

**PROJECT INFORMATION DOCUMENT (PID)  
APPRAISAL STAGE**

Report No.: AB2813

<b>Project Name</b>	Ghana Urban Transport Project
<b>Region</b>	AFRICA
<b>Sector</b>	General transportation sector (100%)
<b>Project ID</b>	P092509
<b>GEF Focal Area</b>	Multi-focal area
<b>Borrower(s)</b>	GOVERNMENT OF GHANA
<b>Implementing Agency</b>	Ministry of Transportation
<b>Environment Category</b>	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> FI <input type="checkbox"/> TBD (to be determined)
<b>Date PID Prepared</b>	January 18, 2007
<b>Date of Appraisal Authorization</b>	February 23, 2007
<b>Date of Board Approval</b>	June 21, 2007

### 1. Country and Sector Background

The population of Ghana is over 20 million with more than 40 percent living in the urban areas. Approximately 3 million people live in the Accra metropolitan area representing more than 14 percent of the national population. Another 5 percent (about 1 million) of the national population live in the Kumasi metropolitan area. It is estimated that Ghana's urban areas currently contribute over 60 percent of GNP, illustrating both their importance and also their potential for contributing further to economic growth.

The city of Accra is the administrative and commercial capital of Ghana and is growing at 4 percent per year; Kumasi is the second largest city in the country, growing at 5.6 percent per year. These are above the national average of 2.4 percent per year, which implies that Accra's population will double in 16 years and Kumasi's in 12 years. The share of people in urban areas in the country is expected to increase from 1 in 4 to almost 2 in 4 by 2020.

In the last 15 years, Accra's population has doubled and its area has expanded almost three fold. The built-up area has increased from 133 square kilometers in 1990 to 344 square kilometers in 2005. The population density, in turn, has decreased from 14,000 persons per square kilometer to 8,000 persons per square kilometer over the same period. The expansion in city size and decline in density has made it difficult for the municipal authorities to meet the service demands of its residents. There is already significant evidence that the lack of urban policies on land use, transport, and economic development is creating problems and limiting the growth potential of these sectors. Urban sprawl has increased travel distances and pushed up the price of public transport; this particularly affects the poor and often excludes them from work because of their dependence on the public transport system. Increased car use has created congestion on the roads, resulting in health, safety, and environmental problems. For example, the National Road Safety Council reckons that 67 percent of road accidents happen in urban areas each year.

Within the Accra metropolitan area, there are two main forms of public transport operations:

- (i) *Tro-tro (mini buses) and shared taxi services*, which are managed by unions and co-operatives and offer services along defined routes, usually between terminals or lorry parks. These operations suffer from a number of quality problems. A significant proportion of these operate outside the framework managed by the unions and co-operatives, and are usually opportunist “floaters” that take passengers that might otherwise use the services of either the organized *tro-tro* services or the Metro Mass Transit routes.
- (ii) *Large bus services*, provided by the new Metro Mass Transit (MMT), a quasi-private company that receives favorable financial support from the government.

Key issues facing the urban transport sector in the country are as follows:

- (i) The sector ministries, along with the metropolitan, municipal, and district assemblies (MMDAs), are now developing the capacity and the institutional framework necessary to support the overarching sectoral responsibilities that champion transport causes and coordinate activities. Although the institutional structures for construction and maintenance of the road network seem to be in place and performing satisfactorily, the same cannot be said about the **service operation institutions, which are generally non-existent**. Although Government of Ghana (GOG) for the last six years has been investing in Metro Mass Transit’s (MMT’s) plan to operate an urban passenger transit system with large buses, the impact of MMT’s operation has not been substantial.
- (ii) The primary road network is highly congested due to a lack of road capacity, **inefficient use of the existing road space**, indiscriminate parking, and street trading.
- (iii) Urban transport in Accra, Kumasi and other cities is characterized by the fundamental paradox of a market with **proven excess demand and shortage of supply** and it is not attracting sufficient new investment to redress this imbalance. The “excess” demand is reflected in overcrowded buses and long waiting times, without even accounting for the “latent” demand resulting from lack of affordability and access. The supply “shortage,” in spite of a proliferation of taxis and *tro-tros* (mini buses), implies constraints in the provision of large, good-quality buses. Such buses are unavailable due to the low productivity of the capital assets in highly congested traffic, and from the inability of informal operators to attract the necessary funding to operate large, good-quality buses.
- (iv) Urban development trends are encouraging **sprawling settlement patterns**, which discourage use of slow-moving NMTs (particularly bicycles) and walking and increases dependence on private motor vehicles.

- (v) The transport sector is a **dominant source of local and global air pollutants** (PM, SO<sub>x</sub>, NO<sub>x</sub>, CO, CO<sub>2</sub>, VOCs, O<sub>3</sub>) that are responsible for adverse health impacts and contribute to global climate change. The Environmental Protection Agency (EPA) does not possess the authority, staff, or physical resources to adequately address the broad environmental consequences of excessive vehicle emissions and poor standards of vehicle maintenance. Until recently there was a complete lack of data on air pollution and vehicular emissions. Recent efforts aided by the United States Environmental Protection Agency (USEPA) and the Danish International Development Agency (DANIDA) have helped initiate the process of data collection and analysis; however, USEPA assistance ended in 2006 and DANIDA support will end in 2008. The city environmental agencies need longer-term support to build capacity to effectively monitor air pollution and manage vehicular emissions.

## 2. Objectives

The key objectives of the project are to:

- (i) Improve personal mobility in cities in Ghana, through a combination of traffic engineering measures, management improvements, regulation of the public transport industry, and implementation of Bus Rapid Transit (BRT) system; and
- (ii) Promote a shift to more environmentally-sustainable transport modes and encourage lower transport-related GHG emissions in Accra.

Outcomes of the investments, on the pilot BRT corridor, are expected to be:

- (i) Reduction in average travel time for bus passengers
- (ii) Increase in average travel speed for all traffic
- (iii) Increase in productivity of bus services (increase in share of people carried by buses)
- (iv) Reduction in tons of CO<sub>2</sub>-equivalent emissions

## 3. Rationale for Bank Involvement

The Bank has financed transport operations in Ghana over the past two decades in roads, urban transport and feeder roads; port and railway; and rural roads components under agriculture projects. These projects have provided an opportunity for the Bank to establish a substantive dialogue with the Government on major issues in the transport sector. The Bank has also supported building a knowledge base through a number of studies financed by Public-Private Infrastructure Advisory Facility (PPIAF). The study objectives were to: a) examine institutional, regulatory and operational issues in the urban transport sector; b) develop a toolkit on bus transport reform to provide a practical tool to support national and city policy makers to develop procedures to implement contracting, regulating, institutional and financing options for engaging the private sector in providing services.; and c) provide support to conduct baseline studies and assist Government in developing an urban transport policy. The proposed project provides an opportunity to implement the recommendations emerging from these studies.

## 4. Description

**Component 1: Institutional Development.** (Total US\$13.6 million, of which IDA: US\$10.0 million, AFD: US\$1.4 million; GEF: US\$1.0 million; and GOG US\$1.2 million) This component would strengthen capacity of Ministries and agencies concerned with urban transport, transport operators, MMDAs (AMA, TMA, GWDA, GEDA, KMA, and EJDA), including strengthening of the Urban Passenger Transport Units (UPTUs) within each assembly and creating an Urban Passenger Transport Coordinating Group (UPTCG) for the Accra and Kumasi MMDAs to plan, regulate, and monitor urban transport operations and services. This component would also support the work of the Project Advisory Office (PAO) and the institutional design study to transform it into a permanent Center for Urban Transportation (CUT). Support would be provided through policy and institutional studies, training, technical assistance, operational support, and provision of equipment and vehicles.

GEF will co-finance training, capacity building, and information dissemination, with a specific focus on MOLGRDE and the PAO. Specific actions would include: (a) support to the PAO in planning, route concessioning, operations, and monitoring and evaluation aspects of BRT, to maximize the effectiveness and sustainability of the system and other investments; (b) support to the MMDAs for planning and implementing urban transport policies and help remove barriers to better integration of land development and transport planning; (c) develop a Accra BRT Web site for broader dissemination and information sharing, and promote replication in Kumasi by information sharing and leveraging the demonstration nature of this project; (d) support MOLGRDE in strengthening EPA for air pollution and emissions management, and (e) support MOLGRDE in integrating land development and transport planning for better environmental management. The support will be provided in the form of capacity building (such as management support and study tours), studies, and goods (such as vehicles and equipment).

**Component 2: Traffic Engineering, Management and Safety.** (Total US\$26.9 million, of which AFD: US\$18.6 million; IDA: US\$3.8 million; and GOG: USD\$4.5 million). The subcomponents are (a) traffic management in the Accra metropolitan area; (b) area-wide traffic signal control in Accra; (c) traffic management in Kumasi metropolitan area; (d) area-wide traffic signal control in Kumasi; (e) enforcement of traffic rules and education; and (f) design and supervision of works under sub-components (a) through (e).

**Component 3. Development of a Bus Rapid Transit System.** (Total US\$46.0 million, of which IDA: US\$29.2 million; GEF: US\$4.5 million; and GOG: US\$12.3 million). The subcomponents are as follows: (a) BRT infrastructure design and implementation (including segregated bus-ways, interchange facilities, and terminals and facilities for pedestrians and NMT). The trunk route is 9.1 kilometers in length, with one BRT lane per direction, feeding two distributor loops in the central business district. The trunk route has a terminal/modal interchange at the New Gbawe junction at Mallam, and modal interchanges at Ordorkor Junction, Darkuman Junction, Kaneshie Market, and CMB; (b) a program of regular engagement with key stakeholders, and implementation of a public relations and media strategy for generating support and disseminating information on the BRT system; and (c) overall management and operationalization of the BRT system.

GEF will co-finance the following barrier removal subcomponents: (a) incremental civil works, studies, and consultations to improve pedestrian and NMT access to the proposed BRT system;

(b) BRT stations to enhance their attractiveness for consumers with choice; and (c) stakeholder consultations, public relations, and media strategy.

**Component 4. Integration of Land Development and Transport Planning for Better Environmental Management** (Total US\$2.0 million, of which IDA: US\$1.0 million; and GEF: US\$1.0 million). GEF’s co-financing would support MOLGRDE in updating the land development plans. This would be a highly consultative exercise and would include a review of the existing strategic plan, land use plan, regulations, institutional structures, standards, and procedures; the goal is to support urban growth that is more compatible with the development of transport infrastructure, leading to better environmental management. The development plan would be subject to a Strategic Environmental Assessment (SEA), especially as it relates to urban transportation (with emphasis on walking, NMT, and public transport). The IDA would support capacity building of staff from the EPA, MMDAs, and the Town and Country Planning Department (TCPD) in integrated land development planning, transport planning, and environmental management.

**Component 5. Project Outcome Monitoring** (Total US\$1.5 million, of which IDA:US\$1.0 million and GEF: US\$0.5 million). The subcomponents are studies to support the monitoring of project outcomes through evaluation of (a) transport and social impact indicators, (b) environmental impact indicators, and (c) capacity development indicators.

The GEF would co-finance the subcomponent that focuses on GHG emissions, namely sub-component (b). This would include calculation of direct GHG emissions from interventions such as BRT and NMT. As a result, GEF would also rely on some of the outputs of subcomponents (a) and (c).

#### 5. Financing

Source:	(\$m.)
IDA	45.0
BORROWER/RECIPIENT	18.0
GLOBAL ENVIRONMENT FACILITY	7.0
AFD	20.0
Total	90.0

#### 6. Implementation

#### **Institutional and implementation arrangements**

The roles and responsibilities of the various agencies involved in this project are as follows:

- (i) GOG has formed an Urban Transport Advisory Committee (UTAC) to ensure key technical inputs, multi stakeholder consultation, collaboration, coordination, and information dissemination for urban transport policy development and implementation. Specific responsibilities include: a) developing a common policy and regulatory framework for urban transportation in Ghana, including the setting of target dates for each MMDA to pass related regulatory instruments; b) advising MOLGRDE on directives to be issued to MMDAs in implementing urban transport policies and regulations; c) providing guidance for the set-up and operationalization of CUT; and d) reviewing progress made towards achieving the

Project's objectives, and providing general direction towards implementation of the Project, including making recommendations for removal of any implementation obstacles.

- (ii) MOT will have the overall sector responsibility for this project in close collaboration with MOLGRDE. MOT will provide the urban transport policy framework and carry out project activities related to the setting and enforcing urban passenger transport operating and safety standards, and vehicle and driver standards. MOT will also arrange for the annual audit of the project.
- (iii) DUR (under the MOT) will be the main implementing agency for the project. DUR will have direct responsibility for project management (including procurement, safeguards management, financial management, and monitoring and evaluation). DUR's finance department will oversee all eligible expenditures under the project, in accordance with systems and procedures acceptable to IDA. It will work in accordance with the Financial Procedures Manual established for the ongoing IDA financed Road Sector Development Program and ensure robust internal control arrangements for the project. DUR will also have responsibility for contract administration of traffic management and BRT infrastructure components of the project.
- (iv) MOLGRDE has overall responsibility for the regulation of passenger transport in the urban areas falling under the jurisdiction of MMDAs. MOLGRDE (working in close collaboration with MOT) will ensure that the MMDAs are adequately mandated and resourced to undertake their responsibility in the regulation and delivery of urban transport services. Specific responsibilities include: a) overall regulation of urban passenger transport; b) collecting and analyzing environmental indicators for urban transport; c) supporting DUR in ensuring implementation of the ESMF, RPF, EMP and RAP; and d) undertaking the strategic environment assessment.
- (v) A PAO has been established within DUR, with key staff, office facilities, and support services. While the line management of the project will be carried out by the DUR on behalf of the MOT, the PAO will report to the Director of DUR for all operational and management issues. Specific responsibilities include: a) providing advisory services to the institutions and operators involved in the implementation of the project; and b) providing advisory services in planning, management and regulation of urban passenger transport. The PAO will form the nucleus of the proposed CUT. The project will fund the operations of the PO until December 31, 2009. The staff and operating cost will then be transferred on a sliding scale basis to the government over the next three years. The IDA Credit would continue to finance the gap.
- (vi) UPTUs will be strengthened to develop the authority and the capacity of MMDAs in the domain of planning and regulating local passenger transport services at a pace they can absorb and with support from the project.

A Project Implementation Manual (PIM) will be prepared by DUR (with PAO support) for: (a) institutional coordination and day-to-day execution of the project; (b) disbursement and financial

management; (c) procurement; (d) environmental and social guidelines; (e) monitoring, evaluation, reporting and communication; and (f) such other administrative, financial, technical and organizational arrangements and procedures as shall be required for the Project.

## **7. Sustainability**

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 high 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. Rationalization of bus transport 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.

The project would focus on ensuring sustainability of the critical legal and institutional structures necessary to support long-term implementation of an integrated reform program. Currently, there are inadequate arrangements to regulate bus services, impose safety standards, plan bus services or adjust services to better respond to market demand. A Project Office has been set up to assist the MMDAs to plan, regulate and procure urban public transport services. The Project Office would help establish local and national capacity for market regulation, supported by a nucleus of professionals. This would ensure institutional sustainability of the BRT, 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. During the first year, institutional studies would be undertaken to agree on steps to transform the PO into a permanent unit (Center for Urban Transport) by January 1, 2010. The project will finance operations of the PO for the first two years. After transition to the permanent Center for Urban Transportation, the operating cost will then be transferred on a sliding scale basis to the government over the next three years. Government is committed to make the Center financially sustainable by the end of the project.

## **8. Lessons Learned from Past Operations in the Country/Sector**

***Setting up a strong institutional basis for coordinated planning and regulation is critical to the success of urban transport projects.*** The Bank urban transport policy paper “Cities on the Move” identifies institutional weaknesses as the source of many observed failures in urban transport in developing countries. Strengthening urban transport institutions often requires legislative, institutional and management changes at the national, state and municipal level to minimize jurisdictional and functional impediments to efficient and effective service delivery. It also requires setting up dedicated institutional bodies for urban transport planning and regulation, with commitment from the highest levels of Government and a champion to further the cause of good management. The proposed project would set up a Centre for Urban Transportation at the national level to provide technical and managerial back stopping for the emerging local level licensing and regulatory authorities. Local level planning, regulation and monitoring of urban passenger transport services will be carried out by the MMDAs involved in the project and the need for Licensing Authorities for Greater Accra and Kumasi will be explored within the project timescale. The Minister of Transportation, Minister of Local Government, Rural Development, and Environment, and Chief Executives of Accra, Tema, Ga East and Ga West have endorsed this concept and are committed to this arrangement. In the short-term a Project Office has been set up and key staff has been appointed.

***Interactions with the borrower and beneficiaries should take place in a context they set.*** The impact of changes in policy, governance and institutional frameworks that are taking place in countries like Ghana should not be underestimated. Where the requirements bring about changes in roles, responsibilities and

relationships, there is a need to understand the impact on culture and values of the societies, sectors and institutions in which the change is proposed. It is critical to understand the broader country specific context. Experience shows that best results are achieved through long-term relationships where new ideas can be introduced indirectly and gradually, in pursuit of a shared vision and road map. The design of this project is driven by consideration of national requirements and what is most appropriate in the national context. It is proposed to gradually decentralize the functions of urban passenger transport services to metropolitan and municipal assemblies, within an agreed time frame and well defined road map. A simultaneous thrust has been on sharing best practices and building capacity at the local level (through discussions, study tours) over an extended period of time.

***Allow a measure of flexibility in the design and set reasonable targets.*** The growing problem of urban mobility is the result of absence of regulatory institutions, inadequate capacity for planning public transport services, and inadequate investments. To reorganize urban transport service planning and delivery is a long-term process and its prominence in achieving urban sustainability compounds the need for more integrated, long-term and inclusive decision making. It often requires legislative, institutional and management changes and a period of internalization, capacity building and behavioral adjustment within organizations before the real impact of the proposed new structures can be observed. The preparation of this project has taken almost three years of extensive consultation. Key issues have been agreed up-front. A National Urban Transport Policy has been adopted. The proposed project would involve implementing the agreed program.

***Implementation of BRT is a big challenge and requires considerable up-front discussions and consensus building.*** It is very important to note that BRT is a “system” and requires extensive up-front planning and discussions--looking at all relevant issues as a package, including the design of the bus-way, design of the stops, design of the junctions, design of the ticketing systems, fare levels and structures, regulation and ownership of the buses using the system, safety and enforcement of the regulations. A successful system requires ownership by existing operators, drivers and users and incorporation of their specific concerns in the design. The immediate focus of this project is on: (a) developing a regulatory framework, institutions and a culture of compliance with the framework and an industry structure that can compete and operate within the framework; (b) organizing and regulating existing services; (c) bringing the operators on board; and (d) understanding needs of the users through surveys and focus group discussions. Investments in BRT “hardware” will come about only after an understanding and acceptance of the broader reform program and an appreciation of the complexity of issues involved.

***Sustained engagement and complementary actions are key to making an overall impact.*** The urban transport issues faced by cities of today are the result of inaction of the past many decades. One operation cannot address all the problems. Sustained engagement and complementary actions by other sectors (urban, environment, energy, social) are crucial to making an impact in cities. The proposed project focuses on making improvements on a pilot corridor. If interventions are successful, it is expected to replicate the experience in other parts of the city.

***Provide opportunities to learn from successful implementation of the reform program.*** As part of involving private operators in the dialogue, they accompanied the Government Team on a study tour to London and South America. It provided an opportunity to develop a vision and understand the complexity of tasks required to reform the urban bus transport industry. Some of the key lessons documented by the study team at the conclusion of the study tour were a need for: (a) clear political will from the key decision makers and allocation of resources; (b) clear vision on passenger transport services as a means of improving the quality of life of the citizens, not just moving vehicles; (c) clear involvement of Chief Executives of MMDAs; (d) setting up a project preparatory office/agency that works right from the beginning so as to own project and follow through with it; (e) identifying transport services as business; (f) facilitating traditional operators to transform into legal entities to access financial support



from financial institutions; (g) clear and powerful communication and marketing strategies; (h) developing business models for traditional operators as basis for accessing funds; (i) system user friendly for all, from children to elderly and physically challenged; (j) system integrated with sidewalks and cycle ways with bike parking facilities at terminals and stations.

***A good project monitoring system is necessary for effective management.*** A detailed monitoring and evaluation component, including collection of all necessary baseline data, has been designed and built into the project. Given that the project entails a lot of innovations and changes, close monitoring combined with the extensive consultations that are planned, should allow appropriate adjustments to be made in a timely fashion.

## 9. Safeguard Policies (including public consultation)

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

**Social assessment.** A survey of 3,000 households was carried out, to study travel patterns of the inhabitants of Accra and establish baseline data. In conjunction with the household survey, a survey of travel diaries focusing on school children, market women, and women at maternal health clinics along the pilot BRT corridor was carried out. The findings will not only feed into the design of the BRT, but will also serve to monitor the social development outcomes of the project in a before-and-after study of the social impacts. The household and focus group surveys will be carried out annually during the project life. A Resettlement/Rehabilitation Policy Framework (RPF) was prepared and disclosed, prior to appraisal. A Resettlement Action Plan (RAP) will be prepared after the detailed design of the BRT becomes available and prior to the road-upgrading civil works along the BRT corridor; as the physical impacts will then be known, and consequently, impacts in houses and structures along the BRT alignment.

**Gender issues:** GUTP will benefit children, women, men and the elderly by responding to their mobility needs and providing them better access to basic social services (health, church, school) and to markets. Particular attention will, however, be given to markets along the road, by providing safe and enhanced access to the market places, which, will particularly benefit women and children. Also, GUTP will seek to provide enhanced and safe emergency access to health clinics and hospitals with focus on maternal health.

**Participation/Consultation/Communication:** The identification of project components was participatory. Project preparation involved several consultations: a) Meetings with local

government (municipality) officials, likewise the ministries of local government and of transportation and its Department of Urban Road (DUR); b) Focus group discussions with users, transport unions (private operators, *tro-tro* bus drivers, bus owners), commercial banks, insurance companies, NGOs and development partners and c) workshops involving all the above mentioned stakeholders. Representatives of these key stakeholders were involved in detailed discussions formulating ideas on options to improve the urban transport environment. Based on the discussions, institutional, financial, regulatory, technical and environmental strategies were prepared. In addition, a study tour to Latin America was organized, to enhance social cohesion among key stakeholders enhance their understanding of the benefits of the project and strengthen ownership. As result of the participatory process, all key stakeholders became vocal advocates of the project. Also, GUTP includes a communication sub-component design to enhance participation and strengthen ownership of the project by its stakeholders.

*Social benefits:* The expected social benefits of the proposed project include savings in travel time for users of the system (both in- and out-of-vehicle time), particularly for school children, reduced vehicle operating costs, reduced fares, as well as improvements in the safety and quality of transport services. In addition to traditional mobility benefits, the project may increase labor market options for some workers and diversify land use patterns in Accra.

*Impact assessment:* To assess the social benefits of GUTP, the household survey data as well as the travel diary data, will be used as baseline for a before and after study (a panel survey).

## **10. List of Factual Technical Documents**

Urban Transport Planning and Traffic Management Studies for GAMA, Sekondi-Takoradi, Cape Coast & Koforidua (*February 2004*)

Feasibility Studies and Design of Arterial Roads in Kumasi (*March 2004*)

Engineering Design Socio-Economic Feasibility of selected Feeder Roads in Ghana - Tranche 2 (*August 2004*)

Detailed Design of Traffic Management Works in Greater Accra Metropolitan Area (GAMA), (2007)  
Municipal Development Collaborative Ltd., Ministry of Transportation, Accra, Ghana

Installation of Traffic Data Collection System of the GHA Traffic Pilot Studies (*January 2005*)

Baseline Studies and Monitoring of Impact of road sector development programme roads on poverty reduction (March 2005)

Socio-Economic Feasibility and Environmental Impact Studies of selected Feeder Roads in Ghana - Tranche 2 (*June 2005*)

Feasibility and Technical Studies of (a) Trunk Road Projects, (b) Urban Arterial Road Development & (c) Feeder Road Projects (*October 2006*)

Environmental and Social Management Framework for the Transport Sector Development Programme (*January 2007*)

The Resettlement Policy Framework for the Transport Sector Development Programme (*January 2007*)

Feasibility Studies and Design of Arterial and Local Roads in Accra East (*January 2007*)

Detailed Design of Traffic Management Works in Greater Accra Metropolitan Area (*February 2007*)

11. Contact point

Contact: Ajay Kumar

Title: Sr. Transport Economist

Tel: (202) 473-5528

Fax:

Email: Akumar3@worldbank.org

12. For more information contact:

The InfoShop

The World Bank

1818 H Street, NW

Washington, D.C. 20433

Telephone: (202) 458-4500

Fax: (202) 522-1500

Email: pic@worldbank.org

Web: <http://www.worldbank.org/infoshop>