

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

Report No: 46445

<b>Project Name</b>	Mauritius Transport
<b>Region</b>	AFRICA
<b>Sector</b>	Roads and highways (70%); General transportation sector (10%); General water, sanitation and flood sector (15%); General energy sector (5%)
<b>Project ID</b>	P091828
<b>Borrower(s)</b>	GOVERNMENT OF MAURITIUS
<b>Implementing Agency</b>	Ministry of Finance and Economic Empowerment
<b>Environment Category</b>	<input type="checkbox"/> A <input checked="" type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> FI <input type="checkbox"/> TBD (to be determined)
<b>Date PID Prepared</b>	June 30, 2008
<b>Estimated Date of Appraisal Authorization</b>	December, 2009
<b>Estimated Date of Board Approval</b>	March, 2009

1. Key development issues and rationale for Bank involvement

With about 610 people per square kilometer Mauritius is one of the most densely populated countries in the world. Population is estimated at about 1.2 million people, of whom about 1.14 million live on the island of Mauritius. Port Louis is the only port city in Mauritius and is its commercial, industrial, and administrative center. About 45 percent of the people that inhabit Mauritius Island live in the Port Louis/Plaine Wilhems conurbation, comprising Beau Bassin, Rose Hill, Quatre Bornes, Vacoas, Phoenix, and Curepipe. Population density in Port Louis stands at about 3,250 people per square kilometer. The average density in the remainder of the conurbation is around 1,750 people per square kilometer.

The strong continued growth enjoyed by Mauritius' economy requires the improvement of its infrastructure stock and quality. The Government has asked for support to on-going efforts to enhance the efficiency of transport services and of its energy, water, and wastewater utilities.

**TRANSPORT:** In line with fast growing incomes has come equally high demand for automobiles and transport services. Since 1988 the number of cars and dual-purpose vehicles has grown steadily at about 7% per year. Mauritius now has about 300 motorized vehicles per 1,000 inhabitants, which is fairly typical for upper-middle income countries. The overall transport infrastructure has not been upgraded at the same pace and is lagging behind in terms of development. This shows both in the most densely populated area, the Port-Louis – Curepipe corridor and on the national road network, two areas where World Bank involvement is requested:

**Urban Transport in the Port-Louis – Curepipe corridor:** The Government of Mauritius recognizes that future high and sustainable economic growth depends on reducing the chronic traffic congestion and improving traffic flow in and around Port Louis. With rising car ownership and the increasing concentration of employment in Port Louis, traffic congestion has steadily worsened and is now severe during the morning and evening peak travel periods. Congestion imposes significant costs on travelers who spend up to two hours a day commuting and employers who bear the costs of missed appointments and late arrivals. Congestion slows the delivery of freight and prevents public service vehicles from rapidly responding to emergencies. It also increases vehicle operating costs. Increasing use of private vehicles also negatively affects those without cars, as it reduces overall demand for public transport

services, leading to less frequent and more expensive services for those who require them. The government estimates that the cost of congestion totals MRs 2 billion per year.

The Government has identified a series of priority transport infrastructure investments which are at different stages of project preparation including mainly: (a) road maintenance program for the national road network, including pilot performance-based contracts, (b) ring road in Port Louis and Harbour Bridge, (c) Bus Rapid Transit from Port Louis to Curepipe: there is a strong need to improve bus service quality significantly, and especially to reduce bus travel times from current unacceptable levels (more than 1 hour between Curepipe and the capital city of Port Louis, a distance of 25 km, for example) to ones which are substantially better than automobile journey times.

**Overall Road Network:** The Road Development Authority, a body corporate established by Act No. 6 of 1998, operating under the aegis of the Ministry of Public Infrastructure, Land Transport and Shipping (Public Infrastructure Division) is responsible for the provision and maintenance of roads classified under the Roads Act as motorways and main roads and this includes bridges and other structures found therein. The road network under the jurisdiction of the Road Development Authority consists of 55 km of motorways (dual carriageway) and 1019 km of main roads. Some key segments of the road networks are currently saturated and/or not optimally maintained.

Presently, maintenance, rehabilitation and reconstruction budgets are based on one or a combination of the following techniques:

- based on the previous year's budget possibly with an arbitrary increase or decrease;
- Periodic maintenance schedule such as surfacing or overlays every seven to ten years, whether the road needs it or not;
- Fire fighting approach i.e to attend to complaints from public;
- Political imperative;
- Experience and knowledge.

However, this is not a satisfactory approach since scarce resources may end up being used on roads which are in bad shapes only, thereby neglecting those roads in good condition which nevertheless need to be subjected to preventive maintenance to avoid deterioration which could prove costlier in the long term or else roads which do not require expensive interventions are being provided with costly treatments.

#### **Institutional framework:**

A consensus-forming exercise conducted with the participation of twenty major stakeholders in 2006 resulted in agreement on a package of measures which includes the setting up of a Land Transport Authority (LTA) and which has already received Government's approval.

Several institutions are currently responsible for planning and managing transport systems. The arrangement leads to fragmented management processes, with duplication, conflicts, and obstacles to perform integrated planning.

#### **WATER SUPPLY AND WASTEWATER.**

In terms of water supply, resources originate for 50% from groundwater, for 30% from storage and for 20% from rivers. The access rate to running water is 99 % but resources are limited during the dry season (Sept - Nov), which means that in a few regions (center, north, south, Port-Louis), access is limited at 6 hours/day access for approximately 15-20% of populations. Part of the distribution network is made of asbestos cement and needs to be changed. Rodrigues faces recurrent problems such as pump breakdowns, capacity constraints, vandalism, poor maintenance, high production costs, etc. In parallel, demand is increasing in sectors such as tourism, industry, irrigation, etc, while there are significant water losses (leaks and non-paying customers). In this context, the objectives of the Mauritian Authorities in the water supply sector are (i) to meet municipal water demand up to year 2050, (ii) to ensure 24/24 continuous water supply and (iii) to increase water availability for irrigation

In terms of wastewater, the connection rate to sewerage networks is estimated at 25% (i.e. 63,000 households). EIB, AfDB, Indian and Chinese (Exxim Bank) funds are available for the next 4 years to fund projects aiming at connecting an additional 30,000 households. The Government is willing to (i) expand the wastewater network coverage and the number of households connected, (ii) preserve water quality and (iii) raise the standards of wastewater treatment before disposal into the sea

In terms of institutions, the Operations and Maintenance Departments of the CWA and Wastewater will be merged as a first step towards total merging to take place ultimately. The merger, as well as the establishment of a multisectoral regulator for water and energy, have already been endorsed by Government.

**ENERGY.** In view of the serious challenge posed by rising oil prices and the high cost of energy, the Government of Mauritius intends to adapt its energy strategy to guarantee energy security, maintain the financial viability of the utility, and promote efficient and sustainable use of energy. This will be accomplished through diversification of the energy sector, the establishment of a regulatory body for energy (and water), and the promotion of energy efficiency and energy conservation measures.

The key issues in the energy sector are the need for a regulator, the necessary human resource development and capacity building that is required for it to function, and the expansion and diversification (where possible) of generation capacity. The Ministry of Finance (MoF), the Ministry of Public Utilities (MPU) and the Central Electricity Board (CEB) have expressed interest in World Bank assistance to finance advisory services to develop a regulatory body for energy and water as well as specific investment support for renewable and clean energy project development. The CEB intends to focus on proven technologies in islands similar to Mauritius. The CEB expressed strong interest in exploring the development of a grid code to allow surplus generation capacity from business undertaking and residences, such as from solar PV and wind, to be supplied to the grid via the distribution network. The advisory services for the regulatory body will be financed under the METAP loan, and the establishment of a grid code is being financed by the UNDP.

Previous IPP contracts follow the take-or-pay structure, but the last two follow a two-part tariff structure, comprising charges for capacity and energy, thus better aligned with global practice. For future renewable energy projects, there is a need to make provision for feed-in tariffs in order to mitigate investor risk, thereby increasing investor interest. Further enhancements are required, such as a need to make provision for feed-in tariffs for renewable energy projects in order to mitigate investor risk, thereby increasing investor interest. There may also be a need to enhance existing electricity legislation or pass new legislation to facilitate renewable energy development. The World Bank team will review the current legislation and advise accordingly. This will be financed under the METAP loan.

## 2. Proposed objective(s)

The project will contribute to:

(i) improve the condition of the road network through periodic maintenance and pilot performance-based routine maintenance contracts, (ii) prepare investments in the urban transport sector to alleviate congestion between Curepipe and Port-Louis and in the road sector to keep upgrading the existing network, (iii) assist in establishing a framework for enhanced energy security, including energy efficiency, clean energy development and power system expansion, and (iv) help the Government to prepare a loan to fund proposed water and wastewater investments

## 3. Preliminary description

To meet the proposed Development Objectives, 6 main components were preliminarily identified based on a proposed Loan amount of US\$50 million, including a 15% provision for contingencies. The implementation period would be 2009-2014 mainly to allow for 5-year performance-based routine maintenance contracts for roads.

***Component 1 – Primary Road Network Periodic Maintenance and Routine Maintenance through Performance based Contracts (US\$5 million would be financed by the Bank Loan).***

This component will:

- Finance periodic maintenance on key sections of the main roads of the Mauritian network, possibly on M2 (xx-km dual carriage-way from Port-Louis to Grand-Baie) between Terre Rouge and Port-Louis (5 km), a section that has not been treated since its construction in the late 70's and the pavement of which presents clear signs of fatigue, or, less probably, on M1 (55-km dual-carriageway from the airport to Port-Louis) between Pailles and Port-Louis (approximately 5 km).  
Estimated cost: approx. US\$ 4 million
- Implement the proposed pilot project designed and prepared under the PPF, with the objective of determining whether performance-based contracts, once adapted to the local context, are the right means to overcome a backlog of deferred maintenance on key sections of Mauritius primary network. The purpose is to test the concept both for high-volume and low-volume roads, most probably on one segment of the M2 (Terre Rouge – Pamplémousse) and on one or several rural roads.  
Estimated cost: approx. US\$ 1 million

***Component 2 – Primary Road Network Upgrading (US\$ 25 million would be financed by the Bank Loan,).***

Priority is given to roads whose capacity have been or will soon be exceeded, which constitute main links to key economic areas of the island or which connect or pass through major villages and which constitute safety hazards.

Woton – Belle Rive - Quartier Militaire Road, a 5.5-to-6.5 meter road, the main link between the East and the West of the island, will be fully or partially rehabilitated and widened to up to 7.5 meter under the proposed project, to alleviate congestion and above all to improve road safety on this axis, largely used by trucks and buses. Works will include slight modifications to the alignment to smoothen the sharpest curves, the construction of a round-about in Belle Rive and the widening of culverts in areas that get partially flooded during heavy rains.

***Component 3 – Capacity Building and Support to Institutional Reform in the transport sector (Estimated cost US\$4 million)***

**Assistance to the newly-created Land Transport Authority**

The newly-created Land Transport Authority will be strengthened in the following areas:

A: Career Development.

This will include training for the new Human Resources Department: many employees will be introduced to new tasks, while a new program to target career development for staff as a whole will be initiated. The Human Resources Department will itself develop training programs, and financial support to get those underway will be helpful.

B: Specific Planning Training.

There will be a big new Transport Planning Department which will need technical training, still to be determined, but which may encompass traffic forecast modeling, public transport regulation, transport economics, land use – urban transport nexus, road safety, contract management, environmental and social management, supervision of works, especially performance-based road maintenance contracts etc.

#### C: Management training.

There will be an increased emphasis on good management, and more employees will have managerial roles as at least a part of their mandate. As a consequence, a variety of programs in management, including project and program management, finance, budgeting and organizational development will be helpful.

#### D: Ethics/ Anti-corruption Development

It is envisaged to develop procedures for maintaining ethical standards and preventing corruption in the newly-created LTA. Ethics officers are likely to be appointed. In addition, employee handouts will be developed and the staff will be provided with training sessions on anti-corruption practices. This activity may be sponsored by the Singapore Government.

#### E: Recruiting support.

It is likely that management will need to recruit internationally, and assistance in this area may be requested.

#### F: Studies / Technical Support

More specifically, the loan will fund studies which are needed to lay the groundwork for the urban transport plan for the Port-Louis / Curepipe corridor such as:

- completion of the Bus Rapid Transit and Bus Reform Implementation Study (> US\$1,500,000), the first part of which is being funded under the PPF.
- study on taxi industry reform and removal of illegal taxi / van operators
- definition of a parking policy (including partial removal of on-street Parking in Port Louis
- engineering Studies and tender documents for works to enhance pedestrianised environment in Port Louis
- analysis of tolling options for road projects such as the Port-Louis by-pass.

In the Road Sector, the credit will finance Feasibility, Detailed Design, EIAs, Tender Documents and whenever needed, Resettlement Action Plans for the road works mentioned below for an amount of approximately US\$500,000. Old Flacq Road (from its junction with A2 at Khoyratty through d'Epinay and Camp Créole to its junction with A2 at Grande Rosalie), a 6-km road segment, would be the prime candidate for this component. Terre Rouge – Triolet – Grand Baie Road (14 km from its junction with M2 at Terre Rouge through Saint Joseph, Arsenal, Solitude, Triolet, Chemin Vingt Pieds to its junction with B13 at Grand Baie) and Pailles Branch Road (2.4 km from its junction with M1 at Grewals Underpass through Pailles to its junction with A1 at Grand River North West) will be considered as well during project preparation.

#### ***Component 4- Technical Assistance in the Energy Sector (US\$3 million):***

This will comprise: (a) preparation of a least cost development plan for the power sector, as follow-up to the EU-financed energy policy work, (b) advisory services for scaling up renewable energy development (and energy efficiency), including strengthening the associated legal and institutional framework, and (c) the preparation of detailed energy sector studies for renewable energy, and possibly engineering studies for one or more renewable energy projects (most likely a wind farm), including the hiring of a transaction advisor.

The strengthening of the associated legal and institutional framework will be carried out under the METAP loan.

**Component 5 - Technical Assistance in the Water Supply and Wastewater Sector (US\$5 million):**

The proposed technical assistance activities aiming at helping the government to prepare the investments needed to meet the objectives mentioned in the General Background section are:

- Development of a National Water Resources Mobilization Plan and Optimization of Water Use (short run, medium run, long run)
- Development of a Water Strategic Plan (medium to long term horizon) implying hiring 1 Expert in Water Resources Management for 6 months to validate in-house assessment
- Development of a National Wastewater Master Plan
- Feasibility/ detailed studies for future investments projects

The future investments envisaged at this point are: (i) the capacity extension of the Midlands dams to increase water supply and irrigation in the North region<sup>1</sup>, (ii) the South Mauritius Water project to increase water supply, (iii) the construction of a pumping station and of 3 km of sewers to connect the Tianli development, (iv) the connection of an additional 7,500 households to the sewerage network in Terre Rouge and (v) the construction of 27 km of sewers and connection of 2,900 households in Plaine Wilhems, on the basis of the recommendations of the AfDB-funded Wastewater Master Plan.

The estimated amount needed to fund these activities is approximately US\$5 million.

**Component 6 - Development of Infrastructure Programme (US\$1 million)**

Facilitating the growth and diversification of the economy requires timely and well-planned development of critical supporting economic infrastructure. There are competing uses of land and competing priorities for infrastructure projects in Mauritius. As such, the Government of Mauritius intends to adopt a holistic approach towards planning of infrastructure development so as to make the optimal use of land and investments for desired economic benefits. Such an approach is also expected to meet the urgent need for a clear and consistent planning guidance to both Government agencies and the private sector. In this context, the proposed project will fund a 10 year Infrastructure Master Plan, i.e. a comprehensive assessment of key infrastructure requirements and overall infrastructure management, including land use planning and development over the medium to long-term period, that will identify infrastructure gaps and investments required to catalyse the economy and should be based on the economic vision of Mauritius.

4. Safeguard policies that might apply

<b>Safeguard Policies Triggered (please explain why)</b>	<b>Yes</b>	<b>No</b>	<b>TBD</b>
<b>Environmental Assessment (OP/BP 4.01)</b>	<b>x</b>		
In terms of environmental impacts, the only works envisaged under this loan are related with road maintenance, rehabilitation and/or upgrading. As such, it is recommended that the safeguards category be assessed as (B): the potential impacts on the environment are site-specific, reversible in nature; and mitigatory measures can be easily designed.			
<b>Natural Habitats (OP/BP 4.04)</b>			

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<b>Safeguard Policies Triggered</b> ( <i>please explain why</i> )	<b>Yes</b>	<b>No</b>	<b>TBD</b>
<b>Forests (OP/BP 4.36)</b>			
<b>Pest Management (OP 4.09)</b>			
<b>Physical Cultural Resources (OP/BP 4.11)</b>			
<b>Indigenous Peoples (OP/BP 4.10)</b>			
<b>Involuntary Resettlement (OP/BP 4.12)</b>	<b>x</b>		
<p>Given that the expansion of the Quartier Militaire road width means that affected people are not physically displaced and less than 10 percent of their productive assets will be lost, an abbreviated Resettlement Action Plan (RAP) will be sufficient.</p> <p>The transfer of the lands alongside the road to allow for expansion could be undertaken either by purchase or expropriation with compensation. But often in such cases the land is given voluntarily. This because the road upgrade improves economic efficiency by providing enhanced access to markets and additional safety and may even result in an increase in land prices. Moreover, given that in the majority of cases along Quartier Militaire road, properties are quite large, the loss of one or two meters along the road does not substantively affect the income of the owners.</p>			
<b>Safety of Dams (OP/BP 4.37)</b>			
<b>Projects on International Waterways (OP/BP 7.50)</b>			
<b>Projects in Disputed Areas (OP/BP 7.60)</b>			

The GoM's institutional capacity for safeguard policies is high. Tourism and fishing are key sectors of the Mauritian economy and both depend on sound environmental management for long-run sustainability. Mauritius' environmental agencies have more than adequate capacity and experience in commissioning and following through on environmental impact assessments and for monitoring compliance with the country's environmental and social protection laws. The government is responsive to the desires of the public, and has many times in the past postponed or altered public projects that faced strong opposition from those who would be negatively affected (the extension of the landfill at Mare Chicose is an example). Nevertheless, national laws and regulations will be examined to identify gaps (if any) between Mauritian legislation and World Bank operational policies.

For environmental issues, the Road Development Authority under the Ministry of Public Infrastructure, Land Transport & Shipping works closely with the Department of Environment within the Ministry of Environment and National Development to validate EIAs, and in the case of particularly sensitive projects, a staff member from Ministry of Environment is assigned to the supervision of the works from an environmental perspective. The Department of Environment's staff is adequately trained and experienced. This RDA has satisfactorily carried out several Environmental Assessment and Social Studies and implemented Environmental and Social Management Plans and Resettlement Action Plans in the road sector in the context of the previous World Bank-funded Highway Projects. The LTA staff, which will absorb the RDA, will be trained on environmental and social issues to strengthen further this capacity.

The ESMF with the EIA study will be submitted for review and approval by the Bank before appraisal of the project.

5. Tentative financing

Source:	(\$m.)
BORROWER/RECIPIENT	0
International Development Association (IDA)	50
Total	50

6. Contact point

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