

CHAPTER - 2 POLICY, LEGAL & ADMINISTRATIVE FRAMEWORK

A review of the existing institutions and legislation relevant to the environmental issues in this project at the National and State levels is presented in this chapter. Regulations concerning procedures and requirements that may directly concern the project, the capacity of the concerned institutions and their ability to successfully implement the Environmental Management Measures have been addressed in this chapter.

2.1 HIGHWAYS DEPARTMENT (HD), GOVT OF TAMIL NADU

Highways Department is the Road Agency in the State of Tamil Nadu, entrusted with the mandate of planning and maintenance of roads and is responsible for all the roads in the state (state highways, major district roads and other district roads). A Project Implementation Unit (PIU) headed by a Project Director (PD) has been established for the project. The PCC were appointed to assist the PIU and the GoTN in the project preparation and implementation. During the implementation of the project, the PIU will be assisted by Construction Supervision Consultants referred to as the Project Engineer.

Regulations concerning procedures and requirements that may directly concern the project are examined below.

2.2 INSTITUTIONAL SETTING – ENVIRONMENTAL CONTEXT

The environmental regulations, legislation, policy guidelines and control that may impact this project, are the responsibility of a variety of government agencies. In all, as discussed in the subsequent sections, the following agencies would play important roles in this project.

2.2.1 MINISTRY OF ENVIRONMENT AND FORESTS (MOEF)

The primary responsibility for administration and implementation of the Government of India's (GoI) policy with respect to environmental management, conservation, ecologically sustainable development and pollution control rests with the Ministry of environment and Forests (MoEF). Established in 1985, the MoEF is the agency primarily responsible for the review and approval of EIAs pursuant to GoI legislation¹.

¹ Environmental (Protection) Act, 1986 Item No. 21 of Schedule-I specifies that any highway project needs environmental clearance from the Central Government in the form of an approved EIA, followed by the amendment in May, 1994 and in 1997. Under these notifications certain activities must obtain clearance from Central and State Governments and obtain a No Objection Certificate (NOC) before commencement. EIA is a mandatory requirement in order to obtain clearance if a project falls under the 29 prescribed activities in Schedule -I of the notification. For details on further amendments to 1994 Notification, see Box 3.

2.2.2 MOEF REGIONAL OFFICES

The Ministry of Environment and Forests (MoEF) has set up regional offices, with each region having an office. The office for the present project is located at Bangalore. This office is responsible for collecting and furnishing information relating to EIA of projects, pollution control measures, methodology and status, legal and enforcement measures and environmental protection in special conservation areas such as wetlands, mangroves and biological reserves.

2.2.3 CENTRAL POLLUTION CONTROL BOARD (CPCB)

A statutory authority attached to the MoEF and located in New Delhi, the main responsibilities include *inter alia* the following:

- v Planning and implementing water and air pollution programs;
- v Advising the Central Government on water and air pollution programs;
- v Setting air and water standards; and
- v Co-ordinating the various State Pollution Control Boards.

The role of the CPCB, (for this project) will only be in an advisory capacity while the project shall adhere to the norms and standards set up by the Tamil Nadu State Pollution Control Board (TNSPCB).

2.2.4 TAMIL NADU STATE POLLUTION CONTROL BOARD (TNSPCB)

The TNSPCB has the mandate for environmental management at the state level, with emphasis on air and water quality. The board is responsible for:

- v Planning and executing state-level air and water initiatives;
- v Advising state government on air, water and industry issues;
- v Establishing standards based on National Minimum Standards;
- v Enforcing and monitoring of all activities within the State under the Air Act, the Water act and the Cess Act, etc.;
- v Conducting and organizing public hearings for projects as defined by the various Acts and as stipulated by the Amendment (April 1997) to the EIA Act; and,
- v Issuing No-objection Certificates (NOC) for industrial development defined in such a way as to include road projects.

The NOC from the Tamil Nadu State Pollution Control Board TNSPCB in pursuant to the Water (Prevention and Control of Pollution) Act of 1974, the Cess Act of 1977 and the Air (prevention and Control of Pollution) Act of 1981. In order to obtain a NOC from the Tamil Nadu State Pollution Control Board, or environmental clearance from the MoEF, “public hearing” has been made mandatory². The State PCB establishes a review panel and circulates the application for public review and comment in each affected district. The State Pollution

² The requirement was introduced in the MoEF notification, which came into effect on 10th April 1997. Public hearings have been conducted in the district headquarters of the districts cut across by the corridors.

Control Board issues a No-objection Certificate (NOC) after accepting the application for the project.

The *NOCs of TNSPCB* as well as *clearance from the State Forest Departments* (if any) is required before MoEF action on the EIA can be considered complete.

2.2.5 DEPARTMENT OF ENVIRONMENT

They perform the functions similar to the MoEF at the state level.

2.2.6 TAMIL NADU STATE FOREST DEPARTMENT

The Tamil Nadu State Forest Department is responsible for the protection and managing the forest designated areas within the state. The Forest Department works out Forest Working Plans for the various forest divisions to manage and protect the forest resources. These plans form the basis for managing the forest resources and for chalking out specific plans and policies with respect to the conservation, protection and development of the forest areas. The Forest department will be responsible for granting clearances for forest areas that need to be cleared for the project, according to the provisions of the Forest (Conservation) Act, 1980.

2.2.7 GOI REQUIREMENTS

The primary responsibility for administration and implementation of the GoI policy with respect to conservation, ecologically sustainable development and pollution control rests with the MoEF. The MOEF is responsible to enforce the regulations established pursuant to the National Conservation Strategy, National Forest Policy, the Policy for Abatement of Pollution (1992) and the Indian Environmental Protection Act 1986, revised in 1994 and amended subsequently in 1997 (see Boxes 1 and 2).

The Environmental Impact Assessment Notification, 1994 identified highways (item 21 of Schedule-I) as one of the projects requiring prior clearance from the MoEF. Therefore, the environmental impact assessment (EIA) is a statutory requirement for obtaining clearance (a comprehensive format for EIA has been prescribed in the notification)³.

³ The Guidance for the preparation of EIAs within the overall framework for environmental clearance for new development proposals are detailed in GoI (1994) Handbook of Environmental Procedures and Guidelines. Additional guidelines for road projects are provided in MoRTH (1989) Environmental Guidelines for Rail /Road and Highway Projects.

Box 1: Government of India Amendment on EIA requirements in 1997

In April 1997, a notification was issued by MOEF amending Schedule-I of the EIA Notification, 1994 that lists projects requiring Environmental Clearance. The 1997 Notification states:

“...Environmental Clearance from the MoEF is not required for Highway projects relating to improvement work including widening and strengthening of roads with marginal land acquisition⁴ along the existing alignments provided the highways do not pass through ecologically sensitive areas such as National Parks, Sanctuaries, Tiger Reserve, Reserve Forests etc.”

Source Gazette Notification, Government of India, dated 10th April 1997

It is important to note that the present project involves improvement of the existing single lane to two-lane road. Poor geometrics, habitation along the corridor and very less land width available, warrant a bypass or realignment at several locations. At these locations, acquisition of a 27m strip to accommodate the cross section becomes inevitable. Therefore the GoI Amendment regarding the marginal land acquisition for highway projects does not hold good, as significant land acquisition is envisaged in the project.

Box 2: Definition of “Marginal Land Acquisition”

“...As per the provisions of the EIA Notification of 27th January 94 and as amended on 10th April, 97, environmental clearance is required for highway projects except projects relating to improvement work including widening and strengthening of roads with marginal land acquisition along the existing alignments provided they do not pass through ecologically sensitive areas such as national parks, sanctuaries, tiger reserves, reserve forests. It is hereby clarified that marginal land acquisition means land acquisition not exceeding a total width of 20 metres on either side of the existing alignment put together. Further, it is also clarified that bypasses would be treated as stand-alone projects and would require environmental clearance only if the cost of the projects exceed Rs.50crores each.”

Source MOEF Circular No. 21012/26-99-IA-III dated 15 October 1999.

2.2.8 WORLD BANK REQUIREMENTS

The World Bank environmental assessment (EA) requirements are based on a three-part classification system such as Category A, Category B and Category C as defined by the World Bank OP 4.01. A project designated as Category A, requires a full environmental assessment (EA) Category B projects require a lesser level of environmental investigation. Category C projects require no environmental analysis beyond that determination.

This project is a Category ‘A’ project and therefore requires full environmental analysis. However, emphasis of the World Bank is in the integration of mitigation measures into the project design and mainstreaming environment in all stages of project planning, implementation

⁴ Marginal land acquisition is defined by the MoEF as “land acquisition not exceeding 20m on either side of the existing right-of-way”.

and operation. In addition to the OP 4.01, other WB safeguard policies triggered by the project are given in **Table 2.1**.

Table 2.1: World Bank Safeguard Policies Triggered

S. No.	World Bank Policy	Triggered by
1.	Environmental Assessment OP4.01	Project passes through sensitive areas and likely to have considerable impacts on environmental and social components
2.	Involuntary Resettlement (OP 4.12)	Involves loss of assets, relocation, loss of livelihood
3.	Natural Habitats OP4.04	Project passes adjacent to reserve forests, wildlife sanctuaries and coastal ecosystems
4.	Cultural Resources (OPN 11.03)	The project entails risk / damage to cultural properties and has likelihood of chance found archeological properties

Objectives of Involuntary Resettlement (OP 4.12) are: (a) To avoid involuntary resettlement where feasible or minimized (b) where involuntary resettlement is not avoidable, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons displaced by the project to share in project benefits. Displaced persons should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs. (c) Displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher. This project addresses the above issues through preparation of Resettlement Action Plan.

Natural Habitats (OP 4.04) aims at protection, maintenance, and rehabilitation of natural habitats and their functions in its economic and sector work, project financing, and policy dialogue. The Bank supports, and expects borrowers to apply, a precautionary approach to natural resource management to ensure opportunities for environmentally sustainable development. Natural habitat management plans prepared for the project with necessary budgetary allocations ensure no impacts on the natural habitats.

Objective of Cultural Property Note (OPN 11.03) is to avoid, or mitigate, adverse impacts on cultural resources from development projects that the World Bank finances. The present project has provisions for assessment and mitigation of impacts on chance found cultural properties in the EMP.

The project has complied with the requirements of BP17.50 on Public Disclosure. Extensive consultations were held during the project design stage and post-design follow-up consultations are also planned. In addition, the environmental and social reports of the TNRSF will be displayed at various district libraries, HD headquarters, and other pre-determined locations.

2.3 THE LEGAL FRAMEWORK

The Government of India has laid out various policy guidelines; acts and regulations pertaining to the sustenance of environment and these have been explained in the following sub-sections.

Table 2.2 Statutes, Policies, Regulations and Responsible Agencies

Agency	Statute/policy	Relevant objectives
Ministry of Environment and Forests	<i>Environment (Protection) Act, 1986</i>	To protect and improve the quality of the environment and to prevent, control and abate environmental pollution
	<i>Forest Conservation Act 1927</i> <i>Forest (Conservation) Act 1980 (as amended 1998)</i> <i>Forest (Conservation) Rules 1981</i>	To restrict deforestation by restricting clearing of forested areas.
	<i>Environmental Impact Assessment Notification, 1994</i>	To ensure that appropriate measures are taken to conserve and protect the environment before commencement of operations.
	<i>Environment Protection Rules 1986 – Coastal Regulation Zone (as amended 1991, 1996)</i>	To regulate activities in the coastal zone to protect ecologically sensitive areas.
Pollution Control Board	<i>Water (Prevention and Control of Pollution) Act 1974, as amended 1988.</i> <i>Tamil Nadu Water (Prevention and Control of Pollution) Rules 1983</i>	To provide for the prevention and control of water pollution and the maintaining or restoring of wholesomeness of water.
	<i>Air (Prevention and Control of Pollution) Act 1981, as amended in 1987.</i> <i>Tamil Nadu Air (Prevention and Control of Pollution) Rules 1983</i>	To provide for the prevention, control and abatement of air pollution, and for the establishment of Boards to carry out these purposes.
Highways Department	<i>The Tamil Nadu Highways Bill, 2000</i>	To provide for protection and maintenance of highways assets, enforce mechanisms to control ribbon developments, encroachments and road safety.
Town and Country Planning Board	<i>The Tamil Nadu Town and Country Planning Act 1971</i>	To provide for planning the development and use of rural and urban land in Tamil Nadu
Directorate of Town Panchayats	<i>Panchayat Act</i>	To provide for planning the district development from the panchayat level and regulate land uses in rural as well as municipal areas
Environment and Forest Department	<i>Wildlife (Protection) Act 1972</i>	To protect wild animals and birds through the creation of National Parks and Sanctuaries
	<i>Tamil Nadu Forest Act 1882</i>	To protect and manage forests.
Department of Transport	<i>Central Motor Vehicles Act 1988</i> <i>Tamil Nadu Motor Vehicle Rules 1989</i> <i>Tamil Nadu Motor Vehicle Taxation Act 1974</i> <i>Tamil Nadu Motor Vehicle Taxation Rules 1974</i>	To control vehicular air and noise pollution. To regulate development of the transport sector, check and control vehicular air and noise pollution.
Department of Police	<i>Motor Vehicles Act, 1988</i> <i>Rules of Road Regulations 1989</i> <i>Tamil Nadu Hackney Carriages Act</i>	To enforce highway codes
Archaeological Survey of India	<i>Ancient Monuments and Archaeological sites and Remains Act 1958</i>	To protect and conserve cultural and historical remains found in India
Directorate of Archaeology	<i>Tamil Nadu Ancient and Historical monuments and Archaeological Sites and Remains Rules 1971</i>	Provides procedure for moving antiquities
Revenue Department	<i>Land Acquisition Act 1894</i> <i>Land Acquisition Act 1989</i>	To set out rules for the acquisition of land by Government

2.3.1 THE FOREST (CONSERVATION) ACT, 1980

The Forest (Conservation) Act, 1980 pertains to the cases of diversion of forest area and felling of roadside plantation. Depending on the size of the tract to be cleared, clearances are applied for at the following levels of government:

- v If the area of forests to be cleared or diverted exceeds 20ha (or, 10ha in hilly area) then prior permission of Central Government is required;
- v If the area of forest to be cleared or diverted is between 5 to 20ha, the Regional Office of Chief Conservator of Forests is empowered to approve;
- v If the area of forest to be cleared or diverted is below or equal to 5ha, the State Government can give permission; and,
- v If the area to be clear-felled has a forest density of more than 40%, permission to undertake any work is needed from the Central Government, irrespective of the area to be cleared.

Restrictions and clearance procedure proposed in the Forest (Conservation) Act applies wholly to the natural forest areas, even in case the protected/designated forest area does not have any vegetation cover.

2.3.2 THE ENVIRONMENT (PROTECTION) ACT, 1986 AND THE ENVIRONMENTAL IMPACT ASSESSMENT NOTIFICATION, 1994

The Environmental (Protection) Act, 1986 is the umbrella legislation providing for the protection of environment in the country. This Act provided for the Environment (Protection) Rules, which are formulated since. The Environmental Impact Assessment Notification, 1984 and the Amendment thereto (April 1997) have been discussed in Section 2.3.1 above.

2.3.3 THE WILDLIFE (PROTECTION) ACT, 1972

Wildlife Protection Act has allowed the government to establish a number of National Parks and Sanctuaries over the past 25 years, to protect and conserve the flora and fauna.

2.3.4 THE WATER AND AIR (PREVENTION AND CONTROL OF POLLUTION) ACTS

The Water (Prevention and Control of Pollution) Act, 1974 resulted in the establishment of the Central and State level Pollution Control Boards whose responsibilities include managing water quality and effluent standards, as well as monitoring water quality, prosecuting offenders and issuing licenses for construction and operation of certain facilities. The SPCB is empowered to set air quality standards and monitor and prosecute offenders under The Air (Prevention and Control of Pollution) Act, 1981. Additionally, as per the Gazette notification dated 10 April 1997, SPCB is also empowered for public hearing of all projects including road projects.

2.3.5 THE MOTOR VEHICLES ACT, 1988

In 1988, the Indian Motor Vehicles Act empowered the State Transport Authority to enforce standards for vehicular pollution and prevention control. The authority also checks emission standards of registered vehicles, collects road taxes, and issues licenses. In August 1997, the *Pollution Under Control Certificate (PUC)* programme was launched in an attempt to crackdown on the vehicular emissions in the states.

2.3.6 THE ANCIENT MONUMENTS AND ARCHAEOLOGICAL SITES AND REMAINS ACT, 1958

According to this Act, area within radii of 100m and 300m from the “protected property” are designated as “protected area” and “controlled area” respectively. No development activity (including building, mining, excavating, blasting) is permitted in the “protected area” and development activities likely to damage the protected property are not permitted in the “controlled area” without prior permission of the Archaeological Survey of India (ASI) if the site/remains/ monuments are protected by ASI or the State Department of Archaeology if these are protected by the State.

2.3.7 STATE LEVEL LEGISLATION AND OTHER ACTS

No specific state-level legislation relevant to the environmental clearance requirements, other than those mentioned above are in force in the state of Tamil Nadu. However, clearance will be required for setting up hot-mix plants, batching plants, etc., under the Air and the Water Acts. Clearance from the State Department of Mining is required for establishing quarries. Clearance from the State Ground Water Board/Authorities is required for establishment of new tube-wells/bore-holes, etc.

In addition, with respect to hygiene and health, during the construction period, the provisions as laid down in the Factories Act, 1948 and the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 would apply.

With limited possibility, the provisions of the Hazardous Wastes (Management and Handling) Rules, 1989 and the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996 would also apply during the construction and the operation periods.

There are several other acts as mentioned in the **Table 2.2**, which are directly or indirectly applicable to the project. A brief note on important acts applicable is presented in the following sections.

2.3.7.1 The Tamil Nadu Highways Bill, 2000

The Tamil Nadu Highways Bill, 2000 was introduced in the Legislative Assembly of the state on 13-11-2000. Objective of the bill is stated as:

“To provide for the declaration of certain highways to be State Highways, restriction of ribbon development along such highways, prevention and removal of encroachment thereon, construction, maintenance and development of highways, and lay of betterment charges and for matters connected therewith or incidental thereto”

It provides for a legal status to the assets and premises of the highways along with functions and powers with the highways authorities to protect and maintain them. It specifically empowers highways authority towards restriction of Ribbon development, acquisition of property, prevention and removal of encroachments, restriction of heavy traffic as also the road safety. Penalties can be levied under the provisions of the bill for causing damage to highways properties and unauthorised occupation of the highways land.

2.3.7.2 *Tamil Nadu Groundwater (Development and Management) Bill, 2000*

The said bill is introduced in the Legislative Assembly of the state on 13-11-2000. Objective of the bill is:

“To protect groundwater resources to provide safeguards against hazards of its over-exploitation and to ensure its planned development and management in the state of Tamil Nadu and for matters connected therewith or incidental thereto.”

The bill when passed as an act shall empower government through the Tamil Nadu Groundwater Authority to develop, control, regulate and administer the groundwater in the state by ensuring its optimal and efficient utilisation. The act also provides for conjunctive use of surface and groundwater. The act provides for registration of new users of wells and also prohibition of sinking wells in notified areas without permit. It shall empower the authority penalise the activities not in accordance with the act regarded as offences.

2.3.7.3 *Tamil Nadu Town and Country Planning Act, 1971*

Tamil Nadu Town and country planning act, 1971 is set with an objective:

“to provide for planning the development and use of Rural and urban land in the State of Tamil Nadu and for purposes connected therewith.”

The Act provides for the preparation and implementation of Regional Plans, Master Plans, New Town Development Plans and Detailed Development Plans and other various spatial plans. The act ensures implementation through various developmental controls and policies that would be incorporated in the spatial plans. The developmental plan is being implemented at various levels through the Directorate of Town and Country Planning. These plans form the basis for landuse regulations within the planned area.

2.3.7.4 *Tamil Nadu Panchayats Act, 1994*

The Tamil Nadu Panchayats Act, 1994 is an act to repeal and re-enact the Tamil Nadu Panchayats Act, 1958 for establishing a three tier panchayat raj system in keeping with the Seventy – third Amendment Act, 1992. It relates to the panchayats for greater participation of the people so as to make them institutions of self-government and more effective implementation of rural development programmes.

The Tamil Nadu Panchayats Act provides for preparation and implementation of District development plans. Plan preparation is enforced from the Panchayat level, Panchayat union, Panchayat council, village panchayats, town panchayats, municipal councils and the municipal corporation towards overall development plans. District Planning Committee is responsible for the overall coordination of plan preparation. The act also provides for avoidance of encroachment of public lands and protection of roadside properties (including trees) belonging to the respective government departments. The act is designed to monitor the industrial landuse through the following clause under Section 160:

“ No person shall, without the permission of the panchayat union council in panchayat villages and except in accordance with the conditions specified in such permission, construct or establish any

factory workshop or workplace in which it is proposed to employ steam power, water power or other mechanical power or electrical power.”

Provisions are also made to maintain minimum set back and regulation of density of development for residential and commercial purposes.

2.3.7.5 *The Tamil Nadu Aquaculture (Regulation) Act, 1995*

The act is meant for regulation of coastal aquaculture in Tamil Nadu. It is administered through the Directorate of Fisheries at state level and District committees at the district level. The act provides for issue of licenses for setting up of any new aquaculture farm or expansion of the same. Aquaculture farms setup before the existence of the act is also to be registered with the District Committees setup for the purpose.

The act prohibits setting up of aquaculture farms in areas (termed as prohibited areas) as:

“Wetlands including biodiversity rich areas mangrove swamps, migratory bird routes, breeding grounds, sanctuaries, national parks, biosphere reserves designated as protected areas or areas committed to community conservation or protection, forestry, place of heritage or place of worship, grey or dark areas in the map prepared by the Public Work Department (Groundwater).”

Certain minimum distances as 300m for villages with population less than 500, 500m for villages with population more than 500 and 2 km from any place of heritage. A buffer zone of 50 to 100m is to be maintained between aquaculture zone and non-aquaculture zone in case of sea-based aquafarms and 25 to 50m in case of estuarine based farms. No aquaculture farm is envisaged to extract ground water for culture purpose. The act empowers Directorate of Fisheries to penalise the offenders of provisions of the act by cancellation of licenses and/or levying of fines.

2.3.8 MoRTH AND IRC SPECIFICATIONS

2.3.8.1 *Specifications for Road and Bridge Works, Fourth Revision, MoRTH, Published by IRC, 2001*

All road works in India are to be in accordance with the MoRTH specifications for Road and Bridge works and guidelines of Indian Roads Congress (IRC). The MoRTH specifications have special provisions towards protection of environment under Clause 501, Annexure A and the contractor is to satisfy the provisions. Apart from the Annexure A to clause 501, there are provisions for control of erosion, drainage, dust suppression, borrow area and haul road management under relevant sections. Provisions of clause 501 Annexure A, cover the environmental aspects as:

General:

- ∨ The contractor shall take all necessary measures and precautions to carry out the work in conformity with the statutory and regulatory environmental requirements
- ∨ The contractor shall take all measures and precautions to avoid nuisance or disturbance from the work. It shall be precautionary measures than abatement measures taken after generation of nuisance

- ∨ In the event of any spoil, debris, waste or any deleterious material from site being deposited on adjacent land, the same shall be removed and affected area shall be restored to its original state

Water:

- ∨ The contractor shall prevent any interference with supply/abstraction of water resources
- ∨ Water used for dust suppression shall be reused after settlement of material in collected water
- ∨ Liquid waste products to be disposed off such that it does not cause pollution
- ∨ No debris is to be deposited or disposed into/adjacent to water courses

Air:

- ∨ The contractor to devise and arrange methods to control dust, gaseous or other airborne emissions in such a way that adverse impacts on air quality is minimized
- ∨ Dust shall be minimized from stored material and stockpiles by spraying water
- ∨ Covering of material likely to rise dust during transport is to be covered with tarpaulin
- ∨ Spraying of water on haul roads if found necessary

Noise:

- ∨ The contractor shall use all necessary measures to reduce noise from construction equipment and maintain all silencing equipment in good condition

Control of wastes:

- ∨ No uncontrolled disposal of wastes shall be permitted. The contractor shall make specific provisions for disposal of all forms of fuel and engine oil, all types of bitumen, cement, surplus aggregate, gravels, bituminous mixtures etc. conforming to local regulations and acceptance of the engineer.

Emergency Response:

- ∨ The contractor shall plan and provide for remedial measures in case of occurrence of emergencies as spillages of oil, bitumen or chemicals

In addition to the above conditions, avoidance measures and control of activities having potential for generation of environmental impacts are devised. These include:

Section 111.	Precautions for safeguarding the environment
Clause 201.2	Preservation of Property/Amenities during clearing and grubbing
Clause 301.3.2	Stripping and storing of topsoil for reuse during excavation for roadway and drains
Clause 302.4	Restriction on timings for blasting operations
Clause 304.3.6	Public safety near towns and villages where excavation is carried out
Clause 305.2.2.2	Locations of borrowing and relevant regulations

Clause 305.3.3	Stripping and storing of topsoil at borrow locations
Section 306	Soil erosion and sedimentation control
Clause 407.4.2	Provisions for turfing on median and islands
Section 517	Recycling of bituminous pavement and excavated material
Clause 701.2.1	Use of geotextiles for control of soil erosion
Section 810	Use of Metal beam crash barriers for safety, relevant regulations and specifications
Clause 1010	Quality of water for curing and construction
Clause 2501	Precaution during river training works

2.3.8.2 *Guidelines for Environmental Impact Assessment, IRC: 104-1988*

The guidelines endorse application of Environmental Protection Act, 1986 for highway projects. It recommends that the methods of measuring air pollution should be in conformance with IS: 5182-1977 and in case of noise pollution: IS: 3028-1980, Measurement of noise emitted by moving road vehicles; IS: 4758-1968, Method of measurement of noise emitted by machines; IS: 10399-1982, Method of measurement of noise emitted by stationary road vehicles are to be followed. As regards Highway aesthetics, use of provisions made in IRC: SP: 21-1979, Manual on Landscaping of roads are to be followed.

2.4 CLEARANCE REQUIREMENTS FOR THE PROJECT

The project would need the following environmental clearances:

- v No Objection Certificate (NOC) from the Tamil Nadu State Pollution Control Board
- v Forestry Clearance from the State Forest Department, Tamil Nadu
- v Environmental Clearance from the MoEF

The HD, GoTN has obtained all the requisite environmental clearances required for the project implementation. The HD has complied with the conditions laid down in these clearances and is committed to fulfilling all the requirements during the implementation of the project. The conditions imposed by the MoEF and TNPCB are given in **Appendix 2.1**. It is included in the contract documents that the contractors obtain all required clearances from the various agencies. The clearances obtained have been detailed in the **Table 2.3** below. The clearances obtained are presently valid and will remain so during project implementation. Although the project was packaged differently when put forward to MoEF, the clearance is valid for all present roads and bypasses.

Table 2.3: Status of Statutory Clearances required for TNRSP

S. No.	Statutory Authority	Statute under which clearance is required	Current status of clearance
1	Ministry of Environment and Forests, Government of India	Environmental Impact Assessment Notification, 1994 issued under EP Act, 1986	6 th July 2000(TNRSP02 - 04), 18 th September 2000(TNRSP01)
2	Tamil Nadu Pollution	Water (P&CP) Act, 1974 &	Cleared, 15 th April 1999 for Eastern

S. No.	Statutory Authority	Statute under which clearance is required	Current status of clearance
	Control Board	Air (P&CP) Act, 1981	Corridor and 12 th November 1999 for Northern Corridors
3	Department of Forests, Government of Tamil Nadu	Conservation of Forests Act, 1980	NoC obtained for progress of works on 11-08-2000. Permission for transfer of forest land – under process

Completion of the northern part of eastern corridor (TNRSP02, 03 and 04) in 1997, from Chennai to Cuddalore (East Coast Road – ECR), has provided valuable lessons in EA preparation for TNRSP. Inadequacies in public consultation and environmental assessment led to delays in implementation of ECR. MoEF attached wide-ranging conditions to its approvals of the project in 1994 and 1996 due to the inadequacies. **Table 2.4** compares the conditions attached to the ECR and their relevance or applicability to eastern corridor of TNRSP.

Table 2.4 MoEF Conditions on ECR and applicability to TNRSP02, 03 and 04

MoEF condition, Chennai to Cuddalore (Corridor 1)	TNRSP proposals
MoEF conditions⁽²⁾	
The width of the roadway should be 10.5 m with 7 m bituminous surface	The carriageway will be 7 m wide, and the shoulders 2.5m or 1m depending on the traffic, giving roadway widths of 9 m or 12 m.
Pavement resurfacing should be in accordance with the existing width	The design provides a consistent carriageway width of 7 m, but also makes maximum use of existing pavement by resurfacing
Pavement thickness should be restricted to 50 cm	Pavement thickness will depend on traffic loading, sub-grade properties and pavement materials
To reduce speeds at sharp bends, provide advance signs, rumble strips, guard posts and reflective signs	The final design will include these measures
At bends the width of the sealed surface should be greater, consistent with IRC requirements	At bends the width of the sealed surface will be greater, consistent with IRC requirements
Provide guard posts where embankment is more than 3 m high	There will be very few embankments more than 3 m. They have steel guard rails
To minimize felling of trees, shoulders may be omitted, with the provision of barriers instead.	In rural areas significant trees will be retained if the trunk base is outside the shoulder.
Adequate drainage is to be provided consistent with rainfall patterns in the area	The drainage of the existing road is inadequate; the project will substantially improve drainage facilities
Where the road is realigned, the abandoned section is to be rehabilitated for community use.	The design specifies a variety of uses, including community uses for abandoned sections
For re-alignments there shall not be any acquisition of homestead land.	The deviations generally avoid dwellings; the bypasses affect dwellings but there is community support for the routes.
Provide footpaths on new or upgraded bridges	New or upgraded bridges will include footpaths where the number of pedestrians warrants
No industrial or hotel development on the seaward side of the road.	There is unlikely to be industrial or hotel development on the seaward side of the road and there are adequate controls.
Avenue planting throughout the project.	Avenue planting throughout the Corridor length and where this is not feasible, cluster planting
Select trees in consultation with EFD, provide a judicious mix of exotic and indigenous plants	There has been consultation with Forest Department, and planting will include a broad range of species
For the Cuddalore to Kanyakumari section the EIS will consider three alternatives—no change, the route that the Indian National Trust for Arts and cultural Heritage proposed and the project proposal.	The EIS compares these alternatives and others
EFD conditions⁽³⁾	
Provide bridges and culverts adequate for the increased floodwater discharges and to maintain the natural flow in waterways that the highway crosses	Many bridges and culverts have inadequate hydraulic capacity; TNRSP proposes to substantially improve the state of readiness for cyclonic or severe storm conditions
Runoff, sanitary wastes and accidental spills of transported	The EMP includes measures to minimize these impacts

MoEF condition, Chennai to Cuddalore (Corridor I)	TN RSP proposals
materials to have the minimum impacts	
Control emissions from equipment and machinery by specifying low sulphur fuel.	The choice of fuel is not a matter that H&RWD can determine or control.
H&RWD to sprinkle water over areas prone to fugitive dust emissions so as to control suspended particulate matter levels.	The EMP provides for sprinkling water.
Construction contract to incorporate ambient noise level standards to protect sensitive areas.	The construction contract will incorporate noise level standards to protect sensitive areas.
Plant trees to attenuate noise near sensitive areas.	Avenue planting is provided all along the route and where this is not feasible, cluster planting.
Minimize impacts from vibration.	The standard cross-sections consider vibration.
Restore borrow areas to beneficial use.	The construction contract will require this.
Take adequate measures to stabilise embankments and drains to mitigate soil erosion.	The construction contract will include measures and the EMP measures following construction.
Minimise impacts on wildlife	Direct impacts on wildlife will be minor; there will be signs where wildlife crosses road.
Prepare rehabilitation programme for Project-affected persons.	H&RWD has prepared a draft programme.
Ensure minimum interference with sensitive areas.	Direct impacts will be minimal.

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