Brasília due to the development, within the program, of an NMT plan to better integrate the city's transit lines with non-motorized modes in the future. Further enhancements of MRT projects in other cities are expected to lead to greater emissions reductions, scaling up the contribution of the project towards the achievement of Brazil’s voluntary commitment of GHG emissions reduction.

<b>Outcome Indicators</b>			
<i>Results (Outcomes)</i>	<b>Base</b>	<b>Target (2034)</b>	<b>Means of Verification/ Comments</b>
Outcome 1: Emissions of CO2eq avoided with implementation of tools developed by the project in public transport projects financed with parallel investments in Fortaleza  Indicator 1: Tons of CO2	0 *	108,465 **	TEEMP Calculations (GEF4949_OPTIONAL6_InitialEmissionReductionEstimates.docx) and ex-post evaluations during the program
Outcome 2: Emissions of CO2eq avoided in Fortaleza with GEF pilot bikeways implemented and integrated with public transport financed by parallel investments  Indicator 2: tons of CO2	0	46,648 ***	TEEMP Calculations (GEF4949_OPTIONAL6_InitialEmissionReductionEstimates.docx) and ex-post evaluations during the program
Outcome 3: Daily bicycle trips on pilot bikeways  Indicator 3: number of daily trips	0	1,701	Semiannual Project Report
Outcome 4: Federal and local government officials trained on transport GHG emissions assessment and monitoring  Indicator 4: number of trained people	0	40	Semiannual Project Report
Outcome 5: Federal and local government officials trained on sustainable mobility measures  Indicator 5: number of trained people	0	40	Semiannual Project Report

\* The result of the TEEMP\_BRT model for the MRT projects that are being implemented in Fortaleza and that are going to be concluded within this program's years. The city's 4 BRTs have a scorecard of 48 out of 100 points while the LRT has a scorecard of 71 points. The projects included in this calculation are: Bezerra/Papicu BRT; BR-116/Aguanambi BRT; Alberto Craveiro and Raul Barbosa World Cup BRTs; Parangaba/Mucuripe LRT

\*\* The result of the program's materials being used to enhance the Fortaleza's MRT projects that are being implemented within the program's duration, the calculations were done by enhancing their scorecards. The two IDB financed BRTs had their scorecards raised to 64 and 76.

\*\*\* The calculations involved using the TEEMP\_Bike model for estimating the emission reductions due to the bikeway's implementation itself and the TEEMP\_BRT model to estimate the effect of the bikeways' integration with the MRT projects (3 extra points in the scorecard). The bikeway's demand used for calculating the bikeway's emission reductions was estimated based on the TEEMP\_BRT model for the integrated MRT projects, which resulted in an estimate of 1.701 daily passengers for the first bikeway and 1.386 daily passengers for the second bikeway. If the bikeway's demand is estimated based on the sketch model, which makes the calculation based on the construction quality, extension and width of the bikeway, the proposed infrastructures will have capacity to absorb 14.380 daily trips and reduce emissions by 196.408 CO2eq tons in 20 years.



<b>Component 1: Sustainable Urban Mobility Framework for Brazilian Large Cities</b>							
<i>Component 1 - Products (Outputs)</i>	<b>Indicator</b>	<b>Base</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Target</b>	<b>Means of Verification/ Comments</b>
P1.1 Draft of a regulatory framework for the inclusion of climate change considerations in the assessment of transport investments developed	Draft	0	0	0	1	1	MoV: Semiannual Project Report <sup>9</sup> , Guideline Final Report
P1.2.1 Technical Guideline on Non-motorized Transport Planning developed	guideline	0	0	0	1	1	MoV: Semiannual Project Report, Guideline Final Report
P1.2.2 Technical Guideline on Traffic Demand Management (TDM) developed	guideline	0	0	0	1	1	MoV: Semiannual Project Report, Guideline Final Report
P1.2.3 Technical Guideline on Priority Measures for Public Transit developed	guideline	0	0	0	1	1	MoV: Semiannual Project Report, Guideline Final Report
P1.2.4 Technical Guideline on Intelligent Transportation System (ITS) developed	guideline	0	0	0	1	1	MoV: Semiannual Project Report, Guideline Final Report
P1.2.5 Technical Guideline of Best Practices on Urban Mobility	guideline	0	0	0	1	1	MoV: Semiannual Project Report, Guideline Final Report
P1.2.6 Technical Guideline for Estimating and Evaluating GHGs emissions from urban mobility projects developed	guideline	0	0	0	1	1	MoV: Semiannual Project Report, Guideline Final Report
P1.3 Capacity Strengthening Course for MoC implemented	course	0	0	1	0	1	MoV: Semiannual Project Report

<sup>9</sup> Semiannual Progress Reports will be elaborated by the PEA and delivered to IDB within 60 days of the end of the semester, and shall include, among others, the following information about Products: Products contracted, activities developed within product development, product's progress reports delivered, planned activities and, upon delivery, Final Product Report.

<b>Component 2: Pilot Demonstrations</b>							
<i>Component 2 - Products (Outputs)</i>	<b>Indicator</b>	<b>Base</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Total</b>	<b>Means of Verification/ Comments</b>
2.1.1 System to estimate, and evaluate the reduction of GHGs emissions developed	System	0	0	1	0	1	MoV: Semiannual Project Report, Product Final Report
2.1.2 System interface developed and accessible to MoC personnel	interface	0	0	1	0	1	MoV: Semiannual Project Report, Product Final Report
2.1.3 Ex-post modal shift evaluation methodology developed	methodology	0	1	0	0	1	MoV: Semiannual Project Report, Product Final Report
2.1.4 Ex-post modal shift evaluation applied in each city to estimate modal shifts	evaluation	0	0	1	0	4	MoV: Semiannual Project Report, Product Final Report
2.2.1.1 TDM Strategy developed for Belo Horizonte	strategy	0	0	1	0	1	MoV: Semiannual Project Report, Product Final Report
2.2.1.2 GHG emissions reductions calculated for Belo Horizonte	calculation	0	0	1	0	1	MoV: Semiannual Project Report, Product Final Report
2.2.2.1 NMT Strategy developed for Brasilia	strategy	0	0	1	0	1	MoV: Semiannual Project Report, Product Final Report
2.2.2.2 GHG emissions reductions calculated for Brasilia	calculation	0	0	1	0	1	MoV: Semiannual Project Report, Product Final Report
2.3.1 km of bicycle paths built in Fortaleza	km	0	0	0	7	7	MoV: Semiannual Project Report, Product Final Report
<b>Products to be achieved through Co-Financing Resources</b>							
2.3.2 Km of BRT in operation (Corridors 1 and 4)	32, 6 km of BRT	0	0	0	32.6	32.6	MoV: Semiannual Project Report
2.3.3 Km of BRT in operation (Alberto Craveiro)	6,0 km of LRT	0	6.0	0	0	6,0	MoV: Semiannual Project Report
2.3.4 km of LRT - Light Rail Transit	12,7 km of LRT	5	0	7.7	0	12.7	MoV: Semiannual Project Report

<b>Component 3: Capacity Building and Dissemination</b>							
<i>Component 3 - Products (Outputs)</i>	<b>Indicator</b>	<b>Base</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Total</b>	<b>Means of Verification/ Comments</b>
3.1. courses for government officials and relevant stakeholders at national and local level on transport GHG emissions assessment and monitoring provided	courses	0	0	0	3	3	MoV: Semiannual Project Report
3.1.2 courses for government officials and relevant stakeholders on sustainable urban mobility measures given	courses	0	0	0	5	5	MoV: Semiannual Project Report
3.2 Outreach materials published	publications	0	0	0	6	6	MoV: Semiannual Project Report
3.3 Seminars to showcase the outputs from Components 1 and 2 undertaken	seminars	0	1	0	1	2	MoV: Semiannual Project Report

**ANNEX B: RESPONSES TO PROJECT REVIEWS** (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Comments	Responses
<b>STAP</b>	
<p>1. PIF does acknowledge that the best urban transport policies are those that are based on integration of the all three elements of the Avoid-Shift-Improve framework (GEF-STAP (2010). Advancing sustainable low-carbon transport through the GEF, available at: <a href="http://www.stapgef.org/sustainable-low-carbon-transport">http://www.stapgef.org/sustainable-low-carbon-transport</a>). While the project correctly puts an emphasis on Avoid and Improve, little detail is provided on the Improve pillar aimed at improving e.g., fuel economy standards, construction of low resistance road surfaces, etc.). If project resources are not used directly for addressing this pillar, complementarity with other initiatives/investments should be sought.</p>	<p>The project will develop a regulatory framework and guidelines that will be aimed at promoting sustainable practices integrating the three pillars of the Avoid-Shift-Improve strategy. In light of this, the Improve pillar will be addressed within the regulatory framework, which will outline energy efficiency requirements for transport, and will be specifically targeted through the following guidelines: (i) Transport Demand Management (TDM); (ii) Priority Measures for Public Transit; (iv) Intelligent Transportation System (ITS); and (v) Urban Mobility Best Practices. The first three will deal with measures to improve the overall efficiency of transport systems through better management of traffic and public transport, while the fourth will consider measures to improve the energy efficiency of vehicles, such as drive-train technologies, ecodriving, and maintenance. The above stated will complement Federal Government’s policy on vehicle energy efficiency, “Inovar auto”, which is related to infrastructure investments of the Ministry of Cities. This investments consider GHG emissions reductions, as indicated in the Transport and Urban Mobility Sector Plan (PSTM).</p>
<p>2. It is not clear if the project will address freight transport and it's not clear how important interventions in this sector are for GHG emission reduction in Brazil. IDB has important experience in this area including innovative project on freight transport (GEF ID#4603 Low-carbon and Efficient National Freight Logistics Initiative in Colombia). It would be beneficial if experiences learned in this project are shared and integrated into this project in Brazil.</p>	<p>This project’s main target is passenger mobility, and it is expected that future projects will deal specifically with freight transport. Nonetheless, many measures that will be included in the regulatory framework and the guidelines may also affect freight transport, particularly those related to energy efficiency, TDM, ITS, and GHG emissions estimations. Any relevant experiences learned through the mentioned project will be considered.</p>
<p>3. Climate proofing of urban transport policies and investments is an important part of sustainable low-carbon urban planning. The PIF is silent on whether such proofing dealing with the impacts of climate change on transport planning and infrastructure will be considered in each and all three components of the project. Some guidance on these issues is available from GIZ Sourcebook on sustainable transport: Training Module 5f (2010) (available at: <a href="http://www.giz.de/Themen/en/SID-F26A22D2-1C7A0BCA/dokumente/gtz2010-en-adapting-urban-transport-toclimate-change.pdf">http://www.giz.de/Themen/en/SID-F26A22D2-1C7A0BCA/dokumente/gtz2010-en-adapting-urban-transport-toclimate-change.pdf</a>). Project proponents are advised to consider climate impacts in the project components.</p>	<p>The issue of climate change adaptation in the transport sector is in its initial stages in Brazil. The country is developing a National Climate Change Adaptation Plan, which is expected to be included in a future edition of the PSTM. The regulatory framework will include considerations on adaptation, and the development of training and materials on the state-of-the art on adaptation, which will provide the foundation for the development of climate change adaptation criteria for the National Plan and future urban transport projects.</p>
<p>4. STAP recommends that lessons learned/qualitative and quantitative indicators in using the GEF Manual for calculating GHG benefits of GEF transport projects are analyzed and shared with the GEF partnership. This</p>	<p>The results of the evaluation will be shared with the GEF partnership.</p>

<p>information will be critical in revising the existing methodology STAP is committed to undertake in the next few years.</p>	
<p><b>Germany (Work Program November 2012)</b></p>	
<p>Germany requests that the following points be taken into account during the drafting of the final project document:</p> <ul style="list-style-type: none"> <li>• Component 1 of the project aims to establish a sustainable urban mobility framework through which climate change considerations shall be included in urban transport planning and investments. However, these considerations are limited to climate change mitigation and do not take into account the issue of adaptation to climate change. Most of Brazil's big cities are at the coast and therefore their infrastructure is highly vulnerable to e.g. storm surges and water-related calamities. Against this background, we request that the issue of climate-resilient transport infrastructure is integrated across the three components of the project, in particular under component 1 (mobility framework) and 3 (Capacity Building and dissemination). This would support synergies and co-benefits between low-carbon and climate-resilience goals.</li> </ul>	<p>See answer to STAP Comment 3 above.</p>

**ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS<sup>10</sup>**

A. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES FINANCING STATUS IN THE TABLE BELOW:

PPG Grant Approved at PIF:			
<i>Project Preparation Activities Implemented**</i>	<i>GEF/LDCF/SCCF/NPIF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
1. Consultations with the participating cities	35,000	32,450	-
2. Information gathering for an overview of the transport system in each city involved; definition of indicators for the project, definition of baseline, goals and milestones for each city	85,000	89,800	-
3. Definition of the execution mechanisms	20,000	23,600	-
4. Feasibility assessment and draft project proposal	90,000	92,500	-
<b>Total</b>	230,000	238,350*	-

\* Funds in excess of budgeted amount were provided by the GEF agency.

\*\* All activities have been concluded.

<sup>10</sup> If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.

**ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)**

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/NPIF Trust Fund or to your Agency (and/or revolving fund that will be set up)