1. Country and Sector Background

Main Sector Issues.

**Increasing Demand for Road Transport**
Demand for road transport has increased rapidly with vehicle registrations growing by about 14% annually during the 1990's and projected to grow at least at 8-9% per year for the foreseeable future.

**Road Network Deficiencies**
Despite this growing demand, infrastructure supply has not kept pace leading to serious network deficiencies. More than 50% (about 8,727 km) of the State Highways and Major District Roads are of less than two lane width (7.0 m). Due to the economic importance of these roads to the state, the GOTN has decided to widen all State Highways to two lanes and the Major District Roads of single lane width to either intermediate lane or two lane width depending on traffic and other considerations. The state also has about 40,853 km of Other District Roads and 73,300 km of village and urban roads, which are all generally single lane.

**Inadequate Attention to Maintenance Management and Financing**
The inadequate capacity of the road network has further been exacerbated by inadequate maintenance. Funding for road maintenance has been less than 65% of the requirement as per Finance Commission norms in recent years resulting in more about 35% of the roads being in poor condition. Routine maintenance works have traditionally been performed by in-house gang laborers while periodic works are contracted out to the
private sector. The Highway Research Station of the State has a maintenance management system developed in early 1990's but is not being used effectively by the HD. The existing road inventory and condition database is also outdated and needs to be periodically updated to reflect the actual status of road needs which can then be properly reflected in the prioritization of maintenance works. There is a further concern that even the limited funds earmarked for maintenance are not being effectively utilized. A major portion of the funds is spent on maintaining the gang labor force, whose productivity is thought to be very low. Inadequate attention to maintenance in the past has generated a substantial backlog of deferred works with the overall riding quality and structural condition of the network deteriorating markedly.

**Weak Institutions to Manage and Operate Roads.** As part of project preparation, in 1999 the GOTN commissioned an independent institutional review of the main road agency in the State, the Highways Department (HD). This identified a number of weaknesses in the financial, institutional and regulatory environment in which highways are managed, the most important of which were (i) single homogenous, mixed function organization as the main sector department which impedes GOTN from applying clear lines of responsibility for service delivery (ii) ineffective funding mechanisms that result in inadequate, bureaucratically cumbersome and unstable flow of resources for asset management (iii) ineffective strategic, program and works planning systems - due to inadequate management information collection, storage and analysis and low demand for transparent reporting on sector outcomes derived from public spending - that encourage inappropriate allocation of scarce resources (iv) out of date core processes (information management, environment and social safeguard management, design, quality assurance, financial management, procurement) that hinders delivery of more positive sector outcomes and (v) sub optimal regulatory environment due to out of date legislation and supporting regulations that prevents better road operation and inhibits greater private sector participation. The GOTN also constituted an Expenditure and Reform Commission (ERC) in late 2001 which will be reporting shortly on actions to improve the administration of a number of departments including the HD. It is expected that the ERC's analysis and recommendations will be broadly in line with the earlier institutional review.

**Inadequate attention to road safety.** As is the case elsewhere in India, rapid motorization combined with inadequate enforcement of driving and vehicle road worthiness regulations as well as inadequate infrastructure are leading to a rapid rise in the number of deaths and injuries from road accidents. The most vulnerable road users - pedestrians, bicyclists and motorcyclists - are especially suffering from this. The underlying causes of this poor sector outcome is the lack of coordination between key stakeholders as well insufficient funding and planning of remedial actions.

**Government Strategy**
The GOTN has been one of the most proactive in the country at formulating and implementing reform in the road transport sector (see also Section D.4). The key elements of the government's strategic response to the problems it faces in the highways sector are as follows.

**Preparation of Written Policies** The HD has prepared a draft road policy that seeks to promote more sustainable and efficient management of the road network and which is to be refined through a stakeholder workshop to take place over the next few months. The policy makes the following commitments (i) a clear mission statement for the HD that focuses on delivering a service to road users (ii) application of rigorous standards of economic, environmental and social appraisal of future investments whatever the funding source (iii) improvement of the enabling environment for private funding of sector investments and (iv) intention to establish a road maintenance fund managed by all the major sector stakeholders along commercial lines. GOTN has also formulated a draft Road
Safety Policy (2001) which emphasizes the importance of engineering, education, enforcement and emergency medical relief as part of its action plan to reduce road accidents. Both policies are currently available for review and public comment on the HD website at http://www.tnhighways.org/policy.htm. A Citizens’ Charter confirming the commitment of HD towards the citizens of India, of their vision and mission to provide safe, reliable and environment friendly road network within the state has been brought out recently. This also lists out the important officers responsible for the state road network.

**Sector Financing.** After extensive internal discussions, the GOTN announced as part of the 2001/02 budget speech that a Road Fund would be established. A Road Fund Bill has been prepared which, if enacted, would establish a sound framework for financing and managing the sector based on international best practice. In the meantime, the GOTN applied through the 2002/3 State Budget the levying of an infrastructure surcharge of 5% on sales tax, to raise an additional estimated Rs. 2.3 billion per annum. A mechanism for allocating the additional funds accruing from the infrastructure cess between sectors still needs to be developed. It is expected that a significant portion would be devoted to roads. The GOTN have also drafted enabling legislation for private sector participation in infrastructure based on experience in other states in India (the TN Procurement of Commodities, Goods and Services in Special Cases and in Special Circumstances bill). The HD has been borrowing through the TN Industrial Development Corporation to fund the periodic maintenance of certain roads in the past two financial years.

**Institutional Rearrangements.** Based on the recommendations of the Institutional Development Study done by a reputed international management firm to improve the institutional and financial capacity of the HD, a strategy has been developed to implement certain reforms in the areas of organizational structure and management, core processes, information management as well as financial and regulatory environment. In-principle approval for the broad strategy was accorded by the GOTN in 2001. A time bound action plan is being developed and will be approved prior to negotiations. Some aspects of this plan have commenced. In mid 2002, for example, the GOTN reduced the number of HD gang laborers through redundancy by about 10,000 a measure that saves about Rs.60 Cr per annum from the HD's non plan budget.

**Updating of HD Core Processes.** The HD and GOTN more widely are starting to address some of areas of weakness in their core processes. In procurement, the Tamil Nadu Transparency in Tenders Act, 1998 provides for transparency in public procurement and regulation of the procedures for inviting and accepting tenders and ensuring integrity of tender process and competitiveness. A Commissionerate of Tenders, comprising senior officers from the technical and finance departments, has been constituted to streamline the acceptance and approval of tenders. In information technology, the GOTN has introduced computerization, e-mails and internet access to all important departments including the HD. The HD has its own website (www.tnhighways.org) where key information on policies and programs, tenders, various projects, organization table and responsible persons etc are all displayed. The HD is making a concerted effort to provide access to all its staff from the headquarters level to the division level to a reliable computer network.

**Improvements to Regulatory Environment.** In September 2002 a Highways Act was enacted and came into force, after obtaining the assent of the President of India, that considerably strengthened the HD’s legal ability to enforce its right of way; prevent ribbon development; utilize simplified land acquisition procedures; and to enter into agreements with private companies to undertake road maintenance and development. The HD is also proposing amendments to the Land Acquisition and Motor Vehicles Act. One outcome of these regulatory improvements is greater private sector...
involvement. GOTN has set up the Tamil Nadu Road Development Company in partnership with Infrastructure Leasing and Financial Services to facilitate identification, preparation and implementing road projects in a commercial format with active participation from the private sector. The initial stretch of about 114 km of the East Coast Road from Chennai is already under operation and maintenance contract with tolling. Similarly, the Tamil Nadu Urban Development Fund has been set up by GoTN in partnership with Industrial Credit and Investment Corporation of India to facilitate funding and financing urban infrastructure wherever feasible through private participation. GoTN, either on its own or through the above facilities, has implemented or initiated preparation of some other road/bridge projects under the commercial format.

**Road Safety Enhancements.** The state has a unique position with a Special Commissioner for Transport and Road Safety to be the nodal person to implement the road safety action plan. A Road Safety Fund has also been set up to support the resource requirements for implementing the road safety action plan.

**Private-Sector Participation in Public Transport.** With a view to streamlining administration and reducing administrative overheads and wasteful expenditure, the Government has decided to amalgamate 21 State transport undertakings (STU) into six corporations. Partial privatisation of the bus transport is on the anvil. Private operators have been licensed in all districts to run parallel services and have been competing effectively with the State-owned corporations.

2. **Objectives**

The project development objective is to improve the quality and sustainability of the state's core road network. The core road network refers to the state highways and major district roads being managed by the Highways Department (HD) of Tamil Nadu. This objective is to be achieved through production of the following four outputs (i) capacity and quality enhancement of about 750 km of state roads in the core network with proper management of social and environmental impacts (ii) rehabilitation, major maintenance on about 2,000 km and blackspot improvements at some of the critical locations on the core network (iii) improvements to the management of the state road network through institutional strengthening and public-private partnerships and (iv) enhanced funding and improved allocation procedures for the road sector.

3. **Rationale for Bank's Involvement**

The Bank is in a unique position to respond to the opportunities and challenges posed by the Indian States today since the Bank can: (a) use the leverage of its lending volume and advisory capabilities to accelerate the institutional and policy reform process; (b) ensure that community participation, social development and environmental concerns are fully reflected in project design; and (c) provide and catalyze the critical long term capital needed in the transport sector to support accelerated growth.

Based on extensive previous experience in the country, the Bank has developed a state level approach to improve road investment, management and financing. Since the Bank is involved in the implementation of other similar state highway projects and preparation of several other state roads projects in India, it can provide GoTN with valuable experience. Also, the Bank emphasizes transparency of all processes, adoption of streamlined procedures, adherence to practical time schedules, and dissemination of ‘best practice’ in road construction and management.

The Bank is also working with GoTN on a state level fiscal assessment program preparation of a Medium Term Fiscal Plan and it is expected that some of the transport sector related fiscal/financial issues may be better addressed through a macro level study of the state finances and associated
recommendations. The Bank is currently discussing with the GOTN the preparation of such a macro level study which is due for commissioning early in 2003.

4. Description

**Road Upgrading Component (about 750 km)** This component primarily aims to improve the capacity of the state road network through widening and strengthening of about 750 km of existing state highways and 14 bypasses to two-lane roads with or without paved shoulders, depending on traffic and other considerations. It is expected to bring in medium to large sized contractors through international competitive bidding procedures for the execution of these works. The designs have been done by international consultants and works will also be supervised by consultants procured through international competition. Environmental and social assessment for these works have been carried out and appropriate mitigation plans have been developed for handling the various kinds of impacts. These would be implemented during the project along with or before the execution of works. This component will also support the GOTN's initiative to seek public private partnerships in the funding and operation of roads through providing financial support to prepare and subsidise concession agreements to be concluded between the GOTN and private operators.

**Road Maintenance and Safety Works Component:** Under this component the project would address the periodic maintenance and safety related minor works needed to maintain a smooth, safe and comfortable flow of traffic on the core road network of the state. It is proposed to take up maintenance of about 2000 km of state roads over a four year period with the Bank's assistance decreasing over the years. These would be a mix of conventional maintenance contracts and performance-based maintenance contracts. These contracts are targetted to involve small to medium sized national contractors to help strengthen their capabilities. These would be supervised by the departmental officers with a periodic technical review being undertaken by an independent consultant. Similarly, black spots identified under the project will be analysed and suitable minor interventions up to 100 locations would be designed and executed to help improve the situation. These would be studied after implementation to review the effectiveness of the interventions.

**Institutional Strengthening and Policy Development Component:** Under this component of the project the state government would utilise the services of experts and consultant firms to help in the implementation of the Institutional Strengthening Action Plan. The component would also strengthen the road maintenance planning and implementation within Highways Department through supporting the development of a maintenance management system for coming up with multi-year rolling maintenance programmes/budgets for the core network of the state. Improving the capacity of agencies concerned with road safety in the State will also be taken up through technical assistance services and training. This component will also help the state in looking at public-private partnership (PPP) for road/transport infrastructure development through appropriate technical assistance.

5. Financing

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<td>IDA</td>
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<td><strong>Total Project Cost</strong></td>
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6. Implementation

**Implementing Entity**

The project will be implemented by the Highways Department over a five year period. The HD has established a dedicated project management team (PMT) headed by a Project Director, a senior civil
servant of GOTN, and fully staffed with engineers, a finance officer, environment and social officers and an information system specialist. At the field level the contracts will be monitored by the field offices/divisions of the HD as the employer's representative. For all the major works contracts under the "Road Upgrading Component", construction supervision consultants will be employed as the "Engineer" specified in the contracts, to provide an independent check on the physical quality and time schedule of the works being executed. For the other minor/small works in the project, the superintending engineer will be the designated "Engineer" specified in the contract. Independent technical review consultants would be employed to provide feedback on the quality of the final product to the PMT. A contract management adviser to the project director is also expected to be in place soon.

To oversee implementation of the RAP including land acquisition, a separate Social Development Cell has been created in the PMT headed by a Joint Project Director (already in place) at the level of additional District Collector who reports to the Project Director. He will be assisted by a Deputy Collector (Land Acquisition) and Resettlement Officer and Data Base Management specialist. In addition, field units will be created, one each for each contract package consisting of land acquisition and resettlement specialists. Staff specializing in land acquisition are already working in the field units and have initiated the land acquisition process. The state and district level resettlement monitoring committees have been constituted and will start functioning once the RAP implementation commences. The state level committee is being headed by Secretary (Highways) and the district level committees will be headed by the concerned District Collectors. These committees look after redressing grievances and coordinate the implementation of RAP.

The Government of Tamil Nadu has established an Empowered Committee, headed by the Minister for Highways to deal with policy and inter-departmental issues. By Government Order in October 2002, a four member Project Steering Committee, chaired by the Secretary Highways, was empowered to take decisions on all procurement based on the recommendations of an Evaluation Committee. The four member Evaluation Committee will evaluate all bids and submit recommendations to the Steering Committee. The Project Director is empowered to decide on all variations and disputes valued up to Rs.100 million [approx. USD 2.1 million].

A computerized project and financial management system was developed early in project preparation. Some staff have been trained in its use and would need adequate hardware and software to utilize the system once the project starts. An adequately qualified Finance Manager/Officer will supervise the financial management and accounting functions of the project. He will be supported by an accounts officer and other staff. The field divisions will be headed by a divisional accounts officer (DAO) and will be supported by other staff once they are created.

During appraisal, the capacity of the HD to implement the project in accordance with the Bank's procurement, financial management and safeguard policies was assessed and action plans agreed for remedying any shortfall prior to negotiations. Further details on the current status of implementation arrangements can be found in Sections E4 and G and Annexures 6 and 12.

**Funds Flow**

The project will be provided in Government of Tamil Nadu (GOTN) budget as an identifiable single head budget item under Highways Department (HD) budget each year. GOTN will allocate the funds to HD, including its own share on a monthly basis through issuing of Letter of Credits (LOCs). The contractors will submit the bills to the "engineer" defined in the contract documents, who will then check the bills (including on physical execution of work), certify them for payment and forward these to HD/PMT for payment. The bills, after review by the HD/PMT, will be paid out by them through
7. **Sustainability**

First, the project's financial sustainability will depend on the continued commitment by the GOTN to steadily and substantially increase in real terms maintenance funding to close the gap between the current and the required funding level as recommended by the Finance Commission. A State Policy Letter for the road sector issued by GoTN indicated a commitment to close the funding gap in a period of three years, starting FY98. During negotiations, the GOTN will be asked to reconfirm its commitment to close the maintenance funding gap during the project life in a form of loan covenant. The project size and the imposition it makes on the GOTN budget will be assessed at appraisal to ensure that it is manageable within the government's fiscal framework.

Second, the physical sustainability of the project will be maximized by the high quality of design and construction supervision. The project has and will apply international standards for design, construction supervision and technical review to help ensure the quality of construction. Use of internationally experienced consultants during project design and implementation has helped expand the application of international good practices in road engineering and contract management, which in turn improves project sustainability. Moreover, the periodic maintenance component included in the project will help reduce the backlog of maintenance in the state, and bring the most important part of the state road network to a maintainable condition.

Third, the project's institutional sustainability will be supported by the reforms of the HD to be developed and implemented under the project. Under the ISAP to be undertaken, it is envisaged that the project will support the introduction of (i) improved budgeting, programming, financial and cost accounting management, (ii) improved quality management, application of technical standard and audits, and (iii) enhanced contract management systems and practices. The introduction and development of these enhanced road management measures will help ensure the sustainability of the project's benefits, and facilitate a more effective and sustainable use of scarce funds. Moreover, performance based maintenance contracting will be piloted under the project and judging by the positive response these types of contracts have received elsewhere in India, it is expected that there will be a significant increase in volume of maintenance works that are competitively procured by HD.

The social and environmental sustainability of the project outputs are being addressed through proper application of the various appropriate safeguard procedures during project design together with adequate supervision and monitoring of the actions recommended under the RAP and EMP during implementation. A road safety component seeks to ensure that road safety outcomes are improved in the state as a whole.

8. **Lessons learned from past operations in the country/sector**

Previous projects in the road sector financed by the Bank and ADB have demonstrated that successful operations require: (i) sufficient implementation readiness at the time of project approval to ensure quality at entry; (ii) adequate institutional capacities for project management and contract administration, (iii) client ownership for implementing institutional development measures; (iv) experience with Bank procurement procedures and timely procurement decisions; (v) stronger capabilities and capacities than many domestic contractors and consultants possess; and (vi) timely land acquisition, utility shifting and implementation of resettlement and rehabilitation activities to prevent delays in civil works progress.

Based on lessons learned, the design of the current project includes the following -- (i) utilization of
internationally experienced consultants for the civil works design during project preparation to ensure quality at entry; (ii) undertaking the IDS study prior to appraisal to identify the key institutional changes that need to be introduced to improve the effectiveness and efficiency of the road agency and procurement of technical assistance for most of the institutional and road management related services is well advanced; (iii) carrying out a procurement assessment of the HD and a procurement plan was agreed to overcome identified deficiencies; (iv) ensuring project readiness for implementation by completing detailed engineering for most civil works contracts by appraisal and ensuring readiness for inviting bids before negotiations for more than 720 km of the 750 km of roads identified for upgrading such that a substantial share of the contracts are expected to be ready for award by loan effectiveness; (v) up-front preparation of the RAP was done for planned mitigation of adverse impacts, and advanced initiation of land acquisition to avoid delays in construction activities. (vi) ensuring the payment of compensation and resettlement assistance to PAPs prior to handing over of the respective road stretches to the contractor(vii) adopting pre-qualification criteria, which stimulate joint ventures between international and Indian contractors, which are expected to help further modernize the local construction industry; (viii) financial management and monitoring system assessment and improvements, in accordance with Bank policies, have been undertaken in a timely way and (viii) developing a comprehensive landscape and tree plantation plan as part of the environment management plan to ensure effective compensation of roadside tree loss.

In addition, to understand the impacts of road development on exploitation of natural resources such as ground water and to gain insight into alterations of land use patterns and ribbon development, a case study on the existing east coast road is being planned. This initiative by the project team was based on outputs from the stakeholder consultation workshops.

During project preparation, the Bank has organized a number of seminars to help state road agencies to familiarize themselves with Bank procurement and disbursement arrangements, as well as to provide a venue for state road agencies to share project preparation and implementation experiences of ongoing state highway projects prepared under a similar framework. Furthermore, the project adopted international standards for preparation of feasibility, design, procurement management, environmental and social impact studies.

9. Environment Aspects (including any public consultation)
   Issues : There are no major environmental issues.

10. List of factual technical documents:

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12. For information on other project related documents contact:
    The InfoShop
Note: This is information on an evolving project. Certain components may not be necessarily included in the final project.

Tables, Charts, Graphs:

Processed by the InfoShop week ending: 05/20/2003

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