PROJECT INFORMATION DOCUMENT (PID)
CONCEPT STAGE

Report No.: AB1922

Project Name	MU-Environmental Transport Investment
Region	AFRICA
Sector	General transportation sector (70%);Railways (30%)
Project ID	P091828
Borrower(s)	Government of Mauritius
Implementing Agency	
Environment Category	[X] A [ ] B [ ] C [ ] FI [ ] TBD (to be determined)
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1. Key development issues and rationale for Bank involvement

Key development issues

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 and about 36,000 live on Rodrigues and on a few outer islands. 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 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.

Per capita income in Mauritius grew at an average rate of over 5 percent during 1990–2004, one of the best performances in Africa. The nation's per capita gross national product of about US$4,500 in 2004 (Atlas method) now exceeds that of any other country on the continent except for Seychelles.[1]

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. Passenger cars in 2000 totaled about 90,000, nearly double the number in 1990.[2] Mauritius now has about 78 cars per 1,000 inhabitants, which is fairly typical for upper-middle income countries.[3]

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1 Data are from the World Development Indictors database.
2 International Road Federation, *World Road Statistics 2002*.
3 For example, Chile with per capita gross national income of US$4,590 has 87 passenger cars per 1,000 inhabitants.

The nation's environment and topography pose special challenges for the development of transportation. The island is volcanic in origin with mountain peaks reaching 730 meters bounding the central plateau in the north, west, and south. This limits the area suitable for roads. The island's reliance on tourism, which depends on the maintenance of a high-quality environment, also places constraints on the construction of roads.

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 1.2 billion per year.

The government has long relied on ad hoc measures to expand and upgrade its transport system. While this approach was satisfactory when the population of Mauritius was small and its economy depended primarily on agriculture spread throughout the island, the government recognizes that future sustainable social, environmental, and economic development will require a more comprehensive strategic approach to transport planning. To this end, the government with the assistance of international consultants undertook in 2000 an integrated national transport strategy study. The study projected demand for all modes of transport, laid out options for meeting future demand while also protecting the environment and quality of life, and presented costs and benefits of various transport options. The "Mauritius Transport Action Plan and Public Expenditure Review" prepared by the Bank provided a more detailed analysis of options for dealing with the island's top transport priority: reducing or stabilizing traffic congestion in the Port Louis conurbation without harming the area's economy (World Bank, report 26148–MAS, June 16, 2003). This presents a long-term prioritized investment program covering all modes, based on a realistic appraisal of available financial resources and human and institutional capacity. It is linked to national and regional land use and development planning, and includes policy and institutional reforms to allow the government to fulfill its functions and responsibilities in planning and regulating transport infrastructure and services.

Proposed transport program

The government is now preparing an integrated, comprehensive, 12-year transport program on the basis of the transport strategy and the transport action plan updated to cover 2005–17. The World Bank Group (including the IFC, and MIGA), other donors, the government, and the private sector will support the implementation of the program through a series of projects that will follow, or overlap with, each other. The World Bank will identify and mobilize on behalf of the government the best combination of finance and conditions available in the market to finance the proposed transport program.

Rationale for Bank involvement

The Bank has consider experience in supporting countries' efforts to expand or upgrade public transportation systems. Through its growing global portfolio of urban transportation projects, it has developed the skills and knowledge to help countries design and implement policies to encourage people to switch from private vehicles to public transportation and to build the capacity to manage transportation systems of growing complexity. The Bank also has long experience working in Mauritius. Through this experience, it has developed insight into the specific institutional and social issues of the country and will draw on this knowledge in designing and managing the proposed program. The Bank has also forged positive working relationships with the government entities that will be involved in the proposed program. Bank involvement will help in mobilizing resources and expertise from other partners and thereby improve program design, implementation, effectiveness, and sustainability. Finally, Bank participation will encourage potential private sector partners to participate in the financing of the light rail transit system and to enter into agreements to manage and operate the system over the medium or long term.

The proposed program is in line with the Bank's Mauritius country assistance strategy discussed by the Board on May 7, 2002, which supports the government's New Economic Agenda. The CAS explicitly states that the government has been seeking an alternative along the Port Louis to Curepipe corridor to both reduce congestion and pollution, and that it will most likely decide on a light rail transit system to serve this purpose.

2. Proposed objectives

The program development objective is to reduce or at least stabilize traffic congestion in the Port Louis conurbation. This will benefit all people traveling in the area by reducing (or stabilizing) journey times and increasing their reliability. It will also benefit businesses by reducing the frequency of missed appointments and late arrivals. It will help all people living and working in the area by reducing vehicle emissions, noise, and nuisance, and thereby contribute to improved health and quality of life. Finally, it will assist the less well-off members of society, who cannot afford to purchase cars, but suffer from the long travel times imposed on buses by traffic congestion.

Key performance indicators and targets include:

- Travel time during morning peak commuting times does not increase above 25 to 30 minutes for traffic entering Port Louis from the south and west and above 20 minutes for traffic entering from the north.

- Ridership on the light rail transit system averages 93,000 per day during its first year of operation and rises thereafter at a rate no less than that of population growth in the conurbation.

3. Preliminary description

The program will comprise five components: (a) major investments in mass transit and transportation infrastructure; (b) investments in traffic management; (c) urgent measures; (d) capacity building, and policy and institutional reforms; and (e) program management. The project will be the first of a series of projects envisaged to support implementation of the government's 12-year transport program, financing the first three years of the transport program (2005–08).

Details of the component activities follow:

A. *Major investments in mass transit and roads*. The first component will support the major investments of the program, envisaged at this time to consist of a light rail transit system and major road works, including a Port Louis bypass. The light rail transit system will run along the line of the former railway between Curepipe and Port Louis (a distance of some 25 kilometers). Trains will run at speeds of 55–75 kilometers per hour, so a journey from the beginning to the end of the line will average 32 minutes. The system will include 13 stations (stops), many located in town centers along the route where transport terminals already exist. Access to stations will be through an integrated system of comfortable and reliable feeder buses. To reduce demand on the public budget, the government plans to involve the private sector to the extent possible in financing, managing, and operating the light rail transit system. This component will also support the upgrading (realigning or widening) of roads and the construction of new routes to accommodate increased traffic levels. Priority will be given to roads in and around the Port Louis-Curepipe corridor, especially where changes are needed to implement the light rail transit system or to provide routes allowing traffic to bypass settlements. Over the medium-term, this component may also support construction of major new routes and bypasses to provide safer, more convenient main road connections between the various parts of Mauritius, and to help reduce some of the current conflicts between pedestrians and traffic along these main roads. Finally, this component will finance land acquisition, engineering services, and measures to address potential environmental or social impacts of the major investments. (See maps of the proposed light rail transit system.) The project (the first phase of the program) under this component will support the preparation of the light rail transit system and the Port Louis bypass, including the engineering studies, environmental and social impact analyses, and implementation of measures designed to mitigate potential environmental and social impacts of the investments.

B. *Investments in traffic management*. Reducing traffic congestion will require both provision of public transport that attracts people who would otherwise travel to work in private cars and measures to reduce demand for scarce road capacity. This component will support the development of an electronic road pricing scheme. Such schemes have been used successfully in Singapore, Trondheim, Norway, and recently London. Electronic road pricing schemes work by charging drivers a toll for using scarce road capacity. The toll is set high during peak travel times and low during nonpeak times. By adjusting the tolls busy roads can be made to flow, actually increasing road capacity and the number of people that can access the city center. The revenues raised can be used to fund the government's contribution to the initial cost of the light rail transit system or other local transport improvements, benefiting the less well-off citizens who do not own cars. Without an electronic road pricing scheme, the impact of the light rail transit

system will be too small to justify the expenditure on the rail system, as it is the electronic road pricing scheme that will reduce congestion. Establishing the light rail transit system will increase the political viability of introducing an electronic road pricing scheme by giving people an attractive alternative to driving. This component will also finance roads periodic maintenance; reforms of parking policy and investments in urban parking facilities (to be owned, financed, and operated by the private sector); traffic management measures; signs, signals, and road markings; road safety measures, and sidewalks and drainage.

C. *Urgent investments*. The third component will finance improvements to roads and access lanes, traffic management, reorganization of bus lines, upgrading of bus services and the bus fleet, urban infrastructure to improve traffic flow, and other related activities.

D. *Capacity building and policy and institutional reforms*. This component will support the introduction of reforms to ensure that policies and institutions contribute to the government's objective to reduce traffic congestion in the conurbation without damaging its economy. Under consideration are reforms of parking policy, of policies that encourage employers to pay for the travel of their employees, of policies guiding land use and urban development, and of regulations governing bus services. This component will also help through training and technical assistance to build the capacity of government entities so that they are able to manage and guide the urban transport sector into the future.

E. *Program and project implementation, management, and monitoring*. This component will support expertise for program and project management to ensure that the program and project is implemented efficiently, effectively and in compliance with World Bank financial management, procurement, and safeguard policies. It will also support the preparation and management of the overall urban transport program in the Curepipe-Port Louis conurbation.

Table 1: Program Costs and Financing (US$ millions)

Components	**Public sector**		**Private sector**		**Total**	
	Amount	**%**	**Amount**	**%**	**Amount**	**%**
1. Major investments in mass transit and roads.	305.9	65.5	160.9	34.5	466.7	77.3
2. Investments in traffic management.	55.5	62.0	34.1	38.0	89.6	14.9
3. Urgent investments.	17.7	55.1	14.4	44.9	32.1	5.3
4. Capacity building and policy and institutional reforms.	7.3	81.1	1.7	18.8	9.0	1.5
5. Program implementation, management, and monitoring.	3.9	65.0	2.1	.35	6.0	1.0
Total base costs	**390.2**	**74.8**	**213.2**	**25.2**	**603.4**	**100**
Contingencies	19.5		10.7		30.2	5%
Total costs	**409.8**	**74.8**	**223.9**	**25.2**	**633.6**	**105**

Table 2:Project Costs and Financing (US$ millions)

Components	Public sector		Private sector		Total	
	Amount	**%**	**Amount**	**%**	**Amount**	**%**
1. Major investments in mass transit and roads.	49.6	96.8	1.6	3.1	51.2	37.6
2. Investments in traffic management.	29.7	63.5	17.1	36.5	46.8	34.4
3. Urgent investments.	17.7	55.1	14.4	44.9	32.1	23.6
4. Capacity building and policy and institutional reforms.	3.5	87.5	0.5	12.5	4.0	2.9
5. Project implementation, management, and monitoring.	1.3	65.0	0.7	.35	2.0	1.5
Total base costs	**101.8**	**74.8**	**34.3**	**25.2**	**136.0**	**100**
Contingencies	5.1		1.7		6.8	5%
Total costs	**106.9**	**74.8**	**36.0**	**25.2**	**142.8**	**105**

Implications of the transport program for public finances. The 12-year transport program is affordable without imposing an extra burden on public finances, according to recent financial projections using the financial tool developed for the transport action plan. These show that with real economic growth of 2–3 percent per year, a 7 percent share of GDP allocated for public sector fixed capital formation (compared to the 8 percent achieved during the past few years), and a 14 share of public sector investment targeted to transport infrastructure (the allocation of the past five years), public investment in transport will be similar to that of recent years (see annex 1 for details of the calculations). Taking into account the private sector participation in the financing the program, public expenditures for the program would total about US$34.1 million per year.

Preparation of the program and sequencing of investments. The government has obtained a project preparation facility (PPF) advance of US$2 million to establish and staff a project management unit and undertake the studies required to assess the financial viability and to understand the potential environmental and social impact of the light rail transit system, the Port Louis bypass, and other major investments. Depending on the results of the studies, which are expected in the spring 2006, the government will decide on the sequencing of the major investments of component A of the program. The preparatory work and the financing plans for the investments in traffic management (component B) and in urgent measures (component C) will be completed as soon as possible to allow their implementation to proceed while preparation of the major investments of the program is progressing.

4. Safeguard policies that might apply

Two safeguard issues will be triggered. These are environment assessment (OP/BP/GP 4.01) and involuntary resettlement (OP/BP 4.12). The environmental screening category is A because construction of infrastructure is planned and adverse environmental could occur in the absence of comprehensive assessment of impacts and implementation of mitigation measures. The safeguards screening category is S2 because the program could result in the involuntary displacement of some residences or businesses. A comprehensive environmental and social impact assessment will be carried out during preparation to clarify the issues and to develop plans for addressing them.

5. Tentative financing

Source:	($m.)
Borrower	50
International Bank for Reconstruction and Development	40
Total	90

6. Contact point

Contact: Abdelmoula M. Ghzala
Title: Senior Infrastructure Specialist
Tel: (202) 473-4450
Fax:
Email: Aghzala@worldbank.org