Request for CTF Project Preparation Grant (PPG)

A. TASK MANAGER FOR CTF FUNDING REQUEST

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B. PROPOSAL SUMMARY

1. Geographic Focus of Proposed Activity:

X	Individual Country *(please specify)*: Republic of Egypt
	Regional or Multi-Country *(please specify)*:
	Global:

2. Project Title:

Urban Transport Infrastructure Development Project

3. List of Deliverables from CTF Project Preparation Grant: *(e.g., analysis, study/report, training, seminar, etc.)*

The proposed Urban Transport Infrastructure Development Project has the following two major thrust areas:

- Institutional strengthening for improved urban transport planning and public transport service delivery, which will comprise the following sub-components:
  - *Sub-component 1.1*: Establishment of and capacity building of the Transport Regulatory Authority for Greater Cairo; and
  - *Sub-component 1.2*: Modernization and strengthening of the Cairo Transport Authority.

- Enhance the supply and quality of public transport and reduce congestion, which will comprise the following sub components:
  - *Sub-component 2.1*: Transformation of the Heliopolis Tram into a Light Rail Transit (LRT) and its extension from Heliopolis to New Cairo City;
  - *Sub-component 2.2*: Replacement of about 500 old buses of the Cairo Transport Authority (CTA) and modernization of some of the depots;
  - *Sub-component 2.3*: Inter-modal integration of public transport services with common fare collection systems across all public transport modes; and
  - *Sub-component 2.4*: Comprehensive traffic management measures, including intersections improvement, coordinated traffic lights and bus priority lanes to improve traffic flow on a 20 km pilot corridor.

The **CTF Grant** will finance specifically the following studies:

Activity 1: preliminary studies for Sub-components 1.2, 2.3 and 2.4: Modernization and strengthening of Cairo Transport Authority (CTA), intermodal fare integration, and corridor improvement:

- *Task 1*: Studies for Modernization of and strengthening of the Cairo Transport Authority (sub-component 1.2 of the Urban Transport Infrastructure Development Project);
- *Task 2*: Studies for Inter-modal integration of public transport services with common fare collection systems across all public transport modes (sub-component 2.3 of the Urban Transport Infrastructure Development Project); and
- *Task 3*: Studies for Corridor Improvement which will include the enhancement of operations and safety on a selected congested corridor (10-20 km long and up to 1 km wide) (sub-component 2.4 of the Urban Transport Infrastructure Development Project).

Activity 2: design studies and bidding documents for Sub-component 2.1 : Transformation and extension of the Heliopolis Tram in a LRT (sub-component 2.1 of the Urban Transport Infrastructure Development Project).

Activity 3: detailed technical studies as required for Sub-components 1.2, 2.3 and 2.4 as well as for Sub-components 2.2.

C. PROPOSAL DETAILS

4. Summary of Proposed Activities[1]:

The CTF preparation funding will be used to carry out analytic work to enhance the technical, managerial and financial project design, namely it will be used to carry out the studies to perform a number of tasks as identified in the overall CTF Investment Plan as follows:

Activity 1

- **Under Task 1**: (1.1) revise the organization structure and manpower profile of the Cairo Transport Authority (CAT), (1.2) review the current transport service planning systems, (1.3) modernize the maintenance systems, workshops and garage facilities, (1.4) upgrade terminals and bus stops, (1.5) and Modernize the management information systems and passenger systems.
- **Under Task 2**: (2.1) review the current fare structures and fare collection systems across different modes of public transport in the Cairo Metropolitan Region, (2.2) consider some of the international best practices in integrated fares and fare collection systems (e.g. Seoul and Singapore), (2.3) assess the different international best practices from the Cairo context and recommend options to be used in Cairo, (2.4) draft terms of reference (feasibility study, bidding documents, related to the bus routes).
- **Under Task 3**: (3.1) corridor selection, (3.2) collection of baseline data for the selected corridor, (3.3) carrying out of a diagnostic analysis on the current situation of the corridor,

[1] CTF preparation funding may be used for:
(a) Analytic work to inform a country's policies and programs
(b) Design of policy reforms and preparation of legislation and regulations
(c) Consultation workshops
(d) Training
(e) Institutional development
(f) Feasibility Studies
(g) Environmental and social impact assessments
(h) Technical, managerial and financial project design

(3.4) development of comprehensive measures, (3.5) prepare procurement plan and terms of reference for detailed designs and draft bidding documents.

Activity 2

- A Japanese PHRD Grant of US$ 720,000 is currently financing specific elements of Sub-component 2.1 the transformation and extension of the Heliopolis Tram to New Cairo American University (31 km), including engineering design and bidding documents. However some additional studies are required and there are not enough funds left under the PHRD Grant so it is proposed to fund the remaining balance of the contract under the CTF.

Activity 3

- Detailed technical studies as required for Sub-components 1.2, 2.3 and 2.4 as well as for Sub-components 2.2. Task 2 and 3 above are developing TORs for further detailed studies. The Grant will finance all or part of these studies and the remaining would be financed under the Transition Fund (see paragraph 10).

5. Rationale for CTF grant funding, including consistency with CTF Investment Plan:

This Urban Transport Development project is part of the original and revised CTF investment plans. It is worth mentioning that the World Bank assisted the Government of Egypt (GoE) through *the Greater Cairo Urban Transport* to identify its investment needs. This proposed short-to-medium investment plan is expected to have a tremendous impact by improving mass transit system, reducing traffic congestion and reducing emission by 1.0 million tC02 per year.

Egypt ranks among the eleven countries showing the fastest growing GHG emissions. In addition, the 2002 National Strategy Studies (NSS) confirmed that the overall energy sector, including transport, will be by far the large source of emissions, reflecting a growth rate of 4.9%. The growth of the GHG emissions in the country is primarily linked to the economic and population growth, as well as to the increasing pace of urbanization. This higher growth rate translates into increasing demand in energy, mainly through higher demand for electricity and transport services. Road transport is the prevailing mode of internal transport in both passenger and freight operations. It is worth noting that in 2003-2004 the volume of people transported by road neared 115.6 billion passenger-km, while the freight transport reached nearly 43.1 billion tons-km. There is therefore an urgent need to utilize all opportunities for more energy-efficient rail and inland waterway transport. In addition, most of the motorized vehicles operate in Greater Cairo Metropolitan Area (accommodating over 20 million motorized person trips and 7 million non-motorized trips daily). Consequently, urban transport is the source of about 2/3 of transport sector emissions (especially in the Greater Cairo Metropolitan area where emissions reached about 13 million CO2 tons/year).

The GoE is committed to low carbon energy development and has taken a number of steps as evidenced by: (i) the preparation with the Bank of an Urban Transport Strategy for Greater Cairo Region that included a short to medium term investment plan, (ii) the scaling up of the replacement of old public buses and private taxis with a fleet operating on compressed natural gas (CNG); (iii) the completion of lines 1 and 2 of the underground Metro and a commitment to finalize line 3 by 2012 and line 4 by 2027, (iv) the identification and preparation of specific clean technology project, namely the development of Light Rail Transit (LRT) AND Bus Rapid Transit

(BRT) systems and the conversion of public buses and private taxis to CNG/hybrid technologies.

The proposed project would be financed by both an IBRD loan (approximate amount of US$ 304 million) and CTF funding in the amount of US$100 million of which US$ 1 million CTF Grant, an IDF Grant of US$ 300,000 and a Grant of the Transition Fund of US$ 5.7 million allocated as follows:

Project Components	**Approximate Capital Cost (US$)**	**Public or Private Sector Contribution (US$)**	**Recommended CTF+IBRD+IDF+TF Contribution (US$)**
Component 1: Institutional strengthening for improved urban transport planning and public transport service delivery			
Sub-component 1.1: Establishment and capacity building of the Transport Regulatory Authority for Greater Cairo	2,500,000		2,500,00
Sub-component 1.2: Modernization and strengthening of Cairo Transport Authority (CTA)	2,500,000		2,500,000
Component 2 : Enhance the supply and quality of public transport			
Sub-component 2.1: Transformation and extension of the Heliopolis Tram in a LRT	520,000,000	320,000,000	200,000,000
Sub-component 2.2: Replacement of buses and modernization of CTA garages	150,000,000		150,000,000
Sub-component 2.3: Intermodal fare integration	30,000,000		30,000,000
Sub-component 2.4: Corridor Improvement	25,000,000		25,000,000
TOTAL	**730,000,000**	**320,000,000**	**410,000,000**

The activities described in Section 4 are in line with the revised CTF Investment Plan for Egypt as they relate to its fourth component, namely the Urban Transport Infrastructure Development Project (IBRD). The requested allocation of US$1million will finance the preparation of activities already identified under the various sub-components of the project, and more specifically: (i) *sub-component 1.2* under Component 1, (ii) *sub-components 2.3 and 2.4* under Component 2. This allocation will also finance a portion of the current contract under implementation for *sub-component 2.1* to supplement the available funds under a PHRD Grant, as outlined in section 4

above and the financing plan in section 9.

6. Government Approval of Country-Specific Activities*: details for the approving authority.*

Name of responsible official: Mohamed Elfaramawy Elesawey, Ph.D., P. Eng		
Position: Executive Director		
Ministry/Agency: Ministry of Transport , Greater Cairo Transport Regulatory Authority of (GCTRA)		Country: Republic of Egypt
Tel: +20-10-23-26-44-33	Fax:	Email: melesawey@mot.gov.eg

D. IMPLEMENTATION AND FINANCING PLAN

7. Implementation Approach: *(a) the implementing entity (e.g. consultants, government officials, etc); (b) for country-specific activities, key counterpart institutions; (c) measures to involve key stakeholders; and (d) how the output of the activity is proposed to be disseminated, including its target audience.*

The Executing Agency for the CTF preparation grant will be the **Ministry of Transport**. The Ministry of Transport will ensure the implementation of the study and the preparation of the proposed investment operation.

Procurement: the procurement of consultancy services for the study will strictly adhere to the World Bank's Selection and Employment of Consultant under IBRD Loans and IDA Credits & Grants, dated January 2011.

Disbursement of the Grant Proceeds will be made in accordance with World Bank procedures as outlined in the Grant Agreement with the Recipient.

Reporting: The Ministry of Transport will prepare progress report summarizing progress as it related to implementation, including update on procurement while highlighting issues and recommending appropriate actions to address them.

The team composition for activity 1 is as follows:

an Urban Specialist (Team Leader), an HR/Social specialist, an Institutional Development Specialist, a PPP Specialist, a Traffic Management Specialist, an Urban Road Engineer, a Parking Management Specialist, a Social Marketing Specialist, two Public Transport Specialists, and three IT Specialists (bus operation, fare integration, and traffic management).

8. Implementation Schedule: *beginning and end dates, as well as major activity milestones.*

The estimate duration of the activity 1 study is 10 months from the launch with a schedule of deliverables provided below. The level of effort is estimated to be about 85 staff weeks of key staff. The contract will be lump sum with 10% paid at signature and payments at the end of each month starting with 2nd month until 10th month according to the following schedule of deliverables.

The estimate duration of the activity 2 is 10 months. The activity is ongoing under the PHRD Grant.

The estimate duration of the activity 3 studies is about 18 months after completion of activity 1.

Table: Implementation Schedule for Deliverables under Activity 1

Task 1	**Task 2**	**Task 3**	**Time from Launch mission**	**Payment (%)**
Advance Payment				10%
Tasks 1.1, 1.2, Draft reports	Task 2.1 Draft Report	Task 3.1 Draft Report	1 month	10%
Tasks 1.1 and Task 1.2 Final Reports and Presentation	Task 2.1 Final Report and Presentation	Task 3.1 Final Report and Presentation	2 months	5%
Task 1.3 Draft Report	Task 2.2 Draft Report	Task 3.2 and Task 3.3 Draft Report	3 months	10%
Task 1.3 Final Report and Presentation	Task 2.2 Final Report and Presentation	Task 3.2 and Task 3.3 Final Report and Presentation	4 months	5%
Task 1.4 and Task 1.5 Draft Reports	Task 2.3 Draft Report	Task 3.4 Draft Report	5 months	10%
Task 1.4 and Task 1.5 Final Reports and Presentation	Task 2.3 Final Report and Presentation	Task 3.4 Final Report and Presentation	6 months	5%
	Task 2.4 Draft Report	Task 3.5 Draft Report	7 months	10%
Draft Final Report	Task 2.4 Final Report and Presentation	Task 3.5 Final Report and Presentation	8 months	10%
Final Report and Presentations	Draft Final Report	Draft Final Report	9 months	10%
	Final Report and Presentations	Final Report and Presentations	10 months	15%

9. Financing Plan: a summary of the financing plan by the major components (the detailed budget should provide further breakdown by these component.

Major Components	CTF Request *(US$)*	Co-financing		Total Cost *(USD)*
		US$	*Source* (e.g., gov't cash or in-kind contributions; donor funds)	
Sub-components 1.2, 2.3 and 2.4: Modernization and strengthening of Cairo Transport Authority (CTA), intermodal fare integration, and corridor improvement	500,000	50,000	Government (in kind)	550,000
Sub-component 2.1 : Transformation and extension of the Heliopolis Tram in a LRT	(*)130,000	720,000	PHRD	850,000
Sub-component 2.3 and 2.4: Intermodal fare integration, and corridor improvement	(**)360,000	2,300,000	Transition Fund	2,660,000
Single Audit	10,000			10,000
Total Financing/Costs	1,000,000	3,070,000		4,070,000

(*) this amount will supplement the PHRD funds which currently finance this sub-component
(**) this allocation will finance some urgently needed detailed design studies based on the TOR of Activity 1 of this assignment. The Transition Fund will finance other needed studies.

E. SUPPLEMENTARY INFORMATION AND MATERIALS

10. Additional Information: *any additional information that may be useful in evaluating the proposal (e.g., related activities which may have been undertaken; planned follow-on activities; etc.).*

In close coordination with the Bank, EBRD is currently preparing a project "Replacement of buses and modernization of CTA garages." This project is aligned with sub-component 2.2 of the proposed Bank funded project and EBRD studies will be used to the largest extent possible. However, CTF grant funding might be used to complement EBRD's studies if needed to develop bidding documents.

Other sources of funds identified are an IDF grant in the amount of US$300,000 (which is used to finance sub-component 1.1) and a potential grant from the MENA Transition Fund in the amount US$5,700,000 (which will further support the TA necessary for the various components).

11. Supporting Material: *List all supporting material including, where appropriate, government approval letters, terms of reference, and detailed budget.*

Supporting Material - ANNEX	
1) Detailed Budget for the Activity[2] 2) Terms of Reference 3) Other	

[2] Eligible Expenditures. The preparation grant will finance expenditures for: (i) consultants' services, local training, workshops and seminars, and (ii) operating costs and office equipment for the implementation management of grant activities not to exceed 10% of the grant amount.
Ineligible Expenditures. The following expenditures will be ineligible: (i) salaries for civil servants in recipient countries hired as consultants or otherwise; (ii) purchase of vehicles; (iii) foreign training and study tours; and (iv) salaries and travel of World Bank Group staff and consultants.

Annex 1: Detailed Budget

	Unit	Quantity	US$	US$
Activity 1: studies for Sub-components 1.2, 2.3 and 2.4: Modernization and strengthening of Cairo Transport Authority (CTA), intermodal fare integration, and corridor improvement	Staff-weeks Travel Hotel/perdiem Total	85 30 400	4,000 2,000 250	340,000 60,000 100,000 500,000
Activity 2:additional studies for Sub-component 2.1 : Transformation and extension of the Heliopolis Tram in a LRT	Draft amendment to existing contract estimated €120,000 out of which about €100,000 (approximately US$130,000) to be financed under the CTF			
Activity 1: additional studies for Sub-component 2.3 and 2.4: Intermodal fare integration, and corridor improvement	Detail breakdown of cost will be ascertained after TORs are developed as part of the Activity 1 above. Estimated cost is about US$2.96 million. Most urgent studies will be financed under the CTF grant for US$360,000 and the balance will be funded under the Transition Fund upon approval of the project			
Single Audit	Lump sum			10,000

Annex 2: Term of Reference

TERMS OF REFERENCE

CAIRO URBAN TRANSPORT INFRASTRUCTURE DEVELOPNMENT PROJECT

PROJECT PREPARATION STUDY

Background

Cairo is facing acute congestion with several underlying causes. The institutional fragmentation makes coordinated action difficult. Public transport services are far short of what they should be in a city of the size of Cairo. Road traffic is poor and needs to be handled efficiently. Significant amounts of public money are being spent by way of subsidy for public transport and by way of subsidy on fuel. Dealing with this requires actions on multiple fronts.

The Government of Egypt is preparing a comprehensive project (Cairo Urban Transport Infrastructure Development project) whose development objective is to improve the efficiency and environmental sustainability of the urban transport system in the Greater Cairo Region. This will be achieved through (i) strengthening of the institutions managing the urban transport system and (ii) the implementation of cost-effective and clean technology investments that support modal shift and improve public transport service provision to citizens. This will reduce traffic congestions, greenhouse gas emission and air pollution.

The cost of the proposed project is estimated US$730 million to be partially funded by a World Bank loan and the CTF (Clean Technology Fund). It has the following two major thrust areas:

- Institutional strengthening for improved urban transport planning and public transport service delivery. This will comprise the following sub components:
  - Sub component 1.1: Establishment of and capacity building of the Transport Regulatory Authority for Greater Cairo
  - Sub component 1.2: Modernization and strengthening of the Cairo Transport Authority
- Enhance the supply and quality of public transport, which will comprise the following sub components:
  - Sub component 2.1: Transformation of the Heliopolis Tram into Light Rail Transit (LRT) and its extension from Heliopolis to New Cairo City
  - Sub component 2.2: Replacement of about 500 old buses of the Cairo Transport Authority (CTA) and modernization of some of the garages
  - Sub component 2.3: Inter-modal integration of public transport services with common fare collection systems across all public transport modes
  - Sub component 2.4: Comprehensive traffic management measures, including intersections improvement, coordinated traffic lights and bus priority lanes to improve traffic flow on a 20 km pilot corridor

Objective of the present assignment

The Objective of this assignment is to assist the Government of Egypt in preparing the proposed Cairo Urban Transport Infrastructure Development project through the delivery of a set of studies necessary to prepare the sub-components 1.2, 2.3 and 2.4.

Scope of Work

A consultant firm will be appointed to undertake the following tasks. The Consultant will deliver a draft and a final report with a presentation for each sub-task following the timeline provided below.

Task 1: Modernization and Strengthening of the Cairo Transport Authority

Task 1.1: Review of the organizational structure and manpower profile of CTA

- Review of the current organizational structure and manpower profile of the CTA,
- Review of the current job descriptions of different divisions and departments within the CTA,
- Review of the recommendations of the committee constituted by the Chairman of the CTA for re-organization of the CTA,
- Proposal of a modified institutional structure based on these recommendations along with the associated manpower profile,
- Proposal of a re-structuring/re-distribution plan for the existing manpower to the extent possible,
- Development of job descriptions, qualifications and experience for the additional manpower to be recruited,
- Proposal of mechanisms for re-deployment or re-habilitation of the manpower not deployed in any of the new units/entities of the restructured CTA, and
- Development of an action plan for implementing the restructuring and the manpower redeployment.

Task 1.2: Review the current transport service planning systems

- Review of the practices for route planning of public transport services that are currently practiced,
- Review of the current practices and procedures of bus services concession with the private sector,
- Review of the size and profiles of manpower assigned to undertake the route planning and bus services concession, and
- Comparison of the current procedures and practices for service design and concession and the state-of-the-art international practices and accordingly suggest modifications for the current practices.

Task 1.3: Modernization of maintenance systems, workshops and garage facilities

- Review of the current locations and sizes of all workshops and garages and assess their adequacy in terms of bus holding capacity as well as their location in terms of minimizing non-revenue kms (empty haulage),
- Categorization of the garages according to their usage: i) maintenance facility, ii) bus storing and dispatching, and iii) mixed use,
- Compilation of a database inventory of the current location, capacity, manpower and maintenance equipment at each workshop and garage. The inventory should also include equipment for computerized record keeping of the performance and log sheet for every bus and a computerized record keeping of all stores and spare parts,
- Review of the current practices for inventory management,
- Review of the current practices for scheduling preventive and breakdown maintenance,
- Review of the current practices for maintaining information on driver performance,
- Assessment of the feasibility of a PPP or any other financial model to operate the maintenance facilities in the garages and/or workshops on a long term basis,
- Comparison of all of the above and advanced international practices,
- Assessment of the modernization needs of all workshops and garages, including but not limited to: updated usage plan, manpower and equipment needs as well the practices applied for inventory management, maintenance scheduling, performance tracking, etc,

- Assessment of surplus workshop and garage capacity, if any, and identify possible alternative uses that the spare capacity can be used for to secure additional revenues, and
- Development of a plan for the implementation of the above recommendations for each of the garages and workshops.

Task 1.4: Modernization of terminals and bus stops

- Review of the locations, sizes and layouts of the terminals and bus stops in terms of their capacity and convenience for passenger waiting, boarding and alighting,
- Proposal of possible improvements with a view to enhance convenience in passenger waiting, boarding and alighting as well as passenger comfort (only broad improvements are expected at this stage and more detailed plan will be prepared for each location at a later stage),
- Proposal of possible sources of additional revenues for CTA in terms of commercial property and advertising possibilities or any other possibilities,
- Proposal of possible business models for the management of the terminals and bus stations, including PPP options, and
- Preparation of an action plan to implement the above recommendations.

Task 1.5: Modernization of the management information systems and passenger information systems

- Review of the current practices and systems of management information and feedback, including data collection, compilation and analysis, financial management, manpower management, and others,
- Comparison with international practices and suggest improvements, including computerized systems for improving Management Information System (MIS), Passenger Information System (PIS), etc. typically deployed by large bus operating agencies, and
- Drafting of TORs for a consultant to develop detailed design and bidding documents for procuring the recommended and agreed management information and passenger information systems.

Task 2: Inter-Modal Integration of Public Transport Services with Common Fare Collection System

Task 2.1: Review of current fare structures and fare collection systems across different modes of public transport in the Cairo Metropolitan Region

- Review of the fare policies and structures for the current bus, metro, tram, short distance train and Nile river ferry routes,
- Review of the fare collection mechanisms being used in each of these modes, and
- Review of the proposals of introducing smart cards for fare collection by the Cairo metro, including the technology to be used, the institutional mechanisms proposed for making settlement of payments, the arrangements with financial institutions, if any, etc.

Task 2.2: Review some of the international best practices in integrated fares and fare collections systems, including Seoul and Singapore

- Identification, at a minimum, of three examples of international best practices in integrated fares and common fare collection systems, in addition to the examples of Singapore and Seoul,
- Review of the fare policies adopted and the principles for fare telescoping, transfer authorization, and others that have been adopted to secure the benefits of improved integration,
- Review of the fare collection mechanisms used in each of the defined five examples of international practices,
- Review of the institutional mechanisms that have been put in place for the collection and settlement of fares, and

- Review of the business models that have been put in place for making this system work.

Task 2.3: Evaluate the different international best practices from the Cairo context and recommend options that can be most optimally and practically used in Cairo

- Evaluation of the models used internationally and identification of those which can be considered in the context of Cairo, after carrying out a pros-and-cons analysis of each model,
- Recommendation of the best model that most suits the Cairo context, after taking into account the proposals of the Cairo metro,
- Recommendation of the institutional mechanisms, including a clearing house mechanism form common fare collection system across different modes,
- Recommendation of an appropriate fare policy (flat fare, zone-based, distance-based, time-based etc.) in the Cairo context, and
- Identification of possible institutional, administrative and technical bottlenecks that may be encountered.

Task 2.4: Prepare TORs

- Preparation of the Terms of Reference for a detailed feasibility study and bidding documents for implementing the integrated fare policy and common ticketing system that has been recommended, and
- Preparation of the Terms of Reference for the review and optimization of all bus routes in line with the fare integration.

Task 3: Corridor Improvement

The objective of this task is to improve the operations and safety on a selected congested corridor (10-20 km long and up to 1 km wide) by means of implementing a package of improvements which will include intersection geometric design improvement, traffic control installation, pedestrian crossings, traffic management, parking management, bus priority (if possible), and signage and markings.

Task 3.1: Corridor selection

- Undertaking a physical road inspection for the shortlist of candidate corridors (5-6) provided by the General Administration for Cairo Traffic (GACT), and undertaking a multi-criteria analysis to select one corridor for improvement.

Task 3.2: Compile and collect the following baseline data for the selected corridor

- Public transport routes:
    - Total daily passenger trips,
    - Maximum load point peak hour, peak direction passenger volume,
    - Boarding/alighting by stop by time of day (weekday daily total, am peak period, pm peak period, Saturday peak period), and
    - Corridor peak and off peak revenue running times, peak and off peak frequencies and vehicle requirements by type/size.
- Public Transport segment travel times: For every segment (i.e., intersection to intersection) over the corridor's alignment, time spent
    - Moving
    - Stopped at signals
    - Stopped because of pedestrians crossing road
    - Stopped because of traffic congestion

    - Stopped at stations for passenger service

- General traffic and delay (vehicles) :
    - Traffic volume on different segments of the corridor collected for at least two days for the two peak periods (i.e. am peak period, pm peak period) – classified by auto/truck/bus/bicycle
    - Turning movements at critical intersections of the corridor - daily and by time of day (am peak period, pm peak period) – classified by auto/truck/bus/bicycle
    - Link and corridor travel time data using GPS devices to enable a detailed travel time information analysis including control delays, mid-block delays, etc. Consequently, levels of service at each facility (intersection, road section) on the corridor would be identified
- Bicycle and pedestrian "traffic":
    - At major intersections on the corridor
    - Along, across critical segments (at mid-block) on the corridor
- Safety:
    - If crash data is available, map the location of the Crashes and Fatalities on the corridor for the last 5 years
    - If crash data is available, break it down by road user type (vehicle occupant, pedestrian, motorcyclist, Bicyclists and others. Focus on severe and fatal crashes.
    - If crash data is available, break it down by crash type: head on, intersection, rear end, run off and Vulnerable Road users collisions). Focus on severe and fatal crashes.
    - Safety inspection to develop a database of current road features for the corridor (km of sidewalks, sight distances, pavement conditions, number of pedestrian crossings and type, number of junctions and type etc.)
    - Conflict analysis data at the major intersections on the corridor as a surrogate safety measure to the non-existing collision data. It is preferred to conduct the conflict analysis using computer vision techniques where safety indicators could be automatically determined

Task 3.3: Diagnostic analysis of current situation for the corridor

The private car, public transport and non-motorized transport elements of the multi-modal transport system will be analyzed in detail for the selected demonstration corridor using the diagnosis database developed in Task 3.2. Key aspects to be analyzed under this task shall include but not limited to:

- Supply (e.g., capacity of infrastructure and facilities (e.g., parking, condition),
- Demand (e.g., daily, peak period, peak hour public transport/private vehicle travel)
- Performance (e.g., speeds, travel times, reliability, safety, air quality, finance, user satisfaction)

Parking, urban and land development issues will be covered as well.

Based on historical data, the corridor performance in safety and mobility for all road users (focus on pedestrian, NMT and PT users) should be predicted and analyzed for the next five years under the Business as Usual Scenario.

Task 3.4: Development of Comprehensive Package of Measures

- Prepare the concept design of the cross section of the corridor, including Bus Priority Lanes and closure of all U-Turns.
- Prepare the concept design of Area Traffic Control (ATC) and Junction Channelization and any complementary ITS tools such as E-police, CCTV and VMS systems.
- Produce concept junction design plans for each junction, to include traffic signal phasing, bus priority signals, physical junction channelization to tighten up junctions, and including traffic facilities (signs, lane markings, barriers, traffic calming measures).
- Prepare maps showing existing and proposed traffic signals including mid-block pedestrian crossings, and identifying and highlighting where there are pedestrian phases.
- Produce concept design for footpath improvement and lane separations where needed.
- Develop a parking strategy for the corridor to avoid illegal parking.
- Develop an enforcement and social marketing campaign for the corridor and surrounding areas.

Task 3.5: Prepare a Procurement Plan, and TOR for Detailed Designs and Draft Bidding Documents

- Preparation of a procurement plan which includes all measures to be applied on the corridor (civil work , equipment, campaigns)
- Drafting TORs for consultant to do detailed designs and draft bidding documents of all measures to be applied on the corridor (civil works, equipment and campaigns).

Implementation Arrangements

Organization

The study will be financed by a grant from the Clean Technology Fund (CTF) managed by the Ministry of Transport.

Team Composition (key staff)

- Team Leader: Urban Transport Specialist with 20+ years of experience in working and/or consulting for Transport Authorities in large cities (5+ million populations).
- HR/Social Specialist: 10+ years of experience in human resources in public sector.
- Institutional Development Specialist: 10+ years of experience in public sector, preferably in setting up new institution. Knowledge of Egypt public sector is an advantage.
- Public Transport Specialist (bus operation): 15+ years of experience in bus operations in large cities
- Public Transport Specialist (bus maintenance): 15+ years in the maintenance of buses used for public transport. Knowledge of CNG buses is an advantage.
- PPP Specialist : 10+ years of experience in setting up PPP structure for the operation of public facilities, preferable those used in the maintenance of public transport buses
- Traffic Management Specialist: 15+ years of experience in the design and procurement of traffic management systems (ATC, e-police equipment)
- Urban Road Engineer: 10+ years in planning and design of urban roads
- IT specialist 1 (Bus Operation): 5 – 10 years of experience in the development of management information and passenger information systems for bus operating companies.
- IT specialist 2 (Fare Integration): 5 – 10 years of experience in the development and use of IT based smart card fare collection systems for multi-modal public transport system.
- IT specialist 3 (Traffic Management) : 5-10 years of experience in use, installation and maintenance of ITS equipment for traffic management (ATC, CCTY, e-police)

- Parking Management Specialist: 10+ years of experience in planning parking strategies in large cities.
- Social Marketing Specialist: 10+ years of experience in advisory and implementation support experience to different organizations / agencies in designing and implementing advertising and social marketing campaigns in the area of road safety

Time Frame and Schedule of Payments

The duration of the study is estimated to be 10 months from the launch with a schedule of deliverables provided below. The level of effort is estimated to be about 85 staff weeks of key staff. The contract will be lump sum with 10% paid at signature and payments at the end of each month starting with 2nd month until 10th month according to the following schedule of deliverables.

Time from contract signing	Task 1	Task 2	Task 3	Percentage payment
Advance payment				10%
2 weeks	Launch mission and inception report			
1 month	Tasks 1.1, 1.2, Draft reports	Task 2.1 Draft Report	Task 3.1 Draft Report	10%
2 months	Tasks 1.1 and Task 1.2 Final Reports and Presentation	Task 2.1 Final Report and Presentation	Task 3.1 Final Report and Presentation	5%
3 months	Task 1.3 Draft Report	Task 2.2 Draft Report	Task 3.2 and Task 3.3 Draft Report	10%
4 months	Task 1.3 Final Report and Presentation	Task 2.2 Final Report and Presentation	Task 3.2 and Task 3.3 Final Report and Presentation	5%
5 months	Task 1.4 and Task 1.5 Draft Reports	Task 2.3 Draft Report	Task 3.4 Draft Report	10%
6 months	Task 1.4 and Task 1.5 Final Reports and Presentation	Task 2.3 Final Report and Presentation	Task 3.4 Final Report and Presentation	5%
7 months		Task 2.4 Draft Report	Task 3.5 Draft Report	10%
8 months	Draft Final Report	Task 2.4 Final Report and Presentation	Task 3.5 Final Report and Presentation	10%
9 months	Final Report and Presentations	Draft Final Report	Draft Final Report	10%
10 months		Final Report and Presentations	Final Report and Presentations	15%