



GEF

REQUEST FOR CEO ENDORSEMENT/APPROVAL

PROJECT TYPE: Full-sized Project
THE GEF TRUST FUND

Submission Date: September 1, 2009

Resubmission Date: October 15, 2009

PART I: PROJECT INFORMATION

GEFSEC PROJECT ID: 3827

GEF AGENCY PROJECT ID: 114762

COUNTRY(IES): Nigeria

PROJECT TITLE: Lagos Urban Transport Project 2

GEF AGENCY(IES): World Bank

OTHER EXECUTING PARTNER(S): Lagos Metropolitan Area Transport Authority

GEF FOCAL AREA(s): Climate Change

GEF-4 STRATEGIC PROGRAM(s): CC-SP5-Transport

NAME OF PARENT PROGRAM/UMBRELLA PROJECT: West Africa Energy Program

| Expected Calendar (mm/dd/yy) | |
|------------------------------|------------|
| Milestones | Dates |
| Work Program (for FSPs only) | 02/19/2009 |
| Agency Approval date | 11/24/2009 |
| Implementation Start | 03/24/2010 |
| Mid-term Evaluation | 06/30/2012 |
| Project Closing Date | 06/30/2015 |

A. PROJECT FRAMEWORK

Project Objective: To improve the capacity to manage the transport sector in the Lagos and Kano metropolitan areas and to enhance efficiency and effectiveness of the public transport network in Lagos. The project will result in GHG emissions avoidance through a shift to more environmentally sustainable urban transport modes.

| Project Components | Investment, TA, or STA ² | Expected Outcomes | Expected Outputs | GEF Financing ¹ | | Co-Financing ¹ | | Total (\$) c=a+ b |
|---|-------------------------------------|---|---|----------------------------|---|---------------------------|----|-------------------|
| | | | | (\$ a) | % | (\$ b) | % | |
| 1. Institutional Development | TA | Local capacity to manage traffic is enhanced Local capacity to carry out travel demand analysis (necessary to estimate vehicular CO ₂ emissions) is established LAMATA functions consolidated in permanent headquarters Kano aggressively pursues development of public transport network | Traffic management units established Travel demand model calibrated LAMATA headquarters building completed Strategic implementation plan for Kano mass transport developed | 1,000,000 | 5 | 33,000,000 | 97 | 34,000,000 |
| 2. Public transport infrastructure and traffic management | TA and investment | Service area for BRT provision is greatly expanded Public transport average speeds along new BRT corridors | BRT corridors developed along Anthony-Obalende and along Mile 12-Ikorodu | 3,500,000 | 2 | 233,000,000 | 98 | 236,500,000 |

| | | | | | | | | |
|------------------------------|------------|--|--|------------------|---|--------------------|-----|-------------|
| | | increase Citywide BRT ridership increases 2-wheeler users and car drivers show increased awareness of the mobility benefits of the BRT | | | | | | |
| 3. Road network improvements | Investment | Improved efficiency of transport network supporting the BRT operation | Bituminous overlays, 15 kms of roadway; Structural repair, 7 kms of strategic roadway | 0 | 0 | 50,000,000 | 100 | 50,000,000 |
| 4. Project management | | | | 0 | 0 | 9,000,000 | 100 | 9,000,000 |
| Total Project Costs | | | | (A) 4,500,000 | | (B) 325,000,000 | | 329,500,000 |

¹ List the \$ by project components. The percentage is the share of GEF and Co-financing respectively of the total amount for the component.

² TA = Technical Assistance; STA = Scientific & Technical Analysis.

B. SOURCES OF CONFIRMED CO-FINANCING FOR THE PROJECT

| <i>Name of Co-financier (source)</i> | <i>Classification</i> | <i>Type</i> | <i>Project</i> | <i>%*</i> |
|---------------------------------------|-----------------------|-------------|--------------------|-----------|
| International Development Association | Impl. Agency | Soft Loan | 190,000,000 | 58 |
| Agence Française de Développement | Bilat. Agency | Soft Loan | 100,000,000 | 31 |
| Lagos State Government | Local Gov't | Grant | 35,000,000 | 11 |
| Total Co-financing | | | (B) 325,000,000 | 100% |

* Percentage of each co-financier's contribution at CEO endorsement to total co-financing.

C. FINANCING PLAN SUMMARY FOR THE PROJECT (\$)

| | <i>Project Preparation a</i> | <i>Project b</i> | <i>Total c = a + b</i> | <i>Agency Fee</i> | <i>For comparison: GEF and Co-financing at PIF</i> |
|---------------|----------------------------------|----------------------|----------------------------|-------------------|--|
| GEF financing | | 4,500,000 | 4,500,000 | 450,000 | 4,500,000 |
| Co-financing | | 325,000,000 | 325,000,000 | | 100,500,000 |
| Total | | 329,500,000 | 329,500,000 | 450,000 | 105,000,000 |

D. GEF RESOURCES REQUESTED BY AGENCY(IES), FOCAL AREA(S) AND COUNTRY(IES)¹– N/A

| <i>GEF Agency</i> | <i>Focal Area</i> | <i>Country Name/ Global</i> | <i>(in \$)</i> | | |
|----------------------------|-------------------|---------------------------------|--------------------|-------------------------------------|--------------------|
| | | | <i>Project (a)</i> | <i>Agency Fee (b)²</i> | <i>Total c=a+b</i> |
| | | | | | |
| Total GEF Resources | | | | | |

¹ No need to provide information for this table if it is a single focal area, single country and single GEF Agency project.

² Relates to the project and any previous project preparation funding that have been provided and for which no Agency fee has been requested from Trustee.

E. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

| <i>Component</i> | <i>Estimated person weeks</i> | <i>GEF amount(\$)</i> | <i>Co-financing (\$)</i> | <i>Project total (\$)</i> |
|----------------------------|-------------------------------|------------------------|--------------------------|---------------------------|
| Local consultants* | 2030 | 751,500 (@587 wks) | 1,693,500 | 2,445,000 |
| International consultants* | 2600 | 2,986,000 (@...wks) | 6,012,750 | 8,998,750 |
| Total | 4630 | 3,737,500 | 7,706,250 | 11,443,750 |

* Details to be provided in Annex C (it seems the figures in annex c correspond to only GEF resources..therefore please include the number of weeks for GEF also and ensure that the totals add upto to the GEF amounts of 751,500 and 2.986m .

F. PROJECT MANAGEMENT BUDGET/COST

| <i>Cost Items</i> | <i>Total Estimated person weeks</i> | <i>GEF amount (\$)</i> | <i>Co-financing (\$)</i> | <i>Project total (\$)</i> |
|--|-------------------------------------|------------------------|--------------------------|---------------------------|
| Local consultants* | 3000 | 0 | 4,500,000 | 4,500,000 |
| International consultants* | 1000 | 0 | 2,900,000 | 2,900,000 |
| Office facilities, equipment, vehicles and communications* | | 0 | 1,500,000 | 1,500,000 |
| Travel* | | 0 | 100,000 | 100,000 |
| Others | | | | |
| Total | | | 9,000,000 | 9,000,000 |

* Details to be provided in Annex C. ** For others, it has to clearly specify what type of expenses here in a footnote.

G. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? yes no

(If non-grant instruments are used, provide in Annex E an indicative calendar of expected reflows to your agency and to the GEF Trust Fund).

H. DESCRIBE THE BUDGETED M & E PLAN:

Monitoring and Evaluation of the project is included in the project as its own component (component 4), and will be carried out to provide feedback to the management unit of the project and to establish project impacts during the project period and a forecast of impact at the end of the project. The M&E strategy will not only track the project benefits and objectives as laid out in the results framework, but also critical co-benefits, namely local air quality improvement and improvements in perception of safety and security, that, if properly accounted for, can reduce the cost per ton of CO₂ emitted.

The M&E will include a number of activities to quantify, with more detail and accuracy than was possible during project preparation, actual emissions of CO₂ from transport activity along the improved corridors. The methodology to be used is discussed in detail in Annex 15b of the PAD. Combined with improvements and refinements to the travel demand model that are also expected to occur under the project, it is hoped that by the project end, a fairly robust estimate of GHG emissions avoided can be produced. It should be noted that the M & E plan will monitor changes in CO₂ emissions for the development of the BRT network in Lagos only; CO₂ emissions abatement estimates for a potential plan in Kano may be developed in the course of the project. All of the components of the project, with the exception of the Kano component, are considered to be vital for successful development and implementation of the BRT network expansion and delivery of the Project Development and Global Environmental Objectives. In this manner, therefore, the M & E program is capturing the combined effects of all components (save subcomponent 1E). Further explanation is provided in Annex H to this CEO endorsement brief.

Monitoring and evaluation activities will be carried out by the project executing agency (LAMATA), with the support of local and international consultants. These activities are budgeted as part of the project management component (about 53 percent of component funds are intended for M&E activities), but GEF funding will not cover any of these costs. Nevertheless, responsibility for generating and reporting monitoring results will be included under the GEF Grant Agreement, as well as the Credit Agreement for the IDA-financing. Details can be found in Annexes 4 and 15b of the PAD. Contracts to be procured for the M&E activities have been identified in the Project Implementation Manual (PIM), and those relevant for the project's first 18 months have been included in the initial procurement plan.

PART II: PROJECT JUSTIFICATION:

- A. STATE THE ISSUE, HOW THE PROJECT SEEKS TO ADDRESS IT, AND THE EXPECTED GLOBAL ENVIRONMENTAL BENEFITS TO BE DELIVERED:** With a population of approximately 130 million and an area of about one million square kilometers, Nigeria has both the highest population and highest average population density in Africa. In addition, Nigeria has a very high rate of urbanization: between 2000 and 2004, the proportion of urban population grew from 36 to 38%. Along with urbanization comes a growth in urban transport. The most reliable data on urban transport in Nigeria comes from Lagos, where the World Bank has an urban transport project. It is a city with 15 million inhabitants, making it the sixth largest city in the world. It is also Nigeria's economic hub and Africa's fastest growing city at an estimated 6-7% per year. It is estimated that the total vehicle population in Lagos is approximately 1.2 million (representing about 55 percent of the total vehicle population in Nigeria), out of which, approximately 72,000 are public transport vehicles (mostly micro- and mini-buses). Kano, the commercial and industrial capital for northern Nigeria and the country's second largest city with about 10 million inhabitants, is facing similar problems of rapid growth of both people and motor vehicles. The state administration there has been focused on upgrading the urban mass transit infrastructure through provision of buses and non-motorized modes (eg. tri-cycles).

The phenomenon of rapid urbanization in Nigeria's big cities creates a mobility problem for the cities' residents and the city fathers, but how those stakeholders respond to those mobility problems is of concern to the global environment community as well, because individual and collective mobility choices made affect fuel consumption and GHG emissions. The vehicle population in Nigeria has been growing at an estimate average annual rate of ten to 15 percent between 2000 and 2004, based on provisional 2004 statistics. There has also been a concomitant sharp increase in the number of public transport vehicles in Nigeria, which includes micro-, mini-, and regular-buses. Fragmentation

in the sector and regulatory weakness has meant not only are there many more public transport vehicles, but also that they are old -- most are over ten years old at the time of import -- poorly maintained, and operated in conditions which maximize fuel consumption. As a result, it is estimated that the transport sector in metropolitan areas accounts for a third of total emissions of the greenhouse gases in Nigeria.

Within the constraints of the country's federal system, the Federal Government of Nigeria (FGN) is trying to address these issues by improving the conditions for delivery of public transport services in urban areas. By improving the regulatory framework for overseeing public transport service provision, encouraging provision of targeted infrastructure improvements to reduce public transport vehicle operating costs, and improving the basis by which traffic systems are conceived and managed in urban areas, the strategy seeks to yield operational improvements that will both reduce the overall number of vehicles and vehicle-kilometers needed to support economic growth and accessibility needs in the metropolitan areas, and improve the financial sustainability of operators, thereby permitting them to accumulate capital and make investments in new vehicles. With incremental attention and resources, this approach will also help encourage come car and motorcycle-owning travelers to opt for public transport instead.

The proposed Urban Transport Project (UTP) is intended to assist the FGN pursue that strategy in Lagos and Kano. It builds upon the achievements of the first LUTP, particularly the development and successful initiation of a "BRT-lite" corridor. That corridor was developed with a credit of US\$150.0 million, and has been rather successful in large part not only because of the hard investments made, but also because of the extensive institutional strengthening that was part of LUTP project design. The proposed UTP will build upon these foundations. It will be a blended project including funding from the International Development Association, the Agence Française de Développement, the GEF, and the State Government of Lagos. The project will support the development of two additional BRT lines, helping to transform the existing investment from a single corridor into a network. The development of a public transport network, in turn, should help transform the market for urban transport in Lagos. At the same time, the project will continue to strengthen transport service delivery and planning in Lagos, through the LAGos Metropolitan Area Transport Authority (LAMATA). The success of the BRT-lite corridor has helped build LAMATA's clout among operators and the general public to successfully pursue both planning and regulatory activities. Ongoing success through LUTP2 will further LAMATA's ability to pursue planning and regulatory strengthening activities. The proposed GEF funding for the project would complement this institutional strengthening, by allowing LAMATA to focus some services and marketing to attracting high CO₂-footprint travelers, namely, those with access to cars and two-wheelers. It would also provide support to facilitate the process of beginning to replicate Lagos' success in Kano, through studies, and training for staff in the Kano State Transport Authority.

B. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL AND/OR REGIONAL PRIORITIES/PLANS:

The objectives and activities designed under the proposed project are consistent with the government's overall strategy for non-oil dependent growth as stipulated in the National Economic Empowerment and Development Strategy (NEEDS) and State Economic Empowerment and Development Strategy (SEEDS). The FGN is keen to propagate the concept of sustainable urban transport that calls for inclusion of parameters such as safety, cleanliness, and reliability in transport systems for Nigerian cities. A small beginning in this direction has been made through the World Bank-aided urban transport project in Lagos.

Additionally, the World Bank and the UK Department for International Development (DfID) have jointly developed the Country Partnership Strategy (CPS), which was approved by the Bank in June 2005. The CPS is aligned with the pillars of both the NEEDS and SEEDS, especially the second pillar that focuses on improved environment and services for non-oil growth. The proposed project would remove some of the key bottlenecks to sustainable transport by facilitating market transformation, strengthening institutional capacity and laying the basis for acceptability of the reform program.

C. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH [GEF STRATEGIES](#) AND STRATEGIC

PROGRAMS: The proposed project fits under the Climate Change focal area strategy of GEF-4. It supports the Strategic Objective 7 (Facilitating market Transformation for Sustainable mobility in urban areas leading to reduced GHG emissions) through its alignment with CC SP- 5 (Promoting sustainable innovative systems for urban transport). The project's activities are in line CC-SP5 since it promotes the long-term shift towards low emissions and sustainable transport operations through strengthening institutional and regulatory framework for sustainable urban transport, and monitoring and evaluation of GHGs.

This project is also one of two transport-sector projects approved as part of the GEF's Strategic Program for West Africa Energy, approved by the GEF Council in November 2008. It will have a demonstration effect of how countries in West Africa might be able to reduce energy consumption in the transport sector and reduce present and future GHG emissions in a manner that increases sustainable mobility.

D. JUSTIFY THE TYPE OF FINANCING SUPPORT PROVIDED WITH THE GEF RESOURCES. The proposed GEF funding will be a grant, supporting primarily consultant services in the form of TA. Grant funding is appropriate, since these TA activities will improve design and operations of public transport, but resources would probably be too constrained for either local, state, or federal authorities to be able to fund these activities on their own.

E. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES: In the transport sector, there presently is no other related initiative in Nigeria.

F. DISCUSS THE VALUE-ADDED OF GEF INVOLVEMENT IN THE PROJECT DEMONSTRATED THROUGH [INCREMENTAL REASONING](#) : The underlying project itself is largely consistent with the objectives of GEF climate change funding in general, and Focal Area Strategy 7 of GEF-4 strategic programming in particular. The expected Global Environmental Outcome (GEO) of the proposed project, therefore, is largely one of degrees compared to the underlying Project Development Outcome (PDO). One of the key PDOs is promoting a shift to more environmentally sustainable urban transport modes; the GEO is to expand this scope, by promoting even more of a shift, specifically by facilitating more effective targeting and marketing of BRT services to users with larger carbon footprints than otherwise would be the case, and by expanding the geographic reach of the project to influence thinking in Kano as well. GEF funding would be used specifically to expand the scope and reach of the underlying project.

For further details, please see the Incremental Cost Analysis in Annex 15 of the attached in the project document

G. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS, THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED AND OUTLINE RISK MANAGEMENT MEASURES: See project risk table, attached to this brief as Annex F.

H. EXPLAIN HOW COST-EFFECTIVENESS IS REFLECTED IN THE PROJECT DESIGN: From a global environmental perspective, the project as a whole is probably highly cost-effective, because the core PDO, improving mobility along prioritized corridors, is being facilitated by measures that will both reduce overall vehicle kilometers of travel and improve the energy efficiency of the remaining vehicle kilometers of travel, by improving network operating conditions for those vehicles. The relatively modest investments needed to put in place the services and systems that can head off both the growth in vehicle activity and the reduction in efficiency that growth would produce are substantially less costly than the investments that would otherwise be needed in the future to reduce the GHG impact of expanded motorized activity once it has actually occurred. Thus, CO₂ emissions avoidance is inherent in the project design. From a GEF perspective, the incremental GEF funding is probably somewhat cost-effective, since the incremental investment -- essentially tailoring, marketing and branding BRT services to high-carbon-footprint customers -- is based on a quality product (as demonstrated in the LUTP project).

However, both measures of cost-effectiveness are uncertain, and will remain so through at least the first several years of project implementation. Most of the growth that the project is intended to head off would have occurred well after the normal life of the project, and therefore is unobservable during the project implementation and evaluation period. To be sure, the extent of any change in vehicular activity and therefore CO₂ emission change during the project life will be measured as part of ordinary monitoring and evaluation due diligence will be included in the project design. However, any such changes may be minimal during the project period, and a true measure of the project's cost-effectiveness would depend on projections which would, by definition, be speculative.

That said, the project will put in place a system to measure transport-related CO₂ emissions along the intervention corridors, and will utilize those measurements, as well as travel demand modeling capacity also being supported under the project, to facilitate estimates of CO₂ emissions avoided both during project implementation and projected out to the future. The methodology to be used for this measurement work is discussed extensively in Annex 15a of the accompanying Project Appraisal Document.

PART III: INSTITUTIONAL COORDINATION AND SUPPORT

A. INSTITUTIONAL ARRANGEMENT: The World Bank will be the sole Implementing Agency. See Annex 6 of the Project Document for details.

B. PROJECT IMPLEMENTATION ARRANGEMENT: The funds will be executed by the recipient agency, LAMATA, as part of their day-to-day execution of the overall project, using funds from IDA and AFD. The World Bank's fiduciary requirements will govern the use of the GEF funds, through a Grant Agreement between the International Development Association and the Federal Ministry of Finance. See Annex 7 of the project document for details.

PART IV: EXPLAIN THE ALIGNMENT OF PROJECT DESIGN WITH THE ORIGINAL PIF:

The proposed project aligns with the objectives identified in the original PIF. However, during preparation, a number of elements in the detailed design have been modified as the overall project has evolved. The key changes are highlighted below:

1) Project objective. The objective has been shortened and made more focused, in line with the small changes to the project component structure. Although the overall scope remains the same, the refocusing of the GEF funds toward stakeholder consultation and communications has slightly changed the incremental reasoning since the incremental benefit of the GEF funds is now more tightly associated with changes in ridership than it had been under the PIF. Under the outline proposed in the PIF, incremental benefit of the GEF funds were attributable to both changes in ridership and improvements in operating efficiency.

2) Implementation partners. During initial discussions, it was thought that the Federal Ministry of Environment – as GEF Focal Point Ministry – might play a role in project implementation. However, there was concern that including MoE as an executing partner would make LAMATA's system of accountabilities and responsibilities for LAMATA – well established and streamlined under LUTP I – less clear, and more difficult for the Bank to manage and monitor. Consequently it was decided that the project would be better managed without a direct executive role for the Environment Ministry.

3) Project components. The scope of the project is unchanged since the PIF. However, the project components have been redefined, and the proposed GEF activities reshuffled to fit into the revised structure of the components. GEF support to Kano remains under the general "Capacity Building" component (now titled institutional development), but the capacity-building support to Lagos has been moved to Component 2, development of BRT in Lagos (what had been component 3 at PIF stage), combined with the resources that had already been allocated there for BRT development, and repackaged under a separate sub-component. This latter change was done because the need became clear during project preparation, but doing so also helps define GEF incrementality more clearly, as discussed above. PIF components 4 and 5 have been consolidated into a single component, so that the overall project now has only 4 components.

4) Project finance. The scale of the overall project has increased since PIF stage, because additional co-financing from the AFD has been identified. At PIF stage the financing included a GEF contribution of US\$4.5 million which was complementing US\$ 100.5 million in baseline co-financing, for a total cost of US\$ 105 million. At CEO stage, the GEF contribution of US\$4.5 million is complementing an increased baseline cofinancing of US\$ 325 million, for a total cost of US\$ 329.5 million. See Annex 15 for the incremental cost calculations

These changes are summarized in the table below.

| | Overall Project | Component 1 | Component 2 | Component 3 | Component 4 | Component 5 |
|--------------|----------------------------------|--|--|--|--|---|
| Title | | <u>At PIF stage:</u> Capacity building <u>At CEO stage:</u> Institutional development | <u>At PIF stage:</u> Road network efficiency <u>At CEO stage:</u> Public transport and traffic management | <u>At PIF stage:</u> Development of BRT system <u>At CEO stage:</u> Road network improvements | <u>At PIF stage:</u> Outcome monitoring <u>At CEO stage:</u> Project management and system monitoring | <u>At PIF stage:</u> Project management <u>At CEO stage:</u> Consolidated into component 4 |
| Costs | <u>At PIF stage:</u> Total US | <u>At PIF stage:</u> \$15.5m (GEF \$0.5m) | <u>At PIF stage (PIF component 3):</u> | <u>At PIF stage (PIF component 2):</u> | <u>At PIF stage (PIF components 4</u> | |

| | | | | | | |
|--------------|--|---|--|---|--|--|
| | <p>\$105m; GEF US \$4.5m (not including IA fee)</p> <p><u>At CEO stage:</u> Total US \$329.5 m; GEF US \$4.5m (not including IA fee)</p> | <p><u>At CEO stage:</u> \$34m (GEF \$1.0m)</p> | <p>\$49.5m (GEF \$4.0m)</p> <p><u>At CEO stage:</u> \$236.5m (GEF\$ 3.5m)</p> | <p>\$35m (GEF \$ 0.0m)</p> <p><u>At CEO stage:</u> \$50m (GEF\$ 0.0m)</p> | <p>and 5): \$5m (GEF \$0m)</p> <p><u>At CEO stage:</u> \$9.0m (GEF \$0.0m)</p> | |
| Scope | | GEF-funding under this component will be used for institutional development in Kano | GEF-funded assistance to Lagos consolidated under single component: BRT consultation, communications, and media strategy | | | |

PART V: AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for CEO Endorsement.

| Agency Coordinator, Agency name | Signature | Date | Project Contact Person | Telephone | Email Address |
|--|---|--------------------|------------------------|-------------------|-------------------------|
| Steve Gorman Executive Coordinator The World Bank |  | October 9, 2009 | Paola Agostini | (202) 473 7620 | pagostini@worldbank.org |

ANNEX A: PROJECT RESULTS FRAMEWORK

| PDO | Project Outcome Indicators (by End of Project) | Use of Project Outcome Information |
|---|--|---|
| <p>Improve mobility along prioritized corridors</p> <p>Promote a shift to more environmentally sustainable urban transport modes.</p> <p>Global Environmental Outcome</p> <p>Promote an incremental shift to more environmentally sustainable urban transport modes among users with relatively high carbon footprint</p> | <ul style="list-style-type: none"> • Reduced travel time along BRT corridors • Reduced household expenditure on transport along BRT corridors • Increase in number of passengers carried per standard bus per day • Length of road network rehabilitated on Lagos metropolitan network • Increase in percent of trips made by BRT among households owning cars or motorbikes • Reduced CO₂ emissions from vehicles along BRT corridor | <p>YR1-YR5: monitor results closely; lower measures may flag high expectations or poor enforcement</p> |
| Intermediate Outcomes | Intermediate Outcome Indicators (by End of Project) | Use of Intermediate Outcome Monitoring |
| <p>Component 1: Institutional Development and capacity building</p> <p>Local capacity to manage transport is enhanced</p> <p>Local capacity to carry out transport supply and travel demand analysis is established (including capacity to estimate CO₂ emissions of counterfactual scenarios)</p> <p>LAMATA functions are consolidated in permanent headquarters</p> <p>Kano pursues development of public transport network</p> <p>Component 2: Improvement of public transport infrastructure and enhancement of traffic management systems</p> <p>Service area for BRT provision is</p> | <p>Number of Transport Planning Units established and functioning</p> <p>People completing study tours and training programs</p> <p>Updated travel demand and network models, databases and other tools (such as GIS) are available for use</p> <p>LAMATA building completed</p> <p>Strategic conceptual transport planning framework for Kano developed</p> <p>BRT corridor developed along Oshodi-Mile2-Obalende</p> | <p>YR2-YR3: feed into preparation of follow-on projects</p> <p>Flag possible problems in implementation of the reform program.</p> <p>Determine if additional resources need to be allocated to model development</p> <p>Flag impediment to corporate efficiency of LAMATA</p> <p>Ensure strong role of environmental sustainability in long range plans for Kano</p> <p>Monitor progress of works</p> |

| | | |
|---|--|---|
| <p>greatly expanded</p> <p>Mobility for public transport users along BRT corridors improves</p> <p>2-wheeler users and car drivers show increased awareness of the mobility benefits of the BRT</p> | <p>BRT corridor developed along Oshodi-Mile 12-Ikorodu</p> <p>Bus service vehicle kilometers per day along BRT corridors</p> <p>Average travel speed of public transport services along BRT corridors</p> <p>Percent of public transport users rating their service as highly or somewhat unreliable</p> <p>Percent of BRT users who report having a car or two-wheeler available for this public transport trip¹</p> <p>Percent of two-wheeler and car owners who report having a somewhat or highly favorable impression of BRT service</p> | <p>Monitor progress of works</p> <p>Verify effective use of developed infrastructure</p> <p>Verify and demonstrate speed advantages created by BRT</p> <p>Verify and demonstrate reliability advantages created by BRT</p> <p>Monitor BRT use by motor vehicle owners</p> <p>Monitor attitudes toward BRT by non-BRT using motor vehicle owners</p> |
| <p>Component 3: Improvement of Lagos State metropolitan road network</p> <p>Improved efficiency of transport network supporting the BRT operation</p> | <p>Average travel speed along resurfaced and rehabilitated roads</p> | <p>Gauge effect of road disrepair on travel time delay</p> |
| <p>Component 4: Project management and monitoring</p> <p>Project benefits and co-benefits are effectively monitored and quantified</p> | <p>Financial and technical performance of project based on audits</p> <p>Calculated CO₂ emissions based on observed vehicle activity and fuel consumption measurements</p> <p>Appropriate safety indicators (to be specified in first year of project implementation) along intervened corridors²</p> <p>Ambient concentrations of pollutants (to be specified during first year of project implementation) along intervened corridors</p> | <p>Verify compliance with fiduciary requirements</p> <p>Self-explanatory</p> <p>Monitor a key co-benefit associated with public-transport-based mobility improvements</p> <p>Monitor a key co-benefit associated with public-transport-based mobility improvements</p> |

¹ Base year indicator based only on reported values from existing BRT-Lite corridor.

² Indicator would be determined during the first year of project implementation because the indicator to be used is not just a question of technical appropriateness, but also one of practicability. The indicator will depend on what data is collected consistently across different institutions.

Table 2: Arrangements for results monitoring

| Project Outcome Indicators | Baseline | Target Values | | | | | Data Collection and Reporting | | |
|--|-------------|---------------|--------|--------|--------|--------|---------------------------------|---------------------------------------|------------------------------------|
| | | YR1 | YR2 | YR3 | YR4 | YR5 | Frequency and Reports | Data Collection Instruments | Responsibility for Data Collection |
| Average travel time on Oshodi-Mile 12-Ikorodu (minutes) | 120 | 120 | 120 | 120 | 100 | 90 | Annually | Traffic surveys | LAMATA |
| Average travel time on Oshodi-Mile 2-Obalende (minutes) | 150 | 150 | 150 | 150 | 125 | 120 | Annually | Traffic surveys | LAMATA |
| Transport share of household expenditure on BRT corridors | 20% | | | | 15% | 15% | Annually | Field Surveys*; House hold survey | LAMATA |
| Average number of passengers carried per standard bus per day along BRT corridors | 500 | 500 | 500 | 500 | 700 | 800 | Annually | On-board survey | LAMATA |
| Length of road network rehabilitated (km) | incremental | 3 | 3 | 5 | 5 | 5 | Annually | Supervision missions | LAMATA |
| Global Environmental Outcomes | | | | | | | | | |
| Increase in percent of trips made by BRT among households owning cars or motor bikes | 10* | 10 | 10 | 10 | 15 | 20 | Annually | Field Surveys*; House hold surveys | LAMATA |
| CO ₂ emissions from vehicles along BRT | 1100.4 | 1100.4 | 1100.4 | 1100.4 | 1066.7 | 1066.7 | One time calculation and end of | Surveys, traffic counts, simulations | LAMATA |

| Project Outcome Indicators | Baseline | Target Values | | | | | Data Collection and Reporting | | |
|---|---------------|---------------|--|--------------------------------|-------------------------------------|-----|-------------------------------|-----------------------------|------------------------------------|
| | | YR1 | YR2 | YR3 | YR4 | YR5 | Frequency and Reports | Data Collection Instruments | Responsibility for Data Collection |
| corridors (Kilotons CO ₂) ³ | | | | | | | project | | |
| Intermediate Outcome Indicators | | | | | | | | | |
| Institutional Development and capacity building | | | | | | | | | |
| Number of Transport Planning Units ⁴ established and functioning | 2 | 2 | 2 | 3 | 4 | 5 | Mid-term review | | LAMATA |
| People completing study tours and training programs | incremental | | | | | | Annually | | LAMATA |
| Updated travel demand and network models, databases and other tools (such as GIS) are available for use | incremental | | Data collection for model calibration complete | Travel demand model calibrated | Travel demand database systematized | | Mid-term review | | LAMATA |
| LAMATA building completed | Land acquired | | | Building completed | | | Mid-term review | | LAMATA |
| Develop a conceptual transport planning framework for Kano | None | | | Strategic Plan completed | | | Mid-term review | | LAMATA |

³ The estimates are based on initial studies and exclude possible impact from a “switching” from two-wheeler motorized vehicles to buses. The base line will be developed further during the first year of project implementation.

⁴ Transport Planning Unit was referred to as Traffic Management Unit under LUTP.

| Project Outcome Indicators | Baseline | Target Values | | | | | Data Collection and Reporting | | |
|--|-----------------------|------------------|-----|-----|-----|-----|-------------------------------|--|------------------------------------|
| | | YR1 | YR2 | YR3 | YR4 | YR5 | Frequency and Reports | Data Collection Instruments | Responsibility for Data Collection |
| Public Transport Infrastructure and Traffic Management | | | | | | | | | |
| BRT corridor developed along Oshodi-Mile 2-Obalende (km) | Feasibility completed | Design completed | | | 27 | 27 | Mid-term review | | LAMATA |
| BRT corridor set up along Oshodi-Mile 12-Ikorodu (km) | Feasibility completed | Design completed | | | 22 | 22 | Mid-term review | | LAMATA |
| Bus service vehicle kilometers per day along improved corridors | 150 | 150 | 150 | 150 | 200 | 200 | Mid-term review | LAMATA service reports, traffic counts | LAMATA |
| Average travel speed of public transport services along BRT corridors (kph) | 10 | 10 | 10 | 10 | 15 | 18 | Annually | LAMATA service reports, speed studies | LAMATA |
| Percent of public transport users rating their BRT service as satisfactory | 20 | 20 | 20 | 20 | 50 | 60 | Annually | On-board surveys | LAMATA |
| Percent of BRT users who report owning a car or two-wheeler | <5 | | | 5 | | 7 | Annually | On-board surveys | LAMATA |
| Percent of two-wheeler and car owners who report having a somewhat or highly favorable impression of | TBD | | | | | | Annually | Parking-lot surveys | LAMATA |

| Project Outcome Indicators | Baseline | Target Values | | | | | Data Collection and Reporting | | |
|---|----------|--|-------------------|-------------------|-------------------|-------------------|--|---|------------------------------------|
| | | YR1 | YR2 | YR3 | YR4 | YR5 | Frequency and Reports | Data Collection Instruments | Responsibility for Data Collection |
| BRT service | | | | | | | | | |
| Road Network Improvement | | | | | | | | | |
| Average travel speed along resurfaced and rehabilitated roads | 12 | 12 | 15 | 15 | 18 | 18 | Annually | Speed studies | LAMATA |
| Project Management and Monitoring | | | | | | | | | |
| Financial and technical performance of project based on audits | | satisfactory | satisfactory | satisfactory | satisfactory | satisfactory | satisfactory | | LAMATA |
| Calculated CO ₂ emissions based on observed vehicle activity and fuel consumption measurements | None | Measurement methodology established; fuel economy measurements taken | Activity measured | Activity measured | Activity measured | Activity measured | Annually (except in-use vehicle tests) | BRT operating data; vehicle counts; speed surveys; road side origin to destination surveys **; occupancy counts; in-use vehicle emissions & fuel-use tests (once) | LAMATA |
| Appropriate safety indicators along intervened corridors | None | Indicators identified and database framework established | | | | | Annually | Accident & crime statistics from police; user perception surveys | LAMATA |
| Ambient concentrations of pollutants | | Roster of pollutants to be monitored | | | | | Annually | Ambient measurements from air | LAMATA |

| | | Target Values | | | | | Data Collection and Reporting | | |
|----------------------------|----------|---|-----|-----|-----|-----|-------------------------------|-----------------------------|------------------------------------|
| Project Outcome Indicators | Baseline | YR1 | YR2 | YR3 | YR4 | YR5 | Frequency and Reports | Data Collection Instruments | Responsibility for Data Collection |
| along intervened corridors | | established; measurement equipment procured | | | | | | quality monitoring stations | |

*Parking lot and service stations surveys will be used to estimate interim numbers. Final numbers will be adjusted based on household surveys.

** Roadside origin to destination surveys will be used to estimate interim numbers. Final numbers will be adjusted on the basis of results from household surveys.

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 by GEF Council | Team response |
|----|--|--|
| | <i>Comments from Germany</i> | |
| 1. | <p>A concern is raised in the proposal that a lack of political commitment on the part of the government of Nigeria, combined with a lack of interest on the part of stakeholders could prevent the project from being a success. The lack of co-financing contributions from the government seems to underscore this concern. How can the role of partners within the various ministries be strengthened to increase ownership and responsibility for stated goals?</p> | <p>The project is fully supported by the federal government and is being implemented by the state and local government authorities.</p> <p><u>Support by the state government at policy level:</u> (a) The Lagos State Government (LSG) has developed a clear policy framework and a strategic plan for improving delivery of transport services; (b) LSG has created an independent metropolitan institution (Lagos Metropolitan Area Transport Authority, LAMATA) with: strong statutory authority; positive, cooperative relationships; independent, dedicated sources of funding; and superior human capacity, data and technical resources. The LAMATA has been established to assist in planning, regulating and procuring urban public transport services and help establish local and national capacity for market regulation, supported by a nucleus of professionals. This would ensure institutional sustainability of the BRT, the NMT facilities, and the limited competitive regime. In addition, setting up institutions within a framework common to the whole transport sector would provide a sustainable basis to manage an effective and efficient transport system in the long run.</p> <p>The LSG has also set up a transport fund with dedicated funding sources (license fees, concession fees, other road user charges) to finance investments in public transport in the city. The LSG has met over 60 percent of the financing needs of urban transport from the transport fund in 2008 (an increase from less than 20 percent in 2004). The state has also financed a number of investments in road improvements (over US\$45 million) in support of the Bus Rapid Transit in the past two years. In addition, to support investments in the priorities identified in the strategic plan, the LSG is financing construction/rehabilitation of two commuter lines as part of the integrated inter-modal transport plan for the city at a cost of over US\$1 billion. The government has requested Bank's support for extension of the BRT corridors while the commuter lines are being constructed using a Public-Private Partnership model, with infrastructure being funded by the LSG under a design/build contract and the actual railway operations being funded and managed by the private sector under a concession agreement.</p> <p><u>Support at the local government level.</u> The local governments in partnership with LAMATA have: (a) developed integrated public transport priority /traffic management measures (including improving NMT travel, sidewalks, pedestrian passes, bike parking, better lighting, roadway fencing); (b) introduced comprehensive, integrated program of complimentary</p> |

| | | |
|----|--|---|
| | | <p>improvements (covering entire route/corridor, focus on facilitating movement of people); (c) developed up-front planning for a successful implementation (preparation of a operations and service plan as the basis of detailed design.</p> <p><u>Support from other stakeholders:</u> The project design has also build on the use market knowledge to integrate operators in a rationalized bus system with a focus on: (a) building on existing operational capacity of service providers; (b) incentivizing the formalization of informal operators; (c) allowing choices for captive users; (d) scaling up and phasing in changes gradually to control service disruption; (e) enforcing law and order. Efforts by existing operators to resist shifting from self-regulation to contractual obligations, law enforcement would be managed through: (a) making strong outreach efforts to all affected groups (operators, drivers, unions, financial institutions); (b) making provision for damage control (likely disruption of service); (c) building confidence (help informal operators incorporate, acquire capacity, strengthen operational capacity, access finance); (d) making incremental changes.</p> <p>The Team believes that assisting LAMATA deliver a second success in the area of sustainable transport will help consolidate the commitment of the FGN and LSG to such projects, and provide a model for institutional capacity development for institutions at all levels.</p> |
| 2. | <p>The proposal states that GEF funds will be used to: “help enhance the capacity-building component of the underlying project such that there is additional emphasis on systems planning to improve both operational efficiency and service characteristics that enhance mode switching in favor of climate-friendly modes.” How will this be achieved in concrete terms?</p> | <p>The Team has concretized this aspect of the use of GEF funds by emphasizing the understanding of behavioral characteristics and preference of potential high-carbon-footprint travelers and helping LAMATA tailor services to meet their needs. For clarity, this sub-component has been transferred in the final proposed project from the capacity-building subcomponent to the BRT development sub-component.</p> |
| | <p><i>Comments from Switzerland</i></p> | |
| 3. | <p>It is difficult to discover / grasp a particular identity of the project. The objectives are formulated in very general terms, and it is unclear which specific measures and actions will be taken and supported by the GEF resources (particularly component 3).</p> | <p>The Team has provided more specificity in the final proposal, in all aspects including now-component 2 (what had been listed as component 3 in the PIF). The GEF funds will be used to develop a strategic transport plan for Kano (that is, help other parts of Nigeria begin to learn from the sustainable transport experience in Lagos), and to develop market studies and a communications plan to target those segments whose change in travel behavior would most contribute to a reduction in CO₂.</p> |

| | | |
|----|--|---|
| 4. | It is also difficult or impossible to specify particular and measurable and monitorable benefits | The Team agrees with the comment, but believes that this is in many respects in the nature of transport projects. The Team has proposed as a monitorable benefit associated specifically with the GEF funding the following: <i>an increase in the percent of trips made by BRT among households with access to cars and 2-wheelers.</i> However, strictly speaking, this “increase” is with respect to the counterfactual situation, which is difficult to observe and monitor directly. The project would observe and monitor the trends. |
| 5. | One might wonder why certain elements (e.g. “improving local capacity to plan, implement, and monitor public transport services”) should be assigned to GEF funding and why they are not already a necessity for the project and hence part of the World Bank project. | The purpose of the underlying project is not to reduce CO ₂ emissions, but rather to improve public transport conditions for the vast majority of public transport users in Lagos. Any planning and monitoring that would ordinarily be done (in the absence of the GEF project) would focus on operations and logistics, not enticing high CO ₂ footprint users. GEF funds will be used to improve these planning capacities. |

6. Elements with a certain link to GEF-topics are mentioned as relevant challenges (e.g. old and poorly maintained vehicles), but they are not addressed further in the proposal. One would expect that the proposal sketches at least in general terms how this issue will be tackled. This should then allow one to make an assessment of the benefits, e.g. the improvement of the energy efficiency in quantitative terms.

Existence of old and poorly maintained buses, owned by individuals and operating in an uncontrolled regulatory environment is one of the key problems contributing to chaos in the urban transport market. The project would not be financing investments in procurement of buses.

Regional experience of direct public-sector financing of buses has generally been unsatisfactory, both because of political interference in the management of the business and the desire to hold down fares, with the consequence of insufficient levels of financial support for maintenance and eventual decline in the quality of bus service. In the proposed project, the government has committed to a PPP framework, whereby it accepts responsibility for the enabling environment and infrastructure provision, but the private sector will be responsible for service delivery, including rolling stock provision and management.

As part of the enabling environment, government together with development partners will finance investments in improving infrastructure (road network, bus stops, terminals, signals, etc), creating bus rapid transit systems, and developing a regulatory framework for organized operation of bus services. The private sector, in turn, will finance purchase of high quality buses.

The project would support a number of strategies to achieve higher productivity of buses and improve standards of vehicle maintenance and repair, which would enable a higher return to be earned on bus investments. Increased asset productivity derived from improved traffic management would allow informal bus operators to attract the necessary funding for investment in better quality buses. Rationalization of bus supply would eradicate predatory competition, increase rider ship and fare box revenues, and reduce operating costs. This would make the public transport industry more profitable and allow informal private operators to secure funding, thereby improving chances of financial sustainability.

With a gradual increase in the supply of regular size good quality buses, the old small buses will be phased out of market, both because of a decline in demand for such services and disrepair.

| | | |
|-----|--|--|
| 7. | Other risks indicated are the lack of political commitment and – related to this, how the project deals with an appropriate policy and regulatory framework. This seems particularly relevant in view of an unregulated and fragmented market. Without expecting a specific “cause-and-effect link” between such a framework and success, the proposal gives no clear indications about the intentions and the key elements for the development of the framework. This is surprising because this policy dialogue is mentioned as a key factor for the BRT project so far. | See response 1 above. |
| 8. | It should get an identity in its own – instead of a general “add-on” to a follow-up project of the World-Bank. | The Team agrees. Efforts have been made in the PAD to show that the current project stands on its own. |
| 9. | The measures and actions planned should be denominated and they should be made more specific – particularly also with regard to GEF-related topics (like energy efficiency, vehicle fleet renewal, maintenance). | Agreed. Specific denominated actions and measures were unavailable at the time of PIF submission because dialog was ongoing with both the government and other development partners (AFD). The underlying project will improve energy efficiency of public transport operations (with probable spillover effects to general traffic), while GEF funds will focus on incrementally inducing mode switching. |
| 10. | The expectations of the effects should be indicated in order to allow for an adequate monitoring. | Agreed. Refer to Annex 3 for detailed monitoring framework. |
| | The process, respectively the continuation of the process to form a policy and regulatory framework should be described in more detail. | A key objective of the project is strengthening LAMATA, one of whose functions is to define the policy and regulatory framework in Lagos. Please see response 1 above and Annex 1 for more details. |
| 11. | The resources for the different elements should to allocated more specifically – and not just as a lump-sum value, particularly in component 3. | Agreed. Refer to Annex 5 for detailed resource allocation. Note that PIF Component 3 is not Component 2 in the proposed project. |

| | <i>Comments from the United States</i> | |
|-----|---|---|
| 12. | Given institutional concerns, the World Bank should exercise solid fiduciary oversight on procurement and the granting and monitoring concessions. | Agreed. This is fundamental to Bank fiduciary responsibility on any project. |
| 13. | Will the project include mechanisms to generate feedback from local communities utilizing the public transport system? This could enhance successes of the project in maintaining and supporting the transport changes. | <p>Yes. This suggestion has been incorporated into the design of the subcomponent “BRT Design, Communications and Media Strategy. The team believes that this is actually a key aspect of maximizing CO₂ emissions reductions.</p> <p>Please see the section on stakeholder involvement (C. 7) in the PAD.</p> |

| Comments by GEF secretariat at time of PIF review | Team response |
|--|---|
| <p>Will the project deliver tangible global environmental benefits?</p> <p>Explanations are given on the difficulty of estimating GEB for transportation projects and the CO₂ indicator has been added to the outcome matrix under Component 3. It is understandable but still by the time of CEO endorsement, climate change benefits need to be estimated in detail, including its baseline scenario, as much as possible.</p> | <p>We have included an estimate of CO₂ reduction in Annex 15 (Incremental Cost Analysis)</p> |
| <p>Is the project design sound, its framework consistent and sufficiently clear (in particular for the outputs)?</p> <p>Almost all the issues are addressed properly. However, it is advised that in the phase of the project design and estimation of GEB, some issues such as old public transport vehicles, absence of suitable regulatory frameworks etc. need to be taken into account in addition to the effects of the modal shift.</p> | <p>See some of the responses above.</p> |

| Comments & suggestions from STAP review | Team response |
|--|-------------------------------------|
| <p>The Project describes a number of formidable barriers including the absence of transport regulatory framework, fragmented institutional arrangements, lack of capacity and awareness among policy makers on sustainable transport options. While the project component 1 aims at improving local capacity to plan, implement, and monitor public transport services, it does not address the issue of the multiplicity of transport stakeholders in two cities and lack of the coordinated policy framework for planning and enforcement. There is a need for a scientific analysis of the barriers and ranking of them. A scientific method such as AHP could be adopted for identifying and ranking the barriers.</p> | <p>Please see response 1 above.</p> |

| | |
|---|--|
| <p>The PIF indicates that there are no related initiatives in the transport sector in Nigeria. However, the World Bank was instrumental in setting up Lagos Metropolitan Transport Authority (LAMATA) that implements the Lagos Urban Transport Project (LUTP) that aims to improve and sustain an efficient public transportation system in Lagos. LAMATA currently operates BRT corridor of 22 km length. How does project component 3 relate to the ongoing BRT efforts? What are the lessons learned and how are they to be used in the proposed development of the BRT system?</p> | <p>The question of how now-component 2 relates to past BRT efforts is addressed extensively in the PAD. For lessons learned from this experience and incorporated in the project design, we refer to Section B.4 of the PAD</p> |
| <p>The project concept states that BRT system will facilitate a transport modal share shift. What criteria have been used in selecting this particular technological and policy intervention? Why other transport modes have been omitted? In addition to being the second most populous city in Africa, Lagos is also an end point of the three Trans-African highway routes and the port with extensive infrastructure. How project interventions related to capacity building take this into consideration?</p> | <p>For a detailed discussion of alternatives considered, refer to Section B.5 of the PAD. Generally, BRT has been pursued because it is the most cost-effective mass transport option, so, for a fixed amount of money to invest, BRT can affect the travel pattern of the greatest number of people compared to heavy rail, light rail, or conventional buses. There have been no explicit efforts to address issues related to freight transport logistics in the present project.</p> |
| <p>Proponents are advised to analyze specific risks and response measures related to slow take-up of the BRT option.</p> | <p>The Team is not clear what is meant by "slow take-up of the BRT option". On the contrary, based on available evidence, the BRT-lite has been embraced by the population of Lagos as a whole, and has generated substantial demand for expansion of the service into a system. For specific details on measures included in the project design, please see the PAD for details: (section C.7 Stakeholder involvement, Section 5 Risk and mitigation measures)</p> |
| <p>During the project preparatory phase, detailed information on the baseline scenario including existing transportation framework and baseline emissions for both cities should be provided in order to evaluate potential project's impacts on GHG emissions.</p> | <p>The team has done so for Lagos. The team has had little engagement with Kano city authorities. Efforts will be made as part of this intervention to engage Kano city authorities during implementation. As observed earlier, the GEF funds will be used to develop a strategic transport plan for Kano (that is, help other parts of Nigeria begin to learn from the sustainable transport experience in Lagos), and to develop market studies and a communications plan to target those segments whose change in travel behavior would most contribute to a reduction in CO2.</p> <p>However, to undertake a proper transport CO2 baseline study for Kano would require substantially more resources than are even being proposed for the Kano study itself.</p> |

ANNEX C: CONSULTANTS TO BE HIRED FOR THE PROJECT USING GEF RESOURCES

| <i>Position Titles</i> | <i>\$/ person week*</i> | <i>Estimated person weeks**</i> | <i>Tasks to be performed</i> |
|---|-----------------------------|-------------------------------------|--|
| For Project Management (No GEF resources used) | | | |
| Local | | | |
| International | | | |
| Justification for Travel, if any: | | | |
| For Technical Assistance | | | |
| Local | | | |
| Public transport service procurement and tendering | 1500 | 86 | Provide support for public transport service procurement and tendering, service contract design, and contract monitoring and management |
| Transport survey specialist | 1500 | 43 | Conduct origin-destination surveys, on-board surveys |
| Data analyst | 1250 | 229 | Collect and analyze data |
| Technical assistance | 1000 | 229 | Support staff |
| International | | | |
| Communications specialist | 3000 | 64 | Design and implement stakeholder outreach plan; conduct information collection exercises, focus groups, and media analysis to better understand how travelers perceive public transport service |
| Public transport planning and service specialist | 3000 | 77 | Assist in designing and implement surveys of all current public transport supply in the metropolitan area; identify the core public transport network and make recommendations for its rationalization; design and implement survey of passenger transport permits |
| Transport operations specialist | 3000 | 68 | Design and implement a survey of passenger priorities with regard to the quality of service delivery; prepare service specifications for the core public transport network; identify priority investments for passenger facilities in the network |
| Travel behavior specialist | 3000 | 73 | Design program to understand travel behavior, traveler sensitivities, and traveler satisfaction; develop survey instruments; oversee survey implementation; analyze results; provide feedback / input for operational & system design |
| Transport planner | 3000 | 62 | Conduct demand analysis, generate demand forecasting model, identify load factors for selected corridors, fare collection systems |
| Environmental management | 3000 | 68 | Provide support to LAMATA for: a) |

| | | | |
|---|------|-----|--|
| specialist | | | ambient air quality monitoring; b) vehicle emissions monitoring; c) modeling of GHG emissions. |
| Transport master plan consultants | 3000 | 300 | Work with Kano to develop public transport master plan |
| Financial specialist | 3000 | 77 | Financial modeling (capital, operation, maintenance), estimate revenues, fare and service elasticities, review operation and fare collection cost components |
| Social scientist | 3000 | 68 | Design and conduct social impact surveys, prepare environmental and social impact plans |
| Master planning consulting firm | 3000 | 300 | Work with Kano to develop public transport master plan |
| Video production | 3000 | 85 | Develop informational video & other elements of media strategy |
| Justification for Travel, if any: Study tours for policy makers and operators are included in the proposed GEF-funded components. Experience shows that first-hand observation of successful functioning systems is an important tool for generating buy-in from key stakeholders. Allowance is also made for travel to Lagos and Kano for international consultants. | | | |

* Provide dollar rate per person week. ** Total person weeks needed to carry out the tasks.

ANNEX D: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS

This project was prepared without the use of PPG funds.

ANNEX E: CALENDAR OF EXPECTED REFLAWS

Not Applicable

ANNEX F: PROJECT RISKS AND MITIGATION

| Risk | Rating | Mitigation measures | Residual Risk Rating |
|--|--------|--|----------------------|
| Political commitment to introduction of a large scale PT reform program may be weak. | S | Government buy-in demonstrated by its support for project phase one by two successive elected Governors; as part of implementation of LUTP, LSG has demonstrated ownership by introducing institutional, legal and regulatory reforms in the public transport sector; a user fees supported Transport Fund has been created to finance public transport investments. | M |
| Multiplication of agencies with overlapping responsibilities at federal, state, and local government levels may result in poor coordination. | S | Establishment of LAMATA has been critical to structural reform of the Lagos transport sector. This has helped in streamlining responsibilities, structured relations with federal, and other state agencies. | M |
| The LSG may not continue to provide support to LAMATA | M | LAMATA has been supported by two successive state Governors and is gradually entrusted with broader urban transport responsibilities, including regulating bus industry in the whole city, planning for strengthening and expansion of commuter rail, development of a transport strategic plan, etc. | M |
| Sustainability of the proposed reforms may be in question due to weak revenue base and low cost recovery. | M | In the past year, LSG has restructured Motor Vehicle Administration to dedicate a part of the taxes to the Transport Fund; LAMATA intends to achieve an expanded revenue base, improve revenue collection, and cost recovery, as well successfully operate the Transport Fund. | M |
| Effective enforcement of the BRT corridor may not be achieved; could lead to deterioration of operating conditions, either due to high level of traffic violations or encroachment by curbside traders and street hawkers. | M | LAMATA together with LASTMA has been very effective in successful implementation of traffic management along the demonstration corridor—enforcement reinforced by regulations and implementation of penalty clauses; the proposed project would further strengthen the capacity of institutions dealing with traffic management and enforcement. | L |
| By design, many of the existing operators will be displaced from the franchised route. As a result, private bus sector may not participate in | S | Key lessons from LUTP: use market knowledge to integrate operators in rationalized bus system; build on existing operational capacity, self-regulation, flexibility, retain cost-effectiveness. Stakeholder buy-in is critical and LAMATA | M |

| Risk | Rating | Mitigation measures | Residual Risk Rating |
|---|--------|---|----------------------|
| <p>initial stages and frustrate efforts to regulate the sector.</p> <p>Operators may be resistant to shifting from self-regulation to contractual obligations, law enforcement.</p> | | <p>has demonstrated this understanding by working with the private sector during implementation of the demonstration project; a number of study tours and discussions forums were organized for the bus operators' unions to benefit from the new experience.</p> <p>The contracts for operating the new BRT routes will be awarded through competitive bids.</p> <p>The co-operation of the current controlling association (NURTW) has been sought in this regard. Union officials who are already fleet operators will be encouraged to join the pilot scheme, and provided with incentives for this purpose. Drivers and mates currently working in the corridor are offered training in order to adapt to the large buses that are now operated. Clearly this is a selective process, as the numbers needed will decline significantly in comparison with current practice. The reported high labor turnover will make this easier for a reduction in numbers. Owners of minibuses currently provided on daily hire will also be affected. An incentive for their migration will be provided by an intensive vehicle inspection campaign in the corridor. In addition, a properly structured social mitigation plan will be developed prior to implementation, which would include retraining programs, micro-credits, entrepreneurship classes, etc.</p> <p>Additionally, the approach taken is to introduce competitive tendering on select routes while leaving existing operators a high degree of freedom away from the BRT corridors</p> | |
| <p>Floater, illegals, unaffiliated operators may resist change and try to cause trouble both at political and street level.</p> | S | <p>Initial pockets of dissent on demonstration project were met with government's resolve to see successful pilot implementation and adequate information, education and communication; an effective communication strategy and user feedback system would be developed as part of project design.</p> | M |
| <p>Traditional operators fail to develop the ability to bid successfully.</p> | M | <p>Formation of transport cooperatives to assist knowledge dissemination and bid process education as part the proposed project would build their capacity.</p> | M |

| Risk | Rating | Mitigation measures | Residual Risk Rating |
|---|---------------|---|-----------------------------|
| Residents of adjoining properties may be affected adversely especially during the construction period; possible resistance from car users who would see part of the road space taken out from general traffic | S | The concern of the residents will be addressed through an intensive communications plan and a participation strategy developed as part of the project design; residents along the corridor have been extensively consulted and a call center is set up to address any specific concerns. Implementation of BRT Lite suggests that impact on 'other traffic' is minimal (and at times even beneficial for other traffic) because of improvements in traffic regulation and organization; in absence of exclusive lane for buses, part of the carriageway is used up anyway by numerous minibuses for parking, passenger pick-up, thus reducing the road width available for vehicular traffic. Interviews with car drivers reveal an appreciation for BRT and even willingness to park-and-ride. | M |
| To project components | | | |
| Financing for procurement of large good quality buses is constrained and past experience acts as a deterrent to banks for their involvement in the sector. | M | The constraints have been overcome to some extent in the ongoing operation. The approach used is to provide security of repayment to the financier by: a) providing the bank the initial lien on revenues collected from services; and b) having the participating operators to accept collective liability for all obligations. With the success of bus financing arrangements in LUTP, a number of other banks have come forward to provide the necessary financing. | L |
| Construction delays or cost overrun may jeopardize project completion | M | The LUTP was implemented from planning to construction stage in less than 16 months and within cost; since then, LAMATA has gained considerable experience and has further strengthened its planning and monitoring capacity | L |
| Lack of coordination with utility agencies may delay construction of BRT corridor | S | Inter-ministerial committee incorporating utility agencies has been set up and meets regularly for effective coordination. | M |

ANNEX G: RESPONSE TO GEFSEC COMMENTS IN REVIEW SHEET OF SEPTEMBER 21,2009

GEFSEC Comment

PAD removed Federal Ministry of Environment from the list of other Executive Partners from the PIF. Please explain the reason and justification of it.

A key partner needs to be identified in Kano as well.

Task Team Response

During initial discussions, it was thought that the Federal Ministry of Environment-- as GEF Focal Point Ministry--might play a role in the project. However, as the project developed, it was decided that the project would be better managed without a direct executive role for the Environment Ministry. They are still an important partner, but play no role other than as GEF focal point. The first project (LUTP) was also implemented by LAMATA which has well developed fiduciary systems (procurement, financial, disbursement) and is in an excellent position to execute LUTP 2. Including MoE also as an executing partner would make accountabilities and responsibilities less clear and difficult for Bank to manage and monitor.

The Team agrees that the description of the Kano component should have been more detailed in the submission. The strategy for the GEF intervention is to improve the effectiveness of the BRT system in Lagos and to begin building the basis for similar activities in Kano. The implementation and monitoring of activities in Kano will be carried out by LAMATA (from fiduciary perspective), as the overall project implementer. LAMATA is designing the activities associated with this component in cooperation with the Government of the State of Kano, through the Kano State Transport Authority. That dialog is ongoing, but at present, it appears as if the activity will include a strategic plan for mass transport in Kano (including initial traffic and transport surveys) and relevant training opportunities. Information about transport in Kano is at an elementary state, and so these activities are essential to lay the foundation for future follow-on activities.

Even at the PIF stage, the need to have comprehensive perspective and to address other issues such as old buses, poor maintenance, lack of the coordinated policy frameworks for planning and enforcement, and absence of suitable regulatory frameworks was pointed out by Council members, STAP and GEF sec. The explanations on the difficulty to address those issues are given only for procurement of new buses. But at least the other elements should be included in the scope of the output/outcome of the project such as development of suitable regulatory framework and coordinated policy framework.

The project is designed to strengthen LAMATA who are the key agency involved in coordinating policy frameworks in Lagos. The strategy is that through empowering and strengthening LAMATA in these areas, the ability to deal with the policy and regulatory issues will be strengthened indirectly. But this is essentially an investment activity that focuses on improving the efficacy and efficiency of the Lagos BRT system, and beginning the process of transferring these lessons to Kano. It is important to recognize that the \$4.5m GEF contribution, even when coupled with the \$300m of cofinancing investments, is not a magic bullet to all transport issues facing Lagos and Kano, together with a population of about 30 million.

As pointed out during our initial response, development of a suitable regulatory framework and coordinated policy framework is central to the success of this project. As part of the enabling environment, government together with development partners will finance investments in improving infrastructure (road network, bus stops, terminals, signals, etc), creating bus rapid transit systems, and developing a regulatory framework for organized operation of bus services. The specific outcome indicator included for Kano, "strategic conceptual transport planning framework developed" to be financed by GEF will include development of an appropriate regulatory framework. For Lagos, efforts are on-going as recognized earlier. Development of a successful BRT system in Lagos, which is one of the outcome indicators, includes implementation of a regulatory framework. Failure to implement a suitable framework will compromise BRT system in Lagos.

On further discussions with the implementing agency, there is a felt need to upgrade the existing service plan framework and rationalize the systems operation. As a result \$2.0 million of the GEF resources will be allocated to a new

sub-component designed to upgrade the systems planning, develop a comprehensive management framework, and rationalize system operation. Once the BRT system is in operation, there will be a need to strengthen bus system integration, including the tributary bus operations feeding into the BRT corridor, strengthening real-time passenger information system, expansion of the stations and main terminals. This would improve run time of buses and greater acceptability of the public transport system, particularly among car users, with a significant impact on reducing GHG emissions.

Now each component is rather independent. Comprehensive planning/ strategy (of this project) needs to be added as a component to coordinate and monitor all the components. Please note overall impact of the project in GEB should be captured.

At this stage, the comprehensive planning has been undertaken using local Nigerian resources. The coordination between the capacity building elements focused on Kano and the support to the BRT expansion will take place through LAMATA's involvement. Many of the activities included under Component 1 will help build LAMATA's capacity to undertake further comprehensive planning activities in the future. However, we are not proposing additional activities focusing exclusively on coordination and further planning, except in helping Kano adopt the lessons and experiences from Lagos.

The four project components are functionally interlinked. Component 1 (Institutional development) is required to strengthen planning and regulatory capacity to successfully implement BRT and carry out road maintenance activities; Component 2 is to construct the BRT and related infrastructure, including development of consultation and media strategy necessary for successful implementation of BRT, and acceptance of the reform program; Component 3 is investment for road network improvements, which are necessary to ensure that the BRT and its feeder system operate in a reliable, integrated manner, including sidewalks for people and roads for vehicles; and Component 4 is to monitor implementation of different project activities.

It is not clear what will be done in Kano city. Further elaborations are needed. In addition, it should be clarified who will be responsible for implementing and monitoring the activities in Kano. Even in annex 4 (Detailed Project Description), 1.G has just one sentence! It should be noted that tangible outputs/outcomes should be identified in Kano. Please explain the relevance of other components to Kano as well.

Now GEF fund is planned to be used just for very soft component (support to Kano and BRT consultation, etc.). It should be clarified that it will be used more tangible elements and elements lead to GEB. And it is just too much to spend 4M just for public awareness in Lagos.

The Team agrees that the description of the Kano component should have been more detailed in the submission. The strategy for the GEF intervention is to improve the effectiveness of the BRT system in Lagos and to begin building the basis for similar activities in Kano. The implementation and monitoring of activities in Kano will be carried out by LAMATA, as the overall project implementer. LAMATA is designing the activities associated with this component in cooperation with the Government of the State of Kano, through the Kano State Transport Authority. That dialog is ongoing, but at present, it appears as if the activity will include a strategic plan for mass transport in Kano (including initial traffic and transport surveys) and relevant training opportunities. We will provide more details in the revised submission.

We have now revised the project design, as observed earlier, to reduce the allocation for raising public awareness from \$3.5 million to \$1.5 million. —This is a small fraction of the total project and extremely important as the task team believes this particular component is considered incremental. We are trying to avoid a situation that is fairly common to these projects where the client country is willing to borrow to build the system and hardware, but may shortchange the activities required to make the investment a success (ie., the "soft" costs). The GEF money is being utilized for improving the effectiveness/efficiency of an investment which, if successful and the ridership improves, will have tremendous global environmental benefits. Without such an emphasis, there is a genuine risk that the ridership will not increase the way it is intended.

GEF resources are focused on making the investment activities more effective in Lagos, removing barriers to the effective utilization of the expanded BRT in Lagos and laying the foundation for future investments in Kano, based upon Lagos

experience. The activities associated with the Lagos component are more substantial than simply "public awareness"; the proposed component is for development and implementation of a comprehensive consultation, communications and media strategy, that LAMATA is currently lacking. Until now, LAMATA's public awareness campaigns were focused on smooth implementation of the BRT lite, and to some degree addressing ongoing service problems with it. The consultation, communications, and media strategy contemplated for the present project addresses 3 objectives currently not even on the radar screen of LAMATA, with global benefits. First, with the expanded BRT services, LAMATA's service offerings are expected to differentiate for more market niches. As that occurs, the level of complexity that needs to be communicated expands substantially. Second, and related, the efforts to attract non-users to the BRT system, particularly through identification of those niche markets, tailoring of services, and communication to targeted audiences (through consultative processes) are going to expand substantially. Third, there will be more concerted efforts to communicate the environmental benefits of BRT to the general public. For all these reasons, the team believes that the proposed revised allocation of \$1.5 million for consultation, media, and communications is an appropriate allocation for the needs to raise public awareness and drive up the ridership for maximum environmental benefit on the new BRT system.

Is the global environmental benefit measurable? Not sufficient. It tries to monitor GEB of BRT component only. Arrangements for results monitoring (table 2) are made only for BRT relevant items. The GEB of all the other components including road network improvements, activities in Kano need to be captured and monitored.

Climate Change benefit estimation is weak. It is limited only for BRT component. The overall impact of the project in terms of CO₂ reduction should be provided.

For Lagos, the Task Team views the BRT component as the principal output needed to deliver the project's Development and Global Environmental Objectives. The works for this output are funded under Component 2 of the overall project, but all of the components and sub-components (with the exception of the Kano sub-component) are essential for attaining the desired objectives.

The Task Team respectfully submits, then, that this comment could or should be recast as follows: 1) Can the marginal or incremental impact of the CO₂ emissions abatement for the project as a whole be attributed for individual components or sub-components? and 2) Are there independent CO₂ effects of individual components (leakage) that might reduce or enhance the overall GHG impact of the project? The general answer to these questions is basically No in both cases, with the exception of Component 2E. The Team has revised the Annex 15 in the PAD to be more precise on this issue. A more detailed discussion of this issue is provided in Annex H.

ANNEX H: COMMENTS ON COMPONENT-BY-COMPONENT QUANTIFICATION OF CO₂ EMISSIONS ABATEMENT

In the context of dialog with GEFSEC, the Task Team was asked to estimate the CO₂ emissions impact of the "non-BRT" components of the project. The Team views the entire project (with the exception of the Kano technical assistance component) as integral, mutually supportive components that collectively serve to deliver the BRT and its attendant developmental and environmental objectives. Consequently, we do not agree with the characterization by the GEFSEC reviewer. However, this does raise some questions about whether the incremental effect of individual components or sub-components can be discerned, and whether there are independent effects of individual components or sub-components that may reduce or enhance the overall CO₂ emission impact of the project. We address these issues for each sub-component, in the table below.

Components

1.A: Training, study tours and twinning programs to provide LAMATA technical staff with knowledge of current developments and best practices in public transport systems delivery and strategic planning

Team comment on quantification of CO₂ emissions abatement

This activity receives no GEF funding.

Incremental: There is no way to determine the incremental contribution of this component to direct CO₂ emissions abatement from the project.

Independent: In theory, we could estimate indirect CO₂ emissions abatement effects (that is, of broader adoption of measures beyond those specifically undertaken in the project) if best practice observed in these activities is adopted in Lagos and Kano. However, such estimates would require base tools and data that are not presently available in these cities, and we feel that we would only be promulgating mythical numbers.

1.B: Construction of LAMATA corporate head office to provide a functional and economically viable building with public transport control centre and equipments to improve institutional effectiveness and promote its sustainability;

This activity receives no GEF funding.

Incremental: This activity is necessary to the effective functioning of LAMATA, but it is impossible to assign a CO₂ emissions abatement to it.

Independent: The Bank Team is working with LAMATA to help boost the LEED rating of the building as much as possible. This may have additional CO₂ emissions abatement benefit, but is largely tangential to the project.

1.C: Update of LAMATA's planning databases and tools, including travel demand and network models, global information system files by activities such as transport demand, supply and performance data collection, surveys, and model development and upgrading

Incremental: This activity is precisely intended to help build LAMATA's capacity -- among other things -- to estimate CO₂ emissions abatement in the future. By itself, therefore, it probably makes no marginal contribution to the GHG emissions reduction expected from the project. But without it, future activities in this area will be unable to even understand what it is that happening in the sector.

Independent: Presumably, the ability to measure CO₂ emissions (and other transport criteria) more accurately will enable LAMATA to better account for it in future decisions, but it is impossible to quantify such an effect.

1.D: This sub-component would finance administrative and operating costs for LAMATA, staff salaries, and other recurrent expenses.

This activity receives no GEF funding.

Incremental: It is not possible to discern the incremental effect of

Independent: No discernible independent GHG impacts.

1.E: Creation of Traffic Management Units (TMUs) to implement transport policies of the state government at local government levels. Three TMUs will be established in Eti-Osa, Ikeja, and Ikorodu. This would include: (a) support to LAMATA to develop and implement legal, administrative, and procedural templates for the creation of these TMUs (including critical communications strategies); and (b) support to the TMUs themselves, once created, to carry out core tasks, including: (i) development of a local area traffic plan; (ii) development of a parking policy, implementation and management plan; (iii) development of traffic solutions to address accident black spots; and (iv) action on remedial works and planned maintenance on priority local roads.

This activity receives no GEF funding.

Incremental: It is not possible to estimate direct incremental CO₂ emissions abatement from this component, because the specific activities the TMUs will undertake is not yet known, and different TMUs might undertake different activities.

Independent: Successful functioning of TMUs should be expected to lead to further CO₂ abatement from the sector. Using the ABC identity of CO₂ emissions reduction discussed in Annex 15b of the PAD (ICA), we can say the TMUs' activities will generally focus on reducing vehicle activity and energy intensity of vehicle operations associated with inefficiencies of the network. However, we cannot quantify these independent effects in any credible fashion with the resources available.

1.F: Studies and training to develop public transport delivery capacity in Kano.

This activity receives GEF funding.

Incremental: Not applicable. This is the sole sub-component whose successful outcome does affect the successful implementation of BRT expansion in Lagos.

Independent: This activity will produce no direct CO₂ emissions abatement benefits for Kano. It will have indirect abatement benefit, if the measures facilitated by the TA are adopted, and if the training improves the speed and skill with which BRT services are delivered in this emerging megacity. However, at present, there is such a paucity of information available about transport in Kano, that it is not possible to derive an estimate of the indirect CO₂ emissions abatement effect of the GEF activities there. We would expect the orders of magnitude of potential effects to be similar to those observed in Lagos. To the extent permitted from available tools and data, some effort at quantification of CO₂ reduction potential of BRT in Kano may be included in the technical assistance. The activities in Kano are themselves intended to facilitate the availability of such data in the future.

This activity receives no GEF funding.

2.A: BRT infrastructure construction and supervision, including interchange and traffic management for corridor from Anthony to Obalende by way of Oshodi and Mile 2.

Incremental: It is not possible to estimate the incremental contribution of the physical works in isolation of the other components.

2.B: BRT infrastructure construction and supervision, including interchange and traffic management for corridor from Mile-12 to Ikorodu (extension of LUTP / BRT-Lite corridor).

Independent: There are likely to be CO₂ emissions associated with construction and maintenance of the infrastructure. These emissions have not been evaluated in the assessment of overall project CO₂ emissions.

2.C: Mass transit alternative analyses studies.

This activity receives no GEF funding.

Incremental: No incremental impact on project CO₂ emissions.

2.D: Development of a background bus feeder system as a compliment to BRT and urban rail investments.

Independent: These studies will include assessments of CO₂ emissions under different scenarios evaluated as part of the range of benefits, costs, and impacts to be assessed under this component. Since many criteria and co-benefits will determine which, if any, scenario is implemented, it is not possible to speculate on how much CO₂ would be abated in practice.

This activity receives no GEF funding.

Incremental: It is not possible to provide *ex ante* estimates of the specific net contribution to project CO₂ abatement by this component, because the sophisticated assessment tools and data are not presently available. If component 1C is successfully implemented, it may be theoretically possible, though computationally quite difficult, to assess the specific net contribution of this component to CO₂ emissions abatement at a later date. Such a calculation would involve developing a travel demand forecast *with* the bus feeder system, a travel demand forecast *without* the bus feeder, deriving the effect of each scenario on bus operations and ambient traffic conditions, calculating the CO₂ emissions associated with those operations and conditions, and then taking the difference as the specific impact of the bus feeder system. Resources have not been set aside to perform this analysis.

2.E: BRT consultation, communications and media strategy.

Independent: There are theoretical leakages that might be associated with this component, such as CO₂ emissions associated with the manufacture of the buses, and their maintenance, but these have not been assessed.

This activity receives GEF funding.

Incremental: The GEO associated with this component is specifically an increase in the percent of trips made by BRT among households with access to cars and 2-wheelers. It is possible to estimate the

incremental contribution of this component if this outcome is attained, and *ex ante* calculations suggest that roughly 2.8 kilotonnes per year can be associated with it, if certain assumptions hold, as documented in the revised Annex 15a. The program of project monitoring the Team has designed will allow for *ex poste* assessment of this incremental contribution, as well.

2.F: Upgrade and rationalize bus system operation

This activity receives GEF funding

Incremental: Upgrading of BRT facilities are all worthwhile objectives once the network is expanded and connected. However, the real GHG reductions would result from improved run times and reduced bus-km. This in turn requires an upgraded service planning to integrate not only bus services along the BRT but also the tributaries and service lanes and a rationalization of the bus system, expansion of the stations (so as to allow overtaking and separated queuing for different services) and the main terminals (to reduce bus queuing and maximize passenger throughput).

3.A Routine maintenance: these are maintenance activities of road surface and drainage systems to be executed by small scale labor based contractors covering the 532 km of the Declared Road Network. A key objective of this sub-component is enhancement of job creation and poverty alleviation.

3.B Periodic maintenance: this component will finance bituminous overlays of 15 km of strategic roads which are degraded but structurally still intact to ensure that they remain in a maintainable condition. Such works are executed by medium scale contractors.

These components receive no GEF funding.

Incremental: These activities are critical for the PDO and overall success of the BRT. However, it is not possible to estimate their incremental contribution with the resources available, because doing so would involve sophisticated operational, financial and technical analysis of the with- and without-subcomponent cases. Those analyses, in turn would require either extensive data collection efforts or extremely heroic assumptions that would merely amount to

3.C Rehabilitation: This component will finance repair works on 7 km of strategic roads in the metropolis identified to be structurally damaged. Such works are carried out by large scale contractors.

the promulgation of mythical numbers.

Independent: These activities will have no substantive independent impact on CO₂ emissions.*

4.A. Technical assistance, equipment, vehicles, office equipment, and other operational support for implementation.

These activities receive no GEF funding.

4.B. Institutional, technical, and financial audit.

Incremental: It is not possible to identify the specific incremental contribution of these activities to project CO₂ emissions abatement.

4.C. Outcome monitoring of transport and social impact indicators, environmental impact indicators and capacity development indicators.

Independent: There are no identifiable independent transport CO₂ emissions effects from these activities. However, there are likely substantial follow-on CO₂ emissions abatement benefits from both the outcome and air quality monitoring activities. The outcome monitoring will develop capacity and data to allow LAMATA and others quantify effects of investments and policies. The air quality monitoring will provide useful information on an important co-benefit of BRT development – cleaner air – which in turn can lower the calculated CO₂ abatement costs for future BRT investment.

4.D. Air quality monitoring along BRT corridors. This includes purchasing of new air quality monitoring equipment.

* It may be argued that road rehabilitation might have some impact on transport CO₂ emissions independent of the BRT. While there are theoretical reasons that such an independent impact is possible, in practical terms, the Team expects such an impact – if it can even be measured accurately – to be negligible. In terms of the ABC identity elaborated in Annex 15b, road rehabilitation can be expected to have some impact on A, in that if it improved the reliability of a link and reduced the travel time along the link, one would expect an increase in vehicle activity along the link, all else equal. Whether that increase along the link represents a net increase in VKT on the network as a whole would need careful network-level analysis. Road rehabilitation can also be expected to have some impact on B, since smoother flowing traffic associated with better road conditions would be expected to reduce vehicle fuel intensity for vehicles operating on that link, compared to no rehabilitation. Again, whether such smoother traffic could be sustained against a traffic inducement effect would, in theory, require a careful network-level analysis. However, the roads to be rehabilitated are not isolated; they are fully embedded in larger transport networks, and in a city of 18 million people, the real constraint is overall traffic congestion on the network at-large. Any effect on A or B from road rehabilitation would be likely be lost amidst network effects and the broader reality of nearly ubiquitous traffic congestion that characterizes much of Lagos' transport system. The Team believes therefore that evaluation of the independent impacts of road maintenance and rehabilitation on climate change, when viewed in the broad context, is not worthwhile.

