INTRODUCTION

This briefing document reports on a process to achieve consensus among twenty major stakeholders on transport policies and actions needed for Mauritius. Following forums held on 14 and 21 September, nineteen out of twenty participants reached agreement on a set of proposals and signed a document to be transmitted to the Government of Mauritius (please find this appended).

There have been many ideas over more than a decade on steps needed to enhance mobility and tackle congestion in Mauritius. Many plans and reports have been produced over fifteen years, often at considerable cost; the international community has participated alongside the Government of Mauritius; a range of projects have been adopted by successive governments; but little action has been taken. As a result, problems of both mobility and congestion have intensified. The consensus process was about bringing everyone together to formulate an agenda that would both bring great benefits to transport infrastructure and operations in Mauritius and which would be politically feasible.

Participants in the forums understood the need to put Mauritius on a path to a fresh start. They attended with one resolve to get actions initiated that will bring real benefits to all Mauritians. As the forums progressed, it was clear that there were a variety of perspectives on how to cope with transport problems. What is remarkable is that all except one participant made strong efforts to reach agreement. If one member of the group was not happy with a proposal, an amendment was offered to satisfy them or a proposal that did not seem attractive was tied to one that satisfied the needs of the constituency in question. With a vigorous spirit of give and take, the group unselfishly acted to produce a set of proposals that would offer benefits not only to all the stakeholders, but to all of Mauritius.

As Chair of the process, I fully back the set of proposals selected. They may not all have been my first choices. However, the group was focused on the idea of creating a coherent package, and the proposals selected come together to forge a new direction for transport in which vehicles use will be more responsible as a result of the imposition of new congestion and parking charges, while substantial benefits will accrue in terms of approved new transport projects to provide both enhanced public transport infrastructure and additional road facilities for general use, and to modernize the regulation and operations of the public transport and taxi sectors.

The key proposal in the whole package is the establishment of a Land Transport Authority. This proposal attracted major support from the start. Fruitful change cannot take until institutional problems which have hindered transport development have been addressed. A new authority integrating all aspects of land transport under one umbrella and integrating land use with transport objectives is essential if the other elements in the proposed program of change are to become reality.
TRANSPORT PROBLEMS IN MAURITIUS

Much has already been written about transport problems in Mauritius. The objective here is to describe them only briefly. In summary, car ownership has escalated as incomes have risen and, in the absence of adequate management of traffic together with a failure to provide high-quality public transport alternatives, congestion has risen to unacceptable levels while journey times for bus passengers caught in traffic as well as for motorists have increased.

The current road system, with only two major entry points to Port Louis from the south, is overburdened. As currently operated, it is incapable of handling the levels of traffic to which it is subjected. Not only is road capacity low for the volume of traffic experienced, but approaches to traffic engineering, with manually controlled roundabouts and a lack of control of flows onto and off the motorway, fail to employ such road space as does exist to best levels of efficiency. Turning movements into and out of Port Louis city at Caudan and Place d’Armes roundabouts introduce particularly severe traffic conflicts and delays.

Roads and pedestrian pavements are poorly maintained, with an inadequate commitment to providing staffing and other resources needed to meet desired levels of service.

Daytime parking charges have been introduced in Port Louis and a number of other congested locations, but have had little impact on reducing congestion. A lack of adequate staffing for travel wardens and inadequate coordination with police who are also involved in parking regulation enforcement, has led to a high incidence of illegal parking. Illegally parked vehicles frequently impede traffic movements. Legal parking on both sides of many city streets also reduces street capacity while uglifying the city with a clutter of cars. Pedestrian pavements are poorly maintained, and little effort has been made to ease pedestrian flows, let alone to make them pleasant.

Taxes on car use, which are payable at time of purchase, at annual intervals, or on petrol purchase, have no influence on the time of day at which motorists choose to travel: the cost appears to be the same whether travel is at peak or at off-peak hours, and peak-hour travel is thereby encouraged. Policies which excuse senior civil servants from paying duty on car purchases have encouraged car purchasing while sending a message that private vehicles have a special intrinsic value to be used as a reward for services rendered.

The bus industry is fragmented and does not plan adequately for its passengers. With one financially compromised parastatal required to provide loss-making services, three major private bus operators, and over seven hundred privately owned small companies, all under pressure financially due to regulated revenues, a static and outdated regulatory environment, rising costs of operation (notably fuel costs), and competition with relatively low-cost automobile use and illegal informal transport operators, there is little scope for innovation.

The bus industry has introduced a small number of direct and speedy services which are
attractive to passengers, but much of the route structure provides slow all-stops local service, which is not acceptable to many car commuters and which is not competitive when the informal sector offers illegal but much faster direct services. Bus terminals in Port Louis are poorly located relative to workplaces, requiring passengers to walk to and from work on foot during inclement weather. The regulatory structure in Mauritius, enforced by the NTA, does not plan for new and reformed services in the interests of passengers.

Lack of financial viability has put pressure on bus operators to keep costs low. Few buses have air-conditioning, while buses require climbing of steep steps to board, are not therefore accessible to handicapped and elderly people, and are not pleasant to use for the public at large.

The regulatory structure for the taxi industry is in need of reform. The industry has grown in ways which have been insufficiently controlled, and licenses granted for patterns of operation which do not best serve the public. The availability of a Ministerial appeals process in the granting of licenses has led to a lack of discipline in industry development.

There has been a lack of coordination of land-use planning with transport. While land-use plans have been produced, little progress has been made to realizing their goals. Land-use development is rarely if ever executed in conjunction with sound principles for transport planning.

The overall greatest problem has been a lack of appropriate institutional structures for effective implementation of transport policies. Responsibilities as well as lines of authority are ill-defined, and duplication exists between government agencies. Multiple agencies advocate competing projects, making it hard for political decision-makers to develop a clear vision of priorities for action. Changes of government have tended to lead to a rejection of previously-established policies in the absence of a strong, technically proficient, and goals-directed authority able to make the case for a commitment to a set of actions which it can show to be in the public interest.

**POLICIES AND ACTIONS ADOPTED BY THE CONSENSUS-FORMING PANEL**

A series of policies for review and potential selection were presented to the consensus group on 14 September. The policies were derived from discussions with transport stakeholders in Mauritius over the previous ten days together with submissions some of them have supplied; a review of past reports on transport problems in Mauritius, including my own review conducted in 1997 for the World Bank; and analysis and refinement of these policies to produce a set amenable to forming a coherent set of measures for implementation.

To help focus discussion, participants were asked to consider the range of values we need to consider in policymaking – values which are often in conflict. Such conflicts create dilemmas
and difficulties in making decisions, but participants were told that we need to engage what those values mean to us if we are to take appropriate actions.

Mobility is required to make the economy function as well as for personal convenience. As societies develop and wealth increases, personal freedom becomes of increasing importance, and specifically the value of the freedom to travel where we like by private car.

As motorization increases and has negative impacts on the environment, we have to consider the value we attach to having liveable and attractive cities, and the price we are willing to pay in terms of restrictions on personal freedom in order to avoid the damage caused by un-fettered growth in vehicle traffic.

We need to ask ourselves also how important we consider the rights of those less fortunate than ourselves: people with low incomes, elderly people, and handicapped people, and how many resources we are prepared to commit to provide them with the freedom to move about which the rest of us enjoy.

When we develop public transport, we need to decide the extent to which users should pay the total costs, as against finding socially-funded ways of bringing them support.

In developing new transport options, we have to ask how important it be that they are cost-effective, and whether they should focus on investment spent in foreign countries or which provide benefits to the Mauritian economy. We need to think about whether we wish to focus on relatively capital-intensive or labour-intensive solutions, and about the impacts we would like to have on local labour markets. Is it worth adopting a possibly more risky or costly project in order to protect or generate more local jobs?

Finally, we need to consider the value of transport projects in relation to the needs of other sectors of the economy and of society. On a basic level, can we consider transport planning separately from the overall values of urban planning?

Casting the net wider, given conflicting demands for limited resources, what is the importance of focusing on transport developments as against those in areas of housing, health, education, and welfare?

It is only by asking these larger questions directly that we are likely to be honest with ourselves in choosing the path to follow. With these needs for reflection in mind, a list of possible policy options was presented to the participants.

A number of modifications resulted from the initial discussion on the 14th, from feed-
back forms all participants were asked to complete, and as a result of some other submissions. The full list was debated on the 21st in an iterative process which removed policies from consideration which clearly did not have almost unanimous support. Those who had supported policies which were dropped were asked to consider transferring their preferences to other policies.

Following a number of rounds of refinement and amendments necessary for consensus, agreement on desirable actions was reached and endorsed by the entire group except for one member, the representative from the contract bus industry.

Proposals were divided into seven categories for purposes of discussion and consensus formation. The agreed policies are listed and discussed below. Cost numbers are based on estimates made at different times for different projects, and in some cases do not reflect the particular project design proposed here. Some estimates are based on preliminary discussions with international donor agencies, and are currently under further refinement. Reliance should therefore not be placed on any of the cost numbers, which are included only for rough guidance. Timelines indicated give a rough order of magnitude estimate of times needed to completion assuming favourable political, institutional and legal climates. Should such supportive conditions not prevail, time taken for implementation can be expected to be longer.

A. Institutional Measures

1. A recommendation for formation of a new Land Transport Authority with reduced output cost per unit compared to current output cost per unit.

Currently, not only is there an ad hoc approach to addressing problems and considering actions in the field of transport, but duplication exists in responsibilities for transport policy-making and action-taking, leading to ineffective operational government and paralysis in project implementation. For example, to solve congestion pressures on Port Louis, the Harbour Authority is calling for a harbour bridge; the RDA for a ring road; and the Mauritius Institution of Engineers for an elevated highway. There is no ready institutional basis for bringing such recommendations together into a rational decision.
The Road Transport Advisory Board has their own proposal on congestion charging, separate from policy considerations of other agencies. The National Transport Authority and the police both have responsibilities for parking enforcement, but they are inadequately coordinated, while this duty remains a relatively low priority for the police given lack of manpower resources or a direction to do otherwise.

A set of recommendations for transport improvements made by the consulting firm, Halcrow Fox, in 2001 were adopted by the previous government, but, in the absence of an effective implementing authority, were not translated into action.

To give a smaller-scale example, the NTA is responsible for bus stop location. However, a review of an NTA proposal for a bus stop must be made by the Road Safety and Traffic Management Unit. Then this has to be sent to the Ministry. The job is then given to the Roads Development Authority for implementation. Such a convoluted process makes it hard to take effective and timely action.

With fragmentation in government, there is a lack of overall planning to achieve desirable transport outcomes. To tackle these deficiencies, a new Land Transport Authority, along the lines of the one established in Singapore for the same purpose of providing strong coordinated leadership, is proposed. The new authority will handle all transport functions under the leadership of strong executive leadership, taking them over from existing institutions which would be dissolved as their functions are transferred.

The authority will have the mandate of planning (and will early in its life produce an initial master plan to be reviewed and amended as needed periodically), executing approved projects, and managing transport resources effectively according to the direction of the elected government. The authority would be responsible for integrating transport policy with the goals of other areas of government and, in particular, for considering the needs of land use and transport integration.

Given the lack of adequate numbers of transport professionals to meet the needs of Mauritius, the authority would put a priority on developing skilled local professionals to push forward its mission, supported with specific funding for educational and training purposes. At the same time, a focus would be placed on streamlining, removing duplication and reduc-
ing bureaucracy to cut back the costs of operations per unit of output as compared to those of the currently existing organizations. The new organization would therefore be expected to be more efficient as well as more focused and capable of implementing its goals.

Once the political side of government has indicated its requirements, the authority would have the ability to act to meet those obligations without interference from competing agencies or ad hoc political interventions. The authority would place a priority on developing long-term plans, policies and actions capable of continuity from one elected government to the next.

Very strong consensus was achieved around this policy. It is particularly notable that senior personnel from agencies which would cease to exist in order to create instead an integrated LTA were strongly in favour of the organizational change because they understood the need for unified integrated decision-making if the current barriers to progress in transport are to be removed and appropriate actions are to be taken.

Establishing the LTA would require legislative action and establishment of a process to transfer existing functions to the new organization. It should be noted that agency reform has been successfully completed in Mauritius in the past, as in the creation of the Mauritius Revenue Authority. Also, a proposal for a new transport authority dates from as far back as 1993, and a bill was drafted but did not receive action. Earlier work could be revisited and built upon.

It is recommended that a management consulting firm skilled in organizational redesign be appointed to oversee as well as design the transition so as to ensure the high functionality and cost-effectiveness of the new organization. Sufficient funding should be programmed for set-up activities which could cost in the range of Rs. 30-50 M.

Key executives should be appointed to the new organization as soon as possible and given real authority over decision-making while the transition forges ahead.

Estimated timeline for implementation: 1-2 years with designation of authority structure and governance responsibilities and appointment of key senior executives as soon as possible, and integration of all existing transport functions over remaining period.

2. Policy to maintain funding for minimum acceptable levels of agency functioning, to include police, traffic wardens, road maintenance, and implementation of projects, subject to a minimum technical level of expenditure set by the LTA.

Currently, many basic services such as policing, traffic management, and road maintenance go...
underfunded, even though road users contribute pay far more in vehicle purchase duties, license fees, petrol and other taxes and public parking charges (Rs. 6 B fiscal 2005) than is returned by government for providing and enhancing roads and transport services (Rs. 2 B).

Under this policy, minimum performance levels would be set for transport project advancement; for road operations; for traffic and parking regulation enforcement; for roads and other facilities maintenance; and for other transport-related activities and funding to provide staffing needed to attain those minimum levels determined by a technical panel of the LTA and then guaranteed in the budget. A fence would be provided to protect funds essential for development and operation of transport from diversion to short-term more politically attractive uses, and to avoid deterioration or breakdown of present systems.

A policy for a stronger, dedicated Transport Fund with funds earmarked for transport expenditures, did not achieve consensus because of concerns about the limitations such a fund could place on the flexibility of government operations along with issues of control; however, the measure as stated did achieve consensus because of recognition of the need to provide a level of protection for essential transport projects and services.

This policy could be put into force through the legislative introduction of the proposed LTA.

Estimated timeline for implementation: 1 year.

B. Public Transport Development

3. Recommendation to develop an open exclusive busway right-of-way in the Curepipe – Port Louis Corridor.

The consensus process reviewed three options for developing a mass transit option in the Curepipe – Port Louis corridor: light rail, a closed busway, and an open busway. Consensus was reached that an open busway facility should be constructed.

A: The Light Rail Option.

Light rail was adopted for implementation in the Curepipe – Port Louis corridor by the previous government, but no
Several studies of the potential for light rail, using a former rail right-of-way, have been conducted, including by Systra, Iberinsa, Halcrow Fox, and a review conducted by myself. The Halcrow Fox study of 2001 was the basis for previous government endorsement of light rail. Light rail offers the advantage of operation on an unimpeded separate right of way, using modern vehicles. Priority for public transport is guaranteed because road vehicles cannot be allowed to operate on the track. Quality light rail systems can provide speedy and attractive service. The Halcrow Fox study of 2001 was the basis for previous government endorsement of light rail. Light rail offers the advantage of operation on an unimpeded separate right of way, using modern vehicles. Priority for public transport is guaranteed because road vehicles cannot be allowed to operate on the track. Quality light rail systems can provide speedy and attractive service.

The cost estimated for light rail by Halcrow Fox in 2001 was Rs. 6.2 B, but this would be substantially greater now (even assuming it was accurate at the time) due to changes in the value of the rupee and to inflation. Recent experience around the world has shown the far higher cost – two to three times higher per route km would be a conservative estimate – of implementing light rail relative to busway alternatives. In addition to high costs, the light rail proposal depends heavily on capital expenditure and products and expertise supplied from outside Mauritius.

With approximately 63,000 daily bus passenger movements in the Port Louis – Curepipe conurbation in 2001 (as against 158,000 people travelling in 79,000 private cars), and current flat trends in public transport growth, the estimate by Halcrow Fox of 93,000 daily ridership for light rail is optimistic, especially in the absence of efforts to restrain car use. With congestion pricing in force, the market for public transport services will likely expand. However, uncertainty in just how patronage will develop makes a capital investment in light rail of the scope proposed for Mauritius highly risky. The history of light rail around the world has been for costs to be underestimated and ridership to be overestimated.

The operating journey time of 32 minutes proposed for light rail for end to service is optimistic, given lower service speeds achieved in many other locations around the world. There would likely be longer periods required for station stops than estimated. It is assumed that 60% or more of light rail passengers would stand during the journey, and this discomfort could deter people who currently drive to work from using the service.

While the tendency has been to forecast that many light rail systems would cover their operating costs, the reality has been of loss making and government obligations. Light rail systems tend to employ fewer drivers than bus systems, but rail infrastructure is more complex and costly to maintain. Should optimistic projections of passengers not materialize, the risk of unsustainable long-term subsidy requirements being imposed on the Government of Mauritius would be extremely high, and some degree of subsidy can be expected even under optimistic scenarios.

Connecting bus services between residences and light rail stations would have to be provided, either at increased cost to the passenger...
or under a revenue-sharing arrangement which would reduce revenue to the operators. Time would be required for passengers to transfer between buses and trains. Numerous studies have shown that the need to transfer strongly deters public transport use and creates a deterrent disproportionately greater than the increase in journey time that results as compared to a direct, transfer-free, trip.

The loss of core high volume high revenue bus services to Port Louis would be accompanied by a need to retain less dense and less financially sustainable bus operations, and would likely threaten the financial viability of bus operators whose profitability is already slight. Job loss would take place in the Mauritian bus industry. The bus industry and bus labour would have recourse to the courts to protest the negative impacts such changes would impose, and political opposition would continue to make implementation at best questionable.

While a few participants in the consensus forum maintained that light rail could provide a higher level of service than buses and would enhance the status of Mauritius, the majority recognized the high financial risks to the government from choosing light rail, the likely negative impacts on the bus industry, and the lack of ability politically to proceed with the project. Accordingly, most conversation focused on a choice of busway facility.

### B: Busway options

Halcrow Fox considered a number of busway alternatives to light rail, but focused on closed busway options. With a closed busway, a single operator uses a custom-designed bus fleet to provide high-quality service on a facility which is closed to all outside traffic. Passengers coming from outside the busway must transfer vehicles to get access to the busway. By isolating the busway from outside traffic, precise operations can be maintained, minimizing risks of system breakdown.

Halcrow Fox mentioned, but did not formally evaluate, an option for an “open” busway. With an open busway, buses are not restricted to the facility, but may travel on local streets at either end to pick up and distribute passengers without the need for them to transfer between buses. An open busway can accommodate a range of bus vehicles and operators at one time.

Halcrow Fox eliminated the option of open busway out of concerns that allowing buses to perform both feeder and busway functions
could cause the facility to break down. If buses are not introduced and managed in a disciplined way on the facility, they can bunch and congestion can result, just as on any other roadway. The operation of the facility must be conducted in a disciplined way, and vehicle crews must be properly trained and adhere closely to regulations.

The estimated cost for an unguided closed busway option, put at Rs. 4.3 B in 2001 by Halcrow Fox, was significantly less than for light rail, although projected ridership of 88,000 daily passengers was not far below the estimate for light rail. Projected maximum peak hour loading of 5650 passengers was well within the capacity of a busway to handle. Journey time end-to-end was projected at 35 minutes, three minutes longer than for light rail.

Halcrow Fox voiced concerns about whether, given their understanding of the public image of the bus, passengers would really use an improved bus facility, although enhanced bus systems in South America and elsewhere have demonstrated that imagery in fact has little or no impact upon passenger demand, which is primarily related to journey times of alternative methods of travel. There were concerns, also, over right of way limitations and the ability to build a facility which would be wider for buses than for light rail unless a guided bus approach was taken. In any implementation effort, such concerns would have to be revisited.

Any busway (or light rail) development would also require redirection of traffic currently operating on roads which occupy part of the right of way, and relocation of individual whose properties would have to be removed to allow construction to proceed.

On the “closed” busway options considered by Halcrow Fox, special buses would operate on the length of the route from Curepipe to Port Louis, and would not leave the facility. As with the light rail proposal, “stations” would be built the length of the busway, at which busway buses would make brief stops. No other buses would be allowed to enter the facility.

The closed busway approach helps ensure effective management, as a single specialized company would coordinate all services to avoid bottlenecks and delays, and would use purpose-built buses from the start to provide sufficient capacity and for rapid boarding and alighting of
passengers. Current labour problems would be eliminated since employees (some of whom might come from current bus companies) would be especially recruited and trained for the job.

For both the busway options Halcrow Fox considered, as for light rail, existing bus operators would convert their services to feeder operations and would likely incur substantial cutbacks and job losses. Passengers would need to transfer between local and busway buses to complete their journeys and, as with the light rail option, would likely have to pay an extra fare in the absence of revenue sharing arrangements.

In the Mauritian context, an open busway would not only offer the advantage of connection-free trips to passengers who pay a single through fare to travel on one bus, but would also preserve and possibly augment jobs at current operators. With the open busway option, operators would be asked to apply for permits for operation which would require guarantees of service standards and include provisions for purchasing upgraded bus fleets to feature low-floor, multiple-door, air-conditioned, environmentally-responsible buses over a reasonable period of time. Since operations would be on a congestion-free facility, more trips could be made during a peak hour than at present, increasing revenues, and helping to make available funds needed by operators to improve their bus fleets.

Given greater productivity made possible by the absence of congestion, the fleet replacement requirements per unit of output would be lower than at present. Operators should be asked to prepare a purchasing and financing plan, indicating an increased fare level which, combined with improved productivity, would permit the purchase of an appropriate fleet of new buses over time. The fare would likely be substantially higher at present and the increase could meaningfully be imposed during the peak only to reflect both the fact that the new facilities are being provided to respond to peak-hour congestion and that passengers travelling off-peak tend to pay their own fares (in Mauritius, by law, employers reimburse the costs of work trips) and constitute a more price-elastic market.

It would be desirable for bus companies to accept responsibility for renewing their own fleets, given increased fares, and priority in access to the busway should be given to operators willing to make such commitments. However, if financial analysis indicates that productivity and
fare changes cannot alone provide for fleet renewal, some government financial participation may be necessary.

To help avoid congestion, a signalling system and monitoring of bus operations from a central control room would be advisable for the new facility. There should be no stations placed on the two main tracks, ensuring that all vehicles so positioned are travelling at speed. Instead, turnouts should be provided to allow buses to stop and also to supply places for buses joining the facility from a number of offline suburban locations to collect passengers before proceeding on to the busway.

It would not be necessary for all buses to make all stops. Non-stop service could be provided from Curepipe to Port Louis or from Rose Hill to Port Louis, for example, while other buses could make local stops. This flexibility would help cut journey times, likely to be below those achievable on light rail, which is planned to make all stops on the length of the proposed line. Because, with an open busway, most passengers outside Port Louis would continue to board near their residences rather than at stations, less elaborate busway facilities would be required than with a closed busway, reducing construction and maintenance costs.

An open busway could be harder to offer for private concession than a closed busway; however, the model of separate companies providing and operating the infrastructure and operating on the infrastructure could be put into place with careful designation of responsibilities and rights. The operating company could build the busway and regulate access to its facilities once open to ensure high-quality operation. Alternatively, the government could build the facility, and set in place a regulatory body to govern its operations.

While elements of open busway operation imply a somewhat different infrastructure from a closed busway, an open busway could potentially be converted to a closed busway at a later date if necessary, although making such future provisions possible could result in higher initial implementation costs. Either open or closed busways offer the potential for conversion to light rail.

No costing has been prepared for an open busway option. Assuming the Halcrow Fox estimate for a closed busway, less the cost of a new bus fleet which, with the open busway, would be provided as far as possible by bus operators, yields a comparative estimate of Rs. 3.8 billion in 20001 rupees. This would likely be reduced given the lower costs of providing stops compared to the elaborate station and interchange requirements of a closed busway, but would also be increased given the need of signalling and control.
room facilities necessary to ensure disciplined operation.

While the open busway option offers many local advantages in terms of direct and speedy trips and preservation and strengthening of the existing bus industry, and while open busways already operate successfully in a range of locations around the world, it remains a risky one for the reasons cited by Halcrow Fox. A basic change in attitudes would be required to ensure the discipline required to avoid discipline.

During the consensus process, bus industry labour indicated a highly responsible preparedness to cooperate with changes in operating practices required to make the open busway a success. Participants considered the risks to the existing bus industry which would result from either light rail or closed bus options, and determined that the risks of implementing an open busway approach were overall less than those of other options and that the open busway presented a politically acceptable alternative, where strong support from stakeholders would contrast with the potentially political opposition which puts into question the ability to implement either light rail or closed busway options.

Accordingly, an open busway option was endorsed. Estimated timeline for implementation: 2–4 years, with sections opening in phases when completed.

4. Proposal to develop a bus lane on the motorway between St. Jean, Quatre Bornes and Port Louis.

The Roads Development Authority is currently studying the potential for introducing a bus only lane on the motorway between Quatre Bornes and Port Louis. Such a facility, which would be a low-cost measure based on modification of existing lanes, would cost in the region of Rs. 60 M and could potentially complement a light rail or busway option by offering speedy service to communities located closer to the motorway than to the rail/bus right of way.

Estimated timeline for implementation: 18 mos. – 2 years.

5. Proposal for process to reform bus route structure and fares.

Current patterns of bus routes and fares have been in place for decades and do not meet...
modern requirements. The regulatory system, furthermore, is conservative, and constrains innovation rather than providing for planned change. While some new services have been started successfully, most routes involve buses which make all local stops and provide a slow service which cannot compete with small-vehicle direct illegal operator services. With about 45% of routes operated by individual operators, it is not easy to get agreement on the restructuring of routes.

Fares which taper off sharply with increasing distance make the operation of longer-distance direct services unattractive to operators, while inflexibility in pricing options makes it hard to cater for niche markets.

There is a need for a range of monthly passes for commuters and for day excursion tickets for tourists. New pricing strategies may be required for successful financing and operation of a busway, if built.

This recommendation would call for establishment of a process by a designated unit of the proposed Land Transport Authority to perform regulatory functions and produce a reformed route and fare structure which would reflect both professional planning for most effectively meeting demands and the establishment of incentives to encourage innovation by operators. The restructuring would require professional support in the region of Rs. 30 M.

6. Proposal for bus-only road in Port Louis.

Buses from the north and south currently mostly terminate at two large terminals at either end of Port Louis. Passengers have to walk to and from work locations. The terminals are unpleasant places which fail to cater for passengers’ needs or comforts. Many buses remain in the terminals for several hours awaiting their next journey. Traffic conflicts arise due to movements in and out of terminals. As an alternative, it is proposed that a road or roads through Port Louis be designated for bus only use. Buses would then circulate through the central area of Port Louis to drop off and collect passengers, and would leave Port Lewis immediately upon completing their circuit through downtown. The potential would exist for creating new routes, for example services linking the north and the south through Port Louis.

The best distribution facility for work activities would be through an attractive bus mall environment created in downtown; however, if it proved difficult to adapt existing roads to provide an all-bus environment in the town centre itself, an alternative option – in conjunction with construction of either a motorway flyover
or harbour bridge (options 19 & 20 below) – would be to reserve the outer lanes of the existing motorway through Port Louis for bus-only use, with stops placed at locations most convenient to workplaces and extra underpasses established as necessary to ensure safe pedestrian access.

Although the open busway would run as far north as Immigration Square via a waterfront alignment, a bus circulation facility would be desirable for buses not using the busway to enter Port Louis. In addition, should the downtown circulator bus-only route be found to be feasible, some or all of the busway buses could complete a loop via that route, delivering and picking up passengers conveniently close to work locations.

Preliminary work should examine the feasibility of the two options. A budget of possibly Rs. 15 M should be established for such initial assessment and design work.

Should adequate bus circulation be established, the potential would exist for developing the land used for Victoria and Immigration Square bus terminals, a potential source of significant revenue.

Estimated timeline for implementation: 1–4 years depending on option chosen.

C. Congestion Pricing

7. Proposal to impose a congestion pricing charge of Rs. 100 for private vehicles and Rs. 200 for freight vehicles with on other restriction on freight movement.

With most of the costs of road travel paid in advance, vehicle travel can seem attractive to drivers in terms of marginal costs as well as journey times. Putting a fee on the use of cars at congested times requires users to pay for their use of the road and for the congestion their vehicle would cause in the absence of a charge.

While the charge helps decongest facilities for all users on public or private transport, it provides the specific benefit of a speedier trip to those willing to pay it. Those who consider their time and convenience worth the cost of the fee have the option to continue to drive.

Perhaps most significantly in the case of Mauritius, congestion charging is necessary to make policies supportive to public transport effective, given the low demonstrated willingness of passengers to shift from private to public modes of transport in the absence of a substantial cost incentive as well as improvements in service.

This proposal would charge cars Rs. 100 and freight vehicles Rs. 200 (amounts sufficiently high to make a real impact on the decision over whether to drive to or through Port Louis), to enter or pass through Port Louis between 7 and 10 am. It would apply to users on the motorway as well as on other routes, because exempting motorway users from charging would serve as an incentive to generation of increased through traffic on that route. It would not only defeat the purpose of the charge to encourage motorists exempted from adding to congestion; it would also be unfair to those paying the charge to travel congestion-free to Port Louis to suffer congestion from those travel-
ling on the same approach roads but not paying the fee.

Revenue of the order of Rs. 370 M might be expected given a diversion of approximately 30% of current traffic as a result of charging and, to make the project politically acceptable, commitments should be made to tie receipts of the revenue to projects to improve transport services.

Alternatively, if further political persuasion is desired, revenue from the charge could be used in part or in whole to reduce annual road tax fees which are paid up front and do not deter driving at congested times. Those avoiding Port Louis during the peak would then pay less tax for their vehicle over a year than before, while the charge to those entering Port Louis at peak times would be partly offset by the rebate.

It should be noted that the Consumer Organization, which was only consulted after the consensus process was completed, but which was broadly supportive of all other adopted measures, has stated their opposition to a congestion charge, and would only consider changing their position with a guarantee of use of the funds to benefit transport users.

It is recommended that initial implementation employ a simple approach, such as a requirement to purchase daily coupons. Electronic procedures could be introduced at a later date.

Congestion charging is recommended for immediate implementation given the lack of political practicality of introducing it towards the end of the term of the current government. Supportive measures, such as enhanced park-and-ride bus services from strategically-located parking lots using air-conditioned vehicles, should be developed and available for use from the inception date of congestion charging to enable the pricing system to operate as smoothly as possible while longer-term public transport improvements are under development.

It would be good, subject to financial viability, to also have at least a few demonstration quality modern low-floor multiple-entrance buses visible at this point, to show what the future will bring. It will also be important to put in place effective public relations activities to help win public support and en-
able a smooth transition. Set-up costs will need to be estimated in detail, but could be in the region of Rs. 100 M.

Estimated timeline for implementation: 1 year.

D. Parking Measures

8. Proposal to partially remove on-street parking in Port Louis.

Under this proposal, parking would be removed from major roads and would be permitted on only one side only on other roads. This would not only discourage car usage into Port Louis, currently at a level of 6000 vehicles every morning peak, but would help remove the negative impact on the urban landscape created by the daily intrusion of a clutter of cars.

A particular emphasis might be placed on reducing reserved on-street parking to increase the general availability of the parking spaces that would remain.

Increased enforcement of parking regulations would be desirable in support of such a measure to remove the increased incentive to park illegally. Current public parking fees bring in about Rs. 10 M annually, and part of this revenue would be lost. Implementation of the program would also have costs, potentially in the range of Rs. 15 M.

Estimated timeline for implementation: 1 year.


This proposal acknowledges not only the negative effect cars have on the urban landscape, but the advantages in terms of city renewal that can come from an attractive process of pedestrianization which would decrease the visibility of cars in the city centre, and create facilities that ease pedestrian movement and create a liveable downtown. The proposal would involve not only the loss of parking revenues, but also planning and implementation costs.

Estimated timeline for implementation: 3 years.

10. Proposal to include parking tax to be included in price of all private parking paid by users.

If public parking spaces are reduced, the market price of private spaces will likely rise and the incentive to the private sector to supply them will increase, enabling the sector to earn a windfall resulting from government policy. This proposal would support restrictions on public parking by adding a tax to fees charged for private parking as a further disincentive to travel by car to Port Louis, to recapture the windfall to private developers that would otherwise result from reducing public spaces, and as a source of funding for transport purposes. The parking fee would
apply to all private parking. Assuming a tax of Rs. 30 per use, up to a day in length, about Rs. 23 M could potentially be raised.

*Estimated timeline for implementation: 1 year.*

### E. Other Supportive Policy Measures

11. **Proposal for a flexitime policy for government and the education sector.**

Under this recommendation, government and education sector employees would be put on flexible working hours to reduce the impact of a concentrated peak. The budget needed to support bringing such a program into being could be of the order of Rs. 3-4 M.

*Estimated timeline for implementation: 9-12 months.*

12. **Proposal for Integrated land-use/transportation actions for attractive new city.**

Under this proposal, new procedures would be put into effect to enhance land-use/transportation policy implementation. Activities would be planned to be accessible to public transport, and transport system design would be integrated with land-use planning to ensure maximum functionality. Activities featuring exclusively road-based access would be discouraged.

This proposal would work well together with the creation of a Land Transport Authority with a mandate to coordinate land use with transport planning and a lead role in performing this function together with participation from the Ministry of Housing. Specific budget items should be established to finance these activities.

*Estimated timeline for implementation: 2-3 years.*

### F. Road Construction and Management

13. **Proposal for a Port Louis bypass road to provide regional traffic relief to Port Louis with special consideration for accommodating a bus only facility in Port Louis, in addition to Terre Rouge – Verdun – Ebene Road.**

Roads are an essential part of the Mauritian national infrastructure. It is a mistake to think that they are intrinsically bad because of current congested conditions. While road building in the absence of controls can stimulate the further development of adverse traffic conditions, constructing an effective road network with pricing controls in place can enhance mobility while contributing to the creation of an important national asset. As an example, Singapore has developed a high-quality new highway system at the same time as it has implemented road pricing.
The consensus process considered three alternative proposed routes for a bypass of Port Louis. A new flyover facility at a cost of Rs. 2 B would relieve congestion caused by conflicting traffic movements through Port Louis. The motorway would be elevated, enabling through traffic to pass straight through without delay. With the new facility in place, it may be possible to reserve the two outer lanes of the existing motorway through Port Louis for bus only use.

On the negative side, constructing this facility would likely cause considerable disruption to existing motorway movements and, if not designed to a high standard, could impose a permanent unattractive visual obstruction.

As an alternative to the flyover, a bridge carrying through traffic across Port Louis Harbour has been proposed. The likely cost of this project, at Rs. 3.5 B, would be higher than that of the flyover proposal, and there would be a number of engineering complications in connecting the facility to the existing network. However, disruption from construction would be less and the risk of a visual obstruction would be avoided.

The potential also exists for a harbour bridge to support major new development in the Caudan area. As with the flyover, with the new facility in place, it may be possible to reserve the two outer lanes of the existing motorway through Port Louis for bus only use.

The third proposal, for a Ring Road around Port Louis, has substantial diversion potential according to consultants CES, who claim that through traffic affecting Port Louis would likely be reduced by 30%. The estimated cost of the project is Rs. 3.8 B, making the project the most expensive of the projects designed to provide traffic relief for Port Louis. The project would also involve substantial requirements for resettlement of individuals displaced by construction.

Parties to the consensus process found that there was insufficient information to specify a preference for any one of the alternatives currently being examined, and therefore simply called for a bypass of unspecified route to be constructed in addition to the Terre Rouge – Verdun – Ebene road, with special considera-
tion given to the potential of the new facility to free up space for bus only operation on existing roads. The three projects have been put forward by different agencies (the Institute of Engineers, the Port Authority, and the Roads Development Authority), reflecting the fragmentation that has inhibited effective transport planning in Mauritius. Cost estimates were made on different dates and from different bases, furthermore, so great care is needed in their interpretation. It is recommended that the decision process be driven by a unified professional evaluation process overseen by the new Land Transport Authority.

Estimated timeline for implementation: 2–5 years depending on project chosen.


This connector road, at an estimated cost of Rs. 800 M, which has been approved by the government, would help provide relief in steering north-south traffic from Port Louis.

Estimated timeline for implementation: 3–4 years.

15. Proposal to convert motorway roundabouts to signalised intersections.

The Mauritius motorway system is currently punctuated by roundabouts which are being required to operate beyond their effective capacity to maintain efficient flows of traffic. Police are stationed at a number of these roundabouts to help maintain flows, but a more scientific approach to regulating flows is desirable. In particular, an intelligently controlled synchronized signal system would help maintain travel speeds on the motorway.

Control on access to the motorway imposed by an enhanced system risks causing backups of traffic onto local roads, but can increase the throughput of vehicles on the motorway through allowing for higher speeds of operation, with the result that, on average, travellers reach their destinations faster.

A World Bank study from December 2005 considered central traffic light control for the Port Louis – Curepipe conurbation at a cost of Rs. 110 M. Additionally converting roundabouts to synchronized signalized intersections could take this cost to approximately Rs. 200 M.

While the focus of this proposal is on the Port Louis – Curepipe corridor, the potential also exists for extending this concept to general traffic management improvements in Mauritius, with gains in traffic flow characteristics at relatively low costs.

Estimated timeline for implementation: 1–2 years.

Currently, roads are inadequately maintained. In addition, many roads have sections which require upgrading to meet modern standards for effective operation. This proposal would call for expenditures to repair the neglect and take the road system to a state where an effective regular maintenance system could effectively keep it in good condition. Approximately Rs. 750 M would be required.

*Estimated timeline for implementation: 3–4 years.*

17. Proposal for taxi industry reform.

This proposal would rationalize the taxi licensing process. The basis of license issuing would be re-viewed, from the perspectives both of providing the best possible public service and of regulating the capacity of the industry to effective levels. Appeals to the Minister over licensing issues would end. Instead, appeals would be made to an independent expert Transport Tribunal.

Professional support would likely be needed for the reform process, perhaps in the order of Rs. 10 M.

*Estimated timeline for implementation: 1 year.*


This proposal would call on the government to provide effective enforcement of illegal van and taxi operators. To help achieve this goal, direct payment from employers to employees of cash transport benefits for the home–work trip would cease. Instead, employers would purchase bus passes directly from legal operators, and issue them to employees each month. This would stop employer-paid benefits being used for illegal travel.

*Estimated timeline for implementation: 1 year.*

G. Taxi Industry Reform

17. Proposal for taxi industry reform.

This proposal would rationalize the taxi licensing process. The basis of license issuing would be re-viewed, from the perspectives both of providing the best possible public service and of regulating the capacity of the industry to effective levels. Appeals to the Minister over licensing issues would end. Instead, appeals would be made to an independent expert Transport Tribunal.

Professional support would likely be needed for the reform process, perhaps in the order of Rs. 10 M.

*Estimated timeline for implementation: 1 year.*

IMPLEMENTATION ISSUES

The consensus process has focused on choosing a set of options which come together as a well-balanced package to provide major improvements to transport infrastructure and transport operations, relieve congestion through demand management, and provide enhanced, more livable urban spaces. With endorsement of a package of proposals by a wide range of stakeholders for the first time in Mauritius, now is the time to build on the momentum to make the proposals reality.

New evaluation of projects has not been attempted in the course of the consensus process, and appropriate verification of costs and imple-
mentation issues, including examination of institutional and economic and social issues in environmental assessments, is required and should be completed promptly.

The focus, however, should be on making the recommended projects a reality, rather than on conducting further alternatives analysis, in recognition of the fact that not only is there rarely such a thing as a “best choice,” but that it is better to have a possibly suboptimal option in operation than to follow the path of the past fifteen years and show little or no improvement in the transport system at all. The consensus achieved makes a potent package possible which, subject to political endorsement, promises great benefits for Mauritius.

As part of the verification process, a financing plan must be prepared, taking into account the needs of each project (a preliminary assessment of costs and cost phasing is underway in conjunction with international donor agencies and government officials, and is expected to be available shortly). Projects must then be programmed according to the availability of resources and to the implementation requirements of each project.

Such tasks are beyond the scope of the current four-week consensus exercise in Mauritius, although ideas for initial guidance will be provided below. While sustained attention should be paid to major project implementation in preparing a programming plan, a strong focus should be put on providing early visible improvements through demand management and lower cost improvements to road and bus system operations.

A legislative programme will be required to create the Land Transport Authority, give it appropriate powers, and to transfer the activities of existing organizations into the new body. Such legislation should reflect the goals of efficiency and coordination in decision-making cited above, and should pave the way for the authority to act on the other proposals in this package.

The legislation specifically, should incorporate the provision for minimum accepting levels of agency funding (proposal 2), provide authority for the LTA to oversee the construction of an open busway in the Curepipe – Port Louis corridor (proposal 3), of other bus only or bus priority facilities (proposals 4 & 6), and of new roadways as well as roadway upgrading (proposals 13, 14 & 16) and parking control (proposal 8).

The legislation should require the integration of land-use and transport planning by the LTA (proposal 12) as well as the creation and regular updating of a master transport plan, and it should provide appropriate regulatory powers to the LTA (proposals 5 & 17).

Separate legislation would likely be necessary for the imposition of new congestion and parking charges (proposals 7 & 10), but LTA enabling legislation should provide for the LTA to implement and manage such programmes as well all other proposals contained in the list agreed by consensus.

In terms of timelines for implementation, it is less helpful to divide the proposals into actions for the short, medium and long-term than to specify which components of each one require action at various times. The proposals are assembled as a coherent package, to be developed together, rather than to be subjected to a sequencing in which some of them could be lost.

Nonetheless, priority would clearly be given both to the establishment of the LTA and to implementation of the congestion charge. Not only does the congestion charge require prompt action to make it politically viable before elections approach, but congestion reduction from congestion pricing along with short-term transport service improvements offer the potential of early evidence of real benefits to the public.

By the end of the first year, the LTA should be enabled, designed by a consulting firm skilled in organizational design, and have full operational powers, with integration of all aspects of operation completed by the second year.

By the end of the first year, congestion charging should also be in place, supported by
an increased emphasis on effective management of roads and parking (proposals 8, 15 & 16) with visible achievements on offer, and implementation of a park-and-ride network using air-conditioned buses, which would operate at faster speeds given the reduction in congestion and which would demonstrate the ability of public transport to offer a quality and faster alternative to driving a car in congestion which can make journeys from the southern conurbation into Port Louis take two hours or even more.

The policy to guarantee minimum acceptable levels of agency funding (proposal 2) should also be showing visible results in terms of higher agency service levels by the end of the first year, to be reflected in a good start to road rehabilitation work (proposal 16) and improved overall transport system performance. Benefits from a new flexitime policy (proposal 11) should also be evident.

Other tasks for attempted accomplishment by the close of the first year, would include:
- Completion of the process for conceptual bus route structure and fare reform;
- Commissioning and commencement of studies, including environmental mitigation as well as technical feasibility, engineering, and financial reports, necessary for proceeding with the open busway (proposal 3) and for roads redesign in Port Louis to provide priority to buses (proposal 6);
- Completion of studies and recommendations on motorway bus lane (proposal 4);
- Commissioning of project selection processes for new roads planning and building (proposals 13 & 14);
- Commencement of land use – transport implementation planning by the LTA (proposal 12);
- Review of needs for taxi industry reform (proposal 17);
- Change in fares reimbursement in cash to employer purchase of passes;
- Enforcement of illegal bus/taxi operations.

During the second year, the motorway bus lane would open, while project design and environmental assessment for the open busway would be completed and construction would start. Work would also possibly begin on preparation for new roads approved, with a priority, however, given to the busway and to completion of road system management enhancement and existing roads rehabilitation should funding not permit immediate action on all projects.

By the third and fourth years, the busway and new roads would be coming online, with congestion pricing creating demand for quality new service and ensuring the effective operation of the new road facilities. Port Louis would be emerging as a more attractive new city as a result of the restraints on traffic and parking and urban redesign efforts. By this time, also, bus operators will have begun replacement of their existing fleet with new low-floor high-quality buses, a process which would accelerate with busway opening.

All of the above assumes immediate and effective implementation of the program by the government. It should be recognized that legal, bureaucratic and resource issues may not allow all parts of the proposed first-year program to be completed on schedule. It is hard, also, to predict exactly which elements might be at greatest risk of delay. Given priority attention, congestion charging and enhanced park-and-ride service should be in effect by the end of the first year, however, while elements of the other projects cited above should be well underway, and showing results during the first part of the second year at the latest.

Results in subsequent years will depend on the effective establishment of the Land Transport Authority, with a disciplined and coordinated planning and implementation apparatus, on availability of financing, and on a stable and strong commitment on the part of government to ensure implementation. The above paints an
optimistic picture which assumed that such a commitment will put aside the political and bureaucratic delays which have halted progress in transport improvements in the past, and assumed that strong leadership will ensure that the program will be established promptly and can proceed without the dysfunctions of the past.

Risks of traditional political and bureaucratic delays must, however, be recognized, and a more realistic picture of effective implementation of all elements of the program would stretch over five to seven years. Commitment put in place now, however, can ensure a continual flow of increasing benefits, while a fundamental metamorphosis in the functionality of Mauritian transport systems takes place, providing a model of enhanced mobility through more responsible use of improved facilities.