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The World Bank

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Report No: 25056-IN

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED LOAN
IN THE AMOUNT OF US\$348.0 MILLION
TO
INDIA
FOR THE
TAMIL NADU ROAD SECTOR PROJECT

May 20, 2003

Energy and Infrastructure Unit
India Country Management Unit
South Asia Regional Office

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CURRENCY EQUIVALENTS

(Exchange Rate Effective November 1, 2002)

Currency Unit = Indian Rupee (INR)

INR 1.00 = US\$0.021

US\$1.00 = INR 48

FISCAL YEAR

April 1 -- March 31

ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank	ISAP	Institutional Strengthening Action Plan
APL	Adaptable Program Loan	IT	Information Technology
BPIP	Borrower Project Implementation Plan	JBIC	Japan Bank for International Cooperation
CAS	Country Assistance Strategy	LA	Land Acquisition
CBO	Community Based Organization	LOC	Letter of Credit
CE	Chief Engineer	MDR	Major District Roads
CEA	Consolidated Environmental Assessment	MIS	Management Information System
CPAR	Country Procurement Assessment Review	MORTH	Ministry of Road Transport & Highways
DAO	Division Accounts Officer	MTR	Mid-Term Review
DEA	Department of Economic Affairs	NCB	National Competitive Bidding
EA	Environmental Assessment	NGO	Non Government Organization
EIS	Environmental Impact Statement	NHAI	National Highways Authority of India
EMP	Environmental Management Plan	PAP	Project Affected People
EOP	End of Project	PCC	Project Coordinating Consultants
ERC	Expenditure and Reform Commission	PMT	Project Management Team
ERMP	Environment and Resettlement Management Plan	PPP	Public Private Partnership
FBS	Fixed budget selection	PWD	Public Works Department
FC	Finance Commission	QPR	Quarterly Progress Report
FMR	Financial Management Report	RAP	Resettlement Action Plan
FMS	Financial Management System	RMMS	Road Maintenance Management System
GOI	Government of India	SEA	Sectoral Environmental Assessment
GOTN	Government of Tamil Nadu	SH	State Highways
HD	Highways Department	SOE	Statement of Expenses
HDM	Highway Design and Maintenance	SOS	Strategic Options Study
HQ	Headquarters	TA	Technical Assistance
IBRD	International Bank for Reconstruction & Development	TN	Tamil Nadu
ICB	International Competitive Bidding	TNRDC	Tamil Nadu Road Development Company
ICICI	Industrial Credit Investment Corporation of India	TNRSP	Tamil Nadu Road Sector Project
IDA	International Development Association	TNUDF	Tamil Nadu Urban Development Fund
IDS	Institutional Development Study	TOR	Terms of Reference
IL&FS	Infrastructure Leasing & Financial Services Ltd.	USD	United States of America Dollars
IPDP	Indigenous Peoples' Development Plan	WAN	Wide Area Network

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**INDIA
TAMIL NADU ROAD SECTOR PROJECT**

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MAP(S)

Map for Upgrading Component Roads
Map for First Year Periodic Maintenance Component Roads

INDIA
Tamil Nadu Road Sector Project

Project Appraisal Document

South Asia Regional Office
SASEI

<p>Date: May 20, 2003 Sector Manager/Director: Guang Zhe Chen, Vincent Gouarne Country Director: Michael F. Carter Project ID: P050649 Lending Instrument: Specific Investment Loan (SIL)</p>	<p>Team Leader: A.K. Swaminathan Sector(s): Roads and highways (90%), Sub-national government administration (10%) Theme(s): Infrastructure services for private sector development (P), Trade facilitation and market access (P), Other public sector governance (S)</p>
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Project Financing Data				
<p>[X] Loan [] Credit [] Grant [] Guarantee [] Other:</p>				
<p>For Loans/Credits/Others: Loan Currency: United States Dollar Amount (US\$m): 348 Borrower Rationale for Choice of Loan Terms Available on File: <input checked="" type="checkbox"/> Yes Proposed Terms (IBRD): Variable-Spread Loan (VSL) Grace period (years): 5 Commitment fee: 0.75%</p>				
<p>Years to maturity: 20 Front end fee (FEF) on Bank loan: 1.00% Payment for FEF: Capitalize from Loan Proceeds</p>				
Financing Plan (US\$m):	Source	Local	Foreign	Total
BORROWER		102.00	0.00	102.00
IBRD		239.02	108.98	348.00
Total:		341.02	108.98	450.00

Borrower: GOVERNMENT OF INDIA
Responsible agency: HIGHWAYS DEPARTMENT OF THE STATE GOVERNMENT OF TAMIL NADU
Address: Tamil Nadu Road Sector Project, Guindy, Chennai, 600 025, India
Contact Person: Mr. P Rama Mohana Rao, Project Director
Tel: 91-44-2230 0195 Fax: 91-44-2230 0195 Email: tnrsp@md3.vsnl.net.in

Estimated Disbursements (Bank FY/US\$m):							
FY	2004	2005	2006	2007	2008	2009	
Annual	37.90	43.80	61.00	85.50	76.80	43.00	
Cumulative	37.90	81.70	142.70	228.20	305.00	348.00	

Project implementation period: 5 years
Expected effectiveness date: 10/01/2003 **Expected closing date:** 03/31/2009

A. Project Development Objective

1. Project development objective: (see Annex 1)

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 the 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) major maintenance on about 2,000 km and accident blackspot improvements at a number of critical locations on the core network; (iii) improvements to the management of the state road network through institutional strengthening and Public-Private Partnerships (PPP); and (iv) enhanced funding and improved allocation procedures for the road sector.

2. Key performance indicators: (see Annex 1)

The following key performance indicators are proposed to measure the achievement of the project development objective:

- Percentage of core road network in poor condition reduced from about 35% at appraisal to not more than 10% at End Of Project (EOP);
- Travel time reduced by on average 20% on two selected project corridors by EOP;
- No. of fatalities from road accidents per 10,000 registered vehicles reduced from 19 to 14 by EOP;
- Annual expenditure on maintenance of the state roads under the Highways Department to be maintained at at least 80% of 11th Finance Commission norms by 2004-05 and thereafter;
- Ex post ERRs equal to or better than appraisal estimates; and
- Implementation of institutional development action plan to schedule.

B. Strategic Context

1. Sector-related Country Assistance Strategy (CAS) goal supported by the project: (see Annex 1) **Document number:** 25057-IN **Date of latest CAS discussion:** December 17, 2002

The project is consistent with the Country Assistance Strategy (CAS) for India. The project contributes to the CAS key objective of providing high quality infrastructure to promote private sector led growth. This involves improving the physical condition and capacity of the road network, enhancing its efficiency to meet the road transport demand of the growing and liberalizing economy, and promoting the role of the private sector in the development and management of the road network. The project also seeks to improve the effectiveness of the public sector road agency through sector related fiscal and governance reforms. Adequate infrastructure and more effective government will in turn help strengthen the enabling environment for investment and sustainable growth and thereby contribute to poverty reduction in the State.

The State has a population of approximately 62 million and an area of 130,058 sq. km. Road transport is the dominant mode of transport in the State accounting for about 80% of both freight and passenger trips, facilitating trade within the State and with its neighbors as well as generating substantial employment in its own right. Tamil Nadu is a state with a rich cultural heritage including many historical places and temples. An important part of the economy relies on religious based travel and other tourism within and from outside the state which again relies heavily on good road communication. The primary road network extends over 18,000 km, including National Highways

(3,850 km), State Highways (7,163 km), and Major District Roads (7,362 km). The planning, maintenance and operation of the National Highways in Tamil Nadu are overseen by the Government of India (GOI) through the Ministry of Road Transport and Highways (MORTH) which in turn implements works through either (i) the National Highways Authority of India (NHAI) for the most important highways or (ii) the Highways Department (HD) of Tamil Nadu for the rest of the National Highway network.

Although the CAS seeks to focus World Bank (henceforth referred to as Bank) support on a limited number of reforming states, it also provides for assistance to states where there is a strong unusual sector merit in terms demonstration effect to promote improved effectiveness of public expenditure. In this case, the Government of Tamil Nadu (GOTN) has been one of the most innovative States in the road sector and has already undertaken important reforms with more fundamental changes and improvements now close to implementation. Moreover, the World Bank is currently entering into a dialogue with the GOTN about the possibility of a more substantive partnership. To this end, a broad based fiscal and governance assessment is now underway.

2. Main sector issues and Government strategy:

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. Demand is projected to grow at least at a minimum of 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 40,963 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, according to Finance Commission norms in recent years, resulting in more than 35% of the roads being in poor condition. Prior to 1998, the HD had been implementing routine maintenance through petty contractors with the Department typically providing plant and materials. From 1998, a substantial recruitment of gang labourers meant that these arrangements were changed to mostly in-house execution of routine works with periodic works outsourced. As a result of diminishing non-plan funds, an increasing portion of the maintenance budget was used for establishment, reaching a high of 68% in 2001-02. However, the GOTN has recently reduced the number of labourers by about 9,800 from the payroll leaving only about 2,800. The Highway Research Station of the State has a maintenance management system developed in the early 1990s; but is not being used as anticipated by the HD. The existing road inventory and condition database is outdated and needs to be updated periodically to reflect the actual status of road needs which can then be properly reflected in the prioritisation of maintenance works. Inadequate attention to maintenance in the past has generated a substantial backlog of deferred maintenance works with the overall riding quality and structural condition 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 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 (e.g. 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. 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 affected by 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 pro-active states 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. 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 the State, of their vision and mission to provide safe, reliable and environment friendly road network within the state has been brought out recently. This also provides contact details for officers responsible for the state road network.

Sector Financing: After extensive internal discussions, the GOTN originally announced as part of the 2001/02 budget speech its intention to establish a Road Fund. A Road Fund Bill was subsequently prepared which, if enacted, would establish a sound framework for financing and managing the sector based on international best practice. The Bill is still to be put before the

Legislative Assembly. However, in the recent 2003/04 budget speech, the GOTN announced that a Road Maintenance Fund is to be established within the Public Account to provide exclusively for the full requirement for maintaining the core road network (about Rs1.2 billion or about \$ 25 million in FY2003/04). While not the more substantial legal and organisational change envisaged in the Road Fund Bill, this is a step towards more sustainable financing of the sector. The GOTN has also drafted enabling legislation for private sector participation in infrastructure based on experience in other states in India. This is expected to be placed before the Assembly in the next session and will provide the basis for the development of concession agreements, sharing of risks as well as project development and implementation procedures.

Institutional Rearrangements: Based on the recommendations of the Institutional Development Study done by a reputed international management firm, a strategy has been developed to implement certain reforms in the HD 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 is shortly to be approved. Some aspects of this plan have commenced. In mid-2002, for example, the GOTN reduced the number of HD gang labourers through redundancy by about 9,800; a measure that saves about Rs.600 million (\$12.5 million) per annum from the HD's non plan budget. For the coming fiscal year the HD intends to outsource routine maintenance on part of its network using one year input based/measurement type contracts and thereafter consider performance based maintenance.

Updating of HD Core Processes: The HD is 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) that provides key information on policies and programs, tenders, various projects, organization table and responsible persons. 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. 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. An initial stretch of about 114 km of the East Coast Road from Chennai is already under operation and maintenance contract and is being tolled. 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 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 in a commercial format.

Road Safety Enhancements: The state has a unique position of a *Special Commissioner for Transport and Road Safety* acting as the nodal officer 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. Increased competition in bus transport has been initiated. Private operators have been licensed in all districts to run parallel services and have been competing effectively with State-owned corporations.

3. Sector issues to be addressed by the project and strategic choices:

The three components of the proposed project are designed to address the three major sector issues identified during project preparation, namely (i) inadequate highway capacity through road widening and strengthening improvements on key routes, (ii) poor riding quality through addressing the maintenance backlog and establishing sustainable maintenance practices and (iii) ineffective asset management through technical assistance to institutional development, most especially of the key line agency the Highways Department. The sector issues to be addressed under the project are consistent with the analysis and recommendations of recent Bank sector work - "India's Transport Sector; the Challenges Ahead", May 2002.

Capacity and Quality Improvement of the Core Network: This project supports investment for widening and strengthening existing State Highways and Major District Roads and construction of bypasses around congested towns. It is expected that these measures will help in reducing congestion and easing traffic flow on some of the most important roads of the state. The main strategic choice has been how best to implement the improvements. Current design is consistent with international good practice in providing for works to be executed by contractors selected through international competitive bidding and supervised by international consultants. This will promote better quality of construction and technological innovation. As a result, the project will also contribute to strengthening the local contracting and consulting industry.

Alleviating maintenance backlog and developing sustainable maintenance practices: Given the size of the backlog - which is estimated as at least Rs.7500 million (about \$156 million) based on the shortfall of funding since 1997 alone - the project design proposes Bank financial support to rationalize the backlog over several years to a steady state that can subsequently be realistically managed from GOTN resources alone. Concurrently to decreasing Bank financial support, technical assistance will be provided to support the development and use of more effective maintenance policies, plans, procedures and practices so as to put the HD back on a sustainable asset management path. The main strategic decision is how much periodic works the Bank should finance and how best to reform the maintenance system so as to avoid the State again having to borrow for maintenance. Technical assistance will facilitate the (i) development and regular updating of a reliable database of road inventory, condition and traffic data; (ii) establishing and using simple computerized maintenance planning systems; (iii) linking GOTN and Bank funding for periodic works in the outer years of the project to the outputs from this system through the preparation of a multi-year rolling maintenance program; (iv) implementation of revised, transparent and stable maintenance funding arrangements; (v) public dissemination of road maintenance plans and reporting maintenance outcomes on an annual basis; and (vi) piloting new methods of routine maintenance implementation through performance-based maintenance contracting.

Institutional Strengthening: The project will support the GOTN's implementation of its Institutional Strengthening Action Plan which is a holistic strategy designed to incrementally overhaul all aspects of the sector to better meet today's changed environment and to bring the State closer to international best practice in sector management and financing. The plan seeks to shift the focus of the HD from being an infrastructure provider to being a strategic client, manager and policy setter thereby ensuring that the management of roads is done in a businesslike manner. This would be driven by the concept of placing the road user as the main customer and their increased satisfaction with road services as the main goal. The main strategic choice has been how best to support the GOTN's reform program and the institutions with which to work. The current design provides for the project to support international standard technical assistance, consultancy services, equipment and training to be delivered to the HD. In addition, the project has flexibility for that support to be made available to other organizations such as the Transport Department and State Traffic Police.

C. Project Description Summary

1. Project components (see Annex 2 for a detailed description and Annex 3 for a detailed cost breakdown):

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 (including 14 bypasses -- some of which are new) 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. This component would also support upgrading and/or construction of state roads and bridges through sub-projects to be taken up through PPP by the GOTN. Appropriate environmental mitigation and resettlement action plans developed for these works will be implemented to take care of the possible impacts.

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 2,000 km of state roads over a four year period with the Bank's funding decreasing over the years. The work would be implemented through a mix of conventional maintenance contracts and performance-based maintenance contracts. These contracts are targeted to involve small to medium sized national contractors to help strengthen their capabilities. These would be supervised by HD officers with a periodic technical review being undertaken by an independent consultant. Similarly, accident black spots identified under the project will be analyzed and suitable minor remedial interventions at up to 100 locations would be designed and executed. 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 utilize the services of experts and consultant firms to help in the implementation of the Institutional Strengthening Action Plan (ISAP). The component will also strengthen the road maintenance planning and implementation within HD through supporting the development and use of a maintenance management system. Improving the capacity of agencies concerned with road safety in the State will also be supported through technical assistance services and training. This component will also help the state in looking at PPP for road/transport infrastructure development through appropriate technical assistance.

Component	Indicative Costs (US\$M)	% of Total	Bank-financing (US\$M)	% of Bank-financing
1. Road Upgrading Component	320.97	71.3	245.17	70.5
2. Road Maintenance and Safety Works Components	110.72	24.6	87.60	25.2
3. Institutional and Policy Strengthening Component	14.83	3.3	11.75	3.4
Total Project Costs	446.52	99.2	344.52	99.0
Front-end fee	3.48	0.8	3.48	1.0
Total Financing Required	450.00	100.0	348.00	100.0

2. Key policy and institutional reforms supported by the project:

The key policy and institutional reforms to be supported under the project, based on the HD's ISAP (attached at Annex 11), which was endorsed by the GOTN in April 2003, are as follows.

Policy Reforms

- ensuring adequate and stable funding allocations for asset management and maintenance through increased allocations to the non plan budget and establishment of a State Road Maintenance Fund;
- enhancing HD accountability for results through: (i) clearly defining department management objectives and associated outcome indicators as well as (ii) applying more rigorous and public departmental planning and reporting processes;
- increasing the involvement of road users in road management through participation in annual sector stakeholders workshops, systematic use of user satisfaction surveys and, in time, participation in a proposed Road Maintenance Fund Board;
- increasing competition in the supply of sector related works and services through gradually outsourcing selected functions to private sector contractors and consultants; and
- taking a more holistic approach to the sector through increased emphasis on environmental and social issues as well as better coordination of road safety activities.

Institutional Reforms in the Highways Department

- restructuring of the HD along functional lines to create clearer lines of accountability and facilitate specialization of staff;
- development and implementation of a quality management program for all areas of HD business, with a view to possible accreditation to international standards for some or all HD divisions;
- enhancement of the planning and programming of works through creation and working of a planning cell;
- enhancement of procurement and contract management through adoption and application of updated procedures;
- improving the efficiency and effectiveness of delivery of maintenance works through (i) development and use in decision making of a simple maintenance management system and (ii) piloting performance based term routine maintenance contracts;
- development and use in decision making/reporting of a computerized management information system along with improved data collection, storage and retrieval procedures;
- extensive training of staff and mainstreaming of international best practices, especially in non-traditional areas such as financial management, environmental and social management and procurement; and
- formalization of road safety and environmental audit and implementation procedures on HD

implemented works.

3. Benefits and target population:

The main benefits are expected to be derived from: (a) better connectivity leading to higher levels of economic activity and tourism and hence greater employment opportunities; (b) lower freight and passenger transport costs enhancing the competitiveness of tradable sectors of the economy, providing economic and social benefits to the communities; (c) improved access to urban industrial consumption centers enhancing agricultural sector productivity and incomes; and (d) better maintained and managed roads leading to lower life cycle costs and more effective use of limited public funds for the road sector. The target population includes road users, agricultural producers, urban consumers, roadside communities, transport operators and tourists.

People living adjacent to projects roads are also expected to be direct net beneficiaries as a result of their improved access to services, markets and information. The potential negative social and environmental impacts of the project along with their mitigating measures are described in sections E5 and E6.

4. Institutional and implementation arrangements:

Implementing Entity

The project will be implemented by the HD 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 - Government Orders creating these have been issued and staff are currently being posted. 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 works in the project, the superintending engineer will be the designated "Engineer" specified in the contract. Independent technical review consultants will 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. Two committees look after redressing grievances and coordinate the implementation of RAP--a state level committee headed by Secretary (Highways) and a district level committee headed by the concerned District Collectors.

The GOTN 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 upto Rs.100 million (approx. USD2.1 million).

A computerized project and financial management system was developed early in project preparation. Sufficient staff have been trained in its use. 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. Each field division includes a divisional accounts officer (DAO), with supporting staff who will all be in place by loan effectiveness.

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 the GOTN budget as an identifiable single head budget item under the HD budget each year. GOTN will allocate the funds to HD, including its own share on a monthly basis through issuing Letters of Credit (LOC). The contractors will submit their bills to the "engineer" defined in the contract documents, who will then check the bills (including physical execution of work), certify them for payment and forward these to HD/PMT for payment. After review, the PMT will pay the bills through issuing cheques drawn on the State Treasury. HD will not have a separate bank account for the project.

The funds flow arrangements for PPP sub-projects will be substantially the same as for the rest of the project, with the detail to be specified in the Concession Agreements to be approved by the Bank.

D. Project Rationale

1. Project alternatives considered and reasons for rejection:

Choice of Class of Roads: The project will focus on the State and Major District roads. The project will not support national highway development which is being addressed through the national MORTH and the NHAI. The Bank has a separate program of ongoing and proposed projects to support the capacity expansion of the national highway network, including sections of National Highways in Tamil Nadu, and institutional development of MORTH and NHAI. High volume road sections with potential for more commercial financing are also being taken up separately under the Bank supported Tamil Nadu Urban Development Fund and other initiatives including public-private partnerships of the kind of Tamil Nadu Road Development Company. The village and urban road networks are under the responsibility of the respective local bodies and municipalities, and they will not be addressed under the project.

Selection of Links: Selection of specific road sections to be upgraded under this project began with a Strategic Options Study (SOS) undertaken by GOTN in 1995/96 to provide an overall assessment of the existing traffic bottlenecks, expected traffic growth and investment needs for the state road network. The SOS provided a basis for agreement between GOTN and the Bank on the initial identification of about 3,250 km of high-priority roads for further study based on traffic congestion, expected economic returns, network connectivity, links to expected economic development, and project packaging. GOTN then undertook feasibility studies of the candidate roads. Technical alternatives evaluated during the feasibility study included various combinations of strengthening,

widening, alignment improvements, paved shoulders and upgrading the road to a multi-lane facility. In addition, bypasses around highly trafficked towns were evaluated as an option to relieve congestion and minimize disruptions to roadside developments. A combined evaluation was also undertaken to account for the economic, environmental/social and other criteria.

Types of Works: To maximize economic returns and minimize social and environmental impacts, the project will concentrate on capacity expansion of existing roads rather than construction of new roads, with the exception of a few bypasses where warranted around congested towns. Other than big investments to upgrade the core network of the state, the project also recognizes the need to focus on periodic and routine maintenance and safety related works which are necessary to keep the traffic flowing smoothly, safely and comfortably. Recurrent expenditure on road operations and maintenance is the primary responsibility of the GOTN, however the loan will support periodic maintenance works in a decreasing fashion to help overcome the backlog of maintenance works and put the HD's asset management back on a more sustainable footing. Safety related works as well as capacity enhancements through purchase of necessary equipment and services will be supported by the project.

Project Size and Lending Instrument: Variations to the overall scale and timing of the project activities were considered, and the final size of the project takes account of GOTN's financial and implementation capacity, contract management skills and commitment to reforms. As the GOTN and the HD are relatively more advanced in terms of the implementation of institutional and policy reform in comparison with other states in India (see section D4 below), there is not a strong argument for using alternative lending instruments such as an Adaptable Program Loan (APL) which may be appropriate where the project's primary objective is reform. Rather the proposed project will complement the GOTN's own efforts to implement its sector reform program at the same time as provide higher quality road infrastructure. The project design has included a provision for pre-investment studies to support further investment in the road sector. This will only proceed if there is demonstrated capacity and performance improvement in the HD which can be evaluated at the Mid-Term Review (MTR) of the project. As in most states in India, the opportunities for private investment in the road sector are limited and public financing for the majority of the network is fully justified for the foreseeable future.

Policy and Reform Agenda: The project will support the ongoing institutional strengthening efforts of the state. In the roads sector these have been given a clearer and more systematic structure through the undertaking in 1999/2000 of an institutional review of the HD. The review resulted in the participatory preparation of an ISAP(see Annex 11), the principles behind which have been endorsed by GOTN in late 2001. This lays out a timetable for reform, in particular in the areas of modernizing the planning, prioritizing, programming and budgeting processes within the HD for both capital investments and maintenance. The project will support the implementation of the ISAP through provision of technical assistance and procurement of IT equipment. In line with the ISAP, the project will complement the HD's efforts to improve productivity through gradual outsourcing of suitable activities and greater transparency in the collection and use of management information.

2. Major related projects financed by the Bank and/or other development agencies (completed, ongoing and planned).

Sector Issue	Project	Latest Supervision (PSR) Ratings (Bank-financed projects only)	
		Implementation Progress (IP)	Development Objective (DO)
Bank-financed COMPLETED/ONGOING			
Improving urban infrastructure services in Tamil Nadu	Tamil Nadu Urban Development Project - II (LN 4478 IN)	S	S
Construction/rehabilitation of rural roads	Bihar Rural Roads (Cr. 1072-IN)	U	U
Construction/rehabilitation of rural roads.	Gujarat Rural Roads (Cr. 1757-IN)	S	S
Capacity expansion of national highways	First National Highways (Ln. 2534-IN)	U	U
Capacity expansion of state roads and institutional development of state road agencies	States' Road Project (Ln.2994-IN; Cr.1959-IN)	U	U
Capacity expansion and institutional strengthening of national highways and MORTH	Second National Highways Project (Ln.3470, Cr.2365-IN) Third National Highway Project (Ln.4559-IN) Grand Trunk Road Improvement Project (Ln.4577-IN)	S	S
Enhancement of institutional capacity to prepare projects at the state-level	State Roads Infrastructure Development technical Assistance (Ln.4114-IN)	S	S
Capacity expansion, maintenance and institutional development of state road and state road agency	Andhra Pradesh State Highway Project (Ln.4192-IN) Gujarat State Highway Project (Ln.4577-IN) Karnataka State Highways Improvement Project (Ln.4606-IN) Kerala State Transport Project (Ln.4653-IN) Mizoram State Roads Project (Cr.3618-IN) Uttar Pradesh State Roads Project (LN.4684-IN)	S	S
Widening and strengthening of selected state roads in a commercial format	IL&FS Project (Ln.3992-IN; Cr.2838-IN)	S	S

Upgrading farm to market roads	UP SODIC Lands Project II	U	S
Improved rural roads and markets	Diversified Agriculture Support Project	S	S
Cross sector fiscal and governance reform	UP Fiscal and Public Sector Restructuring Credit/Loan (Cr.3341-IN & Ln.4546-IN)	S	S
PLANNED			
- Capacity expansion, maintenance of State roads, and institutional development of State road agencies	Tamil Nadu Road Sector Project (FY2003-2004)		
Capacity expansion of national highways and institutional strengthening of NHAI/MORTH	Proposed Allahabad Bypass , National Highway North-South & East West Corridor Projects (FY2004)		
Construction improvement and maintenance of rural roads	Rural Roads (FY2004)		
Other development agencies			
ONGOING			
ADB- Capacity expansion of national highways and institutional strengthening of NHAI/MORTH	First Highway project, Second Highway project, National Highway project, Surat-Manor Tollway Project (2000), Western National Highway Corridor Project (2001)		
JBIC (formerly OECF) - Capacity expansion of national highways and institutional strengthening of NHAI/MOST	Jamuna Bridge Project, National Highway Project		
ADB- TA for preparation of national highway project	National Highway Corridor I & II (2002-2003)		
ADB- Capacity expansion of state highway and institutional strengthening of state road agency	West Bengal, North-South Corridor 1999		
ADB - Capacity expansion of state highway and institutional strengthening of state road agency	Proposed Madhya Pradesh State Highway Project (2002); Chattisgarh State Road Project (2003)		
JBIC - National highway expansion	Proposed National Highway projects		

IP/DO Ratings: HS (Highly Satisfactory), S (Satisfactory), U (Unsatisfactory), HU (Highly Unsatisfactory)

3. Lessons learned and reflected in the project design:

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 730 km of the 750 km of roads identified for upgrading so 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 contractors; (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 (ix) developing a comprehensive landscape and tree plantation plan as part of the environment management plan to ensure effective compensation of roadside tree loss.

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.

4. Indications of borrower commitment and ownership:

The following actions, taken by GOTN and the HD more specifically, indicate borrower commitment and ownership to the development objective of the project. The project has been designed to support these initiatives and accelerate the momentum of reform in the road sector.

Client initiative in identifying the project and preparing preliminary reports;

- GOTN commissioned consultants to carry out a SOS using its own funds in 1995/96.

Efforts to start project implementation prior to Board approval of the loan

- The government has fully established and staffed the PMT to facilitate co-ordination with the project preparation consultants;

- Advanced stage of preparation for main project activities including procurement of major civil works and related services contracts as well as implementation of the Resettlement Action Plan, tree cutting and utility shifting on the upgrading works;
- Extensive consultation and stakeholders' workshops with affected communities and NGOs during the process of engineering design as well as social and environmental assessments;
- Advanced stage of procurement of technical assistance for implementation of ISAP and road management system which are planned to be in place by loan effectiveness;
- Commissioning of a strategic IT needs assessment for the HD, which is due to present its findings shortly, with a view to preparing a detailed IT hardware, software and training upgrading program, and appointment of a Chief Information Officer to lead the process of IT development;
- The Highways Research Station, a government body affiliated with the HD, is currently undertaking an initial identification of accident blackspots using available police and departmental records; and
- initiation of land acquisition process by obtaining administrative approval from the state government for Rs.490 million (\$10 million) towards the cost of land acquisition.

Completion of critical policy and/or institutional changes in a timely manner.

- GOTN endorsement of the model Project Identification and Preparation Framework and compliance with the framework in preparing the project;
- Establishment of several funds or special purpose vehicles in association with financial institutions such as Industrial Credit and Investment Corporation of India and the Infrastructure Leasing & Financial Services Limited (IL&FS) which finance toll roads and other privately managed urban infrastructure facilities (e.g. Tamil Nadu Urban Development Fund, Tamil Nadu Road Development Company);
- Drafting of 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);
- Announcement in the 2003/04 Budget speech that a Road Maintenance Fund is to be established in the Public Account to provide for the full requirement of maintaining the core road network;
- Preparation of (i) a draft road policy that seeks to promote a more sustainable and efficient management of the road network which is to be refined through a stakeholder workshop to take place over the next few months; and (ii) a draft road safety policy and action plan under the supervision of the state road safety council which is currently being presented for government approval;
- Major investment by GOTN in police enforcement equipment is currently under way;
- Establishment of a government wide Staff and Expenditure Reform Commission late in 2001 which is reviewing and making recommendations on administrative reforms and will shortly be reporting on the restructuring of the HD;
- Endorsement by the GOTN in August 2001 of the principles and concepts framework for institutional development;
- Abolition of about 10,000 maintenance gang labourer posts that saves about Rs.600 million (\$12.5 million) per annum from the non-plan budget;
- Passage of the TN Highways Act in 2000 to empower the HD to better manage and enforce the Right of Way on its assets; and
- Several procurement enhancements including (i) the passage of TN Transparency in Tenders Act in 1998; (ii) preparation of government wide procurement action plan for which implementation has been initiated; (iii) GOTN approval in October 2002 of a procurement, contract management and dispute resolution policy framework; and (iv) establishment of

institutional mechanisms to ensure proper project management and contract administration.

5. Value added of Bank support in this project:

The World Bank is in a unique position to respond to the opportunities and challenges posed by the Indian States today since it 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 World Bank has developed a state level approach to improve road investment, management and financing. Since the World Bank is involved in the preparation and implementation of other similar state highway projects, 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 World Bank is also working with GOTN on a state level fiscal assessment program and preparation of a Medium Term Fiscal Plan. Sector governance and fiscal issues will also be addressed through the World Bank's broader partnership with GOTN.

E. Summary Project Analysis (Detailed assessments are in the project file, see Annex 8)

1. Economic (see Annex 4):

Cost benefit NPV=US\$611.6 million; ERR = Upgrading 30.3% Maintenance 43.5 % (see

Cost effectiveness

Other (specify)

Annex 4)

A SOS was carried out in 1995. This identified 3,300 km of roads for improvement on the basis of traffic, road condition and road inventory, environmental and social issues, the importance to economic development of the adjoining area, intensity of commercial traffic, and other factors. Some of these roads were deleted from the subsequent economic analysis since they were either improved under some other scheme or declared as national highways. This left 2995 km for further study.

All physical improvement components of the project were subjected to economic evaluation. The evaluation applied the Bank's Highway Design and Maintenance (HDM 4) model, which integrates both the engineering design and impact of road condition and standards on road user costs by computing the road deterioration pattern for a set of pre-established intervention options. The main economic benefits are expected to be derived from savings in vehicle operating costs, savings in road maintenance costs and time costs. As part of the sensitivity analysis, the risks of implementation delay and lower-than-expected traffic projection were tested, in addition to the normal cost and benefit variation risks.

The overall findings of the economic analysis for the roads selected for upgrading and maintenance are summarized in Table 1 in annex 4. The overall ERR for about 740 km of roads selected for upgrading and 86 km of 12 bypasses which are part of the selected corridors, was 30.23% with an NPV, discounted at 12%, of Rs.26,233 million (US\$550 million). The ERR varied between 16% and 38% for the various corridors. The NPV of the roads selected for periodic maintenance in the first year, (about 700 km out of about 2,000 km), for which detailed cost estimates have been prepared

was Rs.1,885 million (US\$ 40 million) with an ERR of 43.5%.

An economic analysis for each of the PPP sub-projects will be undertaken as part of the feasibility studies to establish their economic viability.

2. Financial (see Annex 4 and Annex 5):

NPV=US\$ million; FRR = % (see Annex 4)

Financial analysis for each of the PPP sub-project will be undertaken to ascertain the viability in financial terms.

Fiscal Impact:

Project Sustainability Sustainability of this project depends, to a large extent, on (i) adequate and timely flow of counterpart funds during the project period; (ii) adequate budget allocations and expenditures for recurring costs required to maintain the assets after the project and (iii) adequate funding and effective spending for the overall needs of the roads sector, including non-project roads, so that the full potential benefit of the project is realized.

Tamil Nadu fiscal affairs were traditionally well managed. However, the fiscal position has deteriorated since 1998/99, signified by a growing fiscal deficit from 2% of GSDP in 1997/98 to projected 5.7% in 2002/03. Over the past 18 months, Government of Tamil Nadu has launched a fiscal and governance reform programme to structurally reverse rapid fiscal decline. A core element of fiscal correction has focused on controlling salaries/benefits/pension expenditure. The HD has reduced its establishment expenditure from a high of Rs. 1,414 million or about \$30 million (15% of sector expenditure) in FY 2000/01 to Rs 813 million or about \$17 million (9% of sector expenditure) this year.

A critical next step will be to establish a comprehensive medium-term fiscal framework which will create the fiscal space for additional development expenditure. More specifically it will ensure the availability of counterpart funding for the present project without diluting the expenditure plan for the sector during the currency of the tenth five year plan. Before GOTN succeeds in restoring its fiscal health over the period of the Medium Term Fiscal Program, there could be periods when its liquidity is tight. This risk could be managed through proactive and advance forecasting of resource requirements for the project. Given that the magnitude of the funding requirement of the road sector to the overall budget is small (about 3 to 4 percent during the previous five years which may rise to between 5 and 6 percent over the next five years) the fiscal risks do not appear unduly high. The size of the project is only about 23% of the proposed road sector expenditure over the project period and is therefore manageable.

Plan Allocations. During the 10th Plan period (Table in Annex 13) the GOTN proposes to spend on an average Rs. 14 billion per year on roads, i.e. 115% more than it did on the sector during the previous five years. The planned sharp increase in Plan allocations for the road sector is the result of a strategic choice by the GOTN to improve both the capacity and condition of the SH/MDR network. The cost of works to be funded under the project will make up a significant proportion of the overall 10th State Plan allocations for the road sector. However, from a cash flow point of view, the impact on state finances will be limited to meeting the counter part funding requirements of about Rs. 5 billion (US\$ 104 million) over five years. Keeping in mind the overall cost of implementing the physical components of the project, GOTN has carefully planned and developed the funding provisions and mechanisms which seem satisfactory. A combination of better quarterly expenditure

forecasts by the implementing agency along with the commitment by government to accord priority in the issue of Letters of Credit, authorizing expenditure on the project, can be expected to reasonably assure funds flow for the project in a timely manner. This will reduce the risk of payment delays to contractors and consultants.

Non-plan allocations. To address continued maintenance funding shortages, it was agreed to include a maintenance component under the project, with the primary aim to reduce the existing maintenance backlog. The preliminary cost of this component is estimated to be approximately Rs 5.3 billion (\$110 million), which will generate a counterpart funding requirement of approximately Rs 1.2 billion (\$25 million) over the project period.

Increasing the annual budgetary provision for road maintenance expenditure, over and above the project requirements, from the present value of 66% (average over the last 5 year plan) of the Finance Commission (FC) norms to 80% (every year) will substantially take care of the overall road sector needs of the state. Of the above provision, it has been agreed that the entire funds required for maintenance of the core road network of the State (as per the Finance Commission norms) will be passed on to a Road Maintenance Fund to be set up during the first year of the project as stated in the FY2003/04 Budget Speech.

As can be seen from the present data (refer table in annex 13), non-plan provisions over the 10th plan period average to about 82% of the FC norms. But, there is a short fall in one year (FY 2004/05) when this ratio falls to about 71%. GOTN will need to address this in time.

3. Technical:

The road widening and strengthening components will introduce substantially higher standards of project design, implementation and quality control. To ensure that a sustainable level of quality is maintained, a major emphasis of this project is the introduction of international "good practice". The quality of engineering decisions has been ensured through the appointment of a well qualified engineering consulting firm. Bid packages will be sized, and pre-qualification criteria prescribed, so as to attract well-qualified international and local contractors. Construction supervision on big packages will be the responsibility of internationally-experienced consultants.

Maintenance work practices can substantially benefit from the introduction of modern techniques. This project builds upon HD's current practice of contracting out maintenance works to the private sector, and will introduce rational maintenance planning, strengthened work methods and quality control. Private sector participation in the area of routine maintenance will also be piloted through a few performance-based maintenance contracts. To ensure long-term sustainability of the improvements to the technical quality of road works, the institutional reform agenda includes the introduction of sound business practices including quality management, technical audits, modern financial and cost accounting systems, and training of HD manpower.

The project supports the efforts being made by GOTN to computerize planning and decision making processes of the State. An IT strategy for the HD is currently under preparation. The project will invest in the provision of basic IT tools for professional staff as well as the proper development and use of a GIS-related asset information system.

4. Institutional:

4.1 Executing agencies:

The HD will be the executing agency for all three components of the project.

The HD has prepared Borrower's Project Implementation Plan (BPIP) (March 2003) and a copy is available in the project files. This document will be updated on a regular basis to reflect any necessary changes in implementation arrangements and progress in implementation.

4.2 Project management:

General. The HD has created a dedicated Project Management Team (PMT) with an Indian Administrative Service (IAS) officer as Project Director and adequate staffing to implement the project. An Empowered Committee will oversee project implementation and make policy decisions as necessary.

Road Upgrading Component. Supervision of all ICB packages will be done by an independent consulting engineer. Government Orders have been issued to create six divisions to represent the client in the field and posting of staff is ongoing. The environmental aspects of the project are being managed by an Assistant Conservator of Forests and an Environment Specialist at HQ. Construction related aspects of the EMP will be addressed by the contractor and monitored by the supervision consultant and the employer's representative on site. Tree plantation will be undertaken by the State Forest Department. A joint Project Director will be responsible for R&R implementation. State and district level committees have been formed to take care of Grievance Redressal.

Period Maintenance and Road Safety Works Component. All NCB packages will be supervised by engineers of the HD through its field divisions. A consultant will be appointed to undertake technical review of the works. A detailed plan on the institutional arrangements for this component has been prepared and documented as a part of a Core Road Network Management Approach Paper. This clarifies HD's role in contract supervision and managing project maintenance contracts, network data collection, and developing multi-year rolling maintenance programme.

Institutional Strengthening and Policy Development Component. The GOTN has an Institutional Strengthening Steering / Advisory Committee to oversee and ensure timely implementation of this component. The Empowered Committee established will take policy level decisions and high level co-ordination. An implementation cell, with at least one senior officer to take the lead in the delivery of the action plan to schedule, was constituted in April 2003.

Road Safety. The HD will undertake all procurement of works, goods and services. The existing Road Safety Council will provide general oversight to the implementation of all road safety activities under the project. A Government Order has been issued to clarify roles and responsibilities amongst the the HD, State Traffic Police and the Transport Department. Each department will assign nodal officers to act as lead counterparts during implementation of the component.

4.3 Procurement issues:

Capacity Assessment. The World Bank has reviewed - as part of the Country Procurement Assessment Review (CPAR) - all the procurement procedures followed by GOTN and a report containing recommendations has been given to GOTN and Government of India (GOI). The GOTN and Bank are currently discussing the detailed plan for implementing the recommendations. The procurement risk of the project is currently rated as average.

Decision Making Structure. A two tier structure for dealing with project related procurement has been established after Cabinet clearance in October 2002 of a comprehensive procurement and

contract management policy framework. The necessary Government Orders have been issued. Details are given in Annex 6A.

Procurement Plan. The HD has prepared a procurement plan satisfactory to the Bank.

4.4 Financial management issues:

The project has a financial management system which will be able to adequately account for project resources and expenditures. HD has developed a computerized Financial Management System (FMS) for the project. The system has been tested and sufficient staff in the PMT and participating divisions are trained on its operation. The project will be provided for in the GOTN budget as an identifiable single head budget item under the 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 HD Finance and accounting function will be headed by a Financial Manager. A senior qualified accountant has already been appointed to this position.

Disbursements. Disbursements from the loan will initially be made following the traditional system (reimbursement with full documentation and against statement of expenditure) and could be converted to the Financial Management Report based disbursements at the option of the GOTN and GOI after the project successfully demonstrates generation of quality FMRs.

Retroactive Financing. Retroactive financing up to a limit of US\$ 6.0 million will cover eligible expenditure incurred up to one year before date of loan signing for implementing activities under the project and agreed with the Bank. Retroactive financing will support project costs pertaining to civil works (US\$ 3.8 million) and consultant/NGO services (US\$2.2 million).

Audit. The Accounts of the Project will be audited by Accountant General (Audit) Tamil Nadu. The audit report is to be submitted within 6 months of the close of GOTN's fiscal year. Thus the following audit reports will be monitored in Audit Reports Compliance System (ARCS).

Implementing Agency	Audit	Auditors
HD	SOE/Project Audit	AG (Audit) Tamil Nadu
Department of Economic Affairs/GOI	Special Account	Comptroller and Auditor General

Further details, including external and internal audit arrangements are provided in Annex 6.

5. Environmental: Environmental Category: A (Full Assessment)

5.1 Summarize the steps undertaken for environmental assessment and EMP preparation (including consultation and disclosure) and the significant issues and their treatment emerging from this analysis.

EA Process. The Sectoral Environmental Assessment (SEA), the Environmental Impact Statement (EIS) and EMP for the project roads were prepared in 1998/1999 in line with the original project design. Subsequently, these EA reports were reviewed by independent consultants in 2002 as per the requirements of OP 4.01 for Category A projects and gaps were identified. The EA reports were updated to address these gaps, consolidated to reflect the revised project design, contract specific

EMPs prepared for the upgradation roads and an Environment and Resettlement Management Plan (ERMP) developed for maintenance roads. The HD has obtained all the relevant GOTN clearances.

Summary of key environment issues, assessment of impacts and mitigation measures: The main environmental issues are unavoidable tree and land loss, potential damage of eco-sensitive environments (coastal zones), potential poorly planned or managed induced development, unavoidable removal and shifting of community assets from the corridor of impact and temporary construction related impacts. These potential impacts will be avoided, minimized and mitigated through sound management as detailed in the Environmental Management Plan (EMP) and Environment and Resettlement Management Plan (ERMP).

5.2 What are the main features of the EMP and are they adequate?

Separate EMPs have been developed for all the roads being upgraded, an ERMP has been prepared for maintenance roads and there is a generic EMP for resettlement sites. These include cost-effective measures to mitigate project related impacts during design, construction, and operational phases. The EMPs (roads being upgraded) have proposed mitigation / enhancement measures as follows.

Manage construction-related impacts. These impacts include identifying suitable locations for siting construction camps and hot mix plants. As with any road project, the usual construction-related impacts need to be mitigated. The issues include the operation of quarries, borrow area management, sand mining from river beds, siting and proper maintenance (particularly, in relation to air emissions) of hot mix plants, proper management of construction camps. As there are a number of new major and minor bridges and several refurbishments as well, proper construction management practices have been specified to ensure that there are no irreversible adverse impacts on these rivers. However, as these rivers are seasonal, no specific planning such as the diversion of water courses is required and no major impacts are envisaged.

Relocate common cultural properties. About 1,800 community assets including 84 roadside ponds / water resource bodies, 189 hand pumps, 565 drinking water taps and 26 wells will be affected. There are a number of religious and historic sites in the vicinity of the project roads and one roadside sacred grove which will be partially affected. Mitigation measures for all of these impacts have been designed as part of the cultural property resource plan in the EMP.

Compensate for tree loss. About 5,700 roadside trees are proposed to be cut and compensatory plantation is proposed at a ratio of 4:1. The planting will be done as per a tree-plantation plan included in the EMP.

Minimize loss of productive land. The roads to be upgraded are mostly in plain terrain and pass through agricultural lands, which will lead to the acquisition of about 300 ha of agricultural land for widening existing roads and for constructing new bypasses. Efforts have been made to minimize the loss of agricultural land and roadside trees by reducing the corridor of impact and modifying road cross-sections.

Protect Eco-sensitive Areas / natural habitats. With respect to eco-sensitive areas, two road stretches pass through reserve forests and conversion of 3.1 ha of forest land could not be avoided. The acquisition of the forest land is being undertaken in line with the GOI Forest Conservation Act. There are road stretches that pass close to Udayamarthandapuram Bird sanctuary and some reserve forests. Mitigation measures have been designed to minimize direct impacts on the vegetation in these stretches. Three contract packages (TNRSP 02, 03 and 04) follow the eastern coast, where there are

mangroves, aquaculture farms and saltpan lands. However, none of these are close enough to the road to be directly impacted. The need for addressing induced development (including resultant salt water intrusion to excessive groundwater withdrawal) along the eastern corridors was identified during the EA process including the stakeholder consultations. Studies to facilitate proper land use management are proposed to be carried out during project implementation.

Provide Appropriately Planned Resettlement Sites. The project proposes to establish resettlement sites for project-affected persons to be relocated. For these sites, generic mitigation measures have been identified to address environmental impacts covering site location, access roads, drainage and infrastructure provisions such as water supply and sanitation.

Manage Maintenance Works. The impacts envisaged on maintenance roads are limited to those during construction. The mitigation measures such as appropriate siting of hot mix plants and construction camps have been planned. However, some of the maintenance roads may traverse close or through eco-sensitive areas (reserve forest areas, coastal areas and others) for which additional mitigation measures have been specified. The ERMP includes standard construction-related mitigation and screening guidelines to determine whether there are any major environmental impacts that will require additional measures.

Institutional Arrangements. The EMPs and ERMPs identify institutional responsibilities at various levels. The Project Director will be responsible for overall implementation. To support the Project Director, an Environmental Cell has been created within the HD. This Cell has been staffed with an Assistant Engineer and an external Environmental Specialist. The Cell will coordinate with the HD's field staff in order to ensure proper implementation. The Cell will also co-ordinate with the Environmental Specialists of the Supervision Consultants and the Environmental Officers of the Contractors for the upgradation roads. Environmental awareness and training programmes have been planned. The training will be initiated prior to the start of construction and recurring training will also be organized during implementation. The EMPs and ERMPs include a budget for the mitigation / enhancement measures, training, monitoring and reporting.

Summary Assessment. All the mitigation, enhancement and monitoring measures in the four contract based EMPs (roads to be upgraded), ERMP (roads to be maintained) and EMP for resettlement sites form a part of the respective contract documents. If properly implemented, the four EMPs, ERMP and EMP (resettlement site) should be adequate to address any potential adverse environmental impact generated from the project.

5.3 For Category A and B projects, timeline and status of EA:

Date of receipt of final draft: March, 2003

1998/99	Original SEA, EIS and EMP prepared
September 2002	First draft of Consolidated EA, EMPs, ESMP, EMP-Resettlement Sites prepared.
October 2002	Final report of the Independent review
December 2002	Local and international public disclosure.
January 2003	EA Summary to Board
March 2003	Final EA Reports

5.4 How have stakeholders been consulted at the stage of (a) environmental screening and (b) draft EA report on the environmental impacts and proposed environment management plan? Describe mechanisms of consultation that were used and which groups were consulted?

During the initial project preparation stages, extensive public (including focus group discussions) and other stakeholder (including NGOs, State Department of Forests, Environment, Town & Country Planning and Water Resources) consultations were carried out in all the districts through which the roads to be upgraded pass. Further public consultations have been held during preparation of the consolidated EA reports. In this regard, stakeholder meetings were also conducted in Chennai, Tiruvannamalai and Ramnanathapuram to discuss the revised EA report, EMPs and ERMP. Suggestions and recommendations have been incorporated wherever feasible.

5.5 What mechanisms have been established to monitor and evaluate the impact of the project on the environment? Do the indicators reflect the objectives and results of the EMP?

Monitoring and evaluation form an integral part of the four EMPs (roads to be upgraded), the ERMP (roads to be maintained) and EMP (resettlement sites). There is a separate monitoring plan in the EMPs for air, water, noise, soil, roadside plantation, borrow area management and machinery maintenance. A similar monitoring plan has been developed for the ERMP and monitoring for the resettlement sites is restricted to the execution of proposed environmental management actions. Indicators form a part of the monitoring plan. The institutional mechanism to ensure the implementation is as per Section 5.2.

6. Social:

6.1 Summarize key social issues relevant to the project objectives, and specify the project's social development outcomes.

Social Development Outcomes The project is designed to improve the efficiency and safety of major sections of the Tamil Nadu road network, providing direct benefits for transport operators, service providers and indirect social and environmental benefits to society. However, the physical works cause some involuntary loss of land, shelter and livelihood to a number of adversely affected households thereby triggering the application of the Bank's policy on Involuntary Resettlement. A second key social development outcome is therefore facilitating social inclusion through providing assistance and support to all those affected squatters and encroachers and other vulnerable groups such that they can secure alternative shelter, opportunities and livelihood. The project also encompasses security by mitigating adverse impacts of land acquisition and resettlement by ensuring compensation of replacement cost and offering titles to alternative houses and shops provided to the affected persons.

Key Issues. The project involves relatively large scale land acquisition and resettlement compared with similar projects financed by the World Bank in the recent past. The project requires about 570 ha of which about 380 ha is private. A substantial amount of this land is required for about 13 bypasses (370 ha) which are mainly proposed as an alternative to avoid displacement of residential and commercial properties in urban areas. This large scale land acquisition will adversely impact about 15,000 households, of which 8,200 households will have severe impacts in the form of loss of house or livelihood or both. The project design takes explicit account of these impacts and incorporates the policies as well as institutional framework to ensure adequate compensation and equitable resettlement of affected persons. A project specific resettlement policy and entitlements has been adopted to mitigate the impacts associated with land acquisition and displacement. The R&R policy provisions and entitlements were used in preparing the Resettlement Action Plan (RAP) describing the steps to be followed for timely acquisition of private lands and delivery of entitlements and assistance. The details of RAP are summarized in Annex 12.

6.2 Participatory Approach: How are key stakeholders participating in the project?

The preparation of the project included substantial consultation with stakeholders at different levels,

particularly with Project Affected People (PAPs), project beneficiaries, and state and local NGOs. At the local level, group discussions, participatory mapping of resources and infrastructure, and other methods have been planned and implemented. Stakeholder workshop have been held, where a suggested policy framework for resettlement was presented and discussed among representatives of different agencies, beneficiaries, and PAPs. The project concept and project preparation process were shared by HD with user groups during workshops. The key issues raised during consultations included: realignment of curves, coastal regulation zone, planting of trees in consultation with local people and NGOs, induced impacts, alternative corridors, adequate drainage facilities in built-up areas, cattle crossings. Wherever appropriate, the suggestions were suitably incorporated in project designs. It is also expected that NGOs will play an important role in the implementation of the Resettlement Action Plan. Copies of final draft RAP including executive summary in local language have been made available in the district libraries where the project roads will be implemented. One state level and two regional stakeholders workshops were organized in Chennai, Tiruvannamalai and Ramnanathapuram during October-November, 2002 to share the draft safeguards documents with stakeholders and incorporate their suggestions.

6.3 How does the project involve consultations or collaboration with NGOs or other civil society organizations?

Consultation were held with affected persons, local NGOs/CBOs during the preparation of RAP. The stakeholders workshops have provided a forum for several NGOs/CBOs to express their view on the project and some suggestions on implementation of RAP, payment of compensation, impacts on water resources, road alignments and preservation of cultural properties amongst other things. HD has invited proposal from short-listed NGOs for providing implementation support. The NGOs are likely to be commissioned by end of May, 2003. Furthermore, academic institutions/NGOs will also be involved in carrying out annual and end-of-project impact assessment of RAP implementation and realization of its objectives.

6.4 What institutional arrangements have been provided to ensure the project achieves its social development outcomes?

After examining various alternatives, it was decided that resettlement implementation should be handled by the same unit which implements the main investment project to ensure timely coordination between land acquisition, resettlement and civil works. Accordingly, a separate cell within the HD has been created to oversee implementation of the RAP and address other social development issues. The social development staff in the cell will be supported in implementing the RAP by relevant district administrations, NGOs and consultants.

The HD has already demonstrated capacity and commitment to implement the RAP through assigning a senior level officer to head the cell, deputing a large number of field based staff to initiate the land acquisition process and identifying alternative resettlement sites. Already acquisition of 36 hectares of land (8%) has been acquired through private negotiations and compensation has been paid. Negotiations for another 42 hectares (11%) have been completed and compensation is expected to be paid shortly. A number of resettlement sites were also identified and these will be finalized after holding consultations, along with implementation NGOs with PAPs on suitability of the proposed site. Furthermore, both state and district level resettlement committees have been constituted and will start functioning once RAP implementation commences. The GOTN has already provided administrative approval of Rs.495 millions (about US\$10 million) for land acquisition to ensure that land is acquired in a timely manner.

6.5 How will the project monitor performance in terms of social development outcomes?

The RAP details the various indicators to be used in monitoring performance. Based on the experience during initial implementation suitable adjustments to these indicators will be made. These indicators are to be reported on a quarterly basis to the Bank as part of the HD's quarterly progress reports. Baseline data on the key socio-economic characteristics of project affected people - in terms of income, occupation, housing conditions, access to basic amenities, housing quality, material assets, land holding - were included in the RAP. These will become the benchmarks for measuring the impact of the resettlement program and monitoring the project's social development outcomes. Independent periodic impact assessments will be carried out to assess whether the RAP has delivered the planned entitlements and achieved the desired social development outcomes as well as propose remedial measures for future implementation.

7. Safeguard Policies:

7.1 Are any of the following safeguard policies triggered by the project?

Policy	Triggered
Environmental Assessment (OP 4.01, BP 4.01, GP 4.01)	<input checked="" type="radio"/> Yes <input type="radio"/> No
Natural Habitats (OP 4.04, BP 4.04, GP 4.04)	<input checked="" type="radio"/> Yes <input type="radio"/> No
Forestry (OP 4.36, GP 4.36)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Pest Management (OP 4.09)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Cultural Property (OPN 11.03)	<input checked="" type="radio"/> Yes <input type="radio"/> No
Indigenous Peoples (OD 4.20)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Involuntary Resettlement (OP/BP 4.12)	<input checked="" type="radio"/> Yes <input type="radio"/> No
Safety of Dams (OP 4.37, BP 4.37)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Projects in International Waters (OP 7.50, BP 7.50, GP 7.50)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Projects in Disputed Areas (OP 7.60, BP 7.60, GP 7.60)*	<input type="radio"/> Yes <input checked="" type="radio"/> No

7.2 Describe provisions made by the project to ensure compliance with applicable safeguard policies.

Involuntary Resettlement The HD has prepared a Resettlement Action Plan (RAP) describing the nature of impacts, implementation arrangements, budgets, time table, monitoring and evaluation arrangements. The HD has put in place adequate capacity, procedures and budget to implement the RAP.

Indigenous Peoples. Project roads do not pass through areas with tribal populations. The census survey revealed that only four tribal families will alone be affected who area scattered in different locations. Four households alone do not constitute a nucleus of Indigenous People as defined in OD 4.20 in terms of attachment to ancestral territories, self identification, language spoken, customary social and political institutions and subsistence oriented production. Therefore, the OD 4.20 on indigenous peoples is not triggered by this project.

Environmental Assessment and Natural Habitats. To assess and mitigate against adverse environmental impacts, the HD has carried out an Environment Assessment and prepared Environment Management Plans for each corridor which are consistent with O.P. 4.01, OP 4.04 and GOI's environmental assessment policies. The EMPs include mitigation measures with respect to conservation of natural habitats. Furthermore, since the project has been classified as a category "A" project, GOTN has conducted an independent review of the project, and its findings have been incorporated in the EA documents.

Cultural Property. The safeguard policy on Cultural Property OPN 11.03 is applicable due to

volume of earthworks required for the road improvement component and some cultural properties being adjacent though not impacted by project roads. "Chance archeological/cultural finds" occurring during construction will be handled under the framework of national laws and as specified by clauses in works contracts.

Disclosure. To comply with BP17.50 the draft final SEA/EIA/EMP/ERMP/RAP and the Executive Summary (translated in local language) were all disclosed in (i) public places in project affected districts in October 2002; and (ii) the Bank's Infoshop in Washington and Public Information Centre in Delhi in December 2002. The final versions were disclosed in the Infoshop/PIC in April 2003 and are currently being distributed to public places in project areas.

F. Sustainability and Risks

1. 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. During negotiations, the GOTN confirmed its commitment to close the maintenance funding gap during the life of the project in a form of loan covenant. The project size and the impact it makes on the GOTN budget have been assessed during 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. 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 the 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.

2. Critical Risks (reflecting the failure of critical assumptions found in the fourth column of Annex 1):

To be further assessed and determined during appraisal.

Risk	Risk Rating	Risk Mitigation Measure
From Outputs to Objective		
Inadequate maintenance of enhanced network and/or maintenance funding shortfall.	M	Monitoring of increase in real terms of annual allocation of maintenance funds during project implementation. Project design includes actions to improve maintenance and GOTN commitment to same to be obtained during negotiations.
Deterioration in state fiscal situation slows project implementation or reduces availability of resources for maintenance.	M	The project size and the road sector investment requirements have been determined based on the World Bank's macro assessment of the State's fiscal situation. Close Bank supervision of state fiscal situation and sector allocations.
Lack of effective senior management leadership due to high staff turnover or other reasons in HD.	M	Project design includes means to bring users interests and public pressure to bear on senior management. Formation of "IDS advisory committee" to lead change management process in HD.
Absence of sustained commitment to sector reform.	S	ISAP already formally endorsed by GOTN. Present budget creates a road maintenance fund. GOTN has also agreed to put in place a representative Road Board, which once done would reduce importance of political influence.
Inadequate information sharing among road safety stakeholders and lack of coordination in allocation of responsibilities.	M	Project design seeks to motivate stakeholders to coordinate. MOU to be signed before loan negotiations between key parties to allocate roles and responsibilities for project.
Lack of HD management commitment to sustain information systems through adequate data collection, analysis and output use.	M	Investment in Management Information System (MIS) is part of government wide program for IT. GOTN commitment to public dissemination of business plans and reports which require the information to be obtained during negotiations. Outer year periodic maintenance work to be prioritized using newly developed systems in HD.
Non-government stakeholders not having a say in decision making pertaining to road network maintenance.	M	Conducting an annual road sector forum to obtain feedback from the major stakeholders. A representative board comprising different government and non-government stakeholders to manage the road maintenance fund.
From Components to Outputs		
Actual traffic growth/diversion does not materialize as estimated.	M	Sensitivity analysis undertaken and results robust under reasonable circumstances. Use of conservative assumptions in preparing

Delayed GOTN procurement and inadequate competition for works and services.	M	economic analysis. Policy framework endorsed by GOTN and new contract administration procedures adopted. Contract packaging designed to maximize competition together with aggressive promotion and advertising by GOTN to attract contractors and consultants to State.
Ineffective coordination between departments and inadequate HD staff to implement all pre-construction activities in timely manner	M	Early posting of adequate dedicated staff in HQ and field and training already delivered.
Inadequate performance of HD and supervision consultants to effectively enforce all contract clauses, including for EMP. Inadequate enforcement of contract clauses by HD.	M	Training of HD staff involved in enforcement of contract clauses by consultants with strong technical audit and advisory capabilities.
Slow flow of funds from GOTN to HD, and delays in submission of audit reports.	S	There is a commitment from GOTN on time frame for transfer between GOTN and HD. HD has had early discussions with AG (TN) to ensure timely submission of audit reports.
Poor performance by contractors, consultants and concessionaires.	M	Strict pre- and post-qualification and screening of contractors, effective works supervision, and proactivity in terminating poorly performing contractors.
Weak coordination between Police and HD in terms of blackspot identification.	M	Institutional strengthening of HD road safety staff will take place under the project, and increased traffic police enforcement at these locations, is part of the Road Safety Action Plan. Establishment of a coordinating unit with the HD to improve inter-agency coordination and to mainstream the blackspot identification.
Unit costs and level of latent defects are not borne out in tendering and execution for periodic maintenance works.	M	Additional survey work being undertaken immediately prior to final designs and bidding documents are being prepared.
TA transfer skills effectively to HD staff.	M	Meticulous preparation of TORs, selection of consultants under Fixed Budget Selection to increase quality element and careful supervision by client and Bank.
HD staff resist change and organizational restructuring.	S	Internal communication strategy to be developed and implemented.
Delays in land acquisition and resettlement.	S	Private negotiations for land acquisition to avoid lengthy land acquisition process and advance identification of resettlement sites for timely shifting of affected households to the resettlement sites.

Overall Risk Rating	M	Average supervision effort required with focus on timely implementation of pre-construction activities, contract management and macro fiscal monitoring.
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Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N(Negligible or Low Risk)

3. Possible Controversial Aspects:

None identified at this stage.

G. Main Loan Conditions

1. Effectiveness Condition

Standard legal conditions.

2. Other [classify according to covenant types used in the Legal Agreements.]

The following have been agreed during negotiations.

GOTN to:

Project Management, Staffing and Decision Making

- Maintain the Empowered Committee, Project Steering Committee and Evaluation Committee with powers, functions, capacity and resources satisfactory to the Bank.
- Maintain a Project Management Team (PMT) in the HD with adequate technical/engineering staff at the HQ and field levels to meet the project's engineering and contract management needs.
- Maintain an ISAP implementation cell in HD reporting to the Chief Engineer (General) with dedicated senior officer/s to lead the ISAP implementation.
- Maintain an Environmental and Social Management Cell within the HD as well as in the field offices and maintain state and district level Grievance Redress Committees.
- Maintain throughout the project period (i) a finance/management professional as Financial Controller within the HD with experience and qualifications agreed with the Bank; (ii) an accountant for each of the divisions with experience and qualifications agreed with the Bank; (iii) a computerized project financial management system to adequately record the resources, flow of funds and expenditure for the project.
- Conclude a concession agreement with a successful private entrepreneur, for each sub-project to be implemented through the PPP initiative, on terms and conditions acceptable to the Bank detailing out the scope and cost of the sub-project, the contribution of GOTN to the cost of works/good therein and proposed schedule of release of the GOTN contribution.

GOTN to cause HD to:

Data Collection, Management and Reporting

- Carry out an annual road condition and traffic survey of the core road network, with methodology and content satisfactory to the Bank, and provide a copy of the survey report to the Bank - first report by Feb 28, 2005 - every February thereafter.
- Undertake surveys, with methodology and content satisfactory to the Bank, to assess road users' satisfaction with road infrastructure and HD performance at least three times during the project period, with the first one to be completed within nine months of project effectiveness, the second one by December 31, 2006 and the last one prior to Loan Closing.

- Prepare and disseminate to the public an HD Annual Business Plan and Annual Report demonstrating performance against the corresponding plan, both reports are to have content satisfactory to the World Bank. First Plan to be made public by May 2004 and first Report by May 2005.
- (i) provide to the Bank a quarterly report on the implementation progress as specified in the Borrower's Project Implementation Plan within 45 days after the end of each calendar quarter; (ii) provide a mid term review report after 24 months from project effectiveness and carry out a mid term review by December 31, 2005; and (iii) continue to conduct annual monitoring of environmental impact of the implementation of the Project for a period of two years following the Loan Closing Date.
- Conduct an annual road sector workshop to obtain feedback from the major stakeholders on progress over the previous year with service delivery improvements and sector reform, such stakeholders to include representatives of relevant government departments, road user and transport associations, relevant NGOs, business and agricultural interests and the road construction industry.

GOTN to cause HD to:

Maintenance Management

- Develop and install a functional road maintenance management system in the planning cell of the HD and apply the system for all periodic maintenance works on the core road network by the MTR and afterwards progressively increase every year the use of the system to cover maintenance works on the road network under the HD till the end of the project.
- In addition to the counterpart funding provisions for this project, increase and keep actual maintenance expenditure for HD roads equivalent to at least 80 percent of the requirements as per the 11th or subsequent Finance Commission norms from the fiscal year 2004-05.
- Making effective the Road Maintenance Fund to fully fund the maintenance requirements for the core road network and a Board to manage the Fund (by March 31, 2004).
- Ensure the start of actual implementation of routine maintenance through performance-based competitive tendering of at least 500 km of the core road network.

GOTN to cause HD to:

Environment and Social Safeguard Management


- Implement the Resettlement Action Plan and Environmental Management Plan to the satisfaction of the Bank.
- Ensure that a Feasibility Study Report, Environmental Management Plan and a Resettlement Action Plan satisfactory to the Bank is prepared for any other works which might be proposed for implementation under the project and not cleared at appraisal.
- Carry out annual resettlement implementation impact assessment studies to assess the changes in the living standards of the affected persons. At the end of implementation a final impact assessment will be carried out to find out whether the resettlement objectives have been realized and compare the living standards with those of baseline values and the control population.
- Ensure that prior to handing over sections to the contractor such sections are free of encumbrances and that all compensation for loss of land and other assets and assistance for the PAPs in the sections have been completed in accordance with the RAP.
- Ensure preparation of environment and social screening reports and action plan for mitigation for road maintenance works under this project and obtaining the corresponding endorsement of the Bank before inviting bids.

H. Readiness for Implementation

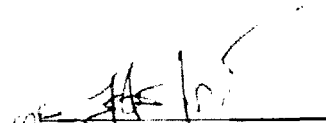
- 1. a) The engineering design documents for the first year's activities are complete and ready for the start of project implementation.
- 1. b) Not applicable.
- 2. The procurement documents for the first year's activities are complete and ready for the start of project implementation.
- 3. The Project Implementation Plan has been appraised and found to be realistic and of satisfactory quality.
- 4. The following items are lacking and are discussed under loan conditions (Section G):

I. Compliance with Bank Policies

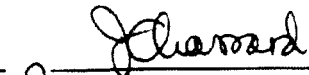
- 1. This project complies with all applicable Bank policies.
- 2. The following exceptions to Bank policies are recommended for approval. The project complies with all other applicable Bank policies.



A.K. Swaminathan
Team Leader



Guang Zhe Chen; Vincent
Gouarne
Sector Manager/Director



Michael F. Carter
Country Director

Annex 1: Project Design Summary
INDIA: Tamil Nadu Road Sector Project

Hierarchy of Objectives	Key Performance Indicators	Data Collection Strategy	Critical Assumptions
<p>Sector-related CAS Goal: Reduce infrastructure bottlenecks to economic growth</p>	<p>Sector Indicators: Road users' satisfaction with road system increases</p>	<p>Sector/ country reports: Independent user satisfaction survey, baseline, MTR and EOP</p>	<p>(from Goal to Bank Mission) Enhanced road infrastructure promotes investment and sustainable growth that contribute to poverty reduction GOTN invests adequately in other critical pro poor interventions</p>
<p>Project Development Objective: To improve the quality and sustainability of the state's core road network</p>	<p>Outcome / Impact Indicators:</p> <ol style="list-style-type: none"> 1. Percentage of core road network in poor condition reduced from about 35% at appraisal to not more than 10% at the end of the project 2. Travel time reduced by on average 20% on two selected project corridors by EOP (Nagapattinam to Tuticorin and Arcot to Nagapattinam) 3. No. of fatalities from road accidents per 10,000 registered vehicles reduced from 19 to 14 by EOP 4. Actual expenditure for maintenance of total road network to be increased annually from 63% (FY 2001/02) to at least 80% of 11th Finance Commission norms by FY 2004/05 5. Implementation of institutional development action plan in HD to schedule 6. Ex post ERRs as per appraisal estimates at EOP 	<p>Project reports:</p> <p>Annual road condition and traffic survey</p> <p>Travel time survey</p> <p>Police and transport department records</p> <p>HD Annual Report</p> <p>HD Annual Report</p> <p>Ex post economic analysis report</p>	<p>(from Objective to Goal) Operators pass on cost savings to consumers</p>

Hierarchy of Objectives	Key Performance Indicators	Data Collection Strategy	Critical Assumptions
Output from each Component: 1. Cost effective capacity and quality enhancement of about 750 km of state highways with proper management of social and environmental impacts 2. Cost effective periodic / routine maintenance and blackspot improvements on about 2,000 km of the core network 3. Improvements to the management of the state road network	Output Indicators: 1.1 No. of kms. upgradation delivered to time, budget, safety and quality constraints - MTR - 300 km. and by EOP - 750 km. 1.2 Delivery of compensation and entitlements to schedule. 1.3 Survival rate of afforested trees at EOP is above 70%. 1.4 Environmental mitigation measures carried out according to contract clauses. 2.1 No. of kms. of periodic maintenance works delivered to time, budget, safety and quality constraints - by MTR - 750 km. and by EOP - 1500 km. 2.2 Environmental mitigation measures carried out according to contract clauses. 2.3 No. of km subject to performance based routine maintenance by contract - 100 km. by MTR and 500 km. by EOP. 2.4 No. of blackspots improved - 30 by MTR and 75 by EOP. 3.1 Publication of medium term and annual business plans and reports . 3.2 Functional reorganization of HD as spelt out in ISAP by end 2005. 3.3 Key HD divisions achieve internationally recognized quality and environmental management system certification by EOP.	Project reports: 1.1, 1.2, 1.3 and 1.4 QPRs 2.1, 2.2 QPRs 2.3 HD Annual Report 2.4 QPRs 3.1, 3.2 HD Business Plans and Reports 3.3 Certificates	(from Outputs to Objective) GOTN allocates sufficient resources to maintain enhanced network No deterioration in state fiscal situation GOTN allocates sufficient resources to maintain enhanced network No deterioration in state fiscal situation Driver behaviour changes as a result of changed traffic management at blackspots Reasonable level of senior management turnover in HD Continued commitment to sector reform Road safety stakeholders share information and clearly allocate responsibilities

<p>4. Enhanced funding and improved allocation procedures for the road sector</p>	<p>3.4 Enhancements to procurement and contract management procedures.</p> <p>3.5 Road safety policy and action plan approved and implemented by MTR and EOP respectively.</p> <p>3.6 Cost of HD establishment as a share of total HD expenditure reduced from 9% (2001) to 5% by EOP.</p> <p>4.1 Road Maintenance Fund administered by a Road Board to be created by March 31, 2004 and working effectively.</p> <p>4.2 HD Senior management using outputs from computerized financial management system to make decisions by MTR.</p> <p>4.3 RMMS installed and is used by Senior Management to plan works on Core Road Network by MTR.</p> <p>4.4 Lane km of highways partly or wholly financed by the private sector (baseline is 300 lane km in 2003).</p>	<p>3.4 HD Annual Report</p> <p>3.5 Policy and Plan, HD Annual Report</p> <p>3.6 HD Annual Report</p> <p>4.1 GO/supporting regulations. Board meeting minutes.</p> <p>4.2 Outputs from FMS</p> <p>4.3 Outputs from RMMS</p> <p>4.4 HD Annual Report</p>	<p>Non-government stakeholders willing and able to bring effective pressure to bear on HD</p> <p>HD management commitment to sustain information systems through data collection and analysis and output use</p>
<p>Project Components / Sub-components:</p> <p>1. Upgradation of about 750 km of state highways including</p> <p>1.1 Civil works</p> <p>1.2 supervision and project management support</p> <p>1.3 implementation of RAPs, EMPs and utility shifting</p> <p>1.4 Supporting sub-projects under PPP initiative of GoTN</p>	<p>Inputs: (budget for each component)</p> <p>US\$320.97</p>	<p>Project reports:</p> <p>QPRs</p>	<p>(from Components to Outputs)</p> <p>Actual traffic growth/diversion estimates materialize</p> <p>Timely GOTN procurement and adequate competition for works and services</p> <p>Effective coordination between departments and adequate HD staff to implement all preconstruction activities in timely manner</p> <p>HD and supervision consultants effectively enforce all contract clauses, including for EMP</p>

<p>2. Other works on about 2,000 km of state roads including:</p> <p>2.1 Road rehabilitation and major maintenance</p> <p>2.2 Blackspot improvements</p>	<p>US\$110.72</p>	<p>QPRs</p>	<p>Satisfactory funds flow by GOI and GOTN</p> <p>Contractors and concessionaires perform properly</p> <p>Actual traffic growth/diversion estimates materialize</p> <p>Timely GOTN procurement and adequate competition for works and services</p> <p>Effective coordination between Police and HD in terms of blackspot identification</p> <p>HD effectively enforce all contract clauses</p> <p>Unit costs and level of latent defects are borne out in tendering and execution</p> <p>Satisfactory funds flow by GOI and GOTN</p>
<p>3. Technical Assistance for</p> <p>3.1 Institutional strengthening and policy development and</p> <p>3.2 Pre-investment studies</p>	<p>US\$14.83</p>	<p>QPRs</p>	<p>Contractors perform properly</p> <p>TA transfers skills effectively to HD staff</p> <p>Effective implementation of broader civil service reforms in GOTN</p> <p>Strong leadership in HD to drive reform process</p> <p>Road management techniques developed under the project are used on non-project activities</p> <p>HD staff do not resist change</p>

Annex 2: Detailed Project Description
INDIA: Tamil Nadu Road Sector Project

The project has three components which are designed to result in (i) strengthening and widening of about 750 km of existing state highways and major district roads and 14 bypasses including supervision of the works, implementing road upgrading/construction sub-projects to be undertaken by GOTN through public-private partnerships and associated social and environmental management; (ii) periodic maintenance of about 2,000 km of state roads and spot safety improvements at up to 100 locations, including technical review consultancy; and (iii) technical assistance to the HD to help in the implementation of the Institutional Strengthening Action Plan (ISAP). These are elaborated below:

By Component:

Project Component 1 - US\$321.00 million
(IBRD Loan: US\$245.2 million; GOTN funding: US\$75.8 million)

Road Upgrading Component (total cost includes contingencies) This component comprises: (i) civil works for strengthening and widening of state roads including construction of new bypasses; (ii) associated construction supervision services (GOTN's project management costs); (iii) land acquisition, resettlement and rehabilitation, environmental management, and utility relocation and government's project management costs; and (iv) sub-projects to be undertaken under PPP initiative by HD as described below.

1.1 Civil Works (US\$277.73 million) Civil works for upgrading and widening of about 750 km existing state highways including new construction of 14 two-lane bypasses will be undertaken. Contracts will be procured in two phases. Four civil works contracts (all ICB) will be procured in the first phase and one contract (NCB) in the second. This component will be implemented over a period of about 48 months. Civil works costs include some environmental management incidental to the works (e.g., quarry management).

Table 1: Details of Upgrading works

Contract No.	Section	Length (Km)	Base Cost (US\$ Million)
TNRSP 01	Arcot - Ulunderpettai and Vriddachalam - Thiruvarur corridors & Bypasses	401	138.54
TNRSP 02	Karaikal - Kattumavadi	116	42.71
TNRSP 03	Kattumavadi - Ramanathapuram	100	25.83
TNRSP 04	Ramanathaapuram - Tuticorin	118	23.96
<i>Total Phase I</i>		<i>735</i>	<i>231.04</i>
TNRSP 05	Ramanathapuram and Kumbhakonam Bypasses	15	9.29
<i>Total Phase II</i>		<i>15</i>	<i>9.29</i>
Grand Total		750	240.33

1.2 Supervision of Civil Works and Project Management Support. Three Supervision consultancy contracts (US\$7.82 Million) will be procured to supervise the civil works. An amount of US\$1.20 Million has been allocated for arbitration award for PCC services engaged for project preparation.

PCC services would also be continued/procured to assist the HD for project management during implementation (US\$2.12 Million). An amount of US\$1.53 Million (non-Bank financed) is also allocated to meet the Government's incremental project management cost and tax liabilities associated with the road upgrading component.

1.3 Land acquisition, Resettlement and Rehabilitation, Utility Relocation, Environmental Mitigation and Management (US\$21.58 Million)

- (a) Land Acquisition for road upgrading and R & R (US\$8.78 Million) and utility relocation (US\$1.20 Million) will be entirely financed by the Government.
- (b) Resettlement implementation support through NGOs (about 5 contracts costing US\$0.72 Million), training and monitoring through monitoring consultancies (2 contracts costing US\$0.12 Million), Resettlement works (US\$2.52 million) and procurement of R & R and EMP related goods (US\$0.19 million). The procurement of R & R works and goods will be undertaken by the respective beneficiaries in accordance with established local commercial practices acceptable to Bank and reimbursed on SOE basis supported by evidence of the usage of the funds.
- (c) R & R cash assistance (US\$7.05 million) will be paid to Project Affected Persons (PAPs) according to the RAP. The Bank will not reimburse any cash compensation paid to PAPs.
- (d) Environmental management and mitigation works not incidental to civil works including support for HIV/AIDS awareness on transport corridors (US\$1.00 million).

1.4 Preparation and implementation of road and bridge upgrading and construction sub-projects to be taken up under a PPP initiative by the GOTN (\$9.26 million). The project will support consultant services for legal advisory and preparation of technical, economic and financial feasibility assessments (\$1.76 million). World Bank support will be extended to the HD for sub-project implementation up to a maximum limit of the GOTN contribution as grant/subsidy to the private entrepreneur as specified in the concession agreement (\$7.5 million). All works undertaken will be compliant with the environmental and social policies as well as fiduciary procedures applicable for this project.

Project Component 2 - US\$110.70 million

(IBRD Loan: US\$87.6 million; GOTN funding: US\$23.1 million)

Road Maintenance and Safety Works Component (total cost includes contingencies)

2.1 Road Maintenance Works Sub-component. This component will include periodic maintenance works of a maximum of 2,000 Km of state roads taken up through conventional contracts over a 4 year program (US\$96.27 million) and about three pilot performance based maintenance contracts (US\$3.61 million). The aggregate cost of the conventional periodic maintenance works will be limited to a ceiling of about US\$97.0 million and will include about 47 small to medium sized (US\$2.0 million to 4.0 million) packages. Technical Review for conventional contracts, supervised by HD; and supervision and post-construction monitoring consultancy services for performance based maintenance contracts (US\$1.45 million) will be also included under this component.

Table 2: Maintenance Works

Year No.	Details	Base Cost (US \$ million)
Year 1	17 contracts	45.83
Year 2	About 12 contracts	17.71
Year 3	About 10 contracts	13.54
Year 4	About 8 contracts	8.33
	Total About 47 contracts	85.41

2.2 Road Safety Works Sub-component. This will finance civil works for implementation of engineering and traffic management measures to enhance road safety at selected high priority blackspot locations throughout the state to be taken up through a three year program (totalling US\$5.43 million) and minor improvement works and installation of road signs and marking along accident-prone corridors (US\$0.41 million). About 12 contracts costing about US\$0.5 million each will be procured through Shopping/NCB procedures for implementing the civil works. Services for blackspot identification, designing traffic management and engineering measures, monitoring and road safety training (US\$0.14 million) will also be funded under this sub-component.

This sub-component will also include an amount of US\$1.42 million (non-Bank financed) towards government's project management cost for the maintenance and safety works component.

**Project Component 3 - US\$ 14.80 million
(IBRD Loan: US\$11.7 million; GOTN funding: US\$3.1 million)**

Institutional Strengthening and Policy Development Component (total cost includes contingencies). This component includes consulting and specialized advisory TA services to:

- help implement the institutional strengthening action plan;
- advise GOTN in the area of public-private partnership in infrastructure development; to develop and install a road management system;
- develop and implement a departmental IT system including needs analysis;
- develop road safety policy and action plan and strengthening the road safety management including establishing accident data recording, analysis and reporting system;
- strengthen state's environmental management capacities;
- conduct road user satisfaction surveys;
- other specialized advisory services on institutional restructuring and PPP in infrastructure development and operations; and
- imparting appropriate training to HD staff.

This component includes provision for carrying pre-investment studies for future investments in the road sector (US\$2.35 million). An allocation of US\$4.07 million has also been made under this component for procuring equipment and software for improved communication, information and office management, road network and safety management. Associated administrative costs and tax liabilities for services and equipment (amounting to US\$1.79 million, non-Bank financed) will also be met out of the total cost allocation under this component.

Annex 3: Estimated Project Costs
INDIA: Tamil Nadu Road Sector Project

Project Cost By Component	Local US \$million	Foreign US \$million	Total US \$million
1. Road Upgrading Component	203.24	78.01	281.25
2. Road Maintenance and Safety Works Component	88.59	9.52	98.11
3. Institutional Strengthening and Policy Development	8.93	4.42	13.35
Total Baseline Cost	300.76	91.95	392.71
Physical Contingencies	19.27	6.46	25.73
Price Contingencies	20.99	7.09	28.08
Total Project Costs ¹	341.02	105.50	446.52
Front-end fee		3.48	3.48
Total Financing Required	341.02	108.98	450.00

Project Cost By Category	Local US \$million	Foreign US \$million	Total US \$million
Goods	3.42	1.05	4.47
Works	304.03	93.62	397.65
Services	33.57	10.83	44.40
Unallocated	0.00	0.00	0.00
Total Project Costs ¹	341.02	105.50	446.52
Front-end fee		3.48	3.48
Total Financing Required	341.02	108.98	450.00

¹ Identifiable taxes and duties are 43.53 (US\$m) and the total project cost, net of taxes, is 406.47 (US\$m). Therefore, the project cost sharing ratio is 85.62% of total project cost net of taxes.

Annex 4: Cost Benefit Analysis Summary
INDIA: Tamil Nadu Road Sector Project

Introduction: The cost-benefit analysis of the project focused on the two project components - widening and upgrading component and the major maintenance component. These comprise about 90% of the total project. The economic and financial analyses for the sub-projects to be undertaken under the PPP initiative will be undertaken as and when they are identified and the viability studied.

Cost-benefit analysis has compared the benefits accrued to the economy through reduction in vehicle operating costs, time savings and reduction in accidents for the current traffic, changes in consumer surplus for generated traffic and its time savings against the economic costs of upgrading and maintenance of roads together with society costs (land acquisition, resettlement and loss of amenities). A Strategic Option Study (SOS) was carried out in 1995 and identified about 3300 km of roads for improvement on the basis of traffic, road condition and road inventory, environmental and social issues, the importance to economic development of the adjoining area, intensity of commercial traffic, and other factors. Some of these roads were deleted from the subsequent economic analysis as they were either improved under some other scheme or were declared as national highways. This left 2995 km for further study. For each of the identified road in the SOS, the cost-benefit study determined the ERR and NPV by discounting the net benefits over the life of the investment at 12%. The roads were selected for improvement options based on the NPV and social and environmental consideration.

[For projects with benefits that are measured in monetary terms]

	Present Value of Flows		Fiscal Impact	
	Economic Analysis	Financial Analysis ¹	Taxes	Subsidies
Benefits:				
Upgrading	33.68	37.42		
Maintenance*	5.02	5.56		
Total	38.70	42.98		
Costs:				
Upgrading	7.45	8.28		
Maintenance	1.89	2.10		
Total	9.34	10.38		
Net Benefits:				
Upgrading	26.23	29.14		
Maintenance	3.13	3.46		
Total	29.36	32.60		
IRR:				
Upgrading	30.23%	NA		
Maintenance	43.5%			
Total	>30.0%			

Note: * Only the first year maintenance program was considered for economic analysis.
 All costs and benefits are in billion Rs.

¹ If the difference between the present value of financial and economic flows is large and cannot be explained by taxes and subsidies, a brief explanation of the difference is warranted, e.g. "The value of financial benefits is less than that of economic benefits because of controls on electricity tariffs."

Summary of Benefits and Costs:

The economic analysis was conducted using the Highway Design and Maintenance - version 4 (HDM-4). The impact of NMT on the traffic flow equations was considered by using a friction factor to reduce the road capacity. The factor value depended on the volume of NMT traffic and the road width. The model simulates life cycle road/pavement conditions and vehicle operating costs and provides economic decision criteria for multiple road design and maintenance alternatives, based on survey of road characteristics, traffic, and agency and user costs. Details of the cost benefit analysis are summarized in the Feasibility Report (August, 1998) for the Tamil Nadu State Roads Project and are available in the file. Since there had been delays in preparing the project, the GOTN repeated traffic surveys on one location each on the identified road stretches as well as carried out roughness surveys for the selected 750 km of roads for upgrading in December 2002. These data were used to modify the traffic forecast and revise the economic analysis using the earlier model. The current economic analysis represents the economic costs and benefits starting from 2003 and the contract-wise details of costs and benefits from 2003 onwards are filed.

The overall findings of the economic analysis for the roads selected for upgrading and maintenance are summarized in Table 1. The overall ERR for the 743 km of roads selected for upgrading and 86 km of 12 bypasses which are part of the selected corridors, was 30.2% with an NPV, discounted at 12%, of Rs.26,233 million (US\$550 million). The ERR varied between 16% and 38% for the various corridors. The NPV of the roads selected for periodic maintenance in the first year, of about 700 km out of about 2000 km, for which detailed cost estimates were prepared after surveys and investigation was Rs.1885 million (\$40 million) with an ERR of 43.5%.

Main Assumptions:**Part A: Upgrading and Widening Component**

Overview. A feasibility study was carried out for 2,995 kilometers of roads identified from over 10000 km of core network through an earlier SOS. About 740 km of roads were prioritized for upgrading including 86 km of bypasses on the prioritized links. The remaining roads were identified for periodic maintenance.

Level of traffic and road characteristics. Traffic estimates for the base year were arrived at through routine traffic surveys - traffic count for seven days at 52 location and origin-destination surveys(O-D) for one 24 hour period during the middle of the traffic count survey at 21 locations on the identified roads during 1997. Traffic surveys were repeated of selected locations on the prioritized sections in the last quarter of 2002. It was found that the traffic had not grown at the rates assumed in the feasibility report. Based on the traffic growth rates between 1997 and 2002, the future growth rates were adjusted to lower levels. Traffic volumes on roads varied from a low of about 500 fast moving vehicles per day to a high of 7,300 fast moving vehicles per day. Of the total roads studied under the project, 44% were single lane (3.5m) or less, 14% intermediate-lane (4.0-6.0m) and the rest mostly over 6m wide. These roads have a roughness varying from an IRI of 3 to a high of 10, with 73% in the range of IRI 5 to 8. The projection of normal traffic for passenger was based on the relevant elasticity for different passengers vehicle types, annual population growth rate and annual per capita income growth rate in the corridor of impact for each corridor. The values of elasticity were 1.6 for cars/jeeps, 1.0 for buses and 1.9 for 2-wheelers for the first five years and reduced to 1.3, 0.85 and 1.2 after 10 years respectively. For freight vehicles traffic growth was estimated using the elasticity of 1.5 in the first five years declining to 1.0 after the 10 year period. The growth rates of primary and secondary industry, including mining where relevant, were

combined and averaged. Diverted traffic was estimated for the base year using the Road Network Model which assigned traffic between a pair of nodes using the minimum travel cost to the user. The travel cost was defined as the sum of distance related cost and time related cost of using a particular route. The average rate of traffic growth over the life of the project was divided into four periods, first three periods of five year each and the last beyond 15 years. The average growth rate for passenger vehicles was in the range of 5 to 11% in the first five year period and 5 to 9% after the 15 years while that of freight was 5.9% in the first five year period declining to 4.5% after 15 years.

Economic costs and benefits: Financial costs were converted to economic costs by a conversion factor of 0.9 and a discount rate of 12% was applied throughout the analysis. Unit construction costs for upgrading and widening component were based on the analysis and adoption of unit rates collected from different sources and market rates for basic work items as well as the calculation of quantities based on the detailed design. Base work costs were increased by about 15% to include physical contingencies, establishment of contractors, and design and supervision costs. The average cost of about US\$314,000 per km includes substantial widening, strengthening and shoulder reconstruction of the existing single lane and less than 2-lane carriage ways to 7m of carriage way and 1-1.5 m of shoulders. The total period for the economic analysis, including the three year period for construction, was considered as 25 years.

Alternatives Considered: In the feasibility study, five options with various pavement and shoulder widths and type of shoulders were considered in relation to projected traffic. These options were enhanced periodic maintenance, widen to 7 m. with 1 m. gravel shoulders, widen to 7 m. with 2.5 m. gravel shoulders, widen pavement to 10 m. with 1 m. gravel shoulders and four laning. The upgrading alternatives were selected from the Indian Road Congress standards for 2-lane roads in plain areas.

Economic Evaluation: Net benefits, the difference between the cost and benefits to the road users, for the alternatives were calculated for each road link using the HDM-4 model. The program models the effects of pavement deterioration and maintenance as a function of traffic levels, and calculates the annual costs of road construction and maintenance intervention measures as well as the costs of road user vehicle operation and travel time. The economic costs for upgrading and widening, including social costs were spread over three years starting 2002, at 20% in the first year, 45% in the second year and 35% in the third year. The economic benefits were the reduced road user costs, primarily the savings in vehicle operating costs and passenger and freight time savings from wider and better pavement reducing congestion, improving speeds and road roughness, reduced recurrent costs, and savings from reduced accidents. Road improvement will lead to time savings for vehicles, crew, passengers and freight, and the savings in the inventory cost of goods in transit. The value of time were computed separately for work and non-work trips based on average wage rate of users of different road vehicle type. For non-work trips the time value was taken at 20% of the wage rate. The average value of passenger time was Rs.44 (\$0.9) per car passenger-hr, Rs.18 (\$0.4) for 2-wheeler passenger-hr and Rs.7 (\$0.15) per passenger-hr for bus passengers.

A total of four routes with a total length of about 740 km were chosen for upgrading on the basis of their economic viability and social and environmental considerations. All selected corridors showed robust ERRs ranging from 16% for the northern corridor between Arcot and Ulundurpet to 38% ERR for the eastern corridor between Vridhachalam and Tiruvarur. The overall ERR is estimated at 30% with NPV of Rs.26.2 billion (\$550 million). The evaluation of the project road corridors and the entire component indicates that the selected road improvement strategy is economically viable.

Part B: Periodic Maintenance Component

Overview: A total of 3600 km, divided into 300 segments, of state highways and major district roads were studied for prioritization for maintenance/betterment needs over the next five year period. The maintenance program was prioritized using the HDM III/HDM Manager. Data was collected by the Highway Department on traffic, road inventory and road condition (cracking, raveling, rutting, potholes, roughness) for the 300 segments. The unit costs of different type of interventions were taken from the detailed engineering design study. The data for 300 segments was grouped together into a 3-dimensional matrix, based on traffic, roughness and pavement strength, and for each of the matrix cell an optimum intervention, based on NPV, was determined using the HDM. The interventions considered were:

- Routine maintenance with resealing at various trigger levels of cracking;
- Overlays of different thickness at different roughness levels;
- Rehabilitation of existing pavement.

Economic evaluation: For the first year program, identified through the matrix, detailed designs were carried out. The cost-benefit analysis was carried out using the latest data on cost of intervention, road condition and traffic and using HDM 4. For maintenance roads the life cycle of 10 years was considered for economic analysis. The NPV of the first year program, about 700 km of roads, was Rs.1885 million (\$40 million) with an ERR of 43.5%.

Sensitivity analysis / Switching values of critical items:

A. For the road widening and upgrading component, the major risks which may affect the economic returns are: cost overruns, lower traffic growth reducing benefits, and delay in start of construction. These risks are reflected by: (i) reducing the benefits by 20%, (ii) increasing the costs by 20%, (iii) delaying the start of construction by one year, and (iv) combination of all the reduced benefits and increased costs to study the impact of worst scenario. In addition the benefits from time savings were eliminated to test their impact on the overall benefits. Sensitivity to future maintenance practice was relatively small, as this mainly affects the user costs in the outer years of the evaluation period. The analysis shows that the economic benefits from the improvement component are robust under any reasonable scenario.

Table 2: Sensitivity Analysis for Upgrading and Widening Component

Test	ERR in %	NPV in Rs.mn
Base Case	30.23	26,233
Completion delayed one year	32.40	27,339
Benefits decreased by 20%	26.62	19,576
Costs increased by 20%	27.23	24.835
Benefits decreased by 20%, costs increased by 20%	23.97	18,078
Time benefits eliminated	19.30	7,712

Switching values of critical items: The cost of upgrading and widening has to increase by over 453.4% or the users' benefits to reduce by 77.95% before the NPV of this component would fall to zero.

B. For the major maintenance component, the risks include lower than projected traffic reducing the benefits, increased cost of construction and delay in starting the work. The impact of these risks were

estimated through a sensitivity analysis. The results of the analysis are summarized in Table 3 for Phase I, which shows that the economic benefits are robust.

Table 3: Sensitivity Analysis of Maintenance Component

Test	NPV Rs. mn	ERR %
Base case	3134	43.5
Benefits reduced by 20%	2221	35.6
Costs increased by 20%	2885	38.1
Benefits decreased by 20%, costs increased by 20%	1971	30.9

Switching values of critical items: For the NPV to be zero the construction cost has to increase by 266.27% and benefits to reduce by 62.44%.

Distribution of Benefits: Benefits of the project would accrue to a wide base of users - the vehicle operators and the community at large through reduced costs and better opportunity for business and employment. The traffic survey carried out during project preparation has revealed that all segments of society - traveler, suppliers and consumers of goods and services, use project roads. In addition, the road improvement sections pass through economically backward districts and their improvement would help in attracting economic activity in these regions.

Annex 5: Financial Summary
INDIA: Tamil Nadu Road Sector Project

Years Ending
June 30

Actual Financial Progress

	IMPLEMENTATION PERIOD						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Total Financing Required							
Project Costs							
Investment Costs	44.7	77.4	94.1	110.2	77.5	38.4	0.0
Recurrent Costs	0.7	0.7	0.7	0.7	0.7	0.7	0.0
Total Project Costs	45.4	78.1	94.8	110.9	78.2	39.1	0.0
Front-end fee	3.5	0.0	0.0	0.0	0.0	0.0	0.0
Total Financing	48.9	78.1	94.8	110.9	78.2	39.1	0.0
Financing							
IBRD/IDA	37.8	60.4	73.3	85.8	60.5	30.2	0.0
Government	11.1	17.7	21.5	25.1	17.7	8.9	0.0
Central	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Provincial	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Co-financiers	0.0	0.0	0.0	0.0	0.0	0.0	0.0
User Fees/Beneficiaries	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Project Financing	48.9	78.1	94.8	110.9	78.2	39.1	0.0

Main assumptions:

Annex 6(A): Procurement Arrangements

INDIA: Tamil Nadu Road Sector Project

Procurement

A. Institutional Capacity

As part of project appraisal, an assessment was carried out to determine the institutional capacity of the HD which manages the procurement activities of the project. The HD has previously executed road works as part of World Bank financed projects such as National Highways-II Project-I [Cr.2365-IN], Agricultural Development Project -Tamil Nadu [Cr.2215-IN], Tamil Nadu Urban Development Project [Cr.1923-IN] etc. In addition, the GOTN has implemented some other externally aided projects. The engineers who have worked on these projects are generally conversant with the systems and procedures to be followed for procurement in World Bank funded projects.

Tamil Nadu is the first State to pass a Procurement Law - namely Tamil Nadu Transparency in Tenders Act, 1998. This introduces enforceable and explicit rules and regulations into public procurement. There are some differences in the procurement procedures prescribed in these rules from those to be followed under Bank financed projects. Section 15 of the said Act states: "The provisions of this Act, to the extent they are not consistent with those prescribed in projects funded by international Agreements or by International Financial Agencies, shall not apply." GOTN has confirmed that this provision will be followed for this project.

The World Bank has conducted, as part of the Country Procurement Assessment Review [CPAR], a review of all the procurement procedures followed by the GOTN. A report containing recommendations has been given to GOTN and GOI. GOTN has examined this report in detail and is in general agreement with most of the recommendations. The GOTN has also prepared and forwarded to GOI in October, 2002 an implementation plan to complete the implementation in stages by March 2005. The GOTN has since signed a participation agreement under TA for Economic Reforms Project (Cr.N045-IN] for US\$1.14 million for engaging consultants (financed under the credit) to help them in this implementation process.

The HD has 1,208 civil engineers and 526 under graduate engineers on their rolls. Officers for this project will be largely drawn from this cadre. These officers are dealing with procurement in their day to day work and hence are generally conversant with public procurement.

The GOTN has agreed that officers who are deputed for procurement duties under this project will be sent for procurement training initially in the Administrative Staff College of India, Hyderabad or National Institute of Financial Management, Faridabad. About 11 officers have been already trained and more officers will be sent for training in the future on a regular basis so that those deputed for the project have the necessary public procurement training. The GOTN has also agreed to give training on legal aspects of contract management to all the officers who will be deputed for implementing this project.

There are three tiers in management structure for the project which was formalized through a comprehensive policy framework cleared by the TN Cabinet in October 2002. Necessary Government Orders have also been issued. These Government Orders established: (a) an Empowered Committee under the chairmanship of Minister for Highways; (b) a Project Steering Committee under the chairmanship of Principal Secretary, Highways; and (c) a Tender Evaluation Committee consisting of four officers, including Special Secretary, Finance under the chairmanship

of the Project Director.

The Empowered Committee will deal with Policy issues and project oversight. Procurement is dealt with by the other two tiers. The Steering Committee is empowered to take decisions on all bids for Goods, Works, and Consultancy Services, both ICB and NCB based on the recommendations of the evaluation committee. In addition, they will also deal with all the variations and disputes costing more than Rs.100 million (approximately US\$2.1 million). The Evaluation Committee will evaluate all bids for Goods, Works and Services 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 (approximately US\$2.1 million).

The HD will shortly engage the services of a Contract Management Advisor. The HD will make 70% of civil works payments within 7 days of receipt of bill and the balance will be paid within a further 28 days. This provision will be incorporated in the bidding document to ensure adequate cash flow for contractors and receipt of better competitive bids.

Contract Supervision of all ICB packages will be done by an independent consulting engineer hired following the World Bank's Consultancy Guidelines. All NCB packages will be supervised by engineers of the TN Highways Department. A consultant will be appointed to do technical review of the HD's supervision periodically and report to GOTN for appropriate action.

The prior review thresholds (indicated in this annex) were derived after assessing GOTN's capacity to carry out project procurement as per World Bank Procurement Guidelines.

B. Procurement Methods

All Goods and Works financed under the Loan shall be procured in accordance with the World Bank's Guidelines for Procurement, January 1995, revised January 1999. Consulting services to be funded through the Bank's Loan shall be procured in accordance with the World Bank's Guidelines for the Selection and Employment of Consultants by the World Bank Borrowers, January 1997, revised January 1999 and May 2002. All civil works, goods and services will be procured using India-specific Model Standard Pre-qualification and Bidding Documents for Bank funded projects. Specific procurement arrangements are summarized in Tables A and A1, and are briefly described below.

B1 Works [US\$390.17 Million]

International Competitive Bidding (ICB): US\$ 267.00 Million Equivalent including contingencies :

The works relating to road upgrading and rehabilitation of 750 km of State Highways will be implemented in 5 contract packages. Four of these five packages will be procured following ICB procedures. One contract will be about US\$140 million and other three between US\$23 to US\$45 million equivalent (the costs mentioned here are the base costs without contingencies). Pre-qualification for all four contract packages has been completed. Bids for these packages will be invited by June 2003 using Bank approved bid documents. To encourage participation of large contractors and use of modern equipment, bids are packaged keeping one of high value US\$140 million and the rest medium size. Under ICB, preference will be given to domestic contractors in accordance with Appendix 2 of the Bank's procurement guidelines.

National Competitive Bidding (NCB): US\$110.62 Million Equivalent including contingencies:

Works estimated to cost less than \$10.0 million relating to road upgrading, maintenance and safety will be procured under this category. There will also be one road upgrading contract (valued about US\$10.74 million including contingencies, value without contingencies likely to be about US\$9.3 million). The first year bids for 17 packages (700 km of road) of periodic maintenance, valued at between US\$1 million to 3 million aggregating US\$50.53 million, will be invited. In the second year bids for 12 contracts [600 km of road], valued at US\$20.46 million will be invited. In the third year bids for about 10 packages (400 km of road), valued in aggregate US\$15.65 million will be invited. In the fourth years, bids for about 8 packages (300 km of road) valued US\$9.63 million will be invited. Performance based maintenance bids for 3 packages (approximately 150-200 km of road) valued at US\$3.61 million will be invited in the second and third year.

Procurement of Small Works: US\$12.54 Million Equivalent:

Minor scattered works relating to resettlement and rehabilitation (US\$2.52 million), shifting of utilities (US\$1.20 million - not to be financed by the Bank loan), black spot improvements (US\$7.84 million) and EMP implementation works (US\$1.00 million) are all scattered works of small value and are not amenable for competitive bidding. Hence they will be procured in packages of US\$50,000 equivalent or less, up to an aggregate of US\$8.84 million, on the basis of lump sum fixed price contracts soliciting quotations from at least three qualified contractors. With prior concurrence of the Bank, minor works aggregating to a cost of \$2.50 million may be taken up under force account.

B2. Procurement for PPP sub-projects [US\$ 7.50 million]

Subprojects shall be constructed, operated and subsequently transferred under concession contracts awarded to private sector participants on the basis of international competitive bidding procedures in accordance with the provisions of Section II of the Guidelines, subject to the provisions of paragraph 3.13 (a) thereof. Goods, works and services required for Subprojects shall then be procured in accordance with the applicable procedures of the respective private sector participants.

B3. Goods [US\$ 4.47 million Equivalent]

Goods and equipment - including computer hardware and software, office and laboratory equipment will be procured following ICB procedures for packages above US\$200,000 equivalent (total US\$ 1.36 million); the majority will be procured using NCB procedures for packages below US\$200,000 equivalent (total US\$1.42 million). Small value off-the-shelf items individually costing US\$30,000 equivalent per contract or less (total US\$1.24 million) may be procured following National/International Shopping procedures in accordance with World Bank Procurement Guidelines. This component includes taxes on equipment amounting to US\$0.21 million. Preference for domestically manufactured goods will be given in accordance with Appendix 2 of the guidelines for items procured following ICB procedures. Satellite imagery, proprietary software, books etc. valued US\$0.24 million will be procured following Direct Contracting procedures in accordance with Procurement Guidelines.

B4. Services [US\$43.02 Million Equivalent including contingencies]

Consultancy services will be procured as follows:

Sl. No.	Description of Services	Estimated Cost	Method of Selection
1.	Construction Supervision ICB Works		
	SC-1	USD3.97 million	QCBS
	SC-2	USD3.25 million	QCBS
	SC-3	USD0.60 million	QCBS
	PCC Services - Phase I - Arbitration Award	USD1.20 million	QCBS
2.	PCC Services - Phase II	USD1.88 million	QCBS
3.	Services for project preparation under PPP (2-3 contracts)	USD1.76 million	QCBS
4.	R&R Evaluation [2 contracts]	USD0.12 million	FBS
5.	R&R Implementation [about 5 contracts]	USD0.73 million	FBS
6.	Technical Review of Maintenance Roads [3-4 contracts]	USD0.84 million	QCBS
7.	Performance Based Maintenance Contracts - Supervision and Monitoring	USD0.60 million	QCBS
8.	Black Spot Identification/Design/ Evaluation	USD0.14 million	FBS
9.	Institutional Strengthening - Implementation	USD0.94 million	FBS
10.	Institutional Strengthening - Specialized Advisory-Technical Assistance [1-2 contracts]	USD0.12 million	SS/Individual
11.	Road Management System Development Consultant	USD1.55 million	FBS
12.	IT Needs Analysis	USD0.02 million	FBS
13.	IT Development and Implementation	USD0.94 million	QCBS
14.	Road Safety Policy and Action Plan	USD0.18 million	FBS
15.	Road Safety Specialized Advisory-TA [about 2 contracts]	USD0.12 million	SS/Individual
16.	Accident Data Recording Analysis and Reporting System	USD0.47 million	QCBS
17.	Environmental Management Assessment [about 2 contracts]	USD0.12 million	QCBS
18.	Specialized Advisory Consultants [about 4 contracts]	USD0.26 million	SS/Individual
19.	Training	USD1.76 million	SS/SOE
20.	Pre-investment Studies	USD2.35 million	QCBS
21.	Road user Satisfaction Surveys	USD0.16 million	FBS
	TOTAL	USD24.08 million	
	FBS	USD3.85 million	
	QCBS	USD18.00 million	
	SS/Individual	USD2.23 million	

The proposals for the Construction Supervision Consultancy for ICB Works have already been invited and consultants have been identified and cleared with the World Bank. The final contracts will be negotiated in April - May, 2003 so that the consultants are in position well before award of

the contracts for civil works. The proposals for first year periodical independent technical review for the maintenance works has also been invited. It has been planned that contracts for technical review consultants would be awarded about a month before the award of the related civil works contracts and their services will commence only after three months from commencement of maintenance construction works.

The services component will also include the non-Bank finance components namely: (i) R&R cash assistance of US\$7.05 million; (ii) land acquisition costing US\$8.78 million; (iii) incremental operating cost amounting US\$4.38 million; and (iv) taxes on consultancy services amounting US\$0.25 million.

C. Procurement Planning

GOTN has prepared a procurement plan for all the identified works packages under the project, which has been reviewed and approved by the Bank [attached]. Procurement of all works packages will follow arrangements outlined in accordance with the project's procurement plan.

D. Prior Review of Procurement Decisions by the Bank [Refer Table B]

- All ICB contracts for works [4 packages]
- All ICB contracts for PPP sub-projects (2-3 contracts)
- All ICB Goods contracts valued to US\$500,000 and above [one package only]
- All NCB civil works contracts and road maintenance contracts valued at US\$3.0 million equivalent and above.
- Consultant contracts with an estimated value of US\$200,000 equivalent and above for firms, and US\$50,000 equivalent and above for individuals.

E. NCB Provisions

All NCB contracts shall be awarded in accordance with the provisions of Paragraphs 3.3 and 3.4 of the Guidelines for Procurement under IBRD Loans and IDA Credits published by the Bank and revised in January 1999 [the Guidelines]. In this regard, all NCB contracts to be financed from the proceeds of the Loan shall follow the following procedures:

- (i) Only the model bidding documents for NCB agreed with the GOI Task Force [and as amended for time to time], shall be used for bidding;
- (ii) Invitations to bid shall be advertised in at least one widely circulated national daily newspaper, at least 30 days prior to the deadline for the submission of bids;
- (iii) No special preference will be accorded to any bidder either for price or for other terms and conditions when competing with foreign bidders, state-owned enterprises, small-scale enterprises or enterprises from any given State;
- (iv) Except with the prior concurrence of the Bank, there shall be no negotiation of price with the bidders, even with the lowest evaluated bidder;
- (v) Extension of bid validity shall not be allowed without the prior concurrence of the Bank (i) for the first request for extension if it is longer than eight weeks; and (ii) for all subsequent requests for extension irrespective of the period (such concurrence will be considered by Bank only in cases of *Force Majeure* and circumstances beyond the control of the Purchaser/Employer);
- (vi) Re-bidding shall not be carried out without the prior concurrence of the Bank. The system of rejecting bids outside a pre-determined margin or - bracket - of prices shall not be used in the project;
- (vii) Rate contracts entered into by Directorate General of Supplies & Disposals, will not be

- acceptable as a substitute for NCB procedures. Such contracts will be acceptable however for any procurement under National Shopping procedures;
- (viii) Two or three envelop system will not be used.

F. Procurement Information

Procurement information will be collected and recorded as follows:

1. prompt reporting of contract award information by the project management units for the respective components; and
2. comprehensive quarterly reports prepared by HD indicating:
 - revised cost estimates for individual contracts and total cost;
 - revised timings of procurement actions including advertising, bidding, contract award, and completion time for individual contracts; and
 - compliance report by the borrower within three months of the Loan signing date.

G. Proposed Procurement Arrangements - Thresholds and Frequency of Supervision

The project elements, their estimated costs, and proposed methods of procurement are summarized in Table A. Thresholds are given in Table B. Figures in parenthesis are the respective amounts to be financed by the Bank.

Procurement methods (Table A)

Table A: Project Costs by Procurement Arrangements
(US\$ million equivalent)

Expenditure Category	Procurement Method ¹			N.B.F.	Total Cost
	ICB	NCB	Other ²		
1. Works	267.00 (213.60)	110.60 (88.48)	11.35 (9.33)	1.20 (0.00)	390.15 (311.41)
2. Goods	1.36 (1.16)	1.42 (1.22)	1.48 (1.29)	0.21 (0.00)	4.47 (3.67)
3. Services	0.00 (0.00)	0.00 (0.00)	24.08 (21.94)	20.32 (0.00)	44.40 (21.94)
4. PPP Sub-projects	7.50 (7.50)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	7.50 (7.50)
5. Front-end fee	0.00 (0.00)	0.00 (0.00)	3.48 (3.48)	0.00 (0.00)	3.48 (3.48)
Total	275.86 (222.26)	112.02 (89.70)	40.39 (36.04)	21.73 (0.00)	450.00 (348.00)

^{1/} Figures in parentheses are the amounts to be financed by the Bank Loan. All costs include contingencies.

^{2/} Includes civil works and goods to be procured through national shopping, consulting services, services of contracted staff of the project management office, training, technical assistance services, and incremental operating costs related to (i) managing the project, and (ii) re-lending project funds to local government units.

Table A1: Consultant Selection Arrangements (optional)
(US\$ million equivalent)

Consultant Services Expenditure Category	Selection Method							Total Cost ¹
	QCBS	QBS	SFB	LCS	CQ	Other	N.B.F.	
A. Firms	18.00 (0.00)	0.00 (0.00)	3.85 (0.00)	0.00 (0.00)	0.00 (0.00)	1.00 (0.00)	20.32 (0.00)	43.17 (0.00)
B. Individuals	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	1.23 (0.00)	0.00 (0.00)	1.23 (0.00)
Total	18.00 (0.00)	0.00 (0.00)	3.85 (0.00)	0.00 (0.00)	0.00 (0.00)	2.23 (0.00)	20.32 (0.00)	44.40 (0.00)

¹ Including contingencies

Note: QCBS = Quality- and Cost-Based Selection

QBS = Quality-based Selection

SFB = Selection under a Fixed Budget

LCS = Least-Cost Selection

CQ = Selection Based on Consultants' Qualifications

Other = Selection of individual consultants (per Section V of Consultants Guidelines), Commercial Practices, etc.

N.B.F. = Not Bank-financed

Figures in parentheses are the amounts to be financed by the Bank Loan.

Prior review thresholds (Table B)

Table B: Thresholds for Procurement Methods and Prior Review¹

Expenditure Category	Contract Value Threshold (US\$ thousands)	Procurement Method	Contracts Subject to Prior Review (US\$ millions)
1. Works Civil works for upgrading and widening Major Maintenance	All contracts valued over US\$10.0 million All contracts valued over US\$3.0 million	ICB NCB	5 packages valued at US\$267 million About 9 contracts valued approx. at US\$42.50 million.
2. Goods Computer hardware and software for e-governance implementation in PWD	US\$ 500,000 and above	ICB	Total package value US\$1.35 million
3. Services Consulting Services	For firms, US\$200,000 and above. For individual, US\$50,000 and above	Bank Guidelines and as at Paragraph B3 above	
4. PPP Sub-projects	All	ICB	3 to 4 packages (expected to total about \$20 million)
5. Miscellaneous			
6. Miscellaneous			

Total value of contracts subject to prior review: about US\$331 million

Overall Procurement Risk Assessment: Average

Frequency of procurement supervision missions proposed: One every 12 months
(includes special procurement supervision for post-review/audits)

Special procurement supervision for post review and audits will be done independently.

¹⁾ Thresholds generally differ by country and project. Consult "Assessment of Agency's Capacity to Implement Procurement" and contact the Regional Procurement Adviser for guidance.

**Annex 6(B): Financial Management and Disbursement Arrangements
INDIA: Tamil Nadu Road Sector Project**

Financial Management

1. Summary of the Financial Management Assessment

Country Issues

The following country issues will apply:

- (a) GOTN's existing accounting system concentrates mainly on book keeping and transactional control over expenditures and there is little in the way of a concept of financial management information being used for decision making. However, a separate financial reporting system has been designed for the project to address this issue.
- (b) The issue of availability of funds on a timely basis to the project implementing entity applies to the project. However, HD has not faced a major problem in the implementation of State Roads Infrastructure Development project (Ln. 4114-IN). GOTN has expressed a strong commitment for the project.
- (c) Quality and timeliness of audit reports (with audited financial statements) will also be an issue - the audit of HD will be conducted by Accountant General (AG) (Audit), Tamil Nadu. GOTN has committed to timely submission of audit reports including audited financial statements - in accordance with TOR acceptable to the Bank - and is liasoning with AG (Audit)Tamil Nadu to ensure this.

Strengths and Weaknesses

Strengths

The project has the following strengths in the area of financial management: (i) The HD has handled State Roads Infrastructure Development project (Ln.4114-IN) and the existing project personnel are trained in Bank's disbursement procedures; (ii) The project will largely follow the HD accounting system as detailed in the HD accounting manual; and (iii) a system of monthly reporting from the HD to AG is in operation which reports monthly and cumulative expenditure budget head wise in comparison with the budget.

Significant weaknesses

Significant weaknesses	Resolution
GOTN's existing accounting system concentrates mainly on book keeping and transactional control over expenditures and there is little in the way of a concept of financial management information being used for decision making.	HD has developed a computerized management information system for the project which will focus on generating management information which could be used for decision making.
Staffing: The divisions which will execute the project have not been created. Accounting staff for the divisions are not in place.	HD has identified Divisional Accountants who will be in place by loan effectiveness.
The entire project has been budgeted as a single budget item in GOTN budget which makes it difficult for a comparison between budgets and actual expenditure - component wise and quarter wise.	HD has agreed to provide a detailed quarter wise component wise breakdown of the yearly budget at the beginning of the year. This has been documented in the BPIP.

Implementing Entity

The implementing agency for the project is HD. HD has put a PMT in place. This team is headed by the Project Director - a senior civil servant of GOTN. The PMT in HD will be supported by participating field divisions. The divisions will actually get the works executed through contractors. However, the payments will be made to the contractors centrally by PMT. Supervision consultants will provide an independent third party check on the physical quality of the works being executed under the project. Their role will be to monitor the quality of work and to certify the contractors' bills for payment.

Funds Flow

The project will be provided in the GOTN budget as an identifiable single head budget item under the HD budget each year. GOTN will allocate the funds to HD, including its own share on a monthly basis through issuing of Letters of Credits (LOCs). The contractors will submit their bills to the "engineer" defined in the contract documents, who will then check the bills (including physical execution of work), certify them for payment and forward these to HD/PMT for payment. After review, the PMT will pay the bills through issuing cheques drawn on the State Treasury. HD will not have a separate bank account for the project.

The funds flow arrangements for Public Private Partnership sub-projects will be substantially the same as for the rest of the project with the detail to be specified in the Concession Agreements to be approved by the Bank.

Staffing

HD Finance and accounting function is headed by a Financial Manager who is a qualified accountant. He will be supported by a divisional accountant and other support staff. The HD divisions will be headed by a Divisions Accounts Officer (DAO) and will be supported by other support staff in the field. Government Orders creating the field divisions to execute the project have been issued and the associated Divisional Accounts Officers are in the process of being deployed and will all be in position before the start of the project.

Accounting Policies and Procedures

The HD accounting manual will be used for accounting for the project. The books of account will be maintained on a cash basis. Standard books of accounts (cash and bank books, journals, ledgers, etc.) will be maintained, on a manual basis at first, and then only on the computerized accounting system once it is operational. Works wise and supplier/contractor wise accounting will be done to ensure availability of ready information on the works and contracts. The details of books and accounts and their formats are laid out in the HD accounting manual.

A separate Chart of Accounts has been developed, as a part of the development of a computerized PFMS, to enable data to be captured and classified by expenditure center, budget heads, project components, and disbursement categories.

Reporting and Monitoring

The payments to the contractors will be made by the PMT on certification by the executing divisions and the supervision consultants. The withdrawal applications will be submitted to the Bank by the PMT.

The computerized PFMS is expected to meet the monitoring and reporting requirements of HD, C&AG and the Bank. The reports will include the following:

- (a) a report on a monthly basis to the AG for the month and cumulative expenditure and its comparison with the budget;
- (b) monthly claims to send to CAA&A in DEA while the disbursement is being made using the traditional system, i.e., on the basis of SOEs and documented claims; and
- (c) FMRs (including reports on physical progress and procurement) to the Bank on a quarterly basis. The content and format of the FMRs have been agreed between the HD and the Bank and the FMR formats form a part of the Borrower Project Implementation Plan (BPIP) (to be confirmed).

Information Systems

The HD has developed a computerized Financial Management System (FMS) for the project. The system has been tested and project financial staff have been trained in its use. The consultants developing the software for implementation in the project will be responsible for training of project personnel in the operation of the system.

Supervision Plan

From a FM stand point, the project will need intensive supervision for the reason of large outlay and an opportunity of institutional strengthening of the internal audit department. The focus during the supervision will be on the strengthening of internal audit department of HD, functioning of project financial management system, reviewing the funds flow position and ensuring the audit of financial statements generated by the project. During supervision of the project the Bank will review the draft concession agreements for each of the PPP sub-projects, as and when they are ready, from the FM point of view to ensure compliance with Bank requirements.

2. Audit Arrangements

Internal Audit

The HD has a significantly staffed internal audit department which carries out the function for the entire department round the year. However, there is scope for the department's capacity to be enhanced - it currently focuses only on transactions audit, the staff are not adequately trained in modern internal control techniques, and no internal audit reports are prepared at regular intervals. The internal audit function will be augmented as a part of institutional strengthening component of the project. A comprehensive strategy and an action plan for the internal audit function will be developed with the help of the consultants. A work plan has been prepared for the internal audit of the project.

External Audit

The Accounts of the Project will be audited by Accountant General (Audit) Tamil Nadu. The terms of reference for the external audit has been approved by the state's Accountant General (TN). The audit report would be submitted within 6 months of the close of GOTN's fiscal year. Thus the following audit reports will be monitored in ARCS.

Implementing Agency	Audit	Auditors
HD	SOE/Project Audit	AG (Audit) Tamil Nadu
Department of Economic Affairs/GOI	Special Account	Comptroller and Auditor General

The audit report for 2001-02 for Tamil Nadu for State Roads Infrastructure Development project (Ln. 4114-IN) has been received and is unqualified and satisfactory.

3. Disbursement Arrangements

Disbursement from IBRD loan will initially be made in the traditional system (replenishment and reimbursement with full documentation and against statement of expenditure) and could be converted to the Financial Monitoring Report based disbursements at the option of the GOTN and GOI after the successful implementation of the computerized FMS.

A Special Account will be maintained in the Reserve Bank of India and will be operated by the Department of Economic Affairs (DEA) of GOI.

The project will submit withdrawal applications to Controller of Aid, Accounts and Audit (CAA&A) in DEA for onward submission to the World Bank for replenishment of the special account or reimbursement.

Allocation of loan proceeds (Table C)

Table C: Allocation of Loan Proceeds

Expenditure Category	Amount in US\$million	Financing Percentage
1(a). Civil works for road improvement/widening, rehabilitation/maintenance, and road safety	309.17	80%
1(b). Civil works for R & R	2.26	90%
2. Goods for Road safety management assistance, institutional strengthening, R&R and EMP	3.66	100% of foreign or ex-factory costs; 80% for other items procured domestically
3(a). Services provided by consultants	19.45	90% of total expenditure
3(b). NGO services and training	2.48	100%
4. PPP sub-projects	7.50	100% of GOTN contribution up to a maximum limit of 80% of sub-project cost towards works/goods
Total Project Costs with Bank Financing	344.52	
Front-end fee	3.48	
Total	348.00	

Use of statements of expenditures (SOEs):

Disbursement will be made on the basis of statement of expenditure for (a) civil works for contracts not exceeding US \$ 3,000,000 (b) goods for contracts not exceeding US \$ 500,000; (c) consultants for contracts not exceeding US \$ 200,000 for firms and US \$ 50,000 for individuals and (d) R&R costs and training.

Special account:

A Special Account will be maintained in the Reserve Bank of India and operated by the Department of Economic Affairs (DEA) of Government of India (GOI). The authorized allocation of the Special

Account will be US\$20 million, representing about four months of average estimated disbursements from the loan.

The project will submit withdrawal applications to Controller of Aid, Accounts and Audit (CAA&A) in DEA for onward submission to the Bank for replenishment of the Special Account or reimbursement.

Retroactive Financing: Retroactive financing up to a limit of US\$6.0 million is available to cover eligible project expenditures as agreed with the Bank and incurred after July 31, 2002. Retroactive financing will support project costs pertaining to civil works (US\$3.8 million) and consultant/NGO services (US\$2.2 million).

Annex 7: Project Processing Schedule
INDIA: Tamil Nadu Road Sector Project

Project Schedule	Planned	Actual
Time taken to prepare the project (months)		70
First Bank mission (identification)	08/15/1997	
Appraisal mission departure	01/15/2003	02/10/2003
Negotiations	03/15/2003	05/15/2003
Planned Date of Effectiveness	10/01/2003	

Prepared by:
Tamil Nadu State Highways Department

Preparation assistance:
States Road Infrastructure Technical Assistance Project (Ln.4114-IN) - about US\$6.8 million

Bank staff who worked on the project included:

Name	Speciality
A.K. Swaminathan	Task Team Leader/Highway Engineer
Piers Vickers	Transport Specialist
I. U. B. Reddy	R&R/Social Development Specialist
Arnab Bandyopadhyay	Highway Engineer
N. Raman	Procurement Specialist
Rajat Narula	Financial Management Specialist
Mohan Nagarajan	Economist
Alok Nath Bansal	Transport Planner
Sonia Chand Sandhu	Environment Specialist
V. J. Ravishankar	Economist
Raj Soopramanien	Counsel
N.S. Srinivas	Team Assistant
Rajesh Singh	Program Assistant
Hyacinth Brown	Finance Officer
S. Vaideeswaran	Environmental Specialist

Annex 8: Documents in the Project File*
INDIA: Tamil Nadu Road Sector Project

A. Project Implementation Plan

BPIP, May 2003

B. Bank Staff Assessments

Aide memoire and Back-to-Office reports of various project preparation missions 1999-2002.

Aide memoire and Back to Office report for appraisal mission, 2003

C. Other

Institutional Development Study, 1999

Institutional Development Study - Results of Evaluation and prioritization of selected Road links and recommended candidates for a priority Five-Year program of Road Maintenance and Betterment, 1999

Feasibility Study Report, 1998

Project Definition Report - Rev. 4, 1999

Institutional Development Study - Inception Report, 1999

A report of CII Tamil Nadu Task Force on Roads, 1999

Social Impact Assessment (Corridor 1 Cuddalore to Tuticorin), 1998

Public Consultation (Corridor 1 Cuddalore to Tuticorin), 1998

Environmental Workshop Report, 1998

Sectoral Environmental Assessment Report, 1998

Road Link Screening Report, 1998

Detailed Project Report, 2002

*Including electronic files

Annex 9: Statement of Loans and Credits

INDIA: Tamil Nadu Road Sector Project

16-Apr-2003

Project ID	FY	Purpose	Original Amount in US\$ Millions			Cancel.	Undisb.	Difference between expected and actual disbursements ¹	
			IBRD	IDA	GEF			Orig	Frm Rev'd
P071272	2003	AP RURAL POV REDUCTION	0.00	150.03	0.00	0.00	155.81	1.82	0.00
P072123	2003	Tech/Engg Quality Improvement Project	0.00	250.00	0.00	0.00	251.61	-3.34	0.00
P073094	2003	AP COMM FOREST MANG	0.00	108.00	0.00	0.00	115.48	-2.88	0.00
P067606	2003	UP ROADS	488.00	0.00	0.00	0.00	483.12	9.57	0.00
P069889	2002	MIZORAM ROADS	0.00	60.00	0.00	0.00	60.24	2.08	0.00
P050668	2002	MUMBAI URBAN TRANSPORT PROJECT	463.00	79.00	0.00	0.00	507.08	-3.32	0.00
P050647	2002	UTTAR PRADESH WATER SECTOR RESTRUCTU	0.00	149.20	0.00	0.00	153.05	25.55	0.00
P071033	2002	KARN TANK MGMT	0.00	98.90	0.00	0.00	105.37	2.55	0.00
P050653	2002	KARNATAKA RWSS II	0.00	151.60	0.00	0.00	156.96	3.18	0.00
P074018	2002	Gujarat Emergency Earthquake Reconstruct	0.00	442.80	0.00	0.00	395.11	208.74	0.00
P072539	2002	KERALA STATE TRANSPORT	255.00	0.00	0.00	0.00	237.80	-5.20	0.00
P040610	2002	RAJ WSRP	0.00	140.00	0.00	0.00	143.64	3.19	0.00
P038334	2001	RAJ POWER I	180.00	0.00	0.00	0.00	128.96	61.46	0.00
P050658	2001	TECHN EDUC III	0.00	64.90	0.00	0.00	57.36	15.69	0.00
P035173	2001	POWERGRID II	450.00	0.00	0.00	0.00	316.81	89.81	0.00
P059242	2001	MP DPIP	0.00	110.10	0.00	0.00	105.03	24.18	0.00
P055454	2001	KERALA RWSS	0.00	65.50	0.00	0.00	62.59	11.51	0.00
P055455	2001	RAJ DPEP II	0.00	74.40	0.00	0.00	63.65	1.00	0.00
P067543	2001	LEPROSY II	0.00	30.00	0.00	0.00	12.66	-1.08	0.00
P067216	2001	KAR WSHD DEVELOPMENT	0.00	100.40	0.00	0.00	103.43	17.62	0.00
P070421	2001	KARN HWYS	360.00	0.00	0.00	0.00	321.81	43.81	0.00
P071244	2001	Grand Trunk Road Improvement Project	589.00	0.00	0.00	0.00	511.87	120.87	0.00
P010566	2001	GUJARAT HWYS	381.00	0.00	0.00	0.00	303.92	119.92	0.00
P049770	2000	REN EGY II	80.00	50.00	0.00	0.00	114.44	33.51	0.00
P045049	2000	AP DPIP	0.00	111.00	0.00	0.00	89.56	15.13	0.00
P050667	2000	UP DPEP III	0.00	182.40	0.00	0.00	74.22	41.64	0.00
P050657	2000	UP Health Systems Development Project	0.00	110.00	0.00	0.00	98.48	24.44	0.00
P010505	2000	RAJASTHAN DPIP	0.00	100.48	0.00	0.00	95.62	37.96	0.00
P035172	2000	UP POWER SECTOR RESTRUCTURING PROJEC	150.00	0.00	0.00	0.00	45.65	18.65	0.00
P067330	2000	IMMUNIZATION STRENGTHENING PROJECT	0.00	142.60	0.00	0.00	54.44	19.93	0.00
P009972	2000	NATIONAL HIGHWAYS III PROJECT	516.00	0.00	0.00	0.00	415.25	153.42	0.00
P059501	2000	IN-TA for Econ Reform Project	0.00	45.00	0.00	0.00	40.02	12.96	0.00
P055456	2000	IN-Telecommunications Sector Reform TA	62.00	0.00	0.00	0.00	57.72	48.50	0.00
P050637	1999	TN URBAN DEV II	105.00	0.00	0.00	0.00	28.86	10.70	0.00
P050646	1999	UP SODIC LANDS II	0.00	194.10	0.00	0.00	105.94	69.19	0.00
P050651	1999	MAHARASH HEALTH SYS	0.00	134.00	0.00	0.00	100.57	73.54	0.00
P049537	1999	AP POWER APL I	210.00	0.00	0.00	20.31	24.60	44.91	0.00
P041264	1999	WTRSHD MGMT HILLS II	85.00	50.00	0.00	0.00	57.08	35.98	0.00
P045050	1999	RAJASTHAN DPEP	0.00	85.70	0.00	0.00	52.16	67.89	0.00
P045051	1999	2ND NATL HIV/AIDS CO	0.00	191.00	0.00	0.00	86.44	38.10	0.00
P038021	1998	DPEP III (BIHAR)	0.00	152.00	0.00	0.00	108.68	106.04	0.00
P035827	1998	WOMEN & CHILD DEVLPM	0.00	300.00	0.00	0.00	167.67	86.44	0.00
P035824	1998	DIV AGRC SUPPORT	79.90	50.00	0.00	0.00	47.70	44.69	21.06
P035169	1998	UP FORESTRY	0.00	52.94	0.00	0.00	10.37	11.42	0.00
P010561	1998	NATL AGR TECHNOLOGY	96.80	100.00	0.00	0.00	84.50	79.59	0.00
P010496	1998	ORISSA HEALTH SYS	0.00	76.40	0.00	0.00	57.72	39.91	0.00
P049385	1998	AP ECON RESTRUCTURIN	301.30	241.90	0.00	0.00	196.03	171.08	0.00
P049477	1998	KERALA FORESTRY	0.00	39.00	0.00	0.00	13.81	14.03	0.00
P010531	1997	REPRODUCTIVE HEALTH1	0.00	248.30	0.00	0.00	78.14	76.45	76.49
P009584	1997	ECODEVELOPMENT	0.00	0.00	0.00	2.34	1.89	5.67	0.00
P010511	1997	MALARIA CONTROL	0.00	164.80	0.00	0.00	101.07	106.51	0.00
P009995	1997	STATE HIGHWAYS I(AP)	350.00	0.00	0.00	0.00	69.65	69.65	-215.35
P010473	1997	TUBERCULOSIS CONTROL	0.00	142.40	0.00	0.00	81.61	91.94	0.00

Project ID	FY	Purpose	Original Amount in US\$ Millions			Cancel.	Undisb.	Difference between expected and actual disbursements ^a	
			IBRD	IDA	GEF			Orig	Frm Rev'd
P035158	1997	AP IRRIGATION III	175.00	150.00	0.00	45.00	72.86	118.92	5.34
P044449	1997	RURAL WOMEN'S DEVELOPMENT	0.00	19.50	0.00	0.00	13.36	14.51	-3.72
P043728	1997	ENV CAPACITY BLDG TA	0.00	50.00	0.00	0.94	8.65	14.64	0.00
P036062	1997	ECODEVELOPMENT	0.00	28.00	20.00	5.86	4.37	12.15	3.80
P049301	1997	A.P. EMERG. CYCLONE	50.00	100.00	0.00	19.00	10.11	33.76	14.76
P010480	1996	BOMBAY SEW DISPOSAL	167.00	25.00	0.00	22.00	18.06	42.18	3.91
P010484	1996	UP & Uttaranchal RURAL WATER	59.60	0.00	0.00	18.90	4.23	23.13	2.63
P010485	1996	HYDROLOGY PROJECT	0.00	142.00	0.00	19.64	13.56	55.10	31.45
P035170	1996	ORISSA POWER SECTOR	350.00	0.00	0.00	95.00	68.49	163.49	0.00
P010529	1996	ORISSA WRCP	0.00	290.90	0.00	0.00	57.64	85.03	24.10
P035821	1996	DPEP II	0.00	425.20	0.00	0.00	28.60	-26.44	0.00
P035825	1996	STATE HEALTH SYS II	0.00	350.00	0.00	0.00	42.54	81.35	0.00
P010461	1995	MADRAS WAT SUP II	275.80	0.00	0.00	189.30	7.77	197.07	-0.73
P010464	1995	DISTRICT PRIMARY ED	0.00	260.30	0.00	0.00	33.94	49.15	26.22
P010476	1995	TAMIL NADU WRCP	0.00	282.90	0.00	25.01	33.19	99.29	68.19
P010522	1995	ASSAM RURAL INFRA	0.00	126.00	0.00	0.00	21.58	33.53	20.69
Total:			6279.40	7288.65	20.00	463.30	7752.23	3393.48	78.83

INDIA
STATEMENT OF IFC's
Held and Disbursed Portfolio
Jun 30 - 2002
In Millions US Dollars

FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic	Loan	Equity	Quasi	Partic
1992	Indus VCF	0.00	0.61	0.00	0.00	0.00	0.61	0.00	0.00
1992	Info Tech Fund	0.00	0.62	0.00	0.00	0.00	0.62	0.00	0.00
1992/94/97	Ispat Industries	0.00	3.00	0.00	0.00	0.00	3.00	0.00	0.00
1989/95	JSB India	0.00	0.28	0.00	0.00	0.00	0.28	0.00	0.00
2001	Jetair	0.00	0.00	15.00	0.00	0.00	0.00	15.00	0.00
2001	LearningUniverse	0.00	0.25	0.00	0.00	0.00	0.25	0.00	0.00
1981/90/93	M&M	0.00	0.55	0.00	0.00	0.00	0.55	0.00	0.00
2002	MMFSL	17.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	MahInfra	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00
1996/99/00	Moser Baer	24.81	14.80	0.00	0.00	9.18	14.80	0.00	0.00
	NICCO-UCO	2.43	0.00	0.00	0.00	2.43	0.00	0.00	0.00
1992/96/97	NIIT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Orchid	0.00	0.00	30.00	0.00	0.00	0.00	20.00	0.00
2001	Owens Corning	25.00	0.00	0.00	0.00	25.00	0.00	0.00	0.00
2001	Pennar Steel	0.00	0.07	0.00	0.00	0.00	0.07	0.00	0.00
1997	Prism Cement	12.19	5.02	0.00	7.50	12.19	5.02	0.00	7.50
1981	RCIHL	0.00	1.97	0.00	0.00	0.00	1.97	0.00	0.00
1995	RTL	0.00	0.45	0.00	0.00	0.00	0.45	0.00	0.00
2001	Rain Calcining	13.33	5.46	0.00	0.00	13.33	5.46	0.00	0.00
2001	SAPL	0.00	0.07	0.00	0.00	0.00	0.07	0.00	0.00
1995	SREI	10.00	0.00	5.00	0.00	10.00	0.00	5.00	0.00
1997	Sara Fund	0.00	5.94	0.00	0.00	0.00	5.94	0.00	0.00
1997/00	Spryance	0.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00
1995	Sundaram Finance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	Sundaram Home	10.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1986/93/94/95	TCFC Finance Ltd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000/02	TCW/ICICI	0.00	6.46	0.00	0.00	0.00	6.46	0.00	0.00
0	TDICI-VECAUS II	0.00	0.15	0.00	0.00	0.00	0.15	0.00	0.00
1998	TISCO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1990	Tanflora Park	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.00
1981/86/89/92/94	Tata Electric	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	Titan Industries	0.00	0.52	0.00	0.00	0.00	0.52	0.00	0.00
1989/90/94	UCAL	0.00	0.53	0.00	0.00	0.00	0.53	0.00	0.00
1987/88/90/93	United Riceland	10.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00
1989	VARUN	0.00	0.36	0.00	0.00	0.00	0.36	0.00	0.00
1996	Vysya Bank	0.00	7.30	0.00	0.00	0.00	7.30	0.00	0.00
1991/96/01	WIV	0.00	2.11	0.00	0.00	0.00	2.11	0.00	0.00
2001	Walden-Mgt India	0.00	0.03	0.00	0.00	0.00	0.03	0.00	0.00
1997	Webdunia	0.00	2.00	0.00	0.00	0.00	0.67	0.00	0.00
1997	AEC	3.12	0.00	0.00	0.00	3.12	0.00	0.00	0.00
2002	Ambuja Cement	0.00	4.94	0.00	0.00	0.00	4.94	0.00	0.00
1989	Arvind Mills	0.00	4.91	0.00	0.00	0.00	4.91	0.00	0.00
1994	Asian Electronic	0.00	5.50	0.00	0.00	0.00	5.50	0.00	0.00
1992/93	BTVL	0.00	20.00	0.00	0.00	0.00	20.00	0.00	0.00
1997									
2001									
Total Portfolio:		214.98	185.51	50.00	66.75	156.13	156.65	40.00	62.25

FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic
2002	Cosmo Films	10.00	0.00	0.00	0.00
2002	Apollo Tyres Ltd	20.00	0.00	0.00	15.00
2002	Escorts Telecom	32.00	0.00	15.00	30.00
1994	INDORAMA DM SWAP	0.70	0.00	0.00	0.00
1997	GVK-Swap	2.50	0.00	0.00	0.00
2000	APCL	7.10	0.00	1.90	0.00
2000	Orissa WESCO	11.00	0.00	0.00	0.00
2000	Orissa NESCO	28.00	0.00	0.00	0.00
2001	GI Wind Farms	9.79	0.98	0.00	0.00
2002	TELCO1	67.00	0.00	0.00	0.00
2002	Usha Beltron	21.00	0.00	3.60	0.00
	Total Pending Commitment:	209.09	0.98	20.50	45.00

Annex 10: Country at a Glance

INDIA: Tamil Nadu Road Sector Project

POVERTY and SOCIAL

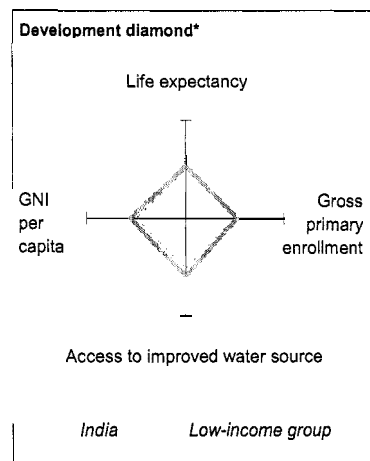
	India	South Asia	Low-income
2001			
Population, mid-year (millions)	1,033.4	1,355	2,459
GNI per capita (Atlas method, US\$)	470	460	420
GNI (Atlas method, US\$ billions)	480.8	617	1,030

Average annual growth, 1995-01

	India	South Asia	Low-income
Population (%)	1.8	1.9	1.9
Labor force (%)	2.3	2.4	2.4

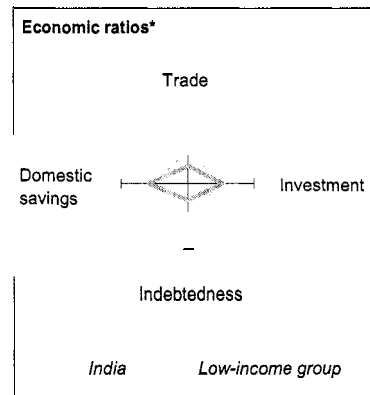
Most recent estimate (latest year available, 1995-01)

	India	South Asia	Low-income
Poverty (% of population below national poverty line)	29		32
Urban population (% of total population)	28	28	32
Life expectancy at birth (years)	63	63	59
Infant mortality (per 1,000 live births)	69	74	77
Child malnutrition (% of children under 5)	47	47	
Access to an improved water source (% of population)	88	87	76
Illiteracy (% of population age 15+)	42	45	38
Gross primary enrollment (% of school-age population)	101	100	96
Male	109	110	102
Female	92	90	86



KEY ECONOMIC RATIOS and LONG-TERM TRENDS

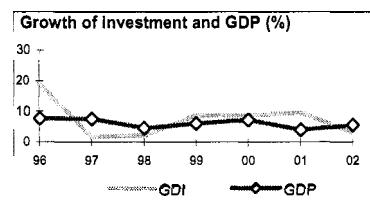
	1982	1992	2001	2002
GDP (US\$ billions)	188.0	266.9	460.6	481.4
Gross domestic investment/GDP	22.4	21.9	22.5	22.4
Exports of goods and services/GDP	6.1	8.6	13.8	13.3
Gross domestic savings/GDP	18.6	22.0	23.4	24.0
Gross national savings/GDP	19.9	21.9	25.3	25.9
Current account balance/GDP	-2.0	-0.6	-0.6	0.2
Interest payments/GDP	0.3	1.3	0.9	0.8
Total debt/GDP	12.1	32.0	21.6	20.2
Total debt service/exports	11.1	29.2	14.0	11.8
Present value of debt/GDP	..	..	..	14.7
Present value of debt/exports	..	..	..	89.8



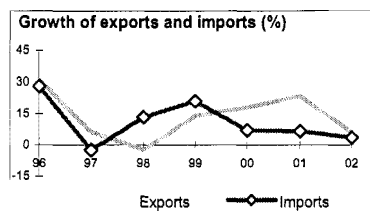
	1982-92	1992-02	2001	2002	2002-06
(average annual growth)					
GDP	5.6	6.1	3.9	5.5	6.0
GDP per capita	3.4	4.3	2.1	3.7	4.5
Exports of goods and services	6.1	12.8	23.4	6.0	10.7

STRUCTURE of the ECONOMY

	1982	1992	2001	2002
(% of GDP)				
Agriculture	37.4	31.5	24.9	25.0
Industry	25.3	26.4	26.6	25.9
Manufacturing	16.3	16.1	15.7	15.3
Services	37.2	42.1	48.5	49.2
Private consumption	70.2	66.7	65.1	65.4
General government consumption	10.1	11.4	13.1	12.8
Imports of goods and services	8.8	8.6	14.5	13.9



	1982-92	1992-02	2001	2002
(average annual growth)				
Agriculture	3.0	3.0	-0.4	5.7
Industry	6.8	6.4	6.6	3.3
Manufacturing	7.0	7.1	7.3	3.4
Services	6.9	8.2	5.6	6.8
Private consumption	5.4	5.5	-1.1	5.4
General government consumption	6.8	7.3	0.6	7.2
Gross domestic investment	5.4	7.5	9.4	3.0
Imports of goods and services	5.4	13.7	6.5	3.5

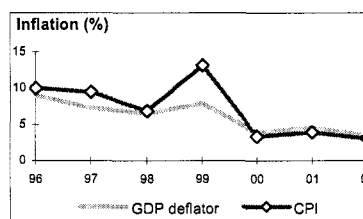


Note: 2002 refers to 2001-02; data are preliminary estimates.

* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

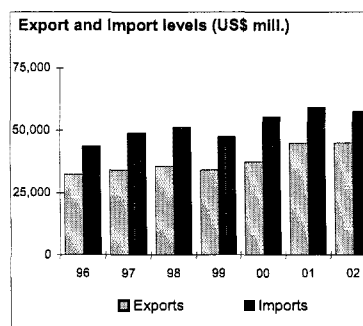
PRICES and GOVERNMENT FINANCE

	1982	1992	2001	2002
Domestic prices				
(% change)				
Consumer prices	13.6	15.6	3.9	3.1
Implicit GDP deflator	10.3	13.8	4.5	3.5
Government finance				
(% of GDP, includes current grants)				
Current revenue	..	..	19.6	19.2
Current budget balance	..	..	-8.6	-8.1
Overall surplus/deficit	..	..	-10.8	-11.8



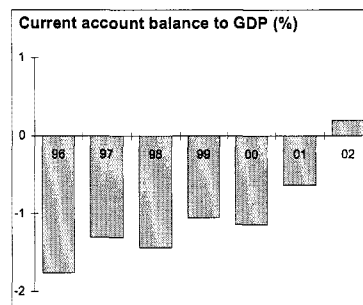
TRADE

	1982	1992	2001	2002
(US\$ millions)				
Total exports (fob)	8,697	18,266	44,894	44,915
Marine products	313	585	1,396	1,218
Ores and minerals	463	930	1,155	1,214
Manufactures	5,547	13,148	34,391	33,241
Gems and jewelry	849	2,738	7,384	7,306
Readymade garments	733	2,199	5,578	5,004
Total imports (cif)	15,970	21,064	59,264	57,618
Food	1,446	275	1,443	2,044
Fuel and energy	5,832	5,325	15,650	14,000
Capital goods	2,209	4,233	8,941	9,315
Export price index (1995=100)	96	104	94	90
Import price index (1995=100)	125	110	100	93
Terms of trade (1995=100)	77	95	94	96



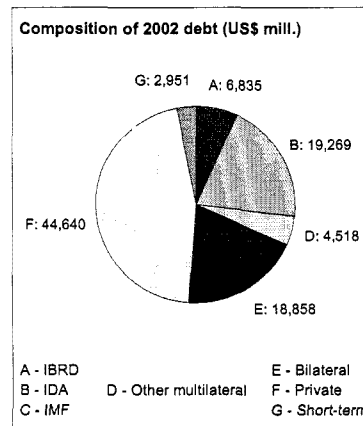
BALANCE of PAYMENTS

	1982	1992	2001	2002
(US\$ millions)				
Exports of goods and services	11,457	23,288	63,764	65,201
Software exports	..	..	6,341	7,174
Imports of goods and services	17,666	24,879	75,656	73,705
Resource balance	-6,209	-1,591	-11,892	-8,504
Net income	213	-3,830	-3,821	-2,654
Net current transfers	2,314	3,783	12,798	12,125
Current account balance	-3,682	-1,638	-2,915	967
Financing items (net)	5,950	-1,757	-1,581	-12,462
Changes in net reserves	-2,268	3,395	4,496	11,495
Memo:				
Reserves including gold (US\$ millions)	4,390	9,220	42,281	54,106
Conversion rate (DEC, local/US\$)	9.0	24.5	45.7	47.7



EXTERNAL DEBT and RESOURCE FLOWS

	1982	1992	2001	2002
(US\$ millions)				
Total debt outstanding and disbursed	22,709	85,421	99,433	97,071
IBRD	1,181	8,459	7,079	6,835
IDA	5,906	14,203	18,888	19,269
Total debt service	1,586	7,861	10,868	9,282
IBRD	137	1,170	1,423	1,089
IDA	60	242	506	565
Composition of net resource flows				
Official grants	750	461	382	336
Official creditors	1,103	2,895	-237	-264
Private creditors	829	1,467	4,103	-1,608
Foreign direct investment	0	97	2,165	2,342
Portfolio equity	0	6	3,026	2,760
World Bank program				
Commitments	2,503	2,186	999	2,244
Disbursements	1,207	2,184	1,761	1,636
Principal repayments	86	669	1,361	1,148
Net flows	1,122	1,516	400	488
Net transfers	1,011	772	-168	-18



**Additional Annex 11:
Tamil Nadu Highways Department Institutional Strengthening Action Plan
INDIA: Tamil Nadu Road Sector Project**

Reform sought	Action to Date	Actions Required	Target Date	Key Outputs and Performance Indicators
1. Sector Organizational Realignment				
Rational and clear division of responsibilities for road management	In principle endorsement by GOTN	Agreement in principle between the HD, DOF and PRIs on rural road ownership Reclassify all roads into new categories after study Follow SFC norms and transfer responsibilities for rural roads to PRIs	Mid 2003 End 2004 From late 2004 until end 2006	HD responsibility for ODRs decreased by 50%.
Establish HD strategic management and reporting capability	In principle endorsement by GOTN	Establish goals indicators and annual targets for HD in the areas of statewide mobility, road safety and environmental impact Revised Road Policy published	1st annual plan March 2004 and 1st annual report Sept 2005 End 2004	Publication of sector policy, corporate business plan and annual plans and reports
Restructure head and field office organizations	In principle endorsement by GOTN	Appoint senior management staff Establish new Organizational structure Rationalize staff and facilities in the field	Late 2003 Late 2004 Mid 2005	HD has EIC and new wings for planning, projects, maintenance, finance/admin, NH, and Rural Roads All staff transferred into the new wings Field office structure rationalized Greater outsourcing of core activities
Develop Stakeholder Participation	In principle endorsement by GOTN	Broaden IDS advisory committee membership	Early 2003	Stakeholders effectively involved in the planning

		Develop stakeholder participation plans and policies	Mid 2004	process
		Develop public relations campaign	Mid 2004	Public well aware of HD's goals and achievements
		Undertake user satisfaction survey	Mid 2003	
Enhance Human Resources Development	In principle endorsement by GOTN	Undertake needs assessment and implement capability development program	Mid 2004	Required capabilities developed in the organization
		Develop and implement staff specialization and development program	Mid 2004	Outstanding performance recognized
		Develop reward and recognition program	End 2004	New Employee Handbook distributed to all staff
		Create new Employee Handbook	Mid 2004	
2. Core Processes				
Enhance planning and programming of works		Establish infrastructure planning unit	End 2004	Unit in place and adequately staffed
		Review actual and required planning processes	End 2004	Functional reclassification of highways completed and approved by GOTN
		Conduct functional classification of roads	End 2004	Highway Master Plans approved.
		Develop master plan, medium term and annual plan.	Early 2004	
Strengthen environmental and social impact compliance		Prepare guidelines for EA and Social Impact Assessment	Mid 2004	Environmental and Social Impact Guidelines Approved
		Review, update and	Mid 2004	HD and contractor

		define, train and introduce procedures as required		Personnel Trained Guidelines in use
		Establish compliance unit under ED for Quality Assurance.	End 2004	International EMS certification achieved for some divisions (ISO 14001)
		Certify HD's environmental management system in key divisions	End 2005	
Enhance effectiveness of procurement and contract management	TN Transparency in Procurement Act 2000 Government wide improvements proposed after CPAR Recent comprehensive revision of all unit rates by committee of CEs	Review procurement requirements	Mid 2003	Registry of suppliers completed and updated regularly
		Prepare database of suppliers	End 2003	Database established
		Develop documentation	Mid 2004	New contract administration procedures adopted
		Reengineer contract administration procedures	Mid 2004	No. of contract disputes Average no. of bidders for contracts
Strengthen program and project monitoring	PFMS for project	Define and implement Program Management System	End 2003	Software purchased, tailored to HD needs or developed and installed
		Define and implement Project Control Procedures	End 2003	Program Management, systems operational
		Define and implement Physical and Financial Monitoring System	Mid 2004	Trained users at all levels Timely, accurate management information
Systemize quality control	Technical review consultant to be employed for maintenance under TNRSF	Assess current quality management systems and define new QA program	End 2003	Targets, Performance Indicators and Resources defined for all core processes
		Prepare policy on compliance with all relevant standards	Mid 2004	Personnel Trained
		Prepare Quality Manual	Mid 2004	QC monitoring system operational and accredited in key divisions

		Implement quality program	Mid 2004	
		Certify the organization's quality system	2005	
Strengthen routine maintenance management and implementation	10,000 gang labourers retired	Prepare and implement a Road Maintenance Management System Introduce Pilot Maintenance Contracting Program	End 2003 Mid 2004	Installed and operational MMS Trained users at all levels Timely, accurate management information Pilot Maintenance Contracting Program Implemented
3. Financial mechanisms				
Modernize the HWD'S planning and budgeting function	PFMS for project in use	Develop a long term Finance Plan (both plan and non-plan) Simplify budget procedures and formats Introduce computerized Payment Management System Computerize budget process and introduce MIS for budgetary control	End 2003 Mid 2004 Mid 2004 Mid 2004	Construction of more roads in road sector. Reduction in manpower and quicker examination of budget proposals. Quicker disbursement of payments and proper accounting of payments Better analysis of work and proper payments.
Implement Financial Management Information System	PFMS for TNRS in use	Implement Budget Module Implement Accounting Module Implement Consolidated Management Reporting Module	End 2003 End 2003 End 2003	Installed and operational FMIS Trained users at all levels Timely, accurate financial management information
Encourage private sector investment	TNRDC creation Bill for enabling private financing of	Enact new legislation to enhance enabling environment	Mid 2004	Speedy development of road sector and less funding by

	infrastructure under review	Educate road users on role of private sector	Mid 2004	government for road maintenance Share of sector investment from private sector
Establish a dedicated Road Maintenance Fund	Draft bill prepared in 2000	Determine the procedures for establishing, managing and auditing a Road Fund Issue any legal documents	Late 2003 Early 2004	Road fund established and working as stipulated Representative Road Board in place and meeting regularly
4. Information systems				
Establish IS Planning, Management & Support Function	CIO appointed	Define CIO responsibility, authority, and detailed functions Prepare IS Master Plan Develop Standards and Procedures	Mid 2003 Mid 2003 Late 2003	Operational IT management and support units IT standards and procedures documented
Undertake broad-based IT introduction and training program	Needs assessment under way	Determine Additional Requirements and Actions Implement Equipment Installation and Training Programs	Mid 2003 From end 2003 to Mid 2005	PC workstations installed and operational Personnel trained in basic computer skills
Implement Road & Asset Database	TA services being procured	Define and document specifications based on functional requirements Identify/design/develop software solutions Implement solutions	End 2003 Mid 2004 From mid 2004	Installed and operational RIS Trained users at all levels Timely, accurate road management information
Implement HWD Wide Area Network Infrastructure		Consolidate application IT infrastructure requirements	Mid 2003 Late 2003	Operational WAN Trained users at all levels

		Design WAN Install and configure WAN components and services	From end 2003 to mid 2005	
5. Regulatory environment				
Managing transport		Amend relevant legislation Strict licensing procedures and enforcement	Mid 2004 Mid 2004	Improved driving standards on roads
Improved traffic congestion management		Constitute a Congestion Management Task Force Develop and implement a congestion management plan	Mid 2004 End 2004	Quantification of congestion problem and approaches to deal with it. Better utilization of existing highways through increased roadway capacity
Improved highway Safety	Services under procurement	Review problem Publish policy and action plan Formalize safety audit procedures	Mid 2003 End 2003 Mid 2003	Reduction in highway fatalities reduced incident congestion and improved highway mobility statewide.

Additional Annex 12

Social and Environmental Management

INDIA: Tamil Nadu Road Sector Project

This Annex describes the key social and environmental safeguards plans and the arrangements for their implementation during the project period.

Social Development Issues

The objective of social development inputs to the project design was to ensure that the corridor of impact of the proposed upgradation roads, whilst taking into account acceptable design principles and standards, minimizes land acquisition and its associated impacts. The project will have both positive and adverse impacts on project road corridors. On the positive side, the project will provide better access and enhanced mobility in 21 towns and 309 villages in 11 districts of the state. As a result, the local people will have greater access to public and other transport facilities. Society will benefit from the savings on vehicle operating costs due to enhanced capacity and geometric improvements and smooth surface. The economic benefits will translate into wider social developments over the life of assets being created. Notwithstanding the various positive benefits, the project will cause a large scale loss of private land, and loss of shelter and livelihood to a substantial number of households. The key social development issues arising out of the project are: (a) potential adverse impacts associated with land acquisition and resettlement; and (b) social exclusion of squatters and encroachers who may not be eligible for assistance and compensation under local laws and procedures.

Socio-economic Impact Assessment

The HD) through the PCC carried out census and baseline socio-economic surveys among the potentially affected households to record their baseline characteristics and identify losses to the project. The process adopted included: (a) screening and social impact assessment as part of feasibility studies to select the final list of roads in the project; (b) preparation of policy procedures and entitlements; (c) census and socio-economic surveys; (d) consultations with affected population and NGOs; and (e) preparation of Resettlement Action Plan (RAP) to describe the proposed implementation arrangements to mitigate adverse impacts. During project preparation, extensive consultations -- consisting of 40 meetings with participation of over 3,500 persons, 11 district level meetings and focus meeting with various stakeholders such as NGOs, government departments -- were held to elicit the views and suggestions of different stakeholders. The outputs from the surveys and consultations have provided inputs for designing the RAP. The RAP specifically described some of the additional measures proposed in these consultations to support poor and vulnerable people affected by the project. In addition, one state level and two regional workshops were held in Chennai, Ramnanathapuram and Tiruvannamalai to share the draft safeguards documents with stakeholders and incorporate any relevant suggestions and comments.

R&R policy and Entitlements

The GOTN has adopted an R&R policy through issue of a Government Order. The policy was earlier reviewed by the Bank and found to be consistent with the Operational policy on Involuntary Resettlement. The policy document describes the principles and approach to be followed in

minimizing and mitigating adverse social impacts associated with land acquisition and displacement. An entitlement matrix summarizing the type of impact and nature of assistance to be provided is also included. The principles for assistance include: payment of compensation at replacement cost, availability of alternative houses prior to displacement, assistance in re-establishing PAPs' livelihood through training and allowance, opportunities for employment through project contracts and reconstruction of all affected community amenities.

Magnitude of Land Acquisition and Resettlement

The project entails significant land acquisition and displacement in comparison to similar projects in the country. The impacts are summarized below.

Type of Impact	Total
Land acquisition ((ha) including transfer of government land)	572
Loss of house(No of households)	2021
Loss of livelihood (No. of households)	5837
Loss of house and livelihood (No of households)	403
Minor impact*	6715
TOTAL	14,976

* Includes loss of part of their assets and may not require additional assistance other than cash compensation for loss of part of assets.

Acquisition of private land is being done through private negotiations. In Tamil Nadu, the guided value of different types of lands is maintained for the purpose of stamp duty payment and registration of properties. This is determined by considering: (i) type of land; (ii) crops grown on the land; and (iii) transaction costs in the near vicinity of the land. It is updated once in three years in rural areas and annually in urban areas. Private negotiations will be carried out by the District Collector with individual land owners based on the guideline value. In order to represent the replacement cost, the negotiated compensation shall not be less than 150% of prevailing guideline value. In the event of dissatisfaction, the land owner has a right to present case to a state level committee. An additional 13% will be paid towards registration and stamp duty expenses. In case the guideline value is more than one year old, an additional 5% per year will be added to the guideline value. Land acquisition has already commenced. So far 36 hectares of private land (9%) has been acquired and negotiations have been completed for another 42 hectares (11%). Compensation will be paid to the owners shortly.

Resettlement Action Plan (RAP)

A census socio-economic survey was carried out with the help of local consultants (of potentially affected persons) to record their baseline socio-economic characteristics. This will become the reference for measuring the changes in the post resettlement period. The survey results indicate that 67% live below the poverty line (25% above state poverty level incomes), while the proportion of families living in kuccha dwellings (substandard materials) are about 64%. About 47% are cultivators, and 36% are wage earners including the agricultural laborers. A gender analysis was also carried out and 977 families were found to be women headed households. Wherever the census data is more than two years old, the key socio-economic and demographic data will be updated during implementation by the NGOs who will be providing the implementation support. Following the census survey, the borrower with the assistance of the consultants, has prepared a draft RAP to be

implemented over a period of three-four years. This RAP describes the measures for minimization of impacts through alternative bypasses, reduction in corridor of impact, avoiding socially sensitive stretches by selecting alternative links, etc. Cut-off dates were established to determine the eligible PAPs for compensation and assistance. The RAP describes the baseline socio-economic characteristics of PAPs, targeted support for vulnerable groups, institutional arrangements, budget and estimates, timetable, as well as monitoring and evaluation arrangements. The conceptual designs for different size of resettlement colonies have also been prepared. The sites for alternative resettlement colonies have been identified and consultation with PAPs are in progress to ascertain their views on the suitability of the sites.

Consultations and Disclosure

Extensive consultations were carried out in 40 locations with more than 3,500 persons having participated. In addition, three stakeholders workshops were also organized to share the draft RAP and to receive feedback and suggestions. Based on the outcome of consultations, the RAP was revised by incorporating relevant suggestions and comments. The important feedback incorporated in the RAP includes: alignment changes for bypasses; suggestions safety issues; road side amenities; induced impacts; alignment modifications; and geometrical improvements. The draft RAP was disclosed in Octobre 2002 in all district libraries where the project road pass. The RAP has also been disclosed on project website. The final versions of the RAP are now distributed to public places in project areas.

Institutional Arrangements

A separate Social Development Cell has been created in HD to oversee the implementation of land acquisition and resettlement plans. The cell is headed by a Joint Project Director at level of additional District Collector reporting to the Project Director. He will be assisted by a Deputy Collector (Land Acquisition) and a Resettlement Officer to be recruited from the open market. The appropriate field based and other support staff for this cell are reflected in the RAP. Training of staff through the Anna Institute of Management is under way. Proposals from NGOs have been invited and they are expected to be commissioned by end of May 2003. Their role includes carrying out joint verification to determine the impacts and PAPs and ensure that the entitlements are received by the PAPs. They will carry out consultations with PAPs on obtaining options for entitlements, finalization of resettlement sites and identifying alternative sites for reconstruction of affected community assets. They will also deliver suitable training for enhancing self employment opportunities among PAPs.

Income Restoration Measures

All those losing their source of livelihood will be provided economic rehabilitation assistance equal to six months lost income. Further, suitable training to establish alternative self employment will be provided. Subsequently assistance will be extended to purchase assets. Wherever possible, project related unskilled and semi-skilled jobs will also be extended through the contractors.

Coordination with Civil works

Each upgrading construction contract has been divided into several. Stretches of roads will be handed over to contractors in a progressive manner. This will allow completion of land acquisition and resettlement in coordinated manner and ensure that all compensation and resettlement assistance

is received by PAPs in a timely way. The milestone for civil works have been identified in a manner that first milestone stretches will have the least encumbrances and the subsequent milestones are also phased according to the magnitude of impacts. The first milestone stretch consist of 153 km will have only 26 hectares of private land (7%) and displacement of about 190 households (8%).

Monitoring and Evaluation Arrangements

Monitoring of RAP implementation will be carried out periodically by the Social Development Cell. Physical progress in terms of land acquisition and payment of compensation and allowances, shifting of displaced people to alternative houses, reconstruction of affected common amenities will be monitored and reported on in quarterly progress reports. An external agency will be appointed for carrying out annual impact evaluation. All those PAPs who have spent more than six months after receipt of compensation and assistance will be included in the annual evaluation survey. Based on the results of the annual assessment, suitable remedial measures will be proposed wherever required. At the end of implementation, a final round of impact evaluation will be carried out to determine the level of changes in the overall living standards of PAPs and to determine the realization of objectives of RAP. The key indicators to be used for measuring the impact will be changes in income, proportion of households living below poverty line, housing conditions, ownership of selected material assets and land owning pattern, changes in occupational pattern, etc.

Costs and budget estimates

The indicative costs and budgets for RAP are summarized below:

Item	Indicative cost (Rs. Millions)	Bank financing (Rs. Million)	GOTN financing (Rs. Million)
Land acquisition for civil works and resettlement	463	----	463
Cash allowances	372	-----	372
Civil Works	120	108	12
Consultancies	40	32	8
Goods	10	8	2
Incremental Operating costs	30	----	30
TOTAL (in US\$)	1035 (21.5)	144 (2.8)	887 (18.7)

Applicability of OD 4.30 Indigenous People

The roads proposed in this project for widening and upgrading do not pass through tribal districts. The census survey indicated that only four households belong to tribal families. They are spread over in several kilometers of roads and no longer live in distinct group, nor do they have any traditional habits or follow traditional ways of life as described in OD 4.20. Therefore, the OD 4.20 on Indigenous Peoples is not triggered for this project. The social impacts on these very few families is similar to those of other PAPs. Their eligible entitlements and support will be provided on a similar basis to other PAPs.

Maintenance Roads

The social impacts in maintenance roads will be minimal, since the proposed treatments roads will consist of pavement improvements within the available space inside the rights of way. In order to ensure that the impacts are identified in advance, HD will prepare a screening report identifying any

impact that may need attention. If the screening report identifies any impacts, mitigation measures will be proposed in accordance with project policy. The screening report will be available for the Bank's review prior to invitation of civil work contracts. Any identified impact will be mitigated prior to handing over of those stretches to the contractors.

Environmental Issues

EA Process

At the early stages of project design/preparation, screening of the corridors was done to identify environmentally sensitive roads. The findings were factored into the feasibility analysis of the project for selection and prioritization of project roads. A Sectoral Environmental Assessment (SEA) -- subsequently conducted to analyze the wider environmental issues -- concluded that most candidate roads require detailed environmental assessment, though none of these roads are so sensitive that they should be excluded from further consideration. Accordingly, Environmental Impact Statements and Environmental Management Plans (EMP) were prepared. Classified as a Category "A" project due to the cumulative magnitude of environmental and social impacts, an independent review of the EA reports was done. This review identified gaps/deficiencies, which were subsequently addressed. As the project had been packaged differently (significant time had lapsed since the preparation of the original EA reports) a Consolidated Environmental Assessment report was compiled and updated to address all the gaps/deficiencies identified during the review. The other documents that form the final set of EA reports include the EA summary, a Consolidated Environmental Assessment report, EMPs for upgradation roads (one for each of the four contract packages), Environmental and Resettlement Management Plan (ERMP) (generic -- one for all maintenance roads) and EMP for the resettlement sites (generic -- one for all sites).

Environment and Forest Clearance

HD has obtained all the required Government clearances and is committed to complying with the requirements during project implementation. Other clearances required by the Contractors will be obtained during implementation and this will be ensured by the HD. The HD/GOTN has obtained all requisite environmental clearances required, i.e.

- Clearance from the Ministry of Environment and Forest, GOI under the EIA Notification, 1994 issues under the Environment Protection Act 1986, received on July 6, 2000 (TNRSP 02 - 04), September 18, 2000 (TNRSP 01)
- Clearance from Tamil Nadu Pollution Control B under the Water (P&CP) Act 1974 and Air (P&CP) Act, 1981 received on April 22, 1999 for eastern Corridor and Nov. 12, 1999 for Northern Corridors.
- Clearance from the Forest dept. GOTN under the Conservation of Forests Act, 1980. NOC obtained fro progress of works on 11.08.2000.

Public consultation & disclosure

Public consultations have been conducted to identify issues of public concern, to collect views on measures for mitigating or offsetting potential environmental impacts and to obtain feedback on project design, route selection and design standards. A Task force comprising consulting specialists, along with the Divisional Engineer (Highways) in each district was constituted to conduct public consultation. At the apex level, the Project Director and consultants participated in meetings with NGOs and concerned individuals/institutions. Public hearings were conducted in all the 11 districts through which the upgradation roads pass. Apart from these, consultations have been held at various levels: Apex level with NGOs having state-wide jurisdiction (4), Collectors of districts through which project roads traverse (10), village level meetings (15), with NGO's in districts where sensitive ecological areas have been identified (10) and at the proposed bypass locations (10). Subsequent to the preparation of final designs, EMPs and RAP, follow-up consultations through regional stakeholder workshops were conducted in December 2002. All the EA and RAP documents have been disclosed at the Bank's PIC in New Delhi and the Info Shop in DC. In addition, these documents have been disclosed in all the project affected districts in the state. The executive summary has also been translated in the local language (Tamil) and disseminated to the public.

Analysis of alternatives

Screening of roads was done during the feasibility study and corridors were chosen for upgradation taking into account environmental considerations. The screening also recommended selected corridors for detailed assessments and these form a part of the EA process. In the eastern corridors (under contract packages TNRSP02, 03 and 04), an NGO raised concerns that providing connectivity to the coastal villages will lead to providing north-south connectivity and, in turn, that will lead to unsustainable induced development, and coastal ecological damage. Analysis revealed that the chosen eastern corridor is most appropriate for providing coastal village connectivity. Furthermore, very little of the heavy north-south traffic is expected to be diverted from the national highway that runs parallel and inland.

Apart from engineering considerations, specific realignment options were considered taking into account environmental impacts and public views/opinion. Realignment, particularly along eastern corridor (TNRSP02, 03 and 04), had to be made to avoid impacts on sensitive areas and at the same time ensuring connectivity to coastal villages. Along TNRSP02, Vedaranniyam swamp forest was avoided. Due to similar considerations, attempts to realign were made to avoid a small coastal fishing village of Vembar in TNRSP04. However, due to strong community representation, the alignment has been routed through Vembar.

Environmental factors and inputs from public consultations were considered prior to finalizing the alignment of the various bypasses. Consultations were also conducted in the proposed alignments and the towns to be bypasses. In most cases, the final bypass alignments are through agricultural fields and settlements/ponds have been avoided. Ramanathapuram Bypass will be taken up in Phase II and a similar process will be followed for finalizing the alignment.

Baseline, Impacts and Mitigation - Key issues

The key issues pertaining to the baseline, potential impacts and proposed mitigation/avoidance measures have been described vis-à-vis the roads to be upgraded alone. These have been suitably reflected in the EMPs of the respective contract packages.

Ground Water Resources: The depth of ground water table along the corridors varies from 5 to 30m. The Ground Water Department has categorized blocks, based on the extent of ground water utilization. Along the eastern corridors, the groundwater contains high dissolved solids making it unsuitable for drinking and high salinity levels. A total of 172 hand pumps and 26 wells located within the CoI of the upgradation roads will be impacted. The project will replace them or provide compensation (private owners) following consultations/agreement with the community.

Water requirements: The water demand for construction activities is 1,280 m³/day for the northern corridor and 910 m³/day for the eastern corridor. As there will be a number of work places, the water requirement at a particular place works out to be 20-25 m³/day. The contractor will arrange for water and ensure that the water supply to nearby communities remains unaffected. The contractor will also not be allowed to extract any ground water from such over-exploited blocks.

Roadside trees: A total of 13,049 trees were observed along the northern corridors (TNRSP 01) and 8234 trees were observed along the eastern corridors (TNRSP 02, 03 and 04) within 15 m of the centerline of the road. The designs have minimized the felling of trees. But 5,700 trees will still have to be felled to obtain a clear zone. To compensate for every tree cut, at least four trees shall be planted. The total number of trees to be planted is 29,387. A tree planting strategy (including a landscaping plan) has been prepared.

Ecology-Wild life Sanctuaries & National parks: None of the project roads directly traverse a wildlife sanctuary or a national park. Along the eastern corridor, the Udayamarthandapuram Birds Sanctuary is located at 0.5 kms from the project roads and the Point Calimere Sanctuary lies at a distance of 25 kms. Setting-up of labour camps, hot mix plants, borrow area and debris disposal sites will be avoided within 1 km radius of the bird sanctuary. The movement and operation of any noise generating and air polluting construction machinery/vehicles will be avoided during the migratory season (October-January) within 1 km along the project roads. Upgrading the road will cause disturbance to the avifauna of the sanctuary due to the increased traffic noise and this will be mitigated by declaring a 1 km stretch in both directions as a silence zone. Signboards informing the road-users about the sanctuary shall be provided along the road on either side.

Ecology-Reserve Forests: The northern corridor (TNRSP 01) passes close to six reserve forests and cuts the sides of two reserve forests. Though these forests support a variety of flora, threatened or endangered floral species have not been reported from any of the areas. Some protected faunal species, especially the spotted deer, are known to inhabit these forests. The eastern corridors (TNRSP02, 03 and 04) do not pass through any reserve forests and the nearest reserve forest is at a distance of 3 kms. In the northern corridors, the alignment has been routed to minimize acquisition of forestland. However, acquisition of 3.1 ha of forestland was unavoidable. It includes 2.8 ha. in Kelur Forest Range (Arani Polur road link) and 0.3 Ha. in Mundanai Forest Range (Polur Chengam road link). The acquisition of forestland is being taken up in accordance with the Forest (Conservation) Act. As a mitigation measure, it will be ensured that the contractor limits construction activities to the RoW in order to avoid any impacts on the vegetation within the reserve forests. Construction camps, stockyards, concrete batching or hot mix plants, borrow areas and debris disposal sites shall not be located within 1 km of the reserve forest areas. Procurement of any kind of construction material from within the forest area is strictly prohibited. No water resources within the forest area shall be tapped for road construction. The road passing through the forest area shall be declared as a silence zone. Signages shall be placed at

appropriate locations. In certain sections, to minimize wildlife crossing, water ponds and fruit bearing trees are being provided.

Ecology-Coastal and Marine Resources: Tamil Nadu has a coastline of 1,000 km and a continental shelf area of 41,412 sq. km with a high diversity of coastal species. There are numerous fishing villages, marine algae (used for thickening) growing locations, aquaculture farms, salt pans and mangroves. There will be no major impacts due to the project roads. Some construction-related impacts are likely where the eastern corridors (TNRSP 02, 03 and 04) pass near areas with mangrove vegetation. Preventive measures have been planned such as no siting of construction camps, hotmix plants and borrow areas, and no disposal of construction wastes within 1 km of mangroves. There will be no impacts on the Gulf of Mannar Marine Biosphere Reserve as the nearest island of this reserve is about 7 km from the eastern corridors.

Cultural Resources: There are both religious locations and places of archaeological importance along the project roads. There are no impacts of these places due to project roads except for one sacred grove at Sadakatti (11-12 Km) along the Tiruvannamalai-Tirukkivilur. Appropriate measures that have community acceptance have been planned. In general, mitigation measures pertaining to impacts, if any, will be implemented in consultation with the local community.

Unsustainable Induced Development: During the EA, concerns were expressed by various stakeholders that the project (eastern corridors --TNRSP 02, 03 and 04) will result in the opening of the coastal region to unsuitable development that will result in further scarcity of fresh water (already scarce due to salinity intrusions). As part of the EA, a study was done to understand and determine what development controls are required. Recommendations have been made to restrict water intensive land uses and to control the extraction of ground water. Strengthening of the existing land use control mechanisms (provided by Town and Country Planning and Directorate of Town Panchayats) through interdepartmental coordination with HD has been suggested. Under the project, a study is planned to determine how to operationalize these recommendations. In addition, the HD shall organize training programs to educate the officers of the village/town panchayats on these control mechanisms and procedures.

Maintenance Roads: As the maintenance roads do not involve widening, no major impacts are anticipated. However, to address any construction related impacts, a generic Environmental and Resettlement Management Plan has been prepared.

Implementation arrangements

The HD has the overall responsibility for implementing all the environmental management measures. An Environmental Cell has been created and this Cell will directly report to the Project Director. The Cell is staffed with officials from the engineering and forest departments, and also externally sourced experts. Apart from the Cell, there will be field level staff responsible for coordinating the day-to-day project activities in the different contract packages of upgradation roads and in the various maintenance road contracts. The Supervision Consultants and the Contractors for the upgradation roads will have dedicated staff to ensure that the environmental management measures are implemented during construction. On the maintenance roads, the HD will ensure, through its Divisional offices, that the Contractors follow proper environmental management measures during construction.

Training

The Environmental Cell will be responsible for training required to implement the environmental management measures on both the upgradation and maintenance roads. Training plans have been made. The Contractors, Supervision Consultants and staff of the Divisional offices of the HD/PIU will be trained to ensure that the measures included in the EMPs (upgradation roads), ERMPs (maintenance roads) and EMP (resettlement sites) are followed.

Monitoring & Reporting

Monitoring plans have been prepared and are an integral part of the EMPs (upgradation roads), ERMPs (maintenance roads) and EMP (resettlement sites). These plans include particulars of the different environmental parameters, schedule for equipment maintenance and other related parameters that need to be regularly monitored. Wherever relevant, the contractor will adhere to these plans and the Supervision Consultants/HD (Divisional Office) will ensure that these are done. Reporting on environmental management will operate linearly with the contractor reporting periodically through the Supervision Consultants/Divisional Offices of the HD on progress. The Supervision Consultants/Divisional Offices of the HD will in turn report to the PMT on a quarterly basis which will be reviewed and forwarded to the Bank.

Environment budget

The following table gives the environmental budget. Certain engineering practices - erosion prevention, safety, signage and provision of temporary drains - to minimize environmental impacts, were identified during the EA process. These costs are considered incidental to the works and have been integrated with the engineering costs in the contract documents.

Table: Environmental Budget (in Rs. million)

Budget Head	TNRSP 01	TNRSP 02	TNRSP 03	TNRSP 04	Total
General items	12.60	4.97	4.97	4.97	27.51
Construction Phase	54.60	16.45	10.33	10.80	92.17
Operation Phase	3.85	4.04	4.04	4.04	15.97
Total (excl. contingencies)	71.05	25.46	19.34	19.81	135.66
(in US\$ million)	(1.48)	(0.53)	(0.40)	(0.41)	(2.83)

For the ERMP, a budgetary provision of Rs.10.66 million (excluding contingencies) has been made. This is to cover monitoring and training programs and the possible need for mitigation/enhancement measures. There are no separate costs for the EMP for the resettlement sites. These form a part of the RAP budget.

Additional Annex 13 Road Sector Expenditure and Financing Details

INDIA: Tamil Nadu Road Sector Project

Road Sector Expenditure constituted about 3% to 4% of total expenditure of the Government of Tamil Nadu over the ninth plan period 1997/98 to 2001/02. However, a severe fiscal crisis in 2001/02 restricted the expenditure on the roads sector to about 2% of total expenditure. During this period the GOTN spent an average Rs.6.5 billion (US\$135 million) on the sector while the GOTN's annual expenditure averaged Rs. 206 billion (US\$4.3 billion).

During the tenth plan period, the GOTN proposes to spend on an average Rs.14.0 billion (US\$ 291 million) annually, i.e. 115% more than it did on the sector during the previous five years. The financing of this expenditure requires increasing the government's budget support from Rs.3.0 billion (US\$ 62 million) on average in the previous five years to Rs.6.1 billion (US\$ 127 million) on average in the tenth plan period, an increase of 110%. Structuring of the TNRSF to conclude only by 2008-09 (Rs.6.9 billion, US\$ 143 million) is spent during the first two years of the Eleventh Plan) therefore ensures that counter-part funding requirements are backloaded to a certain extent, giving government some space to raise necessary budgetary resources. The Government's proposed financing of the tenth plan for the road sector is presented in the Table below.

The GOTN envisages an expenditure of Rs.81.0 billion (this includes Rs.2.5 billion (US\$ 52 million) of private sector investment) on the road sector during the 10th Plan period. The plan component of the expenditure is about Rs.50.5 billion (US\$1.05 billion) out of a total plan size of Rs.400 billion (US\$ 8.3 billion) over the period 2002-07, i.e. about 13% of total.

The Table below indicates the expenditure profile for the road sector during the ninth and tenth Five Year plan periods. Allocation for road sector expenditure is more than doubling in the 10th Plan. Establishment expenditure is designed to decrease from 17% to 5% of sectoral expenditure in the 10th Plan period. This therefore provides more space for the HD to incur maintenance and investment related expenditure on the state road network. Provisioning for maintenance expenditure (both plan and non-plan categories) seems adequate. Improved expenditure composition is, therefore, projected during the tenth five year plan period.

Since the expenditure under the project is on a reimbursable basis, GOTN will be required to provide a significant amount of the project cost in the initial two years of the project, before the reimbursement cycle stabilizes. Accordingly, GOTN has agreed to provide 75% of EAP and its own contribution in its budget for 2003/04 (about Rs.1.9 billion, US\$ 40 million) and is required to provide Rs.2.3 billion (US\$ 60 million) in the following year (approx 50% of EAP and its own share). The provision, along with the system of preferential Letters of Credit that GOTN has agreed to provide the project, should be sufficient to ensure that the project stays adequately funded. Given that the magnitude of the funding requirement of the road sector to the overall budget is small (about 3 to 4% during the previous five years which may rise to between 5 and 6% over the next five years) the fiscal risks do not appear unduly high. The track record of GOTN with respect to the quantity and quality of public spending and management of the roads sector, including rural roads, along with the overall fiscal reform program that GOTN is beginning to embark upon, imply that the sustainability of the proposed investment is reasonably assured. The degree of risk financial depends on the strength of the fiscal reform program, in general, and the strength of the power sector reform program, in particular.

Tamil Nadu Roads Sector Expenditure & Financing: 1997- 02 and 2002 - 07											
	- - Ninth Five-Year Plan Period - -					- - Tenth Five-Year Plan Period - -					
	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2002-07 TOTAL
{Values in Rupees Crore or Rupees 10 million}											
FC norms for road maintenance	297.38	317.90	336.97	363.33	381.50	400.57	420.60	441.63	462.00	485.00	
Non-plan as a %age of FC norms	91.80	81.76	75.25	54.60	30.01	79.19	95.10	71.67	84.00	79.33	81.86
Establishment (staff salary)	58.92	105.78	125.64	141.37	110.20	81.25	65.96	69.26	72.73	76.36	365.56
Non-Plan	28.80	53.54	71.92	80.85	77.58	47.00	30.00	31.50	33.08	34.73	176.31
Plan	30.12	52.24	53.72	60.52	32.62	34.25	35.96	37.76	39.65	41.63	189.25
Non-Wage O&M	310.85	280.28	328.34	532.50	290.61	349.00	580.00	585.00	555.00	510.00	2579.00
Ordinary Repairs (Non-Plan)	25.57	35.36	21.08	31.42	12.74	29.00	32.00	35.00	38.00	41.00	175.00
Periodic Renewal (Non-Plan)	218.62	171.02	160.56	86.10	24.17	241.20	338.00	250.00	317.00	309.00	1455.20
Strengthening (Plan)	34.83	24.72	22.11	260.09	224.98	0.00	120.00	200.00	80.00	60.00	460.00
Rehabilitation of Bridges(Plan)	31.83	49.18	124.59	154.89	28.72	78.80	90.00	100.00	120.00	100.00	488.80
Investment (addn to stock of assets)	133.62	176.41	218.98	252.85	179.74	453.90	632.00	786.00	1051.00	997.00	3919.90
Widening of SH/MDR/ODR (Plan)	23.75	5.35	57.20	84.79	28.54	77.00	194.00	271.00	459.00	463.00	1464.00
Upgradation of Rural Roads (RIDF)	50.80	87.57	71.27	87.98	55.36	108.45	119.00	132.50	146.00	132.00	637.95
Other Rural Roads Expenditure	59.07	83.49	90.51	80.08	95.84	108.45	119.00	132.50	146.00	132.00	637.95
Reconstruction Bridges	25.46	39.34	99.67	123.91	22.98	160.00	200.00	250.00	300.00	270.00	1180.00
Total Roads Sector	503.39	562.47	672.96	926.72	580.55	884.15	1277.96	1440.26	1678.73	1583.36	6864.46
<i>financed by (source of funds):</i>											
External Donors	58.85	47.50	9.28	5.27	1.82	0.00	174.80	281.96	322.24	322.24	1101.24
Domestic Banks (Nabard/HUDCO)	109.87	171.06	206.00	219.01	165.24	284.35	315.00	350.00	395.00	350.00	1694.35
Govt. of India Grants					40.45	132.00	167.00	209.00	250.00	257.00	1015.00
State Government Budget	334.67	343.91	322.29	353.70	167.36	467.80	621.16	599.30	711.49	654.12	3053.87
Other (private/market)			135.39	348.74	205.68						**

** In addition Rs.1245.30 crores is subjected to Private Sector Participation in Strengthening and Maintenance of Roads.

This excludes the provision for 2007-08 and 2008-09 under EAP. This gives total outlay during 2002-07 ie. 10th Plan Period.

MAP SECTION

