



# Highways and Minor Ports Department

**POLICY NOTE  
2016–2017**

**Demand No. 21**

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Minister for Public Works,  
Highways and Minor Ports

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# **HIGHWAYS AND MINOR PORTS DEPARTMENT**

## **POLICY NOTE - 2016-17**

### **1. INTRODUCTION**

The basic infrastructure of a good road network accelerates the development process through better connectivity and opening up of the backward regions to trade and investments. Roads also play a key role in intermodal transport development, establishing easy links with airports, railway stations and ports. In addition, roads have an important role in promoting national integration among various States. Hence, enhanced investments for the development of road infrastructure enjoyed top priority especially in the last five years.

Highways Department is committed to improve the road infrastructure by providing newer roads, bridges, bypasses and widening and better maintenance of roads at desired service level adopting best engineering practices to serve the public.

Motivation, combined with strict adherence to standards, codes, legislation and regulations to ensure the citizens enjoy a high standard of safety and reliability in road infrastructure is the motto of

this department. By understanding the full lifecycle investments and adopting sound practices reliable infrastructure is sought to be maintained.

The inherent characteristic approach of the Highways department while devising a project always reckon with five factors viz, 1) Capital which is the foremost criteria (through sufficient funding), 2) Resources - Men, Material and Machine 3) Time (through better planning, project phasing and effective monitoring to ensure timely completion), 4) Development of Action plan including list of activities and prioritization and 5) Suitable selection of project location (unbiased selection to meet the actual needs of the public).

For effective, efficient and transparent functioning of the department, Government have come up with integrated e-pathai system which helps to maintain the road network at desired service level by fixing performance indicators based on roughness index, traffic density and surface conditions.

The Government of Tamil Nadu, by way of innovative methods, such as increased allocation of funds through different sources like Public Private Partnership (PPP), Performance Based Maintenance Contracts (PBMC), better regulations (quality control, scientific allocation and management of resources), time tested and result oriented practices has been successfully implementing projects to

provide good transport infrastructure for the development of the society.

By comprehensively covering all aspects of road design, construction, maintenance and management of highways, resources are being deployed to improve the performance of this department to provide for better connectivity. Land acquisition for highways projects are being done under Tamil Nadu Highways Act (TNHA) 2001 and after the Right to Fair Compensation and Transparency in Land Acquisition Rehabilitation and Resettlement Act 2013 came into force, the quantum of compensation and entitlements ensured in TNHA 2001 have been restructured to improve the process of Land Acquisition in line with the Central Act. The Government has already undertaken detailed study to incorporate necessary amendments to TNHA 2001 and related rules to safeguard the financial health of the project affected families without affecting the livelihoods and performance of the Highways Department. This will ensure quicker delivery of services and timely completion of projects.

## **1.1 HIGHWAYS AND MINOR PORTS DEPARTMENT IN TAMIL NADU**

The Highways Department of Government of Tamil Nadu was established in 1946. Nowadays Highways department is maintaining 62460 km of road network spread across the entire length and

breadth of the State. This department has a clearcut mandate of creating, augmenting and maintaining the road infrastructure of the state with the **vision** to “**increase the capacity, connectivity, efficiency and safety**” of the highways system.

The Highways and Minor Ports Department comprises of

1. Highways Department
2. The Tamil Nadu Road Development Company and IT Expressway Limited (Special Purpose Vehicle: subsidiary company owned by TNRDC)
3. The Tamil Nadu Road Infrastructure Development Corporation
4. The Tamil Nadu Maritime Board
5. The Poompuhar Shipping Corporation Limited

## **1.2 CATEGORIES OF ROADS**

### **1.2.1 National Highways (NH)**

The road network connecting State capitals, Major Cities, Major Ports, large industrial areas and important tourist centers as well as notified by Ministry of Road Transport and Highways (MORTH), Government of India (GoI) are classified as the National Highways. National Highways form the economic backbone to the country enhancing quick movement of men and materials to the requisite destinations in right time and facilitate rapid development along their routes.

Totally 4994 km length of National Highways run through Tamil Nadu State. Out of this 1985 km are maintained by State National Highways Wing and balance 3009 km are maintained by the National Highways Authority of India (NHAI). National Highways are being developed by widening to two lane / four lane / six lane with paved shoulders and strengthening the existing riding surface with the funds from the MORTH, GoI and some of them are also taken up under Public Private Partnership mode.

### **1.2.2 State Highways (SH)**

The State Highways connect District headquarters with National Highways and neighbouring States. These stretches get maximum importance owing to heavy traffic intensity. The total length of State Highways in Tamil Nadu is 12093 km.

### **1.2.3 Major District Roads (MDR)**

The Major District Roads connect towns and municipal areas with District headquarters. These roads connect the production and marketing centres with National Highways and State Highways. In Tamil Nadu, the total length of Major District Roads is 11617 km.

### **1.2.4 Other District Roads (ODR)**

The Other District Roads (ODR) are the backbone of the rural economy and day to day activities of general public which connect villages

with marketing, educational and health care centres and Taluk headquarters and other nearby important roads. Based on the traffic intensity, the Other District Roads are maintained as Single Lane or Intermediate Lane.

Sugarcane Development Roads are also under the ODR category, which are connecting the sugarcane cultivating areas with Sugar mills and in turn with nearby marketing centres. There are 33756 km of Other District Roads including 1676 km of Sugarcane Development roads in the State of Tamil Nadu.

The details of road network maintained by the Highways Department are given in Table 1.1

**Table 1.1: Details of Road Network**

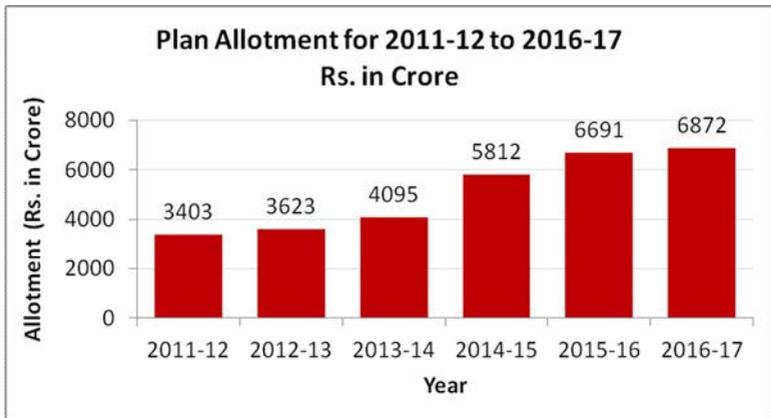
<b>Sl. No.</b>	<b>Classification of Road</b>	<b>Length (km)</b>	<b>Maintained by</b>
1	National Highways (NH)	1985	NH wing
		3009	NHAI
	NH Total	4994	
2	State Highways (SH)	12093	C & M Wing
3	Major District Roads (MDR)	11617	
4	Other District Roads (ODR)	33756	
	<b>Grand Total</b>	<b>62460</b>	

The Lane wise length details are given in **Table 1.2.**

**Table 1.2: Lane-wise Length Details  
(Length in km)**

Sl. No.	Category	Single Lane	Intermediate Lane	Double Lane	Multi Lane	Total
1	NH	12	26	2731	2225	4994
2	SH	56	402	9931	1704	12093
3	MDR	500	7785	3164	168	11617
4	ODR	29709	3148	848	51	33756
<b>Total</b>		<b>30277</b>	<b>11361</b>	<b>16674</b>	<b>4148</b>	<b>62460</b>

The figure 1.1 given below shows the growth of Plan allotment on road sector of the State.



**Figure 1.1: Plan Allotment Details**

Significantly increased plan outlay which has multiplied 3 times in the span of 10 years has contributed to the overall improvement of the state

road network. The increased allocation aided in achieving the policy of the Government to upgrade all the State Highways into atleast two lane roads. This has resulted in the improved road safety conditions. The latest statistics (Road Accidents in India 2015 by MORTH, GoI) reveals that the severity of accidents (No. of fatalities per 100 accidents) in Tamil Nadu is 22.7 which is lower than the national average of 29.1. Further, while at National level, the fatal accidents have increased by 5.7% on the whole while comparing the 2012 and 2015 data, in TamilNadu, the fatal accidents have reduced by 3.3%.

## **2. POLICY OUTLINE**

The road network contributes very significant positive impacts on the society and the country by indirectly stimulating economic growth. Several positive measures with predominant scientific approaches are being taken to make roads as user friendly and to improve the performance of Highways Department to its maximum efficiency.

In order to cope up with the present day requirements of capital investments in the infrastructure development field, it is high time to rope in private entrepreneurship with robust investments in road infrastructure projects. Efforts are being initiated to bring private investments in road construction through sustainable transparent policy initiatives.

The various schemes being implemented to achieve the vision of the department are detailed below:

### **2.1 SCHEMES/ MAJOR PROJECTS BEING IMPLEMENTED**

#### **2.1.1 Comprehensive Road Infrastructure Development Programme (CRIDP)**

The Hon'ble Chief Minister announced this flagship programme in the year 2004-05. For the Economic and Industrial development of the state, road infrastructure developments are being

implemented under this programme. Infrastructure development like widening and improvement of roads, construction of bridges, culverts, protective works, center medians, crash barriers, drains, road safety works and formation of bypasses are undertaken.

Improvements and strengthening of the road network always gain prominence under the dynamic leadership of the Hon'ble Chief Minister. Decongestion of roads and smooth traffic flow have been ensured by constructing new bypasses and ring roads for the Municipalities and corporations. Under the 'Comprehensive Road Infrastructure Development Programme', sanction has been accorded for an amount of Rs. 15205 Crore in the last five years.

It has been announced that all State Highways will be widened to Double Lane and all Major District Roads will be widened to Intermediate Lane. Accordingly, large scale widening was taken up under CRIDP. In the last five years, 913 km length of State Highways has been widened to double lane and 3041 km length of Major District Roads has been widened to intermediate lane.

### **2.1.2 Non-Plan Works**

Maintenance is an integral part of planning and regular maintenance of road optimize the life span of road infrastructure. Indian Roads Congress has prescribed norms for maintenance and works

are prioritized based on those norms. Utilizing Non-plan maintenance fund Periodical renewal, maintenance works including Special repairs are being carried out.

Timely and preventive maintenance strategies of roads reduces rebuilding cost and routine maintenance of bridges enhances its life span. In addition, routine maintenance of vulnerable locations will facilitate easy flow of surface water during monsoon thus reducing the damage to the riding surface.

### **2.1.3 Bypasses**

Top priority is given for reducing traffic congestion in towns and cities by way of providing bypasses in order to reduce travel time and vehicle operation cost.

Totally 88 bypasses have been taken up in the Corporations, Municipalities and Town Panchayats. Of which 30 bypasses have been completed and opened for vehicular traffic and 10 works are in progress. Land acquisition works are in progress for 37 bypasses, 9 works are in Detailed Project Report (DPR) Stage and 2 proposed works are under the consideration of Government.

### **2.1.4 CHENNAI PERIPHERAL RING ROAD (CPRR)**

The Hon'ble Chief Minister has announced that Chennai Peripheral Ring Road (CPRR) will be formed connecting Ennore with Mamallapuram. The

Chennai Peripheral Ring Road will provide better connectivity to decongest Chennai city road connecting villages around Chennai city catering to their future traffic requirements besides helping in achieving efficient commercial goods transportation and port connectivity.

The proposed Chennai Peripheral Ring Road starts at Ennore port travels through the proposed Northern Port Access Road and connects Mamallapuram near Poonjeri junction of East Coast Road (ECR). The Government sanctioned Rs. 10 Crore for the preparation of Detailed Project Report (DPR) for this work and the same has been completed. The proposal for external funding for civil works (85 % of construction cost) from JICA has been sent to Government of India and it is under process. Currently, utility mapping on the proposed corridor is being carried out.

### **2.1.5 Railway Works Programme**

With a view to reduce the accidents and to eliminate detention time at Level Crossings and to avoid traffic congestion at level crossing locations, the Level Crossings where the Train Vehicle Unit (TVU) exceeds 1 Lakh are replaced with ROB/RUBs under Railway Works Programme on 50:50 cost sharing with Railways. The Railways execute the bridge proper and the approaches are by the Highways Department.

So far, 299 Level Crossings across the State have been converted into ROB/RUBs' under various schemes. At present, there are 1262 manned Level Crossings and 778 unmanned Level Crossings in the State. These will also be converted into ROB/RUB in a phased manner.

### **2.1.6 NABARD Loan Assistance Scheme**

Under this scheme, Construction/ Reconstruction of Bridges and improvements/ Rebuilding of ODR, MDR and SH roads are being implemented. Bridges in Panchayat Union Roads are also constructed under this scheme after obtaining necessary NOC from the Rural Development and Panchayat Raj department.

During 2015 – 16, 191 Bridges and 46 Roads to a length of 130.51 km have been taken up for execution. Out of which 83 Bridges and 6 Roads to a length of 15.35 km have been completed.

### **2.1.7 Chennai Outer Ring Road**

Chennai Outer Ring Road (ORR) is one of the major project being executed by Highways Department under Design, Build, Finance, Operate and Transfer (DBFOT) mode with an investment of Rs. 2160 Crore. The project is being executed in 2 phases. phase-I covers 29.65 km starting from NH 45 in South Chennai to NH 205 in West Chennai. The second phase links NH 205 in west Chennai with Minjur in North Chennai for a length of

30.50 km. It is a six lane road. The Roadway includes 22 m open lands in the center with a view for future public transport corridor. Provision of 50 m width corridor along the entire stretch has also been made available for future development. This road will serve for the through traffic and traffic meant for ports and industries. phase-I of the project has been completed. So far 82% of works have been completed and the remaining works are in progress in the second phase.

### **2.1.8 Public Private Partnership (PPP)**

A paradigm shift is needed from the conventional approach of restricting planning from fixed budget allocation to a newer operational dimension in order to achieve the ambitious investment target of Rs. 134600 Crore in Vision 2023. Plans are being evolved in an integrated and holistic manner, which requires mobilization of huge resources. PPP mode is one of the viable alternate method through which resource mobilization is possible to ensure faster delivery of road infrastructure.

PPP is claimed to infuse necessary resources and enable the public sector to harness the expertise and efficiencies that the private sector can bring to the delivery of certain facilities and services traditionally procured and delivered by the public sector.

Widening and Improvement of Madurai Ring Road has been taken up under BOT mode by

TNRIDC with Tamil Nadu Infrastructure Development Board (TNIDB) guidelines. The work is now entrusted and Preliminary works are in progress. In addition, upgradation of three corridors to a length of 146 km is about to be tendered under TNRSP.

### **2.1.9 Tamil Nadu Road Sector Project II (TNRSP II)**

Tamilnadu Road Sector Project-II was formulated in the year 2013 envisaging upgradation of high density road corridors in the State.

Strategic Options Study II (SOS II) was carried out to arrive at a project proposal for TNRSP-II. Roads to a length of 2867 km were analysed and prioritized based on Economic Internal Rate of Return (EIRR) criteria.

An amount of Rs. 65 Crore has been approved through Tamil Nadu Infrastructure development Board (TNIDB) under the Chairmanship of the Hon'ble Chief Minister for Detailed Project Report Preparation for upgrading core road network. Consultants have been engaged by TNRSP-II for various road improvements for a length of about 2079 km as prioritized from SOS study.

Detailed Project Report for various road improvement works for a length of about 573 km has been completed. Out of the above, 427 km of road works (Two lane plus paved shoulders) were

taken up under Engineering Procurement Construction (EPC) mode and 146 km of four lane road Upgradation is proposed under Public Private Partnership (PPP) mode through World Bank funding. EPC works in 10 packages are in progress. For PPP works, tender for 3 packages are to be invited shortly. Civil works are in progress for the maintenance of 597 km of roads, adopting Output and Performance based maintenance Road Contract (OPRC) mode.

Three Supervision consultants and one monitoring consultant have been engaged for supervising 10 Engineering Procurement Construction contracts and maintaining 2 Output and Performance based Road contract (OPRC) respectively.

Institutional Capacity Enhancement (ICE) and Road Safety (RS) components of TNRSP-II are being implemented by the Director General of the Highways Department.

Detailed Project Report preparation for the remaining roads are at the final stage.

### **2.1.10 Performance Based Maintenance Contract (PBMC)**

Performance Based Maintenance Contracts for roads are designed to increase the efficiency and effectiveness of road asset management and regular maintenance. During the contract period, PBMC ensures safe and travel comfort to the road users in the specified level. Minimum road surface conditions

and service levels are defined through output and performance measures for which the contractor is responsible.

Under this contract initial rectification, periodical renewal, minor improvements, ordinary maintenance and emergency works are taken up. PBMC ensures the good surface condition of the roads under contract is mandatory for comfort travel of road users. This type of contract significantly shifts the focus from only execution of works to the efficient management and conservation of road assets.

During 2013-14, maintenance of State Highways and Major District Roads in Pollachi Division have been taken up under this scheme for 5 years. During 2015-16, maintenance of 307 km length of State Highways and 274 km length of Major District Roads in Krishnagiri and 229 km length of State Highways and 340 km length of Major District Roads in Ramanthapuram Divisions and 498 km length of State Highways and 278 km length of Major District Roads in Thiruvallur Division have been taken up for maintenance under this scheme for five years.

#### **2.1.11 Chennai – Bengaluru Industrial Corridor (CBIC)**

The corridor between Chennai – Bengaluru – Chitradurga (around 560 km) would have an influence area spread across the states of

Karnataka, Andhra Pradesh and Tamil Nadu. The CBIC development is planned to achieve accelerated development and regional industry agglomeration in the States of Tamil Nadu, Karnataka and Andhra Pradesh. A total of 25 priority projects across various sectors have been identified for debottlenecking infrastructure shortcoming in the region in the preliminary study conducted by the Japan International Cooperation Agency (JICA). The priority projects include Northern Port Access Road for connectivity to Ennore Port, Chennai Outer Ring Road – phase II and Peripheral Ring Road from Mamallapuram to Ennore. Steps are being taken to implement the projects identified under road sector in Tamil Nadu and the proposals are in various stages.

### **2.1.12 Tamil Nadu Innovative Initiation Fund (TANII)**

Tamil Nadu Innovative Initiation Fund (TANII) has been established in the State Planning Commission “to promote innovation culture in Tamil Nadu”. Under this scheme, two research works have been taken up by the Highways Research Station.

## **2.2 INSTITUTIONAL CAPACITY ENHANCEMENT AND ROAD SAFETY**

### **2.2.1 Institutional Capacity Enhancement**

Highways and Minor Ports Department has embarked on a mission to achieve its vision through capacity enhancement measures. In order to

achieve the set goals, it is felt necessary that the present functioning of the department required to be modified. The Institutional Capacity Enhancement (ICE) measures are proposed to be taken up under Tamil Nadu Road Sector Project II (TNRSP-II) utilizing the World Bank loan assistance. The ICE component is formulated to accomplish the following core objectives keeping in view to, the issues being faced by the department in realizing its goals.

- a. Mobilization of alternate funding resources through Public Private Partnership (PPP projects), tolling, cess on fuel and developmental charges etc.
- b. Efficient allocation of resources which is unbiased and scientifically justified.
- c. Enhance the enterprise-level efficiency through
  - a. Effective use of IT-ICT infrastructure in every activity starting from project planning, formulation, estimation, tendering, measurement, billing, project monitoring etc.
  - b. Minor organizational restructuring such as redistribution of work load, creation of traffic engineering and road safety cell, strengthening designs wing and separating research and training from monitoring quality control activities
  - c. Road User satisfaction survey to get the public feedback on the outcome of

various infrastructure projects implemented as a part of Monitoring and Evaluation

- d. Improved inter and intra department coordination
  - e. Standardization of bidding documents and protocol to cover the latest trends including e-governance procedures, best practices being followed in the field
  - f. Introduction of e-procurement to enhance transparency in tendering and develop capacity to implement the same
  - g. Incorporation of e-pathai related SOPs, recently issued government orders on routine functioning, delegation of powers etc, in the Highways Manual to give them a statutory validity
- d. Human Resource Development through Knowledge Sharing and Training

Through Institutional Capacity Enhancement measures it has been decided to address the following issues:

- a. Judicious allocation and optimum utilization of resources
- b. Development of long and regular term plans
- c. Sustainability of the existing IT-ICT infrastructure
- d. Mainstreaming of e-pathai applications in the day to day functioning

- e. Convergence of planning requirements
- f. Creation of the micro level Performance indicators to rank the projects based on their outcome
- g. Standardization of design of structures
- h. Synchronized handling of Road safety, traffic and road condition data
- i. To provide a reliable and sustainable public infrastructure

For the effective implementation of ICE component, Institutional Capacity Enhancement and Road Safety Cell (ICERS Cell) under the Director General, Highways has been established comprising of one Superintending Engineer, a Divisional Engineer, two Assistant Divisional Engineers and two Assistant Engineers. Further working committees have also been established to

- a. Propose to the ICERS Cell in clearly defining strategies / requirements to meet the objectives of the ICEP in the specific domain.
- b. Review the existing procedures/ systems and develop plan for improvement
- c. Prepare the TOR for the subsequent procurement
- d. Propose resource requirement for such procurement
- e. Critically review the TORs already prepared in tune with the objectives and suggest suitable

modifications in tune with the present day requirements.

- f. Review the deliverables of the consultants.
- g. On implementation, evaluate the sub-components implemented and suggest further improvement based on the impact

Currently the teams are working on various aspects to formulate the related proposals.

### **2.2.2 Road Safety**

Recognizing the socio economic consequences of the road traffic accidents, the Government is taking various measures to improve the road safety scenario through multiple stakeholders. To improve the road safety through engineering measures, special road safety programme, road safety related projects under Comprehensive Road Infrastructure Development Programme are being carried out. Further, the Government has also earmarked about 2% of Plan expenditure under Road Infrastructural Development for enhancing the Road Safety.

Besides, a comprehensive road safety programme is formulated under the World Bank assisted Tamil Nadu Road Sector Project II. The road safety components of the projects involve, strategic and operational level initiatives to bridge the identified gaps.

Strategic components includes (1) Formulation of Road Safety Results Framework including revisit

of existing road safety policy and fixing road safety goals, (2) Preparation of Road Safety Promotion Plan, (3) Framing methodology for Monitoring & Evaluation of road safety programmes and (4) Research and Knowledge Transfer

Operational components to address (1) Augmenting enforcement systems targeting key behaviors through Police, (2) Review and enhancement of compliance systems targeting unsafe drivers and operators (3) Suggestion towards funding/ resource allocation mechanism for the sustainable road safety programmes.

In order to achieve desired goals, it is planned to take up review and updating of Existing Road Accident Data Management System (RADMS) for accurate data collection, analysis and arriving at appropriate measures, augment the capacity of enforcement, compliance systems. As part of this component, it is planned to take up road safety demonstration projects at Kancheepuram District and one at corridor level. The demonstration project will focus on (1) coordinated investment planning (2) establishment of good practices for speed management program, (3) risk targeted patrol plans (4) safety focused administrative procedures including appeal and audit processes and (5) supporting quick trauma response services.

In order to strengthen the lead agency, various institutional arrangements have been created and it is fully functional.

#### *2.2.2.1. Road Safety Executive Leadership Group (RSELG)*

Road Safety Executive Leadership Group (RSELG) headed by the Additional Chief Secretary, Highways and Minor Ports Department and supported by the Principal Secretary to Government, Home, Prohibition and Excise Department, Secretary to Government, Health and Family Welfare Department, Secretary to Government School Education Department, Transport Commissioner, DGP/ ADGP (State Traffic Planning Cell), Chief General Manager, NHAI. The role of RSELG will be overseeing and coordinating the delivery of road safety activities across the critical delivery sectors, providing a coordinated line of advice to the Minister of Transport on critical road safety issues affecting Tamil Nadu, providing direction and governance to the implementation of Tamil Nadu's road safety policy. Also, RSELG is suggesting multi-sectoral work programmes to give effect to the Road Safety policy including the road safety project components to the Tamil Nadu Road Sector Project II (TNRSP-II) and lead the promotion of a safe systems approach to road safety with in Tamil Nadu. This results in the implementation of high value safety interventions within their respective Departments.

#### *2.2.2.2. Road Safety Management Cell (RSMC)*

RSMC is headed by the Transport Commissioner/ Road safety Commissioner and supported by the officials from all the stakeholding departments. The RSMC has been established with a mandate to strengthen the Transport Department (lead agency), assisting in implementation of road safety measure with a focused attention to considerably reduce accidents, to coordinate with the line departments, to review and evaluate the existing legislation and compliance system and suggest improvements. RSMC in addition, assists in the identification of resource requirement and allocation for continued road safety support. It also lead the road safety promotion, monitor, evaluate and support implementation of road safety programmes including research and knowledge sharing.

#### *2.2.2.3. Road Safety implementation Units (RSIU)*

RSIU is chaired by the District Collector with members from Police, Highways, Health, Transport and Education Departments. The responsibility of RSIU is assessing requirement and formulation of proposal, implementation and monitoring of road safety programmes. RSIU will also carry out community health promotion campaign, trauma

response and treatment services and implement as directed by the Road Safety Management Cell.

This unit will support training and capacity enhancement of personnel involved in road safety across multiple departments, road safety audit and propose speed management strategies including setting of speed limits.

### **2.2.3 Road Safety Protocol**

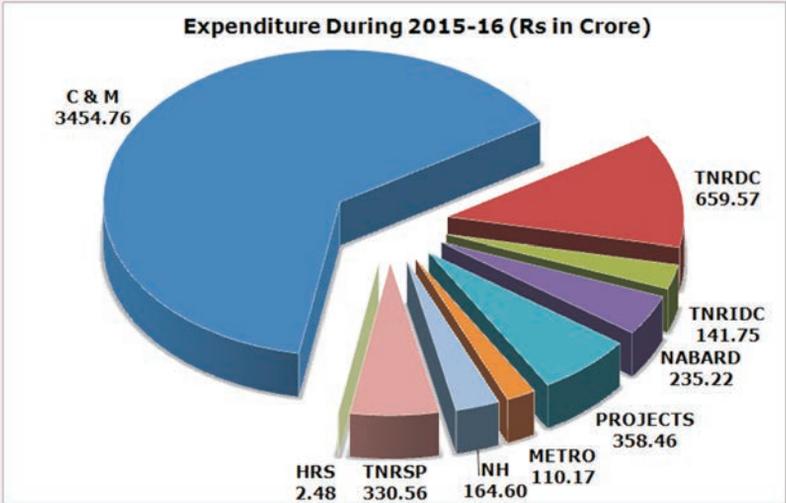
Further, for identification and removal of blackspots through engineering measures, a Road Safety Protocol has been formulated, which will be facilitated by the engineering committees. The field level committee comprises of the Divisional Engineer (C&M) and Divisional Engineer (Investigation) to carry out joint inspection and suggest suitable Engineering measures. At circle level, the Superintending Engineer (C&M) concerned will review, prioritize and shortlist the proposal received from field committee considering the factors such as accident fatalities, grievous injuries and the possible threats due to Engineering defects. The recommendations of the SE (C&M) concerned will be appraised, shortlisted further by the State Level Committee comprising of Director General, Highways, Chief Engineer (C&M) and Director, Highways Research Station (HRS). Short listed proposal will be recommended to government for approval.

### **2.3 OVERALL EXPENDITURE (2015-16) AND ALLOTMENT FOR 2016-17**

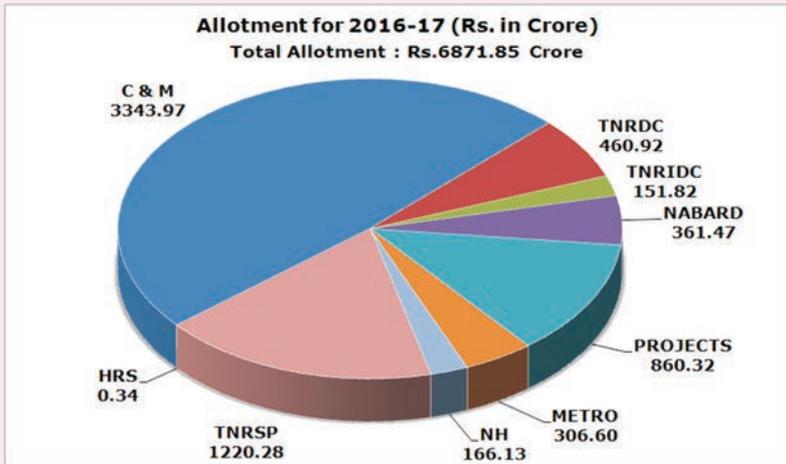
Various schemes are being implemented by this department utilizing funds from State, Central and external funding agencies. Various road and bridge works to the tune of Rs. 11367.52 Crore are being implemented in the year 2016 – 2017.

For the year 2015 – 2016, Rs. 6691 Crore has been allotted to Highways Department for implementation of plan works originally. Later in the revised budget estimate the allocation has been reduced to Rs.5347 Crore, of which an expenditure of Rs. 5151 Crore have been incurred that is 96%. An amount of Rs. 6871.87 Crore have been allotted in Revised Budget Estimate to Highways Department for the year 2016 – 17.





Plan Expenditure during 2015-16 (Rs. in Crore)



Allotment for the year 2016-17 (Rs. in Crore)



### **3. STRUCTURE AND ACTIVITIES OF THE DEPARTMENT**

#### **3.1 ORGANISATION STRUCTURE OF THE DEPARTMENT**

The Organization is strengthened by the coordination of 8 wings under the control of Director General. The research works are being done by Highways Research Station Wing. The designs and the required filed investigations are being done by the Designs and Investigation Wing. The above said two wings are non execution wings and there are six wings for execution of works of the department.

1. Construction & Maintenance wing – Works funded by State Government
2. National Highways wing - Works funded by Government of India
3. NABARD & Rural Roads wing – NABARD loan assistance works
4. Projects wing-Railway Works Programme (funds sharing)
5. Metro wing-Chennai Metro Development Programme works
6. Tamil Nadu Road Sector Project – World Bank loan assistance works

In addition, two companies are executing Special Projects.

1. Tamil Nadu Road Development Company and ITEL Subsidiary of the Tamil Nadu Road Development Company
2. Tamil Nadu Road Infrastructure Development Corporation.

The functions of all the wings are detailed as follows:

### **3.2 OFFICE OF THE DIRECTOR GENERAL**

To augment the efficiency of this department and for coordination with all wings the post of Director General has been created. The Director General is also the head of all the Technical Committees.

- Overall Planning and Budgeting of Highways Department.
- Establishment and Personnel Administration matters in Highways Department.
- Coordination of Road Accident Data Management System (RADMS)
- Managing the e-pathai related IT solutions.
- Any other work entrusted by the Government.
- Functioning with 3 Joint Directors and one Chief Officer (IT) in the Divisional Engineer cadre.
- Supported by ICERS cell with one Superintending Engineer and one Divisional Engineer

### **3.3 CONSTRUCTION & MAINTENANCE WING**

- Maintenance of State Highways, Major District Roads, Other District Roads, sugarcane roads and bridges.
- Execution of Part – II scheme works.
- Restoration of roads and bridges affected by natural calamities like monsoons, floods and Tsunami.
- Execution of road and bridge works under Comprehensive Road Infrastructure Development Programme including formation of bypasses.
- Implementation of road infrastructure schemes under Public Private Partnership.
- Works are carried out by 8 Circles and 41 Divisions.

### **3.4 NABARD & RURAL ROADS WING**

- Execution of bridges and roads with loan assistance from NABARD.
- Construction of Road Over Bridges / Under Bridges under Railway Works Programme.
- Works are carried out by 4 Circles and 14 Divisions.

### **3.5 PROJECTS WING**

- Road Over and Under Bridges at Railway Level Crossings under Railway Works Programme.

- Major Bridge works with State funds and NABARD assistance.
- Formation of Ring Roads and Radial Roads.
- Formation of Sugarcane Roads utilising Sugar Cess fund.
- Works are carried out by 4 Circles and 10 Divisions.

### **3.6 METRO WING**

- Execution of Chennai Metropolitan Development Plan (CMDP) works.
- Road works, major bridge works and flyovers works in road junctions under TNUDP – III.
- Construction of ROBs / RUBs in Metro areas.
- Works are carried out by one Circle and 5 Divisions.

### **3.7 NATIONAL HIGHWAYS WING**

- National Highways development works are executed under Plan & Non-plan schemes with the funds provided by the Ministry of Road Transport and Highways, Government of India
- Development of State roads are executed under Revamped Central Road Fund, Inter State Connectivity and Economic Importance schemes with the funds provided by the Government of India from Central Road Fund.

- State roads such as Other District Roads included in Core network are developed under Pradhan Mantri Gram Sadak Yojana programme with the funds provided by the Ministry of Rural Development, Government of India.
- Development of Western Ghats hill roads in Nilgiris District are executed under Hill Area Development Programme with the funds provided by the Government, Planning Development and Special Initiatives Department.
- National Highways wing comprises of 4 circles and 8 divisions.

### **3.8 TAMIL NADU ROAD SECTOR PROJECT WING (TNRSP)**

- Road upgradation works with the World Bank assistance.
- Undertaking studies for projects to be implemented through Public Private Partnership.
- Strengthening the organisational set-up of Highways Department.
- Road safety related works
- This wing comprises one Project Director, Chief Engineer, two Superintending Engineers and 7 Divisions.

### **3.9 HIGHWAYS RESEARCH STATION**

- Research activities relating to roads and bridges.
- 3 tier quality assurance for all works implemented by this department.
- Recommendations for road safety and traffic improvement works.
- This wing functions under the Director with One Joint Director, 4 Deputy Directors, 8 Divisional Engineers (Quality Control) and 8 Regional Labs.

### **3.10 PLANNING, DESIGN AND INVESTIGATION WING**

- Carrying out investigation for new road and bridge, flyovers, grade separator works.
- Preparation of structural designs, drawings and quantity estimates for bridge works costing Rs. 2 Crore and above.
- Proof checking of Design and Drawings prepared by consultants.
- This wing comprises one Joint Chief Engineer, 4 Divisional Engineers and 5 Investigation Divisions.

### **3.11 TAMIL NADU ROAD DEVELOPMENT COMPANY (TNRDC)**

- Implementing major PPP projects.
- Management of Chennai Outer Ring Road works.
- Undertaking Rajiv Gandhi IT Expressway works and maintaining as toll road.
- Improving and maintaining the East Coast Road (Chennai to Puduchery) as toll road.

### **3.12 TAMIL NADU ROAD INFRASTRUCTURE DEVELOPMENT CORPORATION (TNRIDC)**

- Developing of road and bridge infrastructure required in industrial areas.
- Madurai ring road improvement work.



## **4. OFFICE OF THE DIRECTOR GENERAL**

Overall administration, Planning and Quality Control, modernization of departmental works through Information Technology Cell and Capacity Enhancement (ICE) measures along with road safety works through (ICERS) Institutional Capacity Enhancement and Road Safety Cell are taken up by the office of the Director General for effective and efficient management of the works.

### **4.1 ADMINISTRATION**

The office of the Director General is overall responsible for the establishment and personnel administration matters of all the staff of Highways Department.

### **4.2 HUMAN RESOURCES DEVELOPMENT**

#### **4.2.1 Staff Strength**

Total strength of this department is 6945. Of this, 1652 are Engineers, 791 are Technical Staff and 4502 are Administrative and Ministerial staff.

### **4.3 INFORMATION TECHNOLOGY CELL**

In the e-pathai application, Road Maintenance Management System (RMMS) has been developed to effectively prioritize the road works

using a computerized system. The RMMS database so far consist of road condition data for State Highways and Major District Roads. The system has now been customized to upload the Other District Road (ODR) and Sugar cane road (SCR) data also. By customizing the ODR and SCR data into RMMS, comprehensive database of all the roads has been made available for better monitoring and planning. A new feature namely dashboard has been incorporated so as to see the details in a nutshell.

The current system architecture of RMMS was developed in the year 2008. RMMS has been interfaced with so many other applications namely GIS, P&FMS and ADCE equipments. As the data in P&FMS and RMMS tends to grow in future, the existing architecture will not support, rather it will tend to slow down the end user response time. Hence, planned to enhance the RMMS architecture in future.

Another application in e-pathai namely, GIS is currently used for viewing spatial attributes of existing roads which are being maintained through RMMS. With the advent of new applications, GIS has to be enhanced to capture field data through mobile application. This will help in capturing the road condition directly from the site and uploading in the GIS, simply with a mobile app, thereby rectification process will be quicker by the respective divisions. In GIS application, facility to upload road condition

directly from the site through mobile will be customized in the GIS application. Query tool and advanced analysis tool may be enhanced in the existing GIS Application to enable a advanced search option.

It is planned to address the above issues under the World Bank assisted ICE component.

The Integrated Project, Human Resource & Finance Management System (P&FMS) is an epathai application, which aims at statewide computerization to automate the existing manual procedures and process followed for Project Management, Financial Management and Employee Record System for improved information, communication, project monitoring and office management. The application has been made live on 15.10.2014 and about 1466 works of Highways Department has been keyed in by the field Engineers of C&M Wing.

The existing website namely [www.tnhighways.gov.in](http://www.tnhighways.gov.in) and [www.tnrsp.gov.in](http://www.tnrsp.gov.in) has been registered and made functional by using NIC services. The website will be enhanced to better standard by incorporating dashboard facilities for better monitoring and viewing.

#### **4.4 INSTITUTIONAL CAPACITY ENHANCEMENT AND ROAD SAFETY CELL (ICERS CELL)**

The World Bank loan assisted second Tamil Nadu Road Sector Project is focusing mainly on improving (a) capacity and maintenance of priority roads; (b) the institutional capacity through improved policies, operational systems and procedures; and (c) road safety.

Institutional Capacity Enhancement component aims to implement the Institutional Capacity Enhancement Plan (ICEP) approved by Government and to support (a) policy level actions and commitments to improve both mobilization and allocation of resources in the road sector and (b) operational level initiatives to enhance enterprise-level efficiency through (i) process improvements; (ii) organizational restructuring; (iii) sustaining investments in Technology upgradation in IT infrastructure; and (iv) Training & Knowledge Management.

Road Safety Component is focused on the implementation of Road Safety Plan approved by Government.

The Road Safety Component aims at achieving improved road safety comprising of actions at state level and field level. The state level action includes strategic interventions focused on development of a comprehensive road safety

strategy, delineating the roles, responsibilities, investments and other initiatives of various stakeholder departments. The field level initiatives include implementation of road safety demonstration projects in Kancheepuram District and a selected corridor. The outcome of the demonstration project will be reviewed, updated and implemented in another district.

For the purpose of carrying out the (i) day-to-day implementation of the activities under Institutional Capacity Enhancement Component and road safety, (ii) inter-institutional coordination, (iii) procurement, financial management and monitoring, (iv) external communications and reporting activities, as well as ensuring implementation of compliance with the Safeguards Documents; ICERS Cell under the Director General, Highways Department has been established. The ICERS Cell is headed by a Superintending Engineer, Highways reporting directly to the Director General of the Highways Department, assisted by competent staff including a Divisional Engineer.

The ICERS Cell carries out all the procurement in close coordination with the respective stakeholders participating in the implementation of such Components.

Currently, the ICERS Cell has taken initiatives to establish various institutional arrangements such as Road Safety Executive

Leadership Group (RSELG), Road Safety Management Cell (RSMC), Road Safety Implementation Units (RSIUs) required to perform the tasks under Road Safety Component and ensured effective functioning of those institutions through better coordination. Besides, the cell is working on various sub tasks involved in the ICE and Road Safety components utilizing the support of the Working Committee constituted specifically for the purpose by the Government.

## **4.5 COMMITTEES**

The Director General is the chairperson of all the Technical Committees. The following committees have been formed for the effective functioning of this Department:

- **Board of Engineers (BoE)** is the highest technical authority comprising of all the Chief Engineers of the Highways department and is headed by the Director General for policy decision on technical matters.
- **Commissionerate of Tenders (CoT)** was established with Director General (Highways), the Secretary, Finance/ Representative, the Chief Engineer (Highways), Construction and Maintenance, the Chief Engineer (Highways), NABARD and Rural Roads and the Chief Engineer concerned to streamline the tender acceptance procedure.

- **Revised Administrative Sanction Committee (RASC)** comprises of the representatives of Government in the Finance and Highways Departments, along with three retired Chief Engineers from this department (for the appraisal of technical deviations) for processing and early approval of RASC proposals.



## **5. CONSTRUCTION AND MAINTENANCE**

Construction and Maintenance wing of Highways Department maintains a total length of 57,466 km of Government Roads categorized as State Highways, Major District Roads and Other District Roads. This wing undertakes major infrastructure projects like Widening, strengthening and improvements of roads including construction of Bridges/Grade separators, Culverts, formation of Bypasses and Road safety works, etc.

For executing these works, 8 circles and 41 divisions are functioning under the control of Chief Engineer (Construction and Maintenance).

The details of various categories of works and schemes undertaken by this wing are as follows:

### **5.1 COMPREHENSIVE ROAD INFRASTRUCTURE DEVELOPMENT PROGRAMME (CRIDP)**

The Hon'ble Chief Minister introduced the Comprehensive Road Infrastructure Development Programme (CRIDP) in 2004-2005 for Widening of roads to increase capacity, Strengthening of roads and Formation of Bypasses to enhance the existing road infrastructure facilities in a comprehensive and holistic manner.

### **5.1.1 CRIDP - State Highways**

During 2015-16, spill over works of widening/ improvements to 918.73 km length of roads and construction of 304 bridges/culverts/ protective works were taken up at a cost of Rs. 1407.77 Crore.

New works of widening/improvements to 1228.43 km length of roads and construction of 254 bridges/ culverts/ protective works have been sanctioned at a cost of Rs. 1321.00 Crore in the year 2015-16.

During 2015-16, widening/ improvements in 962.31 km length of roads and 305 bridges/ culverts/ protective works have been completed at cost of Rs. 1299.09 Crore.

Revised budget provision of Rs. 1199.48 Crore has been allotted for the year 2016-17.

### **5.1.2 CRIDP - Major District Roads**

During 2015-16, spill over works of widening/ improvements to 767.13 km length of roads and construction of 130 bridges/ culverts/ protective works were taken up at a cost of Rs. 748.20 Crore.

New works of widening/ improvements to 941.31 km length of roads and construction of 210 bridges/ culverts/ protective works have been sanctioned at a cost of Rs. 728.90 Crore in the year 2015-16.

During 2015-16, widening/ improvements in 819.43 km length of roads and 149 bridges / culverts/ protective works have been completed at a cost of Rs. 845.22 Crore.

Revised budget provision of Rs. 747.34 Crore has been allotted for the year 2016-17.

### **5.1.3 CRIDP - Other District Roads**

During 2015-16, spill over works of widening/ improvements to 1580.79 km length of roads and construction of 72 bridges/culverts were taken up at a cost of Rs. 972.96 Crore.

New works of widening/improvements to 2311.69 km length of roads and construction of 264 bridges/culverts/protective works have been sanctioned at a cost of Rs. 1159.89 Crore in the year 2015-16.

During 2015-16, widening/improvements in 1598.11 km length of roads and 92 bridges/ culverts/ protective works have been completed at a cost of Rs. 705.22 Crore.

Revised budget provision of Rs. 538.18 Crore has been allotted for the year 2016-17.

### **5.1.4 CRIDP - Other District Roads - Special Component Plan**

During 2015-16, spill over works to a tune of Rs. 6.38 Crore was taken up for execution.

New works of widening/improvements to 580.75 km length of roads and construction of

9 bridges/culverts/protective works have been sanctioned at a cost of Rs. 250.23 Crore in the year 2015-16.

During 2015-16, widening/improvements in 320.51 km length of roads and construction of 7 bridges/culverts/protective works have been completed at a cost of Rs. 74.72 Crore.

Revised budget provision of Rs. 315.00 Crore has been allotted for the year 2016-17.

## **5.2 PART II SCHEME**

Good environment with adequate facilities enhances the working abilities of the employees. Construction of new traveller's bungalow helps in reaching remote locations. New buildings and shifting of rented building to own building are done in this scheme.

Under Part II scheme, infrastructure facilities are being improved and Research Studies are being carried out. The State Government allocates funds to this department for construction of buildings, Traveller's Bungalows, purchase of office equipments, laboratory equipments, softwares and for conducting research.

During the year 2015-16, spill over works of 13 buildings were taken up for construction. New works have been sanctioned for construction of office buildings for 5 Divisions, 20 Quality Control sub divisions and 1 Traveller's Bungalow at Uthukuli

at a cost of Rs. 7.50 Crore. These works are in progress.

During 2015-16, 19 buildings have been completed at a cost of Rs. 5.48 Crore.

Revised budget provision of Rs. 3.15 Crore has been allotted for the year 2016-17.

### **5.3 NEW WORKS IN CHENNAI EXTENDED CORPORATION AREA**

In Chennai Extended Corporation area, 250 km length of roads are taken up under this scheme in Chennai, Thiruvallur and Kancheepuram districts.

Hon'ble Chief Minister has announced that works will be taken up for Rs. 1033.00 Crore in the Chennai Extended Corporation Area. As an initiating step of that announcement Government has sanctioned Rs. 250.00 Crore for 7 works in State Highways, 3 works in Major District roads and 4 works in Other District Road and the works are in progress.

In the 2<sup>nd</sup> phase, Rs. 150.00 Crore has been sanctioned for the Extended Corporation Area development works for the year 2015-2016. 22 works covering a length of 60.10 km has been taken up and are in progress.

During 2015-16, 3 works to a length of 9.55 km have been completed at a cost of Rs. 106.86 Crore.

Revised budget provision of Rs. 153.67 Crore has been allotted for the year 2016-17.

## 5.4 FORMATION OF BYPASSES

Bypasses help in reducing traffic congestion in major towns and makes diversion of thorough traffic.

13 bypasses have been completed in the last five years including Rasipuram bypass phase1 part 1 (Km2/8-8/8), completed in the year 2015-16. The present status of bypass works being carried out by this wing is shown in Table5.1.

**Table 5.1: Status of Bypasses**

<b>Details</b>	<b>Nos.</b>
Completed	13
In progress	5
LA work in progress	21
DPR work in progress	4
Under Government consideration	2
<b>Total</b>	<b>45</b>

Formation of bypass to Edapady Town (km. 0/0-8/8) is in progress.

During 2015 - 16, Rs. 42.00 Crore for formation of Thanjavur bypass phase II part 2 from km. 9/0 to 14/265 was sanctioned and the works are in progress. For the work of formation of bypass to Pattukottai phase II from km. 4/2 to 7/4, Rs. 21.90 Crore has been sanctioned. Further, Land

Acquisition for forming bypass to the following towns were sanctioned during the year 2015-16.

**Table 5.2: Land acquisition sanctioned for bypasses during 2015 – 16**

<b>S. No</b>	<b>Bypass</b>	<b>Length in km</b>	<b>Cost in Crore</b>
1	Walajahbad	6.01	66.33
2	Kamuthi	6.40	1.50
3	Kumbakonam	9.42	28.00
4	Valangaiman	5.40	3.14
5	Mettupalayam	7.25	99.35
6	Coimbatore Western Ring Road	32.42	320.00

During the year 2015-16, Rs. 21.47 Crore has been sanctioned for formation of bypass to Illupur town in Pudukottai District and Rs. 20.63 Crore has been sanctioned for formation of Eastern Bypass to Pollachi town.

Land Acquisition for the bypasses to the following towns have been sanctioned at a cost of Rs. 712.39 Crore and are in progress.

**Table 5.3: Details of Land acquisition works for bypasses during 2016 – 17**

<b>S. No</b>	<b>Bypass</b>	<b>Length in km</b>	<b>Cost in Crore</b>
1	Tiruvarur	9.98	10.10
2	Thiruthuraiipoondi	2.46	0.53
3	Periyapalayam	1.70	2.17
4	Sivagangai	10.60	1.00

<b>S. No</b>	<b>Bypass</b>	<b>Length in km</b>	<b>Cost in Crore</b>
5	Tharamangalam	2.93	1.10
6	Tirutani	3.24	11.61
7	Manachanallur (Trichy District)	2.62	14.40
8	Mannargudi Ring Road	21.40	10.06
9	Pudukottai Ring Road	21.25	13.60
10	Parthibanur Ring Road (Ramanathapuram district)	3.60	0.88
11	Sivakasi Ring Road	22.00	33.50
12	Karur Ring Road	32.10	77.00
13	Uthiramerur	4.09	7.00
14	Illupur (Pudukottai district)	5.40	4.00
15	Walajabad	6.01	66.33
16	Kamuthi	6.40	1.50
17	Rasipuram phase I, part-II	4.87	7.12
18	Kumbakonam	9.42	28.00
19	Valangaiman	5.40	3.14
20	Mettupalayam	7.25	99.35
21	Coimbatore Western Ring Road	32.42	320.00
	<b>Total</b>	<b>215.14</b>	<b>712.39</b>

Further preparation of Detailed Project Report for bypasses to Thiruvallur, Vettavalam, Dindigal and Thuraiyur phase II are in progress.

## **5.5 RAILWAY OVER BRIDGE AT RAILWAY LEVEL CROSSING**

Construction of ROB at Athipattu (L.C No.13) in Thiruvallur District at a cost of

Rs. 23.30 Crore is in progress under Railway Works Programme (RWP).

In Nagappattinam district, Construction of ROB at Sirkali (LC- 216) was completed by Railway Authorities and construction of approaches to ROB was taken up through State funds to facilitate traffic flow. This work has been taken up at a cost of Rs. 12.00 Crore and is nearing completion.

Construction of ROB at Textool in Coimbatore district, under CRIDP scheme at a cost of Rs. 20.00 Crore was completed and opened for traffic.

## **5.6 PERFORMANCE BASED MAINTENANCE CONTRACT (PBMC)**

Performance Based Maintenance Contract for roads is designed to increase the efficiency and effectiveness of road asset management. PBMC ensures good condition of the roads fulfilling adequate need of road users, throughout entire period of the contract. This scheme includes Initial Rectification, Periodical Renewal, Minor Improvements, Ordinary Maintenance and Emergency works.

In Pollachi highways division, Performance Based Maintenance Contract (PBMC) is being implemented in 191.40 km of State Highways (SH) and 185.98 km of Major District Roads for a period of five years at a cost of Rs. 233.93 Crore. Initial

rectification works for 152.59 km have been completed and periodical renewal works are in progress.

Subsequently, in Krishnagiri highways division, maintenance of 307 km length of State Highways and 274 km length of Major District Roads are also taken under Performance Based Maintenance Contract. A sanction of Rs. 450 Crore was accorded and these works are in progress.

In Ramanathapuram Highways division sanction was accorded for Rs. 460 Crore for maintenance of 229 km length of State Highways and 340 km length of Major District Roads under Performance Based Maintenance Contract (PBMC) and the works are in progress.

In Thiruvallur highways division sanction was accorded for Rs. 630.38 Crore for maintenance of 498 km length of State Highways and 278 km length of Major District Roads under this scheme and the works are in progress.

## **5.7 CHENNAI PERIPHERAL RING ROAD**

Government of Tamil Nadu is in the process of identifying and implementing infrastructure projects. One of the major projects included in Vision 2023 is Chennai Peripheral Ring Road. Chennai Peripheral Ring Road is conceptualized to provide a better connectivity around the city catering future traffic requirements and provide

efficient commercial transportation by enhancing port connectivity. This road will facilitate container movement from southern districts to Ennore Port.

This road starts at Ennore Port and ends at Poonjeri Junction near Mamallapuram having a length of 133.65 km which is split into 5 sections

Section-I: Northern Port Access Road – Ennore Port to Thatchur on NH-5 (25.50 km)

Section-II: Thatchur on NH-5 to start of Thiruvallur Bypass (26.25 km)

Section-III: Start of Thiruvallur Bypass to Sriperumbudur on NH-4 (29.55 km)

Section-IV: Sriperumbudur on NH-4 to Singaperumalkoil on NH-45 (24.85 km)

Section-V: Singaperumalkoil on NH-45 to Mamallapuram (27.50 km)

The Government has sanctioned Rs. 10 Crore for the preparation of Detailed Project Report (DPR) for this work and the same has been completed. The project cost including Land acquisition has been worked out to Rs. 12301 Crore. The proposal for external funding through JICA has been sent to Government of India and is under consideration of Government of India. Currently, utility mapping on the proposed corridor is being carried out.

## **5.8 FORMATION OF ROAD GRIDS ALONG CHENNAI OUTER RING ROAD**

Chennai Outer Ring Road is a major orbital corridor for Chennai metro region. The traffic originates on this corridor will have to be provided with effective dispersal system to link with the radial corridors and thus a grid system of road with radial and orbital linkages have been proposed. 18 Nos. of macro grid linkages have been identified and all these links are to be developed in consonance with the stipulations in Second Master Plan of Chennai Metropolitan Development Authority.

Out of 18 nos. of macro linkages 15 nos. of grids are taken up by Construction and Maintenance wing. Government have proposed to create Road Grids for effective dispersal of traffic originating from Chennai Outer Ring Road and sanctioned Rs. 5.22 Crore for preparation of detailed project report. Preparation of detailed project report has been completed for 15 road grids.

## **5.9 ROAD SAFETY WORKS**

A comprehensive proposal to improve the black spots in the Government roads has been prepared at an estimated cost of Rs. 1130 Crore. The proposal includes the following engineering measures:

1. Widening of narrow culvert (where width of the culvert is less than carriage way).

2. Widening of narrow culvert (where width of the culvert is narrow as per IRC).
3. Realignment of 'S' curve (radius of the curve is less than 90m).
4. Realignment of 'S' curve (radius of the curve is more than 90m).
5. Construction of safety wall/crash barrier around the road side open well/tank bunds.
6. Construction of safety wall/crash barrier along high embankment.
7. Construction of safety wall/crash barrier in ghat roads.
8. Construction of center median.
9. Provision for road furniture (gantry boards, studs, delineators, center line marking).
10. Junction improvements.

The above road safety works are being implemented in the phased manner as tabulated in **Table 5.4** below

**Table 5.4: Allotment of funds for Road Safety**

<b>Year</b>	<b>Scheme</b>	<b>Amount Rs. in Crore.</b>
2014-15	Road Safety	200
	CRIDP	250
2015-16	Road Safety	100
	CRIDP	200

During the year 2015-16, 2113 no. of works have been completed at an expenditure of Rs. 99.57 Crore.

During the year 2016-17, Rs. 150 Crore under CRIDP scheme for road safety works and Rs. 100 Crore under road safety fund is proposed.

## **5.10 NON-PLAN MAINTENANCE WORKS**

During 2015-16, an allocation of Rs. 819.73 Crore has been made for maintenance of roads and bridges.

Comparing with the allocation made in the year 2014-15, there was a shortfall of Rs. 337.33 crore in maintenance grant since 14th Finance Commission has not provided grant for Tamil Nadu Highways Department under non-plan maintenance.

During 2015-16, renewal of 2842 km length of roads has been completed at an expenditure of Rs. 852.09 Crore.

Revised budget provision of Rs. 859.28 Crore has been made for 2016-17.

## **5.11 MAJOR WORKS ANNOUNCED BY THE HON'BLE CHIEF MINISTER OF TAMIL NADU**

At present people use the existing Kodai-Ghat Road (SH 156), Thandikudi Ghat Section and Ghat Road connecting through Perumalmalai-Adukkam. But Kodai-Cochin road was closed by Forest Department to preserve the flora and fauna. Tourists from Kerala and Theni have to take a long route to reach Kodikanal. The labourers from Kerala and local villagers suffered a lot by travelling through circuitous route to their work place. Hence the Hon'ble Chief Minister of Tamil Nadu has made

an announcement that "Feasibility of widening and relaying the Periyakulam to Kodaikanal Road will be examined". Accordingly the Government has sanctioned Rs. 69.50 Crore for the work of carrying out improvements and rebuilding to Periyakulam-Kodaikanal (via) Adukkam road (km 0/0-35/9) and the works are in progress.

The Hon'ble Chief Minister of Tamil Nadu has announced that "A road will be laid between Chinnamanur and Megamalai in Theni district". Accordingly the Government has sanctioned Rs. 80.67 Crore for the work of "Rebuilding and widening from single lane to Intemmediate lane of Chinnamanur – Iravangalar road via Megamalai (km 0/0 – 35/0)".

The Hon'ble Chief Minister of Tamil Nadu has announced that "To reduce the traffic congestion in Salem City Five roads junction, a flyover will be constructed". Accordingly the Government has sanctioned Rs. 320 Crore for the work of "Construction of two tier flyover at Five Roads Junction including construction of flyover upto Ramakrishna road junction and four road junction in Salem city". The works are in progress.

The Hon'ble Chief Minister of Tamil Nadu has announced that "A Multi lane flyover will be constructed at a cost of Rs. 50.00 Crore in Thiruvagoundanur junction of Salem city". Accordingly the Government has sanctioned

Rs.111.40 Crore for the construction of combined flyover at Kuranguchavadi and AVR roundana junction and Rs. 26.77 Crore for construction of flyover in Thiruvagoundanur Junction in Salem city.

The Hon'ble Chief Minister of Tamil Nadu has made an announcement that "Flyovers at Athupalam, Ukkadam and Western Ring road will be constructed". The Government has sanctioned Rs. 88.61 Crore for the acquisition of land and shifting of utilities for the "Construction of Flyover along Athupalam and Ukkadam Junction in Coimbatore City". Also the Government has sanctioned Rs. 121.82 Crore for the work of "Construction of Flyover along Athupalam and Ukkadam Junction upto Oppanakara Street in Coimbatore City".

The Government has sanctioned Rs. 320 Crore for the acquisition of land for Formation of Western Ring Road to Coimbatore City.

Based on the announcement of the Hon'ble Chief Minister of Tamil Nadu, Rs. 33.57 Crore for Acquisition of land for the "Widening and ground level improvement of Dindigul-Bangalore Road (NH-209), Pollachi-Palaghat Road (State Highways-78A), Municipal Bus Route Road (Other District Roads) and New Scheme Road (Pollachi Municipal Road) in Pollachi Town" has been sanctioned. The Government has sanctioned Rs. 20.63 Crore towards the work of "Formation of Eastern Bypass to Pollachi Town starting from Thippampatty at km.111/4 of NH-209

and ending Achipatty at km 124/8 of NH-209 (via) Alampalayam, Rasakkapalayam, Kullakkapalayam to a length of 15.40 km”.

The Hon’ble Chief Minister of Tamil Nadu has made an announcement that “In Tiruvannamalai 14 km Girivalam Pathai roads will be developed by widening the footpath, lighting and provision for rest room facilities”. The Government has sanctioned Rs. 65 Crore for the above work. Now the works are in progress.

The Hon’ble Chief Minister of Tamil Nadu has made an announcement that “To reduce traffic congestion in GST road, a flyover will be constructed at the Junction of km 32/4 of GST road and Vandalur-Mambakkam- Kelambakkam road”. The Government has sanctioned Rs. 60 Crore for the above work. Utility shifting works are in progress.

The Hon’ble Chief Minister of Tamil Nadu has made an announcement that “Two flyovers one each at Kalavasal and Goripalayam would be constructed”. Accordingly, the Government has sanctioned Rs. 164.28 Crore for the Acquisition of land and LA works are in progress.

As per the announcement of Hon’ble Chief Minister of Tamil Nadu, Government has sanctioned an amount of Rs. 38 crore for acquisition of land for construction of elevated corridor from Madurai Periyar Bus Stand to Sethupathi High School, Meenakshi

Mission Hospital Junction in Madurai City and land acquisition is in progress.

## **5.12 OVERALL EXPENDITURE (2015-16) AND ALLOCATION FOR 2016-17**

During 2015-16, a total of 3700.36 km length of road works, one bypass to Rasipuram, 19 buildings and 553 bridges / culverts / protective works have been completed at an expenditure of Rs. 3949.91 Crore.

For 2016-17, a total Revised budgetary allocation of Rs. 3956.71 Crore has been earmarked for this wing.



**Integrated Chief Engineers' Office Complex in Chennai inaugurated by the Hon'ble Chief Minister on 14.02.2016**



**Interior view of Integrated Chief Engineers' Office Complex inaugurated by the Hon'ble Chief Minister**





**Chief Engineers Quarters at Guindy in Chennai  
inaugurated by the Hon'ble Chief Minister on 01.03.2016**



**Sengipatti Travellers Bungalow in Thanjavur District  
inaugurated by the Hon'ble Chief Minister on 14.02.2016**





**Bridge across Kollidam River in Trichy District (Srirangam)  
inaugurated by the Hon'ble Chief Minister on 14.02.2016**



**Muthalakkampatti Bridge in Theni district  
inaugurated by the Hon'ble Chief Minister on 14.02.2016**



## 6. NATIONAL HIGHWAYS

The National Highways roads are the arterial roads which traverse throughout the state as well as the Nation connecting different State capitals, Major ports, industrial areas and important tourist centres. Hence these roads always encounter very high traffic intensity.

The length of National Highways in the State of Tamil Nadu is 4994 km out of which 1985 km are maintained by National Highways wing and the balance 3009 km are maintained by the National Highways Authority of India (NHAI). National Highways roads are being developed by widening two lane / four lane / six lane with paved shoulders and by strengthening the existing riding surface with the funds obtained from the Ministry of Road Transport and Highways, Government of India.

The lane-wise details of National Highways roads in the State are detailed in **Table 6.1**.

**Table 6.1: Lane-Wise Details of National Highways in Tamil Nadu**

**Length in km**

Sl. No	Maintained by	SL	IL	DL	ML	Total
1	NH wing	12	26	1825	122	1985
2	NHAI	-	-	906	2103	3009
	<b>Total</b>	<b>12</b>	<b>26</b>	<b>2731</b>	<b>2225</b>	<b>4994</b>

## **6.1 CORE ACTIVITIES**

The Tamil Nadu State National Highways wing consists of four circles and eight divisions under the administrative control of one Chief Engineer. The development of National Highways under the control of State Government are being carried out by utilizing the funds from Ministry of Road Transport and Highways, Government of India. The Nature of works such as improvements, widening, strengthening, construction of bridges and maintenance works are being carried out by this wing.

The following schemes are being implemented by this wing.

- National Highways Works - The schemes, carried out on National Highway roads under the control of state NH wing are as follows
  - Plan works - NH (Original) Works
  - Non Plan works – PR /IRQP works
- Centrally Sponsored Scheme works – The Schemes, carried out by State NH wing on roads such as State Highways, Major District Roads and Other District Roads are as follows,
  - Revamped Central Road Fund Scheme (RCRF)
  - Inter State Connectivity Scheme (ISC)
  - Economic Importance (EI) Scheme with 50% State Government Share.

- Hill area Development programme (HADP)
- Pradhan Mantri Gram Sadak Yojana (PMGSY)

## **6.2 PROJECTS AND SCHEMES IMPLEMENTED BY NATIONAL HIGHWAYS WING**

### **6.2.1 Plan Works**

During 2015-16, spill over works costing Rs. 1322.80 Crore comprising of 24 road works having a length of 504 km and 8 bridge works were taken up. Further, the MORTH, GoI had sanctioned 6 road works and 4 bridge works amounting to Rs 542.31 Crore under Annual Plan 2015-16 and one work to a length of 26.85 km amounting to Rs 656.51 Crore under NHDP phase - IV. Out of the above works, 13 road works having a length of 119.10 km and one bridge work have been completed at a cost of Rs. 336.64 Crore during 2015-2016 and the balance works are in progress.

Further, under Annual Plan 2016-17, Government of India has accorded approval for Road/Bridge/Protective works to a tune of Rs. 208 Crore and the Ministry has sanctioned 16 road works to length of 57.50 km amounting to Rs.138.94 Crore and are in tender stage. The estimates for the balance works have been sent to the Ministry for approval.

The Hon'ble Union Minister of Road Transport, Highways & Shipping and the Hon'ble Union Minister of State for Road Transport, Highways & Shipping in the presence of the Hon'ble Minister for Highways and Minor ports Department, Tamil Nadu laid foundation stone for 8 projects on National Highways of State NH wing, costing Rs.873.12 Crore on 17.07.2015 at Suchindram, Kanyakumari District. Further, foundation stone for 2 projects costing Rs. 449.67 Crore was laid on 19.01.2016 at Marthandam, Kanyakumari District. The projects are as follows,

1. Construction of major bridge at Suchindram on NH 47 - Kanniyakumari - Kerala border road at a cost of Rs. 7.54 Crore.
2. Paved shoulder from Ramanathapuram - Dhanushkodi section of NH 49 (Madurai - Dhanushkodi road) at a cost of Rs. 118.77 Crore.
3. Construction of missing link on Dhanushkodi road of NH 49 (Madurai - Dhanushkodi road) at a cost of Rs. 34 Crore
4. Widening from two lane to four Lane on Madurai - Theni section of NH 49 Extn (Madurai - Cochin road) at a cost of Rs. 58.60 Crore
5. Paved Shoulder on Tirupuvanam - Thondi section of NH 230 (Madurai - Thondi road) at a cost of Rs. 65.24 Crore.

6. Paved Shoulder on Vellore - Villupuram section of NH 234 (Villupuram - Mangalore road) at a cost of Rs. 268.92 Crore.
7. Paved shoulder / Four laning on Cuddalore - Virudhachalam section of NH 532 (Cuddalore - Vridhachalam - Salem road) at a cost of Rs. 158.35 Crore.
8. Paved Shoulder on Perambalur - Thanjavur section of NH 226 Extn at a cost of Rs. 161.70 Crore.
9. Widening to 4-lane/4-lane with paved shoulder with strengthening of existing carriageway in km 0/0-31/8 of NH 381 Avinashi - Tiruppur - Avinashipalayam road at a cost of Rs. 162.72 Crore.
10. Construction of flyover from km 604/ 252 to km 607/060 (Marthandam Junction) and from km 630/116 to km 631/650 (Parvathipuram Junction) of NH 47 - Kanniyakumari - Kerala border road, at a cost of Rs. 307.70 Crore.

### **6.2.2 MISSING LINK OF NH - 49 (Madurai – Dhanushkodi road)**

The road stretch between Mugundharayar chatiram and Arichalmunai (9.50 km) of Madurai – Dhanushkodi road (NH 49) was destroyed in the Dhanushkodi Cyclone during 1964. The long felt need of public of Rameshwaram and other tourists has now been fulfilled after 50 years by providing

connectivity from Mugundharayarchatiram to Dhanushkodi. Further, the connectivity from Dhanushkodi to Arichalmunai (Erosion point) is also in progress and targeted to complete within this financial year.

### **6.2.3 Non - Plan Works**

Under Periodical Renewal (PR) / Improvement of Riding Quality Programme (IRQP), 9 road works to a length of 125.09 km amounting to Rs. 73.69 Crore were taken up as spill over during 2015-16.

Further, MORTH, GoI sanctioned 12 new road works to a length of 155.13 km at a cost of Rs. 97.99 Crore under PR/IRQP 2015-16. In addition, the Ministry had sanctioned 18 works to a length of 241.62 km at a cost of Rs. 123.51 Crore under PR/IRQP 2016-17 phase-I during January – March 2016. Out of the above works, 18 road works to length of 280.21 km have been completed incurring an expenditure of Rs. 139.41 Crore. The balance works would be completed during this financial year.

### **6.2.4 NHAI stretches taken over for maintenance**

The National Highways 45C, 47, 67, 67 Extn, 205 (22 km Padi - Thirunindravur Urban stretch), 226 and 227 were entrusted to NHAI for development in the year 2005. Until 2013, these

stretches were neither awarded to the concessionaires nor maintained by NHAI which led to severe public as well as media criticism. On intensive pursuance of State Government, the Ministry handed over 750 km stretches of the above NHs in December 2013 to the State NH wing for maintenance.

Since then, the Ministry had sanctioned 26 nos. of periodical renewal works to a length of 521.66 km amounting to Rs. 266.46 Crore in which 20 works to a length of 441 km have been completed and the balance works are in progress.

## **6.2.5 Centrally Sponsored Schemes**

The Government of India with the accruals from 50% cess levied on the consumption of High Speed Diesel and entire 100% cess on Petrol formulated the Central Road Fund. Out of this, 30% of the amount is allocated annually for development and maintenance of State roads under Revamped Central Road Fund/ Economic Importance/ Inter State Connectivity Schemes.

### *6.2.5.1. Revamped Central Road Fund Scheme (RCRF)*

Under this scheme, 3 road works to a length of 44.30 km and one bridge work were taken up as spill over to a tune of Rs. 41.67 Crore during 2015-16. Further, 76 road works to a length of 485.20 km and 2 bridge works amounting to

Rs. 390.00 Crore was administratively approved by the GoI and technically & financially sanctioned by the GoTN under RCRF 2015-16.

Out of the above, 6 road works to a length of 50.20 km have been completed at a cost of Rs. 158.17 Crore during 2015-16. Balance 72 road works and 3 bridge works are in progress and Mayiladuthurai bypass work is in LA stage.

A revised budget provision of Rs. 166.13 Crore has been made for the financial year 2016-17 by the State Government under this scheme.

#### *6.2.5.2. Suchindram bypass*

Further the construction of bypass to Suchindram town, starting from Ashramam to Ethankadu in Kanniyakumari district to a length of 3.6 km amounting to Rs. 24.50 Crore has been administratively approved by the GoI and financially sanctioned by the GoTN under RCRF scheme 2015-16 and the work is in progress.

#### *6.2.5.3. Inter State Connectivity Scheme (ISC)*

The works under this scheme were carried out by the reimbursement system and hence the budget provision was made by State Government up to the financial year 2014-15. Now, the Ministry has

changed the payment mode of this scheme to Direct Payment Procedure (DPP) system from 2015-16.

In the year 2015-16, the MORTH, GoI had sanctioned 2 road works to a length of 95.85 km amounting to Rs. 90.91 Crore which are in progress.

### **6.2.6 Pradhan Mantri Gram Sadak Yojana (PMGSY)**

The PMGSY / Bharat Nirman Programme was launched by Ministry of Rural Development with the funds from the accruals of 50% cess levied on High Speed Diesel to provide road connectivity to the unconnected habitations of rural India and upgradation of existing rural roads. Out of this, upgradation of Other District Roads which have been included in the core network are being executed by the National Highways wing.

#### *6.2.6.1. Pradhan Mantri Gram Sadak Yojana phase VIII (2012-13)*

Under this programme, 330 Other District Road works to a length of 1062.55 km amounting to Rs. 278.54 Crore have been taken up for upgradation. Out of these, 327 Other District Road works to a length of 1056.95 km have been completed at a cost of Rs. 274.89 Crore till date.

#### *6.2.6.2. Pradhan Mantri Gram Sadak Yojana phase IX (2014-15)*

Under this programme, 57 Other District Road works to a length of 164.04 km amounting to

Rs. 47.65 Crore have been taken up for upgradation. Out of these, 2 works to a length of 5.40 km have been completed at a cost of Rs. 15.14 Crore and the balance works are in progress.

### **6.3 OVERALL EXPENDITURE DURING (2015-16) AND ALLOCATION FOR THE YEAR 2016-17**

A total allocation of Rs. 497.42 Crore has been made by the MORTH for NH works. Out of this, Rs. 496.49 Crore expenditure has been incurred during 2015-16. Further an amount of Rs. 158.94 Crore has been spent under the Centrally Sponsored State Plan Schemes during 2015-16.

An allocation of Rs.518.91 Crore has been made by the Ministry of Road Transport and Highways for NH works and Rs. 63 Crore for ISC and EI works for 2016-17. Apart from this, a revised budget provision of Rs. 166.13 Crore has been earmarked under Centrally Sponsored State Plan Schemes for 2016-17 by the State Government.

### **6.4 PROJECTS EXECUTED BY NATIONAL HIGHWAYS AUTHORITY OF INDIA (NHAI)**

Under the parliamentary functionalities of Government, NHAI act was passed to constitute the National Highways Authority of India during the year 1988 for the development, maintenance and

management of National Highways entrusted and it was operationalized in February 1995. NHAI is implementing the National Highways Development Programme (NHDP) works approved by Government of India in seven phases. Apart from this, roads, flyovers, underpasses and grade separators are also being constructed and improved by NHAI under Port Connectivity Scheme and Other Special Project Schemes.

National Highways 4, 5, 7, 7A, 45, 45A, 45B, 45C, 46, 47, 47B, 49, 66, 67, 68, 205, 209, 210, 220, 226 and 227 in the State of Tamil Nadu are taken up for development under various phases of NHDP by Government of India through NHAI.

State Government extends its co-operation and assistance to NHAI in the matters of preconstruction activities such as land acquisition and shifting of utilities etc.

#### **6.4.1 Works Completed by NHAI**

2927 km length of roads at a cost of Rs. 16730 Crore have been upgraded to six/four lane / two lane with paved shoulders in Tamilnadu since the inception of NHAI.

#### **6.4.2 WORKS AWARDED BY NHAI DURING THE YEAR 2015-16**

The project of 4-laning of Madurai - Paramakudi section and 2-lane with Paved

Shoulders of Paramakudi – Ramanathapuram section of NH-49 for a total length of 115.77 km at a cost of Rs. 1135 Crore has been awarded during the financial year 2015 - 16 and the works have commenced. The stretch from Kerala TN Border – Villukuri section of NH - 47 for a length of 27.25 km at a cost of Rs. 988.65 Crore and Villukuri - Kanniyakumari section for a length of 42.70 km at a cost of Rs.994.79 Crore have also been awarded during 2015 - 16.

#### **6.4.3 WORKS UNDER IMPLEMENTATION BY NHAI IN THE YEAR 2016-17:**

Projects involving a total length of 632 km of National Highways at an estimated cost of Rs. 3000 Crore are under implementation in the state.

#### **6.4.4 WORKS TO BE AWARDED BY NHAI in 2016-17 and 2017-18**

In the year 2016-17, projects for a total length of 494.40 km at an estimated cost of Rs. 4900 Crore and in the year 2017-18 projects for a total length of 737.60 km at an estimated cost of Rs. 12450 Crore, under various Phases of NHDP, are to be awarded after completion of the Land Acquisition process.

#### **6.4.5 PORT CONNECTIVITY SCHEME**

The port connectivity scheme was formulated by Cabinet Committee on Economic Affairs (CCEA)

in the year 2000 with an objective to connect 12 important ports in India by establishing a Special Purpose Vehicle (SPV) under the aegis of NHAI. Special Purpose Vehicles (SPV) have been established in Tamil Nadu to improve the roads connecting 3 major ports Chennai, Ennore and Thoothukudi. The work of "Thoothukudi Port Connectivity" has been completed in January 2013.

#### *6.4.5.1. Chennai - Ennore - Manali Road Improvement Project (EMRIP)*

In order to implement this project, NHAI established a Special Purpose Vehicle (SPV) namely Chennai Ennore Port Road Company Limited with Government of Tamil Nadu (GoTN), Chennai Port Trust (CPT) and Ennore Port Limited and NHAI as Partners.

The State Highway stretches taken up for improvements under this Port Connectivity Scheme are detailed in **Table 6.2**.

**Table 6.2: Roads covered under EMRIP**

<b>Sl. No</b>	<b>Name of work</b>	<b>Length in km</b>
1	Tiruvotriyur – Ponneri - Pancheti Road (4 laning with service road and improvement)	9.00
2	Manali oil refinery road (Improvement)	5.40
3	Northern segment of Inner Ring Road (Paved Shoulder and Improvement)	8.10
4	Ennore expressway (4 laning and improvement)	7.50
	<b>Total</b>	<b>30.00</b>

The estimated cost of the project is Rs. 600 Crore. The details of contributions by the share holders of the company are as given in **Table 6.3**

**Table 6.3: Cost sharing details of EMRIP**

Sl. No.	Agency	Contribution	Loan	Total	Contributed so far
		Rupees in Crore			
1	NHAI	139.80	117.50	257.30	299.82
2	CPT	139.80	110.68	250.48	139.80
3	GoTN	58.20	--	58.20	58.20
4	Ennore Port Ltd.	34.02	--	34.02	34.00
	<b>Total</b>	<b>371.82</b>	<b>228.18</b>	<b>600.00</b>	<b>531.82</b>

Note: In addition to the contribution amount of Rs.371.82 Crore, NHAI/CEPRCL has released further amount of Rs.160.00 Crore for implementation of the project.

In order to protect Ennore Expressway from sea erosion, 10 groynes and seawall for a length of 500m along the sea coast at a cost of Rs. 24.58 Crore were constructed.

Further, 1824 houses have been built for the project affected families in Ennore Expressway, and out of these, 1814 families have occupied their houses.

93% of works of this project have been completed. The balance works will be completed soon.

#### **6.4.6 Bypasses taken up and executed by NHAI**

As a part of NHDP, 124 bypasses have been taken up by NHAI for execution. Out of this, 78 bypasses have been completed and 46 bypasses are in various stages of implementation.

#### **6.4.7 Land Acquisition**

Land Acquisition is being carried out under the provisions of the National Highways Act 1956 for implementation of National Highways Development programme. Totally 26 no. of Competent Authority for Land Acquisition (CALA) establishments are functioning in the State for acquisition of land for NHAI Projects. Out of which, 15 are Special DROs, 9 are regular DROs and 2 are RDOs.

So far a total extent of 3324 Ha of land has been acquired for the ongoing as well as projects proposed to be awarded. The balance extent of 4681 Ha of land needs to be acquired.

#### **6.4.8 PENDING ISSUES WITH NHAI**

The following long pending issues with NHAI have been represented to NHAI/ MoRTH and need intervention of GoI for resolution:

- Inordinate delay by the Concessionaire in executing Tindivanam – Krishnagiri section of NH 66 and poor maintenance of existing road causes inconvenience to public and attracts media criticism and court cases.

- 6 / 8 laning of Tambaram – Tindivanam section of NH 45 to cater the present day heavy traffic, which exceeds more than 35,000 PCU which is the prescribed norm for widening to 6/8 lane.
- Reimbursement of Rs.108.30 crore towards the maintenance works which were carried out by the State Government due to very poor condition of roads and to avert accidents and public criticism in NH 45C, NH 47, NH 226, NH 227 and NH 205 (Padi – Thirunindravur section) and for the improvement works being carried out in the bypass portions of NH 45 Extn. (Dindigul – Theni section) and NH 220 (Theni – Kumuli section) due to neglect and non maintenance of National Highways by NHAI.
- Inordinate delay in issuance of No objection certificate for the construction of ROB / RUB in Tambaram – Tindivanam section of NH 45 in lieu of LC. No.32 and 33 (Perungalathur).
- Formation of Ring road to Salem city connecting all National Highways and State roads passing through Salem City.
- Construction of Grade Separators/ Vehicular Underpass wherever the important State roads cross NHAI roads to avoid accidents.
- NHAI has not carried out proper maintenance work in the existing stretch from Koyambedu to Maduravoyal. On intensive pursuance of the State Government, the NHAI has requested Rs.14.60 Crore from its Head Quarters for

maintenance of the above stretch but these stretches are not yet restored to traffic worthy condition.

- The stretch from Chennai to Wallajah of NH4 is not being maintained properly by the concessionaire which has attracted severe public criticism and court cases.





**Section of Madurai - Ramanathapuram - Dhanushkodi  
Road NH 49 (Cyclone(1964) affected missing link)**



**Madurai - Cochin Road (NH 49 Extn)  
Bridge across Vaigai River**







## **7. NABARD AND RURAL ROADS**

This wing is headed by a Chief Engineer with four Superintending Engineers at Circle level and fourteen Divisional Engineers at District level. Construction of Bridges and improvements of roads with loan assistance from National Bank for Agriculture and Rural Development (NABARD), in addition, construction of Road over Bridges, Road under Bridges and land acquisition for By-passes are carried out by this wing.

### **7.1 NABARD LOAN ASSISTANCE SCHEMES**

#### **7.1.1 Construction of River Bridges in Government and Panchayat Union Roads**

Under this scheme spillover of 167 bridges at a cost of Rs 485.10 Crore and newly sanctioned 22 bridges with a cost of Rs 49.24 Crore, totally 189 Bridges with a cost of Rs. 534.34 Crore have been taken up for execution during 2015-16. Of these bridge works, 83 works are completed, 91 works were in progress and the remaining works are in pre-construction stage.

During 2015-16, 83 bridges were completed with an expenditure of Rs 202.56 Crore. The details of Major Bridge works completed and which were inaugurated by Hon'ble Chief Minister are given in **Table 7.1**

**Table 7.1: Major Bridges completed and inaugurated by Hon'ble Chief Minister during 2015-16**

**Bridges opened on 02.06.2015**

<b>Sl. No.</b>	<b>District/ Constituency</b>	<b>Name of work</b>	<b>Cost (Rs. in Crore)</b>
1	Salem / Veerapandi	Construction of bridge at km 8/10 of Mallur Veerapandi road.	2.60
2	Krishnagiri / Krishnagiri	Construction of a high level bridge at km 10/2 of Soolagiri - Rayakkottai road	2.73
3	Dharmapuri / Palacode	Construction of a High level bridge at km 10/2 of a Pulikarai - Mukkulam Road in lieu of existing piped causeway	2.73
4	Dharmapuri / Pappireddipatti	Construction of High Level Bridge at km 6/8 of Semmanahalli - Ariyakulam road in lieu of existing Piped causeway.	2.20
5	Coimbatore/ Mettupalayam	Construction of high level bridge at km 11/2 of Annur - Sirumugai road.	4.00
6	Coimbatore/ Pollachi	Reconstruction of bridge at km 78/10 of Avinashi - Tiruppur - Palladam - Pollachi - Cochin (via) Meenkarai road.	2.35

<b>Sl. No.</b>	<b>District/ Constituency</b>	<b>Name of work</b>	<b>Cost (Rs. in Crore)</b>
7	Pudukkottai/ Alangudi	Reconstruction of high level bridge km 0/8 of Isugupatty road in Thiruvarankulam Panchayat Union	4.11
8	Madurai / Thirumangalam	Construction of High Level Bridge at km 77/6 - 77/8 of Vathalakundu - Peraiyur - Kariyapatti Road.	7.27
9	Tirunelveli / Sankarankovil	Construction of High Level Bridge at km 4/4 of Karisalkulam - Kalingapatti road. across Nichobanathi River.	3.42
10	Sivagangai/ Manamadurai	Construction of High level bridge at 52/4 of Ramanathapuram - Nainarkoil -Andakudi - Elayankudi -Sivagangai - Melur road.	3.78
11	Sivagangai/ Thiruppathur	Construction of High level bridge at km 8/4 of Nerkuppai - Kandavarayanpatti road.	2.17

### Bridges opened on 13.11.2015

Sl. No.	District/ Constituency	Name of work	Cost (Rs. in Crore)
1	Vellore / Tirupathur	Construction of High Level Bridge at km.92/8 Hokenakkal - Pennagaram - Dharmapuri - Thirupathur road	3.40
2	Villupuram / Vanur	Construction of High level bridge at km.8/2 of Vanur-Kandamangalam road across Sankarabarani river	13.32
3	Villupuram / Ulundurpet	Construction of Bridge at km 33/10 of Viruthachalam - Ulundurpet -Viluppuram Road across Gedilam River	8.36
4	Salem / Attur	Construction of Bridge in lieu of existing causeway at km 0/2 of Edapatty Pudur river bank to East Kannimar Koil road - across Kariyakoil river.	2.50
5	Salem / Veerapandi	Construction of High Level Bridge at km 1/2 of Puthiragoundampalayam - Edapatty Road (via) Panamadal across Vasista river.	4.40

<b>Sl. No.</b>	<b>District/ Constituency</b>	<b>Name of work</b>	<b>Cost (Rs. in Crore)</b>
6	Salem / Gangavalli	Construction of bridge across Swetha River at km 21/4 of Krishnapuram - Poolambadi - Kallappatty - Veeraganur road	3.17
7	Namakkal / Thiruchengodu	Construction of a bridge at km 3/10 of Vaiyappamalai - Ramapuram road in Somanapatty village of Paruthipalli Panchayat across Thirumanimutharu river.	2.85
8	Dindigul / Dindigul	Construction of Bridge at km 0/4 of Mullipadi Village Road	2.30
9	Thanjavur / Orathanadu	Reconstruction of Bridge at km 3/2 of Pulavankadu - Pinnaiyur Road	2.00
10	Cuddalore / Cuddalore	Construction of bridge at km 1/4 of Thennampakkam - Embalam road	2.92
11	Pudukottai / Aranthangi	Construction of high level bridge at km.0/10 of Nilaiyur Siruvarai road	4.25

<b>Sl. No.</b>	<b>District/ Constituency</b>	<b>Name of work</b>	<b>Cost (Rs. in Crore)</b>
12	Virudhunagar / Virudhunagar	Construction of Bridge at km 9/2 of Amathur - Lakshmiapuram road including improvements to the road from km 4/0 - 9/2	2.27
13	Virudhunagar/ Sivakasi	Construction of Major Bridge at km 5/4 of Viswanatham - Venkatachalapuram	2.75
14	Coimbatore / Singanallur	Construction of ROB at km 0/2 of Irugur Town Panchayat office road in lieu of L.C.No.2 at Railway km 1/9-11 in between Irugur - Peelamedu Railway station	18.69

**Bridges opened on 14.02.2016**

<b>Sl. No.</b>	<b>District/ Constituency</b>	<b>Name of work</b>	<b>Cost (Rs. in Crore)</b>
1	Salem / Gangavalli	Construction of Bridge at km 0/6 of Kavaranai - Venganur road across Suvetha river	3.30
2	Salem/ Mettur	Construction of high level bridge across Mettur Ellis surplus course at km.33/8-10 of Thoppur - Mettur - Bhavani - Erode road.	23.21

<b>Sl. No.</b>	<b>District/ Constituency</b>	<b>Name of work</b>	<b>Cost (Rs. in Crore)</b>
3	Karur / Aravakurichy	Construction of bridge to connect Athipalayam in Karur district and Elunuthimangalam in Erode district across Noyyal river.	2.61
4	Thanjavur / Orathanadu	Reconstruction of Bridge at km 0/8 of Okkanadu Samayankudikadu Road	3.52
5	Theni / Andipatti	Construction of Bridge at km.0/2 of Ammachiyapuram - Ayyanarpuram Road.	4.90
6	Tirunelveli/ Radhapuram	Construction of High Level Bridge across Nambiar river at km 4/2-6 of Parapadi-Chitoor road.	3.85
7	Tirunelveli / Tenkasi	Reconstruction of Bridge instead of existing distressed bridge across Chitaar river in km 25/4-6 of Shenkottai - Pavorchatram (via Surandai).	3.54
8	Kanyakumari / Vilavancode	Construction of High Level Bridge in lieu of existing causeway at Thikkurichi - Kadavoo road across Thamirabarani river	7.49
9	Thoothukudi / Srivaikundam	Construction of High Level Bridge across Thamirabarani river at km.15/10-16/4 of Nazareth - Eral road.	19.95

<b>Sl. No.</b>	<b>District/ Constituency</b>	<b>Name of work</b>	<b>Cost (Rs. in Crore)</b>
10	Tirunelveli / Sankarankovil	Construction of bridge at km.1/6 of New Subbulapuram-Therkumalayadipatti road connecting Malayadipatti burial ground road.	4.40
11	Sivagangai/ Sivagangai	Construction of High Level Bridge at km 60/10 of Ramanathapuram - Nainarkoil - S.Andakudy - Ilayangudi - Sivagangai - Melur Road.	3.85
12	Sivagangai/ Thirupathur	Construction of High Level Bridge across Virusuli river at km 1/4 of NH 226 to Eraniyur (Via) Sillampatti Road.	2.75
13	Ramanathapuram, Paramakudi	Reconstruction of High Level Bridge at km 5/4 of Ariyankottai - Kavanur Road	3.74

### **Bridges opened on 01.03.2016**

<b>Sl. No.</b>	<b>District/ Constituency</b>	<b>Name of work</b>	<b>Cost (Rs. in Crore)</b>
1	Kancheepuram/ Thiruporur	Construction of bridge at km.2/10 of Echur Tiruporur road to Amoor-Kunnappattu	2.48
2	Erode / Bhavanisagar	Reconstruction of High Level Bridge @ Km20/4 of Pulliyampatti - Bhavanisagar -Bannari Road.	2.00

For the year 2016-17, an allotment of Rs. 263.43 Crore has been made in revised budget estimate.

### **7.1.2 Improvements to Other District Roads and Major District Roads**

Under this scheme during 2015-16, 46 Roads to a length of 130.51 km at a cost of Rs. 77 Crore has been sanctioned and taken up for execution. Out of those 6 Roads to a length of 15.35 km has been completed incurring an expenditure of Rs. 29.63 Crore. The balance works are in progress.

For the year 2016-17, an allotment of Rs. 50 Crore has been made in revised budget estimate.

### **7.1.3 Construction of River Bridges on Government Roads**

Under this scheme, spill over work of one bridge at a cost of Rs. 3.68 Crore was taken up for execution during 2015-16. An expenditure of Rs 1.99 Crore has been incurred.

For the year 2016-17, an allotment of Rs. 4.67 Crore has been made in revised budget estimate.

### **7.1.4 Improvements to Rural Roads**

Under this scheme, spill over work of one bridge at a cost of Rs. 1.17 Crore in Panchayat Union Road has been taken up for execution. Work held up for want of land from Indian Air Force. Soon

after completion of land transfer, work will be taken up for execution.

For the year 2016-17, an allotment of Rs 1.17 Crore has been made in revised budget estimate.

## **7.2 CONSTRUCTION OF ROAD OVER BRIDGES /ROAD UNDER BRIDGES**

20 Road Over Bridges and 5 Road Under Bridges at a cost of Rs. 284.53 Crore in lieu of the existing Level Crossings have been taken up for execution under the Railway Works Programme. Of these, one ROB at LC 2 – Irugur (Coimbatore District / Singanallur Constituency) has been completed and 13 works are in progress, as indicated in **Table 7.2**

**Table -7.2: List of ROB works in progress**

<b>Sl. No.</b>	<b>District / Constituency</b>	<b>LC No./ Location</b>	<b>Cost (Rs. in Crore)</b>
1	Villupuram / Villupuram	LC 2, Venkatesapuram	31.60
2	Coimbatore / Singanallur	LC 4, Irugur	21.16
3	Tirunelveli / Tirunelveli	LC 18, Tirunelveli Yard	29.12
4	Coimbatore / Coimbatore South	LC 7, Irugur	30.50
5	Erode / Erode West	LC 124, Sastrinagar	9.18
6	Tiruppur/Tiruppur North	LC 132, Tiruppur SRC Mill Gate	48.26

<b>Sl. No.</b>	<b>District / Constituency</b>	<b>LC No./ Location</b>	<b>Cost (Rs. in Crore)</b>
7	Tiruppur/Tiruppur North	LC 133, Tiruppur	27.68
8	Thanjavur / Thanjavur	LC 304, Thanjavur Oriental tower	41.00
9	Dindigul / Dindigul	LC 309, Dindigul	24.00
10	Madurai / Madurai west	LC 366, Palanganatham	33.00
11	Madurai / Thiruparangundram	LC 371, Thiruparangundram	18.30
12	Tuticorin / Kovilpatti	LC 439, Kovilpatti	12.95
13	Virudhunagar / Virudhunagar	LC 403, Virudhunagar	20.53

The details of 11 works which are in pre-construction stage are given in **Table 7.3**

**Table -7.3: Works in pre-construction stage**

<b>Sl. No.</b>	<b>District / Constituency</b>	<b>LC No. /Location</b>	<b>Cost (Rs. in Crore)</b>
1	Tiruvallur / Avadi	LC 2, Pattabiram West	33.48
2	Coimbatore / Singanallur	LC 5, Neelikonampalayam	17.00
3	Coimbatore / Coimbatore South	LC 6, Thanneerpandal	12.65
4	Tiruvallur / Avadi	LC 7, Annanur	15.60
5	Coimbatore/ Goundampalayam	LC 9, Avarampalayam	22.55
6	Tiruvallur /Avadi	LC 9, Hindu college	8.55
7	Coimbatore / Coimbatore North	LC 10, Peelamedu	11.90
8	Tiruvallur / Poonamallee	LC 16, Putlur	10.42

<b>Sl. No.</b>	<b>District / Constituency</b>	<b>LC No. /Location</b>	<b>Cost (Rs. in Crore)</b>
9	Tiruvarur / Mannargudi	LC 22, Needamangalam	23.19
10	Tiruppur/Tiruppur North	LC 131, Tiruppur	13.38
11	Virudhunagar/Virudhunagar	LC 406, Virudhunagar	3.25

### **7.3 PROPOSAL UNDER CONSIDERATION WITH NABARD**

During 2016-17, the proposal for construction / reconstruction of 47 bridges at a cost of Rs.147.38 Crore has been sent to NABARD and concurrence obtained.

### **7.4 OVERALL EXPENDITURE (2015-16) AND ALLOCATION FOR 2016-17**

During 2015-16, an expenditure of Rs. 235.21 Crore has been incurred by this wing for all Plan Schemes. A total of 90 works including 83 bridges with an expenditure of Rs. 205.58 Crore and 6 roads to a length of 15.35 km with an expenditure of Rs.29.63 Crore and 1 ROB (LC-2: Coimbatore – Irugur) has been completed.

For 2016-17, revised budgetary allocation of Rs. 361.47 Crore has been made in Revised Budget.



**Ezhunoothimangalam Bridge in Karur District  
inaugurated by the Hon'ble Chief Minister on 14.02.2016**



**Eral Bridge across Tamirabarani River in Thoothukudi  
District inaugurated by the Hon'ble Chief Minister on  
14.02.2016**





**Salem Camp Bridge across Ellis Surplus Course in Salem District inaugurated by the Hon'ble Chief Minister on 14.02.2016**



**Bridge on Soolagiri - Rayakottai Road in Krishnagiri District inaugurated by the Hon'ble Chief Minister on 02.06.2015**





**Thikkurichi Bridge across Thamirabarani in Kanniyakumari District inaugurated by the Hon'ble Chief Minister on 14.02.2016**



**Sundarampalli Bridge on Hogenakkal - Thiruppathur Road in Vellore District inaugurated by the Hon'ble Chief Minister on 13.11.2015**





**Irugur Railway Over Bridge in Coimbatore District  
inaugurated by the Hon'ble Chief Minister on 13.11.2015**



**Irugur Railway Over Bridge in Coimbatore District  
inaugurated by the Hon'ble Chief Minister on 13.11.2015**





**Ammachiyapuram Bridge in Theni District  
inaugurated by the Hon'ble Chief Minister on 14.02.2016**



**Kavarpanai Bridge across Swetha River in Salem District  
inaugurated by the Hon'ble Chief Minister on 14.02.2016**



## **8. PROJECTS**

The Projects Wing carries out the works of Road Over Bridges (ROB) and Road Under Bridges (RUB) in lieu of existing Level Crossings across the State. The works are taken up under 50:50 cost sharing with Railways under Railway Works Programme in coordination with Railways.

Major river bridges, Grade Separators, Bye-pass roads and Ring Road works are also carried out by this wing.

The Projects wing functions under the control of a Chief Engineer with four Circles and ten Divisions.

Implementation of ROB/RUB works involves the following activities.

1. Site Plan Preparation, Alignment Approval
2. Finalization of Site Plan
3. Finalization of GAD with Railways
4. Preparation of Design, Drawing
5. Preparation of Estimate and sanctioning
6. Preparation of Land Plan Schedule (LPS)
7. Publishing 15(2) Notification
8. Gazette notification of 15(1)
9. Preparation of Valuation for land & buildings
10. Approval of the Valuations
11. Passing of Award / Payments / Taking Possession
12. Shifting of utilities
13. Tendering and Award of works
14. Execution of work

## **8.1 GENERAL ARRANGEMENT DRAWING (GAD) FINALIZATION**

Finalization of GAD (General Arrangement Drawing) involves the following additional activities:

- On sanction of an ROB work, the site is surveyed and all possible alternate alignments are studied and alignment proposals are prepared.
- The alignment proposals are examined at site by the alignment committee comprising of four Superintending Engineers of various wings of Highways Department along with the Divisional Engineer of Investigation wing and the Divisional Engineer of execution wing concerned.
- The most feasible and economical alignment is approved by the Alignment committee.
- The approved alignment and the General arrangement drawing (GAD) for Highway portion are prepared and sent to Railways.
- Railway verifies the proposal at site and sends Provisional Railway GAD to Highways.
- The Provisional Railway GAD is verified at site by the Highways and the GAD is concurred and sent to Railways. Any modification, if necessary, is done by both the Departments at this stage.

- Railway accords final approval and the approved GAD is sent to Highways.

These activities require a minimum time span of nine months to complete.

## **8.2 EFFORTS TAKEN TO REDUCE THE COMPLETION PERIOD**

Almost for all the ROB/ RUB works, the land is to be acquired and service utilities such as EB lines, Telephone lines, Underground sewage and water lines are to be shifted. Also, in certain works, Historical Monuments, Religious sites, Defence land, Railway land etc., pose hindrance that necessitates revising the alignment or getting clearance from the respective departments, causing much delay in completion of the projects.

With a view to reduce the completion period of these intricate projects, thereby reducing the time and cost over runs, diligent effort has been taken to remove the hurdles in the ongoing projects by conducting Co-ordination meetings and joint site inspection with the respective departments in critical cases. As a result of which, the average duration of completion of projects has reduced.

During the period from 2006-11, the average completion period was **7 Years and 10 Months**. This has been reduced to **6 years** during 2011-16, barring the 8 numbers of old long pending works, all of which have been completed.

Because of the special efforts made, 2 works, namely RUB at LC No.3, Pollachi and ROB at LC 473, Paramakudi which were taken up in 2011-12 were completed in a period of 3 years and 11 months (5 months before the agreement period) and 4 years and 3 months respectively.

It is confirmed from the Southern Railway that Tamil Nadu has completed much higher number of Road Over/ Under Bridges compared to the other South Indian states and therefore has been able to get more number of projects from the Railways.

There are 1996 railway level crossings in Tamil Nadu, of which 1301 are manned and 695 are un-manned. Out of the 1301 manned crossings, 36 are located in NH and 357 are located in SH, MDR and ODRs.

The Government of India have also announced a new scheme namely Setu Bharatam to eliminate all the LCs on NH with Grade Separators.

Of the 357 level crossings, 103 have a TVU more than 1 lakh in Tamil Nadu and are eligible for replacement with grade separators (ROB/RUB).

These level crossings will be converted into grade separators (ROB/RUB) at an approximate cost of Rs. 6100 crores, in a phased manner in the subsequent years.

## **8.3 ROAD OVER BRIDGES AND ROAD UNDER BRIDGES AT RAILWAY LEVEL CROSSINGS:**

### **8.3.1 Railway Works Programme**

Under the Railway Works Programme, 85 spillover works were taken up in 2015-16 by various wings of this Department. Of these, 49 spillover works (Table 8.1) and 3 new works were taken up by the Projects wing during 2015-16 at a total cost of Rs. 1588.23 Crore.

In 2015-16, 6 works (Table 8.2) have been completed at a cost of Rs. 162.68 Crore and 28 works (Table 8.3) are in progress for a value of Rs. 909.42 Crore. The remaining 18 works (Table 8.4) are in various stages of pre-construction at a cost of Rs. 516.13 Crore.

**Table 8.1: Spill over works**

<b>Sl. No.</b>	<b>District</b>	<b>No. of ROB/ RUB</b>	<b>Cost (Rs. in Crore)</b>
1	Tiruvallur	4	91.49
2	Chennai	1	80.68
3	Kancheepuram	7	258.03
4	Vellore	8	177.10
5	Villupuram	4	88.09
6	Salem	4	168.86
7	Coimbatore	7	157.42
8	Dindigul	1	59.80
9	Trichy	4	182.02
10	Cuddalore	1	21.25
11	Tuticorin	1	27.50
12	Tirunelveli	2	58.21

Sl. No.	District	No. of ROB/ RUB	Cost (Rs. in Crore)
13	Triuppur	1	19.79
14	Ramanathapuram	1	37.15
15	Namakkal	1	40.16
16	Ariyalur	2	57.40
	<b>Total</b>	<b>49</b>	<b>1524.95</b>

**Table 8.2: Completed Road Over Bridges and Road Under Bridges**

Sl. No.	District	Level Crossing No. & Location	Cost (Rs. in Crore)
1	Vellore	69, Ulli	18.59
2	Coimbatore	3, Pollachi	20.42
3	Coimbatore	11, Rathinapuri	19.50
4	Trichy	248, Odathurai	44.52
5	Salem	113, Suramangalam	22.50
6	Ramanathapuram	473, Paramakudi	37.15
		<b>Total</b>	<b>162.68</b>

**Table 8.3: Ongoing Road Over Bridges and Road Under Bridges**

Sl. No	District	Level Crossing No. & Location	Cost (Rs. in Crore)
1	Thiruvallur	38, Elavur	23.37
2	Thiruvallur	21, Kadambathur	14.90
3	Thiruvallur	15, Sevvapet	24.50
4	Chennai	Vyasarpadi ROB	80.68
5	Kancheepuram	40, Guduvanchery	29.04
6	Kancheepuram	36, Urappakkam	34.50
7	Kancheepuram	47, Singaperumal Koil	52.89
8	Vellore	86, Jolarpet	21.57
9	Vellore	78, Kannadikuppam	25.30
10	Vellore	126 & 127, Vellore Town	36.38

<b>Sl. No</b>	<b>District</b>	<b>Level Crossing No. &amp; Location</b>	<b>Cost (Rs. in Crore)</b>
11	Vellore	80, Valayampattu	25.55
12	Villupuram	111, Vikaravandi	20.20
13	Villupuram	102, Mailam	22.43
14	Villupuram	93, Tindivanam	24.50
15	Salem	187, Leizh Bazaar	42.14
16	Namakkal	Pallipalayam ROB	40.16
17	Coimbatore	146, Singanallur	23.50
18	Coimbatore	10, Karamadai	30.70
19	Coimbatore	162, Podhanur	22.60
20	Trichy	228, Lalgudi	20.50
21	Trichy	1136, Trichy	74.00
22	Trichy	380A, Srirangam	43.00
23	Cuddalore	135A, Panruti	21.25
24	Tirunelveli	118A, Palayamkottai	32.70
25	Dindigul	2, 27 & 308, Dindigul	59.80
	<b>New Works</b>		
26	Dharmapuri	43, Kumarasampatti	22.60
27	Dharmapuri	46, Muthugovundankottai	20.31
28	Dindigul	8, Dindigul	20.35
		<b>Total</b>	<b>909.42</b>

**Table: 8.4 - Road Over Bridges and Road Under Bridges in various stages of pre construction.**

<b>Sl. No</b>	<b>District</b>	<b>Level Crossing No. &amp; Location</b>	<b>Cost (Rs. in Crore)</b>
1	Ariyalur	206, Kallagam	29.00
2	Ariyalur	201, Ariyalur	28.40
3	Coimbatore	13, Kannapan Nagar	14.00
4	Coimbatore	3, Irugur	26.70
5	Kancheepuram	59, Ottivakkam	30.40

<b>Sl. No</b>	<b>District</b>	<b>Level Crossing No. &amp; Location</b>	<b>Cost (Rs. in Crore)</b>
6	Kancheepuram	75, Acharapakkam	32.30
7	Kancheepuram	64, Karunguzhi	29.50
8	Kancheepuram	29, Ponnerikarai	49.42
9	Tiruppur	Chikkanna College ROB	19.79
10	Tirunelveli	4, Kulavanigarapuram	25.51
11	Thiruvallur	13, Perumalpattu	28.72
12	Tuticorin	486 & 487, Tuticorin	27.50
13	Salem	184, Mulluvadi Gate	58.59
14	Salem	183, Anaimeedu	45.63
15	Vellore	81, Vaniyambadi	13.00
16	Vellore	128, Katpadi	22.61
17	Vellore	70, Valathur	14.10
18	Villupuram	88, Olakkur	20.96
		<b>Total</b>	<b>516.13</b>

In the year 2012-13, the Government has accorded Administrative Sanction for Rs. 100.90 Crore to carry out preliminary works for 12 ROB/RUB works, which are in various stages. In the year 2015-16, of these 12 works, Administrative Sanction has been accorded for Rs. 117.425 Crore for 6 works. For the remaining 6 ROB/RUB works, the preliminary works are in progress.

Out of 6 works for which Administrative Sanction is accorded, 3 works are in progress as listed in Table 8.3 and the remaining 3 works are listed in **Table 8.5**.

**Table 8.5: Preliminary Works Sanctioned during 2012-13 in Pre-construction stage**

<b>Sl. No</b>	<b>District /Name of Work</b>	<b>Cost (Rs. in Crore)</b>
	<b>Dharmapuri</b>	
1	Construction of Road Over Bridge at km 144/4 of Old NH -7 in lieu of existing LC No 38 at Railway km 60/100-200 between Sivadi and Dharmapuri Railway Stations.	12.08
	<b>Madurai</b>	
2	Construction of ROB at km 0/8 of Sholavandan-Valayapatty road (Via Andipatty) in lieu of existing LC No.346 at Railway Km473/500-600 in between Madurai-Dindigul junction	18.18
	<b>Tirunelveli</b>	
3	Construction of ROB at km. 0/8 of Palayamkottai - Sivanthipatti road in lieu of existing LC No. 6 at railway km. 6/ 600-700 in between Palayamkottai Seidhuganallur railway station.	23.91
	<b>Total</b>	<b>54.17</b>

The above 3 works will be taken up for execution during the current year.

In the year 2013-14, the Government have accorded Administrative Sanction for Rs. 231.49 Crore to carry out preliminary works such as Land Acquisition, Shifting of Service Utilities and Investigation for 18 ROB/RUB works. Of these, Administrative Sanction has been accorded for the following 2 works **(Table 8.6)**. Tender will be floated for these works shortly.

**Table 8.6: New Works Sanctioned from  
Preliminary works 2013-14**

<b>S. No</b>	<b>District /Name of Work</b>	<b>Cost (Rs. in Crore)</b>
	<b>Vellore</b>	
1	Construction of ROB in lieu of existing <b>LC No.123</b> at Railway km 147/100-200 between Vellore Cantonment and Kaniyambadi Railway Stations at Km4/0 of Vellore Hoosur Road	21.96
	<b>Thiruvarur</b>	
2	Construction of ROB in lieu of <b>LC No.34</b> at km 2/4 of Thiruvarur - Mannargudi - Muthupetti road (SH 202) in between Railway km 50/800 - 50/900 between Kuzhikarai - Thiruvarur Railway Stations of Thanjavur - Nagore - Karaikal section.	27.60
	<b>Total</b>	<b>49.56</b>

Of the above two works, for the ROB work at LC 123, tender has been finalized and the work will be commenced shortly. The ROB work at LC 34 will be taken up for the execution during the current year 2016-17.

Out of the remaining 16 works, 3 works are in estimate stage, 11 works are in DPR stage and 2 works are in GAD stage.

### **8.3.2 WORKS TAKEN UP IN RAILWAY WORKS PROGRAMME 2015-16**

In 2015-16, for taking up 12 ROB/ RUB in 7 districts, Rs. 3.51 Crore have been sanctioned by

the Government for preparation of Detailed project report under Railway Works Programme. Of these 12 works, 4 works are in DPR stage (Table 8.7) and balance 8 works are in GAD stage (Table 8.8).

**Table : 8.7- Works in DPR stage**

<b>Sl. No</b>	<b>District</b>	<b>Level Crossing No. &amp; Location</b>	<b>DPR Cost (Rs. in Crore)</b>
1	Vellore	67, Goodanagaram	25.52
2	Vellore	72, Melpatti	21.50
3	Madurai	377, Thirumangalam	39.01
4	Cuddalore	157, Kammiyampettai	21.30
		<b>Total</b>	<b>107.33</b>

**Table : 8.8- Works in GAD stage**

<b>Sl. No</b>	<b>District</b>	<b>Level Crossing No. &amp; Location</b>	<b>DPR Cost (Rs. in Crore)</b>
1	Coimbatore	11, Karamadai	19.93
2	Salem	7, Peramachur	23.82
3	Salem	10, Omalur	40.86
4	Salem	15, Tholasampatty	21.40
5	Salem	18, Mecheri	25.46
6	Salem	21, Kunjandiyur	34.71
7	Virudunagar	424, Thiruthangal	37.53
8	Kanyakumari	15B, Viricode	40.19
		<b>Total</b>	<b>243.90</b>

An expenditure of Rs. 205.65 Crore was incurred under this scheme during 2015-16. A budget provision of Rs. 478.27 Crore has been made for this scheme for the year 2016-17.

## **8.4 CONSTRUCTION OF BRIDGES WITH NABARD ASSISTANCE**

In order to provide necessary road access in rural areas, bridge works with NABARD loan assistance have been carried out by Projects Wing. Under this scheme, spill over works of High Level Bridge across Cauvery river Connecting Mohanur (Namakkal District) and Vangal (Karur District) has been taken up to a value of Rs. 43.50 Crore in 2015-16, completed and opened to traffic on 14.02.2016.

An expenditure of Rs. 11.18 Crore was incurred under this scheme in the year 2015 - 16. A provision of Rs. 3.34 Crore has been made for this scheme for the year 2016 - 17.

## **8.5 WORKS TAKEN UP WITH STATE FUNDS**

### **8.5.1 High Level Bridge Across Noyyal River Near Chikkana College**

The High level bridge sanctioned for Rs. 3.85 Crore under CRIDP scheme in 2006-07 has been resumed in 2015-16 as the court cases against this work were disposed. The work is in progress and will be completed in the current financial year.

### **8.5.2 Erode Outer Ring Road**

In order to mitigate the heavy traffic congestion in Erode Town and to ensure free flow of

traffic, Government had accorded sanction for the formation of a ring road from Kokkarayanpettai to Thindal to a length of 14.80 km.

In phase I & II, formation of the outer ring road from km 0/0 to 2/2 including construction of a high level bridge across Cauvery River and formation of road from km 2/2 to 7/6 respectively were completed under CRIDP scheme and opened for public use.

In phase III, the work of formation of the outer ring road for a length of 7.20 km from km 7/6 to 14/8 including construction of a Road Over Bridge at km 11/2–11/6 for **Rs.69.30 Crore** was taken up. At present, 60% of work is completed and further work is in progress.

### **8.5.3 Road Over Bridge at Pallipalayam**

In 2013-14, Government has accorded Administrative Sanction for Construction of Railway Over Bridge at km 90/2 of SH 79 in Nammakal district for **Rs. 40.16 Crore** under state funds. At present, 55% of work is completed and further work is in progress.

### **8.5.4 Construction of Grade Separator in Erode District**

In 2013-14, Government has accorded Administrative Sanction for **Rs. 22.93 Crore** to carry out preliminary works for construction of

Grade Separator at km 1/8 of Erode – Perundurai – Kangeyam Road Government hospital Junction. The preliminary works are nearing completion. Administrative Sanction will be accorded during the current year to take up the main bridge work.

### **8.5.5 Road Over Bridge at Ambur**

During 2013-14, Government has accorded Administrative Sanction for preliminary works for Rs. 6.97 Crore for construction of Railway Over Bridge at Bethlegam area in Ambur Town, between Ambur and Vaniyambadi Railway Stations in Vellore district. Design work is in progress.

### **8.5.6 ONGOING WORKS**

During 2013-14, Government has accorded Administrative Sanction for **Rs.3.60** Crore for preparation of Detailed Project Report for the construction of following 24 works.

- River bridges 13 Nos,
- ByPass 3 Nos,
- New road formation 2 Nos,
- Road Over Bridges 4 Nos,
- Limited Use Subway 1 No &
- Grade Separator 1 No.

Out of the 24 works, Detailed Project Reports for 17 works have been completed. For 6 works, DPR preparation is in progress. One bypass work to Suchindrum in Kaniyakumari district has been

deleted from State scheme and transferred to the State NH wing.

Out of the 17 works for which DPR has been prepared, for one River bridge work at Kallanai in Thanjavur district, Government has accorded Administrative Sanction for Rs. 61.024 Crore and the work will be tendered shortly.

For the remaining 16 works, administrative sanction is under consideration.

In 2014-15, 3 Foot Over Bridges and 4 river bridges were taken up for preparation of Detailed Project Reports. The Detailed Project Reports were prepared and the Government have accorded Administrative Sanction for Rs.58.70 Crores for the construction of 4 River bridges and Rs.30.18 Crores for construction of 3 Foot Over bridges. The details of 4 river bridges qwhich are in progress are given in **Table 8.9.**

**Table : 8.9 River Bridge Works in progress**

<b>Sl. No</b>	<b>District /Name of Work</b>	<b>Cost (Rs. in Crore)</b>
	<b>Cuddalore</b>	
1	Construction of High level Bridge across Uppanar river connecting km.6/8 of Chidambaram – T.S.Pettai Road (ODR) and km.161/8 of PWD Coleroon river left bund road	10.06

<b>Sl. No</b>	<b>District /Name of Work</b>	<b>Cost (Rs. in Crore)</b>
	<b>Cuddalore</b>	
2	Reconstruction of Major bridge (HLB) across Vellar river at km.104/2 of NH45A (Villupuram-Pondy-Nagapattinam road)	22.57
	<b>Dharmapuri</b>	
3	Construction of High level Bridge near Pappireddipatti across Vaniyar River	7.25
	<b>Pudukkottai</b>	
4	Costruction of High Level Bridge across River Pambar with Approaches near Chithirambur.	18.82
	<b>Total</b>	<b>58.70</b>

The details of 3 foot over bridge works which are in various stages of pre construction are given in **Table 8.10**.

**Table : 8.10 Sanctioned FOB Works**

<b>Sl. No</b>	<b>District /Name of Work</b>	<b>Cost (Rs. in Crore)</b>
	<b>Coimbatore</b>	
1	Construction of Foot Over Bridge with Escalator near Nanjundapuram junction at Coimbatore	10.72
	<b>Coimbatore</b>	
2	Construction of Foot Over Bridge with Escalator near Railway Station at Coimbatore City	8.09

<b>Sl. No</b>	<b>District /Name of Work</b>	<b>Cost (Rs. in Crore)</b>
	<b>Karur</b>	
3	Construction of Foot Over Bridge with Escalator near Bus Stand at Karur	11.37
	<b>Total</b>	<b>30.18</b>

### **8.5.7 ROAD OVER BRIDGE FOR ELCOT AT MADURAI: (DEPOSIT WORK)**

During 2015-16, Government has accorded administrative sanction for Rs. 13.82 Crore for construction of Railway Over Bridge across the SEZ in ELCOT in Vadapazhanji, between Madurai and Usilampatty Railway Stations in Madurai district. The work is in progress.

In the year 2015-16, an expenditure of Rs. 65.62 Crore has been incurred for the works taken up under state government fund (other than CRIDP) and a provision of Rs.49.13 Crore has been made in the year 2016-17.

### **8.6 SUGARCANE ROAD DEVELOPMENT SCHEME**

To form and improve the roads from sugarcane growing areas to sugar mills, the cess fund collected from the sugar mills by the Agricultural Department is utilized.

9 Road works and 1 High level bridge at a cost of Rs. 14.40 Crore have been taken up under this scheme and 7 road works have been completed at a cost of Rs. 9.04 Crore in the year 2014-15. In 2015-16, 1 High level bridge has been completed at a cost of Rs. 2.60 Crore and 1 road work at a cost of Rs. 1.83 Crore in Virudhunagar district has been completed.

## **8.7 OVERALL EXPENDITURE (2015-16) AND ALLOCATION FOR 2016-17**

During 2015-16, an expenditure of Rs. 358.46 Crore was incurred in all schemes. For 2016-17, revised budget allocation of Rs. 860.32 Crore has been made.



**Bridge across Cauvery connecting Mohanur (Namakkal) and Vangal (Karur) inaugurated by the Hon'ble Chief Minister on 14.02.2016 (Longest River Bridge in TN)**



**Rathnapuri Railway Over Bridge in Coimbatore district inaugurated by the Hon'ble Chief Minister on 14.02.2016**





**Paramakudi Railway Over Bridge in Ramanathapuram District inaugurated by the Hon'ble Chief Minister on 01.03.2016**



**Paramakudi Railway Over Bridge in Ramanathapuram District inaugurated by the Hon'ble Chief Minister on 01.03.2016**





**Odathurai Railway Over Bridge in Trichy district  
inaugurated by the Hon'ble Chief Minister on 14.02.2016**



**Suramangalam Limited Use Subway in Salem District  
inaugurated by the Hon'ble Chief Minister on 01.03.2016**



## **9. METRO**

Metro wing is headed by a Chief Engineer with one Circle and five Divisions. Metro wing was formed to achieve the objectives of Chennai Metropolitan Area second master plan.

To enhance safe and sustainable urban Transport system, construction of Grade Separators, Foot Over Bridges, Subways, Railway Over Bridges and Railway under Bridges are being taken up. The improvement in infrastructure reduces traffic congestion and road accidents in the Chennai Metropolitan Area.

### **9.1 CHENNAI METROPOLITAN DEVELOPMENT PLAN (CMDP)**

To cater to the future demand for traffic in Chennai Metropolitan Area, the Chennai Metropolitan Development Plan is being implemented since 2003-04 with State budgetary allocation. The Comprehensive Traffic & Transportation Study for the Chennai Metropolitan Area in the Second Master Plan of the CMDA has recommended about 340 projects which are to be implemented in a span of 15 years (2010- 2025) at an approximate cost of Rs. 14070 Crore.

So far, the Government has given its approval for 269 improvement works at a cost of Rs. 2160.79 Crore which includes 14 Grade

Separators (including DPR for 1 RUB work), 12 Railway Over Bridge/ Railway Under Bridge (including DPR for 2 ROB works), 16 river Bridges, 482.47 km of Road works, 5 Pedestrian subways, 1 Sky walk and 1 Foot Over Bridge.

Major works under implementation are detailed below:-

### 9.1.1 Grade Separators

Grade separators are provided at major intersections to avoid conflicts. Grade separators are provided as a part of long term strategy for better management of traffic. During 2015-16, 9 spillover works are being taken up at a cost of Rs. 675.39 Crore. Out of which 2 works have been completed at a cost of Rs. 109.78 Crore. During 2015-16, Administrative Sanction is accorded for 4 Works at a cost of Rs. 278.45 Crore. 1 DPR work for RUB. The various stages of works are shown in

#### Table 9.1.

**Table 9.1: Grade Separators**

Sl. No	Nomenclature	Cost (Rs. in Crore)
<b>SPILOVER WORKS</b>		
<b>Works Completed</b>		
1	Grade Separator at the intersection of Madhavaram High road with G.N.T Road at <b>Moolakkadai</b>	49.55

<b>Sl. No</b>	<b>Nomenclature</b>	<b>Cost (Rs. in Crore)</b>
2	Grade Separator at the intersection of Anna Nagar IInd Avenue and Mogappair road with Inner Ring road at <b>Thirumangalam</b>	60.23
	<b>Total</b>	<b>109.78</b>
<b>Works in Progress</b>		
3	Grade Separator at the intersection of Mount - Poonamallee road with Kodambakkam - Sriperumpudur road at <b>Porur</b>	54.00
4	Construction of a Grade Separator at the junction of Perambur – Redhills road near <b>Kolathur Rettai Eri</b> (LHS) in Inner Ring Road	52.72
5	Grade Separator at the intersection of N.S.K Salai (Arcot Road) with Inner Ring road at <b>Vadapalani</b> taken up under CMRL	69.43
6	Grade Separator on EVR Salai at the intersection of <b>Nelson Manickam road</b> and Anna Nagar 3rd Avenue road (Section –I completed at a cost of Rs. 35.00 Crore)	117.00
7	Construction of a Grade Separator at the junction of Kundrathur road and Santhai road at <b>Pallavaram</b> in GST road	80.74

<b>Sl. No</b>	<b>Nomenclature</b>	<b>Cost (Rs. in Crore)</b>
8	Construction of a Grade Separator at the junction of Taramani road, Tambaram – Velachery road and Velachery bypass in <b>Velachery Vijayanagaram</b> junction.	98.22
9	Construction of a Grade Separator connecting the junctions of Mofussil bus entrance of CMBT and <b>Kaliamman Koil road</b> junction in Jawaharlal Nehru Salai (IRR)	93.50
	<b>TOTAL</b>	<b>675.39</b>
<b>NEW WORKS (2015-16)</b>		
<b>Works in progress</b>		
10	Grade Separator at <b>Medavakkam</b> – Sholinganallur road junction, Medavakkam – Mambakkam road junction and Mount – Medavakkam junction in Maramalaiadigal Bridge – Irumbuliyur (MBI) road.	133.10
11	Construction of Grade Separator at the intersection of mount Medavakkam road and Pallavaram-Thuraipakkam road near <b>Kilkattalai</b>	58.22
	<b>Total</b>	<b>736.93</b>

<b>Sl. No</b>	<b>Nomenclature</b>	<b>Cost (Rs. in Crore)</b>
<b>Works to be taken up for execution</b>		
12	Construction of a Grade Separator at the junction of Perambur – Redhills road near <b>Kolathur Rettai Eri</b> (RHS) in Inner Ring Road	29.13
<b>Works in DPR Stage</b>		
13	Grade Separator at the junction of <b>ECR –Thiruvanmiyur</b> road (Land Acquisition)	58.00
14	Construction of RUB at Mount-Medavakkam road and Southern Sector of Inner Ring Road (DPR only)	---
	<b>Total</b>	<b>278.45</b>
	<b>Grand Total</b>	<b>953.84</b>

### **9.1.2 RAILWAY OVER BRIDGES/ UNDER BRIDGES AT RAILWAY LEVEL CROSSING:**

Under Railways works program, 10 spillover works were taken up in 2015-16 at a cost of Rs. 318.04 Crore in the Chennai Metropolitan Area. Out of which, 1 work was completed at a cost of Rs. 35 Crore. The remaining 9 works at a cost of Rs. 283.04 Crore are in various stages. Administrative sanction has been accorded for 2 works for the preparation of Detailed Project Report. The details are shown in **Table 9.2**

**Table 9.2: Railway Over Bridges/ Under  
Bridges at Railway Level Crossing**

Sl. No	Nomenclature	Cost (Rs. in Crore)
<b>SPILLOVER WORKS</b>		
<b>COMPLETED WORK</b>		
1	LC No.5 – Construction of Railway Over Bridge near <b>Pattaravakkam</b> (Completed at a cost of Rs. 36.06 Crore).	35.00
<b>Works In Progress</b>		
2	LC No.3 –Construction of Railway Over Bridge near <b>Tiruvottiyur - Mattumandhai</b>	47.00
<b>Works To Be Taken Up For Execution</b>		
3	LC No.4 –Construction of Railway Under Bridge near <b>Tiruvottiyur</b> Railway station.	28.00
4	LC No.6 – Construction of Railway Under Bridge near Tiruvottiyur - <b>Wimco Nagar</b> Railway station.	25.50
5	LC No.14 – Construction of Railway Over Bridge near <b>Veppampattu</b> Railway station	29.50
6.	LC No.4 –Construction of Railway Under Bridge near Korattur Railway station	19.97
7.	LC No.16 –Construction of Railway Over Bridge near <b>Nandhiyambakkam-Minjur</b> Railway station	28.32

<b>Sl. No</b>	<b>Nomenclature</b>	<b>Cost (Rs. in Crore)</b>
8.	LC No.32&33 – Construction of Railway Over Bridge near <b>Perungalathur</b> Railway station	76.00
9.	LC No.22 –Construction of Railway Under Bridge near <b>Thirusulam</b>	14.00
10.	LC No.27 –Construction of Limited Use Subway near <b>Chrompet Radha Nagar</b>	14.75
	<b>Total</b>	<b>318.04</b>
<b>DPR Stage</b>		
11	Widening of ROB at km 20/8 of Mount-Poonamallee-Avadi road.	-
12	Widening of ROB to dual four lane at km 12/2 -13/2 of Inner Ring Road	-

### **9.1.3 River Bridges**

Administrative sanction was accorded for 12 river bridges at a cost of Rs. 121.25 Crore. Out of which, 7 works were completed at a cost of Rs. 96.25 Crore. In addition, administrative sanction has been accorded for 4 River Bridges during 2015-16 at a cost of Rs. 107.87 Crore. The remaining 5 river bridges are in various stages as detailed in **Table 9.3**

**Table 9.3: Details of River bridges**

<b>Sl. No</b>	<b>Nomenclature</b>	<b>Amount Rs. in Crore</b>
<b>Completed Works</b>		
1	Widening of Bridge across Coovam river in Periyar EVR salai at Km6/6 of GWT Road	6.91
2	Construction of Two lane bridge adjacent to the existing Thiru-vi-ka bridge at Chennai, Adyar	15.64
3	River bridge across coovam river at road connecting GWT road at km 11/2 and Mogappair	16.04
4	Providing a bridge across Ennore Creek to connecting Ennore-Expressway Road with North Chennai Thermal Power Station	52.66
5	Widening of Bridge at km.3/4 of Mount - Poonamallee - Avadi road (SH-55)	1.00
6	Construction of a bridge at km.16/6 of Tambaram - Mudichur road (SH110)	2.00
7	Construction of an additional two lane bridge at km.62/2 of SingaperumalKoil - Sriperumpudur - Thiruvallur - Senkundram road (SH-57)	2.00
	<b>Total</b>	<b>96.25</b>
<b>Works in progress</b>		
8	Construction of additional 3 lane bridge across the river Cooum near Aminjikai in EVR Salai	8.00

<b>Sl. No</b>	<b>Nomenclature</b>	<b>Amount Rs. in Crore</b>
9.	Construction of an additional two lane bridge at km.15/8 of Mount - Poonamallee - Avadi road (SH-55)	5.00
	<b>Total</b>	<b>13.00</b>
<b>Work transferred to TNRSP II</b>		
10.	Construction of a bridge at km.13/8 of Chennai - Kodambakkam - Sriperumpudur Road (SH113)	2.00
11.	Construction of a bridge at km.27/6 of Chennai - Kodambakkam - Sriperumpudur Road (SH113)	1.00
	<b>Total</b>	<b>3.00</b>
<b>Work deleted</b>		
12.	Construction of a high level bridge at km.14/4-14/8 of Karanodai- Minjur road(the work is very near to the bridge nearing completion in the Outer Ring Road phase II taken up by the TNRDC)	9.00
	<b>Total</b>	<b>9.00</b>
<b>Works in Land Acquisition and Tender Stage</b>		
13	High level bridge across Coovum river in NH 4 at Nolambur road junction (Land Acquisition)	36.00
14	Construction of high level bridge across Coovum River at km 0/6 from M.P. Road at Paruthipattu (Land Acquisition).	3.10
15	Widening of high level bridge at km 2/6 across the river Adyar in Mount - Poonamallee Road near Ramapuram <b>(tender stage)</b>	15.46

<b>Sl. No</b>	<b>Nomenclature</b>	<b>Amount Rs. in Crore</b>
16	Construction of high level bridge across Buckingham Canal at km 0/6 of Thiruvottiyur - Ponneri- Panchetty Road. <b>(tender stage)</b>	53.31
	<b>Total</b>	<b>107.87</b>
	<b>Grand Total</b>	<b>229.12</b>

#### **9.1.4 ROAD WORKS:**

The following three road works as shown in **Table 9.4** have been administratively sanctioned.

**Table 9.4 ROAD WORKS**

<b>Sl. No</b>	<b>Nomenclature</b>	<b>Stage of work</b>	<b>Cost (Rs. in Crore)</b>
1	Formation of new link road connecting MBI road at <b>km 17/4 in Rajakilpakkam</b> and Tambaram Eastern Bypass at Agaramthensalai. (Only completed LA portions).	3 km completed. Out of 9 km, balance 6 km LA is in progress	25.00
2	Forming New Link Road connecting Puzhal Chennai GNT Road and <b>Amullaivoyal</b> in IRR at km 20/8	Land demarcation is in progress	20.00
3	Forming link road and construction of Bridge across Buckingham canal connecting Rajiv Gandhi Salai and East Coast Road at <b>Neelankarai</b>	Land Acquisition is under progress	204.20
	<b>TOTAL</b>		<b>249.20</b>

### 9.1.5 Pedestrian subways:

To provide safe crossing for Pedestrians and for ensuring uninterrupted traffic on the important roads, administrative sanction has been accorded for Construction of 5 Pedestrian subways for Rs. 19.00 Crore. The various stages of works are detailed in **Table 9.5**

**TABLE 9.5: LIST OF PEDESTRIAN SUBWAYS**

<b>Sl. No</b>	<b>Nomenclature</b>	<b>Stage of work</b>	<b>Amount Rs. in Crore</b>
1.	Near A.G Church in Anna Salai.	RAS proposal under scrutiny	3.50
2.	Near M.K.N road junction at Guindy in GST road.	RAS proposal under scrutiny	3.50
3.	At km 1/6 of Jawaharlal Nehru Salai (IRR) near Malladi company at Ekkattuthangal.	Tender stage	3.50
4.	At km 2/7 Nehru Salai (IRR) near Kasi theatre.	Tender stage	3.50
5.	At km 7/7 of Jawaharlal Nehru Salai (IRR) near CMBT.	DPR stage	5.00
	<b>Total</b>		<b>19.00</b>

### 9.1.6 Skywalk

As a solution to pedestrian vehicle conflict, especially in the crowded areas at Central station a sky walk connecting Central station, Park station and GH in EVR Salai was proposed at a cost of

Rs. 20.00 Crore. However Chennai Metro Rail Limited (CMRL) has taken up a comprehensive area development proposal at a cost of over Rs.300 cr. which includes provision of 3 no.of pedestrian subways having varying width of 11m to 14m, as part of under ground station construction at Park station to Moore Market, Central station to Park town, Central station to Tamilnadu Tourism Centre (along Buckingham Canal) and the first 2 works are under construction. As the ongoing pedestrian subway works under Chennai Metro Rail Project is a better alternative than the proposed skywalk, the skywalk proposal is not being taken up.

### **9.1.7 Foot Over Bridge (FOB)**

To facilitate safe pedestrian crossing near Tambaram railway station and Bus stop, administrative sanction have been accorded for Construction of FOB at Tambaram Railway station at km 26/8 with escalators at a cost of Rs. 19.49 Crore. DPR is nearing completion. The work will be taken for execution during 2016 - 17.

### **9.1.8 Elevated Corridor from the Chennai Airport to Chengalpattu (Toll-Plaza) along the Grand Southern Trunk Road ( NH-45)**

The Feasibility study for the development of Elevated Corridor from the Chennai Airport to Chengalpattu (Toll-Plaza) for a length of 40 km along the Grand Southern Trunk Road ( NH-45) has

been entrusted to M/s CDM Smith Consulting Private Limited by CMDA at a cost of Rs. 84.18 lakhs in pursuance of the announcement made by Hon'ble Minister for Housing and Urban Development in 2014-15. The finalisation of alignments are in process and the final report is yet to be completed by CMDA.

Based on the submission of Final Detailed Feasibility report by CMDA, further DPR will be prepared by engaging consultants.

## **9.2 TAMIL NADU URBAN DEVELOPMENT PROJECT–III (TNUDP-III):**

The TNUDP –III Scheme was formulated in 2005 and was implemented with World Bank loan assistance till March 2012. In this scheme 5 road works, 5 FOBs were sanctioned out of which 4 road works and 5 FOBs were completed. The remaining works of TNUDP–III are merged with CMDP Division IV of Metro Wing, the details of the works are shown in **TABLE 9.6**.

**TABLE 9.6 DETAILS OF TNUDP –III WORKS**

<b>Sl. No</b>	<b>Nomenclature</b>	<b>Stage of work</b>	<b>Amount Rs. in Crore</b>
1.	Widening and Strengthening of Koladi Road km 0/0-7/0 (Single Lane to Double Lane) ODR	Completed	25.55

<b>Sl. No</b>	<b>Nomenclature</b>	<b>Stage of work</b>	<b>Amount Rs. in Crore</b>
2.	Widening and Strengthening of Ariyalur Vilangadupakkam Road km 0/0-6/4 (ODR) (Single Lane to Double Lane)	Completed	10.24
3.	Widening and Strengthening of Madhervedu Road km 0/0-1/6 (ODR) (Single Lane to Double Lane)		3.62
4.	Widening and Strengthening of Minjur Kattur Thirupalaivanam Road km 0/0-17/4		45.41
5.	Widening and strengthening of the Taramani link road km 0/0-3/650	Work has been completed on the LHS and RHS will be completed after the completion of Macro drain work by PWD, WRO.	32.23
6.	Construction of Foot Over Bridges with escalators in 5 places at Tambaram-MEPZ, Pallavaram, Perungudi, Taramani, SBIOA-annanagar of Chennai Metropolitan Area	Completed	28.00
	Other project component		22.27
		<b>Total</b>	<b>167.32</b>

### **9.3 CONSTRAINTS**

In implementation of Metro works, the following are the constraints:

1. The works executed by Metro Wing being in heavily congested localities of Chennai city is exerting burden on traffic management which warrants diversion of traffic to provide required work front.
2. Restriction on working hours as the works are being allowed during night hours only between 11 pm and 5 am.
3. Shifting of public service utilities such as water pipe line, sewerage lines, EB cables & poles, bus shelters which warrants additional land acquisition causing cost and time overrun.
4. Many of underground utilities could not be properly identified at the time of project preparation. These utilities could be exactly located only after commencement of works. Moreover the land acquisition process can be commenced only after identification of utilities and requirements of service departments, resulting in delay in construction of work.
5. Land acquisition process is tedious job in Chennai city and needs major coordination from the revenue department. The minimum

time required for land acquisition is 27 months. Further delay also occurs if the land owners approach the court for higher compensation.

6. Chennai Metro Rail works & CMWSSB works are also under progress in the CMDP project areas which adversely affect the progress of works.
7. Some of the project preparation as well as execution need NOC and concurrence from CMRL/Mono Rail/NHAI and other departments which also affect the progress of works.
8. The time and cost factors mentioned above acts as a deterrent for the contractors to participate in the tendering process. For example in the case of construction of Road Over Bridge (ROB) at LC. No: 3 near Mattumandhai, there was no response from the bidders. Hence the implementation of this work delayed by more than 1 year.
9. In addition to the above constraints, the specific issues are involved in the following ongoing works.
  - In the work of Construction of Grade Separator in EVR salai near Anna Arch, the work could not completed within the agreement period due to the reasons such as clearing the encroachments by revenue

authorities, change in alignments during execution, restricted working hours even during the night hours due to the movement of high volume of heavy containers plying to harbour, restricted permissions given by Traffic police to carry out work due to which the work was carried out consecutively instead of parallel activities.

- Regarding the construction of grade separator at Velachery Vijayanagar, the diversion of traffic requires formation of motorable box type structure for a width of 5.5m over PWD open canal for a length of 1.1km on Velachery Bypass and Tambaram Road. On Taramani side macro drain work done by PWD also hampers the speedy work of the grade separator. On both sides, EB lines shifting is a major issue in this project.
- In Porur, since the existing CMWSSB Water mains of size 1500&1200mm dia could not be shifted, the span arrangements and pier locations were redesigned. Also the traffic flow is so heavy with no diversion option and to construct the obligatory span, the traffic is diverted through the adjacent spans which affects the progress in four adjacent spans. Due to heavy traffic flow upto midnight, majority of the concrete works are carried out from midnight to early morning hours only.

- In Medavakkam grade separator, no alternative road for diversion of existing traffic is available to take up the bridge proper work. Consequently the service road need to be constructed first in order to divert the traffic. For the construction of service road, Nanmangalam forest land for an extent of 1.32 Acre to be acquired, huge number of residential cum commercial building are to be evicted, the land acquired under ULC Act are to be transferred and huge number of electrical poles and transformers are to be shifted. Due to these constraints, the expected progress could not be achieved.

However, concerted efforts are being taken to overcome the constraints by constant monitoring so that the works are not delayed.

#### **9.4 OVERALL EXPENDITURE FOR THE YEAR 2015-16 AND ALLOCATION FOR 2016 - 17**

During 2015-16, an expenditure of Rs.160.73 crore has been incurred for implementation of various works under the above schemes despite the above bottlenecks.

For the year 2016-17, revised budgetary allocation of Rs. 306.60 Crore has been made under CMDP scheme.



**Grade Separator at Moolakadai in Chennai City inaugurated by the Hon'ble Chief Minister on 13.11.2015**



**Grade Separator at Thirumangalam in Chennai City inaugurated by the Hon'ble Chief Minister on 13.11.2015**





**Grade Separator near Anna Arch in Chennai city  
inaugurated by the Hon'ble Chief Minister on 01.03.2016**



**Malaipattu Bridge in Kanchipuram district  
inaugurated by the Hon'ble Chief Minister on 13.11.2015**



## **10.TAMIL NADU ROAD SECTOR PROJECT**

Tamil Nadu Road Sector Project II was formed in the year 2013 with an aim to upgrade high traffic road corridors in the State. The Tamil Nadu Infrastructure Development Board (TNIDB) under the Chairmanship of Hon'ble Chief Minister has allotted an amount of Rs. 65 Crore for carrying out Detailed Project Report (DPR) Preparation for a length of 2079 km to have a shelf of Projects for upgrading. DPR preparation for the selected roads were taken up through five Consultants and has been completed for 573 km road length. DPR work for the remaining stretch is in the final stage of completion.

World Bank appraisal mission for the initial phase of the project was completed in mid December 2014. Loan and Project Agreement for US\$ 300 Million covering road up gradation, maintenance, Institutional Capacity Enhancements and Road Safety were signed on 28.05.2015 and loan became effective on 10.07.2015.

World Bank loan component will also support the associated activities like transaction advisory, supervision of quality control, and other related consultancy services.

Under the Engineering, Procurement & Construction (EPC) & Public Private Partnership (PPP) mode of contracts, major risks related to design, time, and cost overrun are transferred to the contractors and payments are linked to outcomes, thereby providing stronger incentives for provision of better services to road users, pursuit of investment, operational efficiency and optimization of costs over the contract life cycle. In case of maintenance, similar objectives are being sought to be achieved through multiyear maintenance contracts wherein payments are linked to performance. The project is adopting e-procurement system (NIC platform) for ICB / NCB procurement.

In order to expedite the land acquisition and resettlement implementation, three Special District Revenue Officer units have been formed. A software has also been developed and implemented for clear monitoring of Land Acquisition and Resettlement payments to the Project Affected Persons.

Utmost importance has been given to address environment and social impacts due to Project Implementation.

Following are the components approved under TNRSP-II

## 10.1 PROJECT COMPONENTS

<b>COMPONENTS</b>	<b>Cost (Rs)</b>
1. Road upgrading under EPC contracts – 427.65 km	: 2414.28 Cr.
2. Road upgrading under PPP contracts - 146.00 km	: 1499.06 Cr.
3. OPRC – 597 km	: 239.00 Cr
4. Consulting Services	: 108.51 Cr.
5. Institutional Capacity Enhancement	: 66.00 Cr.
6. Road Safety	: 120.00 Cr.
7. LA and R&R	: 693.00 Cr.
8. Miscellaneous services	: 31.15 Cr.
<b>Total</b>	<b>5171.00 Cr.</b>

## 10.2 ROAD NETWORK IMPROVEMENT

The components envisage upgradation and long term maintenance of selected roads within the state's high density core road network, through three contracting methods as explained below.

### 10.2.1 UPGRADATION AND MAINTENANCE THROUGH EPC CONTRACTS:

Construction of civil works for widening and upgrading of 427 km of roads of Core Road Network (CRN) to two-lane with paved shoulders standards and maintenance for 5 years has been awarded and

works are in progress. **Table – 1** shows the details of works of EPC packages.

**Table- 1**

<b>Contract</b>	<b>SH No.</b>	<b>Name of the road stretch</b>	<b>Length in km</b>	<b>Agreement amount Rs. in Crore</b>
EPC01	SH116	Upgrading Kanchipuram - Vandavasi Road (SH116) km 14/300 to km 36/700	22.342	184.98
	SH58	Upgrading Sadras - Chengalpattu - Kancheepuram - Arakkonam - Thiruthani Road (SH58) km 0/000 to km 26/811	26.14	
EPC02	SH4	Upgrading Arcot - Villupuram Road (SH4) km 29/800 to km 110/165 and km 113/325 to km 114/600	83.075	320.02
EPC03	SH9	Upgrading Cuddalore - Chittoor Road (SH9) km 41/700 to km 44/000 and km 45/000 to km 66+190 and construction of a new link road between SH9 and	28.45	95.22

<b>Contract</b>	<b>SH No.</b>	<b>Name of the road stretch</b>	<b>Length in km</b>	<b>Agreement amount Rs. in Crore</b>
		SH137 (km 66+190 to km 71+147)		
EPC04	SH70	Upgrading Vridhachalam - Parangipettai Road (SH70) km 0/000 to km 35/800	35.80	162.41
EPC05	SH86	Upgrading Omalur - Sankari - Thiruchengode - Paramathy road (SH86) km 54/800 to km 81/000	26.20	103.81
EPC06	SH79	Upgrading Malliyakarai - Rasipuram - Trichengode - Erode Road (SH79) km 0/000 to km 30/600 and km 51/400 to km 71/300	50.50	224.06
EPC07	SH95	Upgrading Mohanur - Namakkal - Senthamangalam - Rasipuram Road (SH95) km 0/000 to km 13/100	13.10	63.95
EPC08	SH89	Upgrading Nanguneri - Bharatavaram -	35.20	110.99

<b>Contract</b>	<b>SH No.</b>	<b>Name of the road stretch</b>	<b>Length in km</b>	<b>Agreement amount Rs. in Crore</b>
		Ovari Road (SH89) upto ECR junction km 0/000 to km 35/200		
EPC09	SH44	Upgrading Paruvakudi - Kovilpatti - Ettayapuram - Vilathikulam - Vembar Road (SH44) km 22/500 to km 38/750 and km 41/300 to km 56/700	31.65	152.97
EPC10	SH41	Upgrading Rajapalayam - Sankarankoil - Tirunelveli Road (SH41) km 1/800 to km 28/000 and km 33/800 to km 82/800	75.20	286.50
		<b>TOTAL</b>	<b>427.66</b>	<b>1704.91</b>

### **10.2.2 UPGRADATION AND MAINTENANCE THROUGH PUBLIC PRIVATE PARTNERSHIP (PPP) UNDER MODIFIED ANNUITY MODE:**

It is proposed to take up widening to four lane standard of approximately 146 km of roads of CRN through PPP modified Annuity mode. After

obtaining final no objection of the World Bank, tenders for the works shown in **Table-2** will be invited shortly.

**Table-2 PPP WORKS**

<b>Contract</b>	<b>Name of the Road</b>	<b>Length in km</b>	<b>Cost Rs in Cr</b>
PPP-01	Gobi - Erode road km 123/000 to km 153/600	30.60	352.43
PPP-02	Oddanchatram - Dharapuram-Tiruppur road km 37/400 to km 108/400	70.20	660.00
PPP-03	Tirunelveli – Tenkasi road km 5/000 to km 50/600	45.64	528.70
<b>Total</b>		<b>146.44</b>	<b>1541.13</b>

### **10.2.3 MAINTENANCE THROUGH MULTI-YEAR OUTPUT AND PERFORMANCE BASED ROAD CONTRACT (OPRC);**

Output and Performance Based Maintenance Contracts for roads were designed to increase the efficiency and effectiveness of road asset management and maintenance. Minimum road conditions and Service Levels are defined through output and performance measures for which the contractor is responsible.

Roads improved under TNRSP I (Arcot – Tiruvarur and Nagapattinam – Tuticorin) for a length of about 597 km have been entrusted in two packages for 5 years maintenance period adopting

output and performance based maintenance contract approach and the works are in progress.

### **10.3 CONSULTANCY SERVICES**

Three consultancy services have been engaged to supervise the 10 EPC contract packages and one consultant has been engaged to monitor the OPRC works.

### **10.4 INSTITUTIONAL CAPACITY ENHANCEMENT (ICE)**

This component aims to implement the Institutional Capacity Enhancement Plan (ICEP) broadly outlined by the Highways Department and approved by GoTN. The project will support (a) policy level actions and commitments to improve both mobilization and allocation of resources in the road sector and (b) operational level initiatives to enhance enterprise-level efficiency through

- (i) Process improvements;
- (ii) Organizational restructuring;
- (iii) Sustaining investments in IT infrastructure; and
- (iv) Training & Knowledge Management.

An amount of Rs. 66.00 Crore for the ICE components has been approved under the World Bank loan.

## **10.5 ROAD SAFETY**

The project will support achievement of improved over all road safety in the state at two levels, viz., State and District levels.

An amount of Rs. 120.00 Crore for Road Safety components has been approved under the World Bank loan.

The implementation of ICE and RS components are being taken up through the newly formed ICERS Cell under the control of Director General, Highways Department

## **10.6 LAND ACQUISITION (LA) AND RESETTLEMENT AND REHABILITATION (R&R) ACTIVITIES.**

Government have given approval for the Resettlement Policy Frame work (RPF) for the project in line with the new Right to Fair Compensation and Transparency Act in Land Acquisition, Rehabilitation and Resettlement (RFCTLARR) Act 2013 and WB Operational guidelines for Compensating land acquisition and project affected people. The RPF covers the principles and objectives of resettlement, process for conducting census survey, socio-economic surveys, and preparation of Resettlement Action Plan (RAP), entitlements for different types of impacts, process of land acquisition, valuation of affected assets.

Consultations and disclosure, institutional arrangements, coordination with civil works, grievance redress mechanism and monitoring and evaluation arrangements. Government have also given approval for the interim compensation to be paid for Land Acquisition.

## **10.7 MISCELLANEOUS SERVICES**

In the project components, an amount of Rs. 31.15 Crore has been provided for procurement of consultancy / advisory services, third party audit consultancy, Front End Fee and Project Contingencies.

## **10.8 OVER ALL EXPENDITURE 2015 – 2016 ALLOCATION FOR 2016 – 2017**

During 2015-16, expenditure for Rs.330.55 Crore have been incurred for implementation of various works under the above schemes.

For the year 2016-17, a revised budgetary allocation of Rs.1220.28 Crore has been made under this scheme.

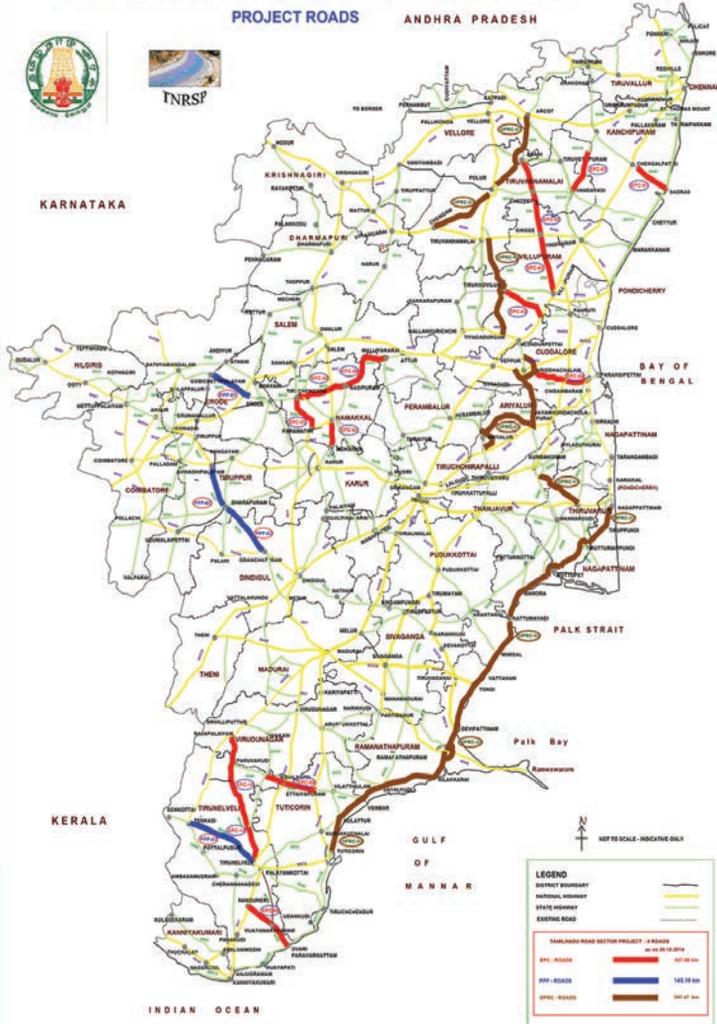
# TAMIL NADU ROAD SECTOR PROJECT - II

PROJECT ROADS

ANDHRA PRADESH



KARNATAKA



KERALA

8000 METRE SCALE - INDICATIVE ONLY

**LEGEND**

- DISTRICT BOUNDARY
- NATIONAL HIGHWAY
- STATE HIGHWAY
- EXISTING ROAD

TAMIL NADU ROAD SECTOR PROJECT - II ROADS	UP TO 25.12.2014	UP TO 31.03.2015
PPP - ROADS	Red line	145.39 km
PPP - ROADS	Blue line	145.39 km
PPP - ROADS	Brown line	145.39 km

INDIAN OCEAN



## **11.HIGHWAYS RESEARCH STATION**

Highways Research Station was established in 1957, in the model of Central Road Research Institute, New Delhi, for adopting new technology innovated world wide to suit the climate, geography and traffic conditions of the State of Tamil Nadu. Ever since, it has been functioning, as a prestigious institution under the Highways Department. Under the control of the Director, Joint Director, Four Deputy Directors (Research) and eight Divisional Engineers (Quality Control) are look into the activities of HRS. The objectives and functions of Highways Research Station are as follows;

- Assurance of quality standards for the materials used in the construction of roads at all stages of works executed by the Department
- Continuous Research in all fields of Highway Engineering with a view to utilize the resources optimally for achieving the best quality road network in the State
- Offering suggestions to field Engineers for arriving at a solution in distressed areas
- Identifying accident-prone areas, suggesting suitable remedial measures to minimize the accidents and suggesting improvements to Junctions
- Imparting training to the Engineers in various fields related to Highways works

## **11.1 QUALITY CONTROL MECHANISM**

A three-tier quality control system is in place to check the quality of works at all stages, by conducting required tests. Quality control laboratories at Circle and Division levels have been established to achieve the above purpose. The quality checks conducted at the preliminary stage of a work, avoid considerable wastage of time, energy and financial resources and enable to take corrective measures at initial stage itself.

## **11.2 LABORATORIES**

Four laboratories viz., Soils, Concrete, Bitumen and Traffic at Highways Research Station and eight Regional Laboratories at Thanjavur, Coimbatore, Madurai, Tirunelveli, Trichy, Tiruppur, Villupuram and Salem are functioning to achieve the above objectives.

Highways Research Station is involved in designing flexible and rigid pavements, subsurface soil exploratory works, pile load tests for bridges, non-destructive tests on concrete members, tests on steel, Concrete and Bituminous mix designs for all layers and elements of Roads and Bridges, evaluation of surface characteristics of roads conducting surface roughness tests, structural evaluation by carrying out Bencklemen Beam Deflection (BBD) test, designing the pavements

based on traffic and assessing the Vehicle Damage Factor (VDF) by Axle load tests.

The junction pattern and existing characteristics are closely studied. Based on the data collected and detailed analysis, road junctions are redesigned and improved for reducing Road Accidents drastically.

### **11.3 RESEARCH ACTIVITIES**

During the year 2015-16, the following two research schemes have been taken up under Tamil Nadu Innovative Initiation Fund by this Institution are in progress;

1. Study on performance of Bituminous pavement laid over stabilized sub base
2. Accident study for vulnerable road users

### **11.4 TRAINING**

Training is an important activity in any organization because training paves way for the growth and development of human resources. Training updates the knowledge resource with the latest technological trends or development in the field of Highways Engineering. Training Wing of HRS has been organizing training programmes to foster technical knowledge amongst the Engineers of the Department.

Every Tuesday, Weekly Technical Lecture programme is being organized, by inviting a guest

speaker. Guest Speakers from different walks of professional stream have delivered guest lectures. The programme recently crossed its 150th week mark, during April 2016. Nearly 5400 participants have attended the sessions so far.

As a part of training activities during 2015-16, about 59 Engineers of Rural Development & Panchayat Raj Department have undergone training on QC procedures at HRS from August to September 2015.

About 33 students from reputed Engineering Colleges/Universities have completed inplant training and 24 Engineering students completed their project thesis work at HRS.

Tentative Programme for training the engineers of the Department under various topics have been drawn up for the year 2016-17. An exclusive Training Centre, to suit the training needs of the Department, with the latest state-of-the-art facilities is under construction at an estimated cost of Rs. 15.57 Crores at HRS campus.

## **11.5 CO-ORDINATION WITH IRC**

The HRS is actively co-ordinating with IRC, in the recent past. The Director, HRS is a member of Technical committees and Sub-committees of IRC. The IRC, has nominated representatives from HRS as core committee members in its committees.

The Engineers of Highways Research Station have actively taken part in the IRC annual sessions and presented Technical papers.

The topics of the technical papers presented during 76th annual sessions at Indore, Madhya Pradesh, are as follows;

- 1) Fibre Reinforced Concrete Pavements – A Way to Green Environment.
- 2) Leather Waste in Bituminous Pavement – A Green Construction Technique.
- 3) Reduction of Carbon Emission by Using Stress Relieving Interlayer in Pavements.
- 4) Role of Human Factor in Road Accidents – Pedestrian Vulnerability Assessment – A Case study.

'IRC Publication Sales Extension Counter' has been established for the benefit of the students and professionals in HRS campus.

## **11.6 MEMORANDUM OF UNDERSTANDING WITH CRRI:**

The HRS has entered into a Memorandum of Understanding (MoU) With Central Road Research Institute, New Delhi. Through the MoU, the latest innovations in Technology will be exchanged. The MoU was signed by the Director, CRRI, New Delhi and the Director, HRS, in the presence of the Principal Secretary to Government, Highways and Minor Ports Department on 17.03.2015, at HRS,

Chennai. Under the MoU, joint projects and training are to be carried out.

55 Engineers of all cadres from Assistant Engineer to Superintending Engineer, took training on "Road Safety Audit" at HRS, under the guidance of experts from CRRI, during October 2015. One day Awareness Training programme on Bridge Health monitoring was also conducted by a senior scientist from CRRI.

On the similar lines, a Joint Development Agreement is to be entered into with the IIT-Madras, Chennai. Memorandum of Understanding with Anna University, Chennai is also under active consideration.



**Post Quality Audit at Tirumangalam – Usilampatti Road  
by Quality Assurance Wing**



**Pile Load Test for Bridge across Amaravathi River  
connecting Melapalayam and Koyampalli in Karur District**



## **12. PLANNING, DESIGNS AND INVESTIGATION**

The Planning, Designs and Investigation wing is entrusted with field investigation and preparation of Detailed Project Report for river bridges, grade separators, Road over bridges (ROB)/Road under bridges (RUB) proposed to be executed by various wings of the Highways department.

This wing has five investigation divisions at Chennai, Madurai, Tirunelveli, Salem, Coimbatore and four designs divisions at Chennai with one Joint Chief Engineer and is headed by the Chief Engineer.

### **12.1 INVESTIGATION DIVISIONS AND THEIR ACTIVITIES**

The investigation divisions undertake the following field works.

#### **12.1.1 Field Investigation and Sub-Soil Exploration**

- Detailed investigation at proposed bridge site and collection of field data.
- Obtaining required particulars from Public Works Department for River Bridges and from Railways for ROB and RUB works.
- Sub-soil investigation through exploratory bores to ascertain the bearing capacity of the sub-soil and to decide the foundation of the bridges.

### **12.1.2 Preparation of Detailed Reports and Drawings**

- Preparation of site plans incorporating all the field details
- Preparation of alignment drawings and getting approval from the alignment committee.
- Preparation of cross sectional and longitudinal sectional drawings along the stream & alignment and computation of hydraulic particulars.
- Recommendation of suitable proposals based on field investigation and sub-soil exploration

## **12.2 DESIGNS DIVISIONS AND THEIR ACTIVITIES**

The activities of designs divisions are as follows:

- Preparation of designs, drawings, and quantity estimates for river bridges, ROBs, RUBs, grade separators and other highway structures.
- Proof checking the alternative designs furnished by the bidders and according approval.
- Proof Checking the Detailed Project Reports prepared by the consultants who are engaged by various wings of the department.

Scrutinizing and giving recommendations to facilitate the issue of permit for non-standard heavy motor vehicles to ply on roads.

### **12.3 WORKS COMPLETED:**

During 2015-16, preparation of design, drawings and estimate for 10 ROBs / RUBs, 20 river bridges, 2 Limited use subways, 1 Grade Separator and revised design for 7 bridge works have been completed.

Technical guidance for restoration of retaining wall in the hill road leading to Arthanareeswarar temple at Thiruchengodu was also offered.

In addition, design and drawings prepared by the consultants for 2 ROBs / RUBs , 8 river bridges, 5 flyovers, 2 foot over bridges, 2 pedestrian subways and revised design for 1 bridge work were proof checked. Totally, 61 works have been completed by this wing during the year 2015-16.

During the current year, preparation of design, estimate and drawings for 2 ROBs / RUBs, 5 river bridges, and proof checking of DPR prepared by the consultant for 1 foot over bridge, 1 limited use subway, capacity check of Bridge at Southern Sector of IRR for MRTS platform construction and revised design for 2 bridge, totaling to 12 works have been completed.

## **12.4 PROGRAMME OF WORK (2016-17)**

It is proposed to collect field particulars and to prepare design for 27 ROBs / RUBs, 10 river bridges, 4 limited use subways and 6 bridge design modifications, totaling to 47 works.

In addition, DPR works prepared by the consultants for 9 ROBs / RUBs, 4 river bridges, 7 grade Separators, 1 pedestrian subway, 1 foot over bridge, 3 flyovers, 1 bridge in Peripheral road and 3 bridge design modification, totaling to 29 works are to be taken up for proof checking.

As on date 76 Works and in addition to that other works which are expected to be received during the financial year 2016 - 17 are also to be taken up.

## **13.TAMIL NADU ROAD DEVELOPMENT COMPANY LTD**

Tamil Nadu Road Development Company (TNRDC) Ltd, was incorporated in 1998 for identifying and implementing major infrastructure projects in road sector in the State of Tamil Nadu under Public Private Partnership format by attracting and mobilizing private sector investments.

TNRDC is a joint venture of TIDCO and TIDEL with the equity share capital in the proportion of 50:50 both of which are undertakings of Government of Tamil Nadu. The Chairman of the Board is the Additional Chief Secretary, Highways and Minor Ports Department and has representation from various stake holders as well as Independent Directors in accordance with the Companies Act.

### **13.1 PROJECTS IMPLEMENTED BY TNRDC**

#### **13.1.1 East Coast Road Project (ECR) Chennai Akkarai to Puducherry (km 22/300 – km.135/500)**

TNRDC had entered into a long term Concession Agreement with Government of Tamil Nadu on 22nd December 2000 and have taken up 113.20 km stretch of ECR from Kudimiyandithoppu near Akkarai on the outskirts of Chennai to Koonimedu on the outskirts of Pondicherry for

improvement, operation and maintenance under PPP format.

TNRDC had completed the project at a cost of Rs. 60 Crore and the date of commercial operations commenced on 24<sup>th</sup> March 2002 and attending the regular maintenance works.

## **13.2 PROJECTS UNDER IMPLEMENTATION BY TNRDC AS MANAGING ASSOCIATE**

### **13.2.1 Chennai Outer Ring Road – phase I**

The Government of Tamil Nadu has decided to provide a major connectivity Corridor on the western side to ease the congestion for free and quick flow of traffic. Administrative sanctions have been accorded for the development of Chennai Outer Ring Road Project phase-1 as a Green Field Project with the formation of dual three lanes with Service Roads for a length of 29.65 km from Vandalur in NH-45 to Nemilichery in NH-205 via Nazarathpet in NH-4 at a cost of Rs. 1081.40 Crore.

The completed portion of the project road to a length of 27.00 km from Mannivakkam to Nemilichery has been inaugurated by the **Hon'ble Chief Minister** of Tamil Nadu on 28.08.2014 and put to public use.

At present 97% of works have been completed. The land acquisition process is expected to be completed by September 2016 and the

balance 3% of works are targeted to complete by September 2017.

### **13.2.2 Chennai Outer Ring Road - phase II**

The Government have sanctioned the Chennai Outer Ring Project phase-II, a major six lane road connectivity project to a length of 30.50 km from Nemilicheri in NH-205 to Minjur in Thiruvottiyur - Ponneri - Panchetti (TPP) Road via Padiyanallur in NH-5 at a cost of Rs. 1075 Crore under the Design, Build, Finance, Operate and Transfer (DBFOT) mode with Semi Annual Annuity payment.

The **Hon'ble Chief Minister of Tamil Nadu** laid Foundation Stone for Chennai Outer Ring Road phase-II on 28.08.2014.

At present 82% of works have been completed and the balance works are in progress. The project has to be completed by September 2016 as per Concession Agreement. But due to heavy rainfall in November and December 2015 resulting in heavy floods affecting the project work, the project is likely to be extended upto December 2016.

### **13.2.3 Ennore Manali Road Improvement Project (EMRIP) / Chennai Ennore Port Road Connectivity Project**

The Project envisages the improvement of about 30 km road network in North Chennai with

the objective of establishing seamless and efficient road connectivity from Chennai and Ennore Ports to NH network. The roads that are being improved include the Ennore Expressway, Manali Oil Refinery Road, Northern part of Inner Ring Road and Thiruvottiyur-Ponneri-Panchetti Road.

NHAI, the project lead sponsor, has engaged TNRDC as its Managing Associate and subsequently as Supervision Consultant.

As on date, 93% of works have been completed and the balance works will be completed soon.

#### **13.2.4 Improvements to North Chennai Thermal Power Station Road (including Athipattu ROB) and Ennore Port Road**

M/s. Toshiba, a Japanese concern – JSW Turbine and Generator Pvt. Ltd., (JV) have set up a manufacturing plant in Andarkuppam at km. 6/150 of Thiruvottiyur – Ponneri - Panchetti Road. The shipments from this manufacturing unit has to be transported by heavy Special Transport Vehicle (525 MT) needs to travel 7.35 km on the Thiruvottiyur – Ponneri - Panchetti (TPP) road, 4.8 km on North Chennai Thermal Power Station (NCTPS) road and 2.4 km on Ennore Port road to reach Ennore Port. Among these three roads, Thiruvottiyur – Ponneri - Panchetti Road which is

part of the Ennore Manali Road Improvement Project (EMRIP) is being improved in EMRIP project.

TNRDC is the Managing Associate for the project in other two roads viz.,

(i) North Chennai Thermal Power Station Road km 0/0 – 4/8 and

(ii) Ennore Port Road km 0/0 – 2/4

This is an unique project in which the road and bridges are designed to sustain 525 MT Special Over designed shipment for the first time in Tamil Nadu. The railway bridge also faces with massive technical challenges because of the difficult terrain and location being proximity to the sea. All these challenges have been overcome successfully and all the bridges have been completed and tested successfully.

All the works have been completed and the **Hon'ble Chief Minister of Tamil Nadu** inaugurated the project on 14.02.2016. M/s Toshiba have successfully transported the manufactured equipment from its plant by Special Transport Vehicle (STV) carrying Over Dimensional Cargo (ODC) through the project roads and bridges on 11.04.2016 to Ennore Port.

### **13.2.5 Northern Port Access Road (Chennai Peripheral Road phase-I)**

The proposed Northern Port Access Road is an important link to the fast growing Ennore and Kattupalli Ports which handle major cargo

movements. The proposed new road will connect the Northern Gate of Ennore Port and Thatchur on NH-5 with an additional spur road linking Thiruvottiyur – Ponneri - Panchetti (TPP) Road.

This will also cater to the needs of the recently developed Kattupalli Port by L&T.

The total length of this road connecting Ennore Port to Thatchur is about 21.15 km and length of the TPP link Road is 4.35 km. The work is proposed for execution in two phases as under:

**phase-I:** Construction of the road from Ennore Port entrance to Neidavoyal village (km 0/0 to 6/2), from Neidavoyal village to Vallur link road (km 4.350) totaling 10.550 km.

**phase-II:** Construction of the balance portion of length 14.95 km from Neidavoyal to Thatchur in NH-5.

The Government in G.O.(Ms).No.33 Highways and Minor Port (HF2) Department, dated 19.02.2016 accorded administrative sanction for Northern Port Access Road for a sum of Rs. 951 Crore (Rupees Nine Hundred and Fifty One Crore only) towards land acquisition in 15 Villages of Ponneri Taluk in Thiruvallur District and the land acquisition is under process.

### **13.2.6 Widening of East Coast Road into four lane and improvements**

The East Coast Road, from Akkarai to Koonimedu on outskirts of Puducherry state limit was initially improved to two lane carriageway with hard shoulders and maintained by TNRDC as a Toll Road from 24<sup>th</sup> March 2002. The increasing traffic intensity is the cause of increased accident rates in the absence of centre median besides insufficient carriageway necessitated the widening of this road to four lane with divided carriageway from Akkarai to Mamallapuram as phase I, including geometric improvements to curves and junctions between Mamallapuram and Puducherry border wherever necessary.

Accordingly, administrative sanction was accorded by the Government for Rs. 272.10 Crore. Out of this, a sum of Rs. 108.84 Crore funded by the Government as Viability Gap Fund which is 40% of Project Cost to TNRDC. The balance amount has to be mobilized by TNRDC.

The work commenced on 28.2.2014 and 77% of the works have been completed and further works are in progress.

- ❖ Out of 33.5 km on LHS & RHS, dual two lane carriageway a length of 28 km on LHS and a length of 27 km on RHS have been completed. Balance works are in progress.

- ❖ Out of 13 curve improvement works, 7 works completed and out of 7 junctions improvement works 3 completed. The balance works are held up owing to stay order of Hon'ble National Green Tribunal (Southern Zone).

All the works from km 22/300 (Akkarai) to km 55/800 (Mahabalipuram) are targeted to complete by August 2016.

### **13.2.7 Reconstruction of existing bridge and Construction of additional two lane Bridge across River Palar in ECR**

The Government has sanctioned an amount of Rs. 134 Crore for "Reconstruction of the existing Palar Bridge and construction of an additional two lane bridge near Vayalur on the East Coast Road (km 76/000)".

The revised estimate cost works out to Rs. 105.20 Crore including the construction cost of bridge proper Rs. 85.19 Crore, supervision charges, Quality control, escalation etc. for the change in nomenclature, i.e. "Construction of new 4-lane high level bridge across river Palar at km 76/000 at Vayalur at ECR and retaining the existing bridge for slow moving vehicle and pedestrian", which was approved by the Government. The construction period is 2 years and the entire works have been completed and the bridge was opened to traffic on 14<sup>th</sup> February 2016.

### **13.3 IT EXPRESSWAY LTD (ITEL)**

M/s. IT Expressway Ltd (ITEL) was incorporated by TNRDC in the year 2004 as its wholly owned subsidiary for domiciling the IT Corridor Project, with a shareholding pattern of 77% by TNRDC and balance 23% by TIDCO.

### **13.4 PROJECT SO FAR COMPLETED BY ITEL**

#### **13.4.1 Rajiv Gandhi Salai (IT Corridor) phase-I**

The Rajiv Gandhi Salai (IT Corridor) phase-I was developed as a dual three lane road from Madhya Kailash to Siruseri for a length of 20.10 km. The link road connecting Sholinganallur and East Coast Road for a length of 2.15 km was also included in the project and was widened to a four lane road. This road is being maintained as a toll road.

### **13.5 PROJECT IN PIPELINE WITH ITEL**

#### **13.5.1 Rajiv Gandhi Salai (IT Corridor) phase-II**

In view of extending the phase-I of Rajiv Gandhi Salai (IT Corridor) upto Mamallapuram, the Government has proposed construction of six lane road from Siruseri to Mamallapuram for a length of 25 km, including two bypasses (Kelambakkam and Thiruporur) in phase-II of Rajiv Gandhi Salai, under

a viable financial arrangement through public private partnership.

The Government have sanctioned Rs. 294.68 Crore for land acquisition in first phase. An extent of 88.62 hectares has to be acquired in 13 villages for widening this road to a width of 60 m. So far 32.40 hectares have been acquired and the land acquisition process is in various stages for the remaining extent.

The consultant had submitted the final DPR for phase II. The estimated project cost as per the DPR is Rs. 573.99 Crore. The Government have decided to implement the two bypasses for Kelambakkam and Tiruporur in the first stage. The total estimated cost for Kelambakkam and Tiruporur bypass as per the Schedule of Rates (SoR) 2014-15 works out to Rs. 268.10 Crore. The detailed estimate has been sent to the Government for administrative sanction.

### **13.5.2 Multi Level Car Parking (MLCP) at Siruseri**

The **Honourable Chief Minister of Tamil Nadu** has made an announcement for “the Construction of a Multi Level Car Parking (MLCP) at Siruseri, under Public Private Partnership mode”. It will be designed with 20 floors to accommodate 2000 cars and bus parking area to park 50 buses at a time. The project will be executed under Design,

Build, Finance, Operate and Transfer (DBFOT) basis. The estimated cost of this project is Rs. 200 Crore.

The concession period is fixed as 20 years including 24 months construction period.

The consultancy services for the preparation of Detailed Feasibility Report (DFR) was awarded and the consultant had submitted the DFR and RFP document for calling tenders. Tender Notice for appointment of Concessionaire was published on 06.06.2016 with 08.07.2016 as last date for receipt of tender. However, no bids were received. The project is being reviewed and will be retendered in due course.

### **13.5.3 Elevated Corridor**

**The Hon'ble Chief Minister of Tamil Nadu** has made an announcement for the construction of an Elevated Corridor from Taramani to Siruseri under phase-I and from Siruseri to Mamallapuram under phase-II, for a total length of 45 km. Administrative sanction of Rs. 5 Crore has been accorded for the preparation of DPR for the above work.

At present, the consultant had submitted the final draft DPR for phase-I and II and the Technical Expert Committee, comprising of officials from Government and TNRDC has reviewed the DPR and offered their remarks. The consultant has conducted

stakeholders meeting on 4.7.2016 and the final DPR is under preparation, considering the inputs by the various sectors.



**Ongoing works of Chennai Outer Ring Road Phase II  
Construction of Bituminous Surface**



**Ongoing works of Chennai Outer Ring Road Phase II  
Grade Separator at Padiyanallur**





**Ongoing works of Chennai Outer Ring Road Phase II  
Construction of Major Bridge at Seemavaram**



**Ennore Port Connectivity  
inaugurated by the Hon'ble Chief Minister on 14.02.2016**



## **14. TAMIL NADU ROAD INFRASTRUCTURE DEVELOPMENT CORPORATION**

During the year 2005-06, **Tamil Nadu Road Infrastructure Development Corporation** was established as a non-profitable organization to implement, upgrade and maintain road infrastructure in the State of Tamil Nadu. The Oragadam Industrial Corridor project and four laning of Madurai Ring Road Project are being implemented by TNRIDC.

Oragadam and Sriperumpudur are largest and most developed industrial area in Kancheepuram District. There are 4 SIPCOT units, having several prominent Indian and Multinational companies, Six global car manufacturing companies, lot of industries and National Automotive Testing Research Infrastructure Project (NATRIP) are situated in and around Oragadam and Sriperumpudur.

Due to rapid growth of industrial activities and continuous growth of industrialization the traffic intensity has drastically increased. Industries are using many multi axle trucks and goods carriers for conveying of raw material and finished products to the industries.

Considering the speedy development of industries in and around Sriperumpudur in Kancheepuram District, it was decided to improve the road infrastructure facilities for Oragadam Industrial Park.

## **14.1 PROJECT COMPONENTS**

Under the Oragadam Industrial Corridor Project, the following works are taken up in various Phases.

### **phase - I**

During the year 2005-06 under first phase, four laning work for a length of 57.40 km was taken up in two roads i.e. Singaperumalkoil – Sriperumpudur road (for a length of 24.00 km) and Vandalur – Wallajabad road (for length of 33.40 km) including construction of Grade Separator in the Junction of above two roads at a cost of Rs. 300 Crore. This scheme is under implementation at a revised estimate cost of Rs. 547.82 Crore.

### **phase - II**

During the year 2011 - 12 under second phase, the work of Improvements from four laning to six laning at km 12/6 to 24/6 of Singaperumalkoil– Sriperumpudur road was taken up for implementation at a cost of Rs. 86.50 Crore. This scheme is under implementation at a revised estimate cost of Rs. 108.66 Crore.

### **phase - III**

During the year 2014 -15 under third phase, the work of six laning of Singaperumalkoil – Sriperumpudur road km 0/6 to 12/6 was taken up for implementation at a cost of Rs. 115.00 Crore.

### **phase - IV**

During the year 2015-16 under fourth phase, the work of improvements from four laning to six laning at km 30/400 to 47/000 in Vandalur – Wallajabad road (upto Oragadam and including Land Acquisition for Padappai Bye pass) is taken up for implementation at a cost of Rs. 189.81 Crore.

## **14.2 PRESENT STATUS**

Out of 57.40 km length of Oragadam Industrial Corridor Project, 55.10 km have been completed in phase-I work. Balance 2.30 km will be completed after the completion of LA. The work of construction of a Grade Separator at Oragadam junction has been completed and is in public use.

Total expenditure incurred in phase I is Rs. 463.00 Crore which includes the expenditure of Rs. 184.62 Crore for land acquisition.

In second phase out of 12.00 km, 11.20 km (excluding Sriperumpudur and Mathur LA stretches) has been completed during March 2016 and balance 0.80 km will be taken up after the completion of LA.

An expenditure of Rs. 96.41 Crore has been incurred so far.

Out of 12.00 km in third phase, 5.80 km have been completed. Out of balance 6.20 km, 4.70 km work is in progress and remaining 1.50 km will be taken up after completion of land acquisition. An expenditure of Rs. 74.09 Crore has been incurred so far. The phase-III works will be completed during this financial year.

Out of 16.60 km in fourth phase, in 4.20 km work is in progress in various stages. The phase-IV works will be completed during the next financial year.

### **14.3 FOUR LANING OF MADURAI RING ROAD**

Madurai Ring Road having total length of 27.20 km, is the main arterial road of two lane for catering the Madurai city traffic and there is heavy traffic flow in this road due to the connectivity provided by this road to Madurai - Rameswaram Road (NH-49), Madurai - Tuticorin road (NH-45B), Madurai – Tirunelveli road (NH-7) and Madurai – Thondi road (NH-230). Also this road connects important places such as Meenakshi Mission Hospital, “Mattuthavani” integrated bus stand, Velammal medical college, airport etc. Traffic intensity of this road is very high and exceeds the capacity of existing two lanes.

Hence, the work of four laning of Madurai Ring Road from two lane to four lane from km 0/0 – 27/2, is taken up for implementation through Tamil Nadu Road Infrastructure Development Corporation under BOT (Toll) scheme at a cost of Rs. 213.69 Crore during the year 2015-16. It is proposed to widen the existing two lane road to four lane by widening on both sides so as to have a 9.0 m carriageway on either sides with center median of 1.20 m. Further it involves widening of 2 Railway Over Bridges and 1 River bridge. The project is to be executed under BOT basis with suitable VGF through Tamil Nadu Road Infrastructure Development Corporation (TNRIDC).

For this work, agreement has been executed and preliminary activities are in progress. The concessionaire is in the process of finalising the financing arrangements after which the construction work will commence.



## **15.TAMIL NADU MARITIME BOARD**

Tamil Nadu Maritime Board was formed under the Tamil Nadu Maritime Board Act, 1995 (Act 4 of 1996) from 18.03.1997, whereby the erstwhile Tamil Nadu Port Department was converted into a Maritime Board for the purpose of Administration, Management and Control of the Non-Major Ports in the State of Tamil Nadu and for matters connected therewith, with the following objectives:

1. To facilitate / encourage establishment of Port based industries such as Thermal Power Plants, Refineries, Fertilizer plants etc., by providing exclusive port facilities to handle the cargo required for such industries.
2. To provide port connectivity to the industries in the Central / Western Districts in the State of Tamil Nadu.
3. To decongest the major ports in the State of Tamil Nadu.
4. To decongest Highways and Railways by providing facilities for coastal shipping
5. To promote the maritime training activities on par with international standards.

### **15.1 COASTLINE AND PORTS**

The State of Tamil Nadu has a coast line of about 1076 Kms. Along this coastline, there are three Major Ports, namely, Ennore, Chennai and Tuticorin notified under the Major Port Trust

Act, 1963 and 23 Non-Major (Minor) Ports notified under the Indian Ports Act 1908. The major ports come under the control of Government of India and the non-major ports come under the control of the State Government.

## 15.2 MINOR PORTS IN TAMIL NADU

The following are the declared minor ports in Tamil Nadu:-

<b>Government Ports</b>	<b>Captive ports</b>
1) Cuddalore	1) Kattupalli
2) Nagapattinam	2) Ennore Minor port
3) Pamban	3) Mugaiyur
4) Rameswaram	4) Thiruchopuram
5) Valinokkam	5) Silambimangalam
6) Kanyakumari	Shipyards
7) Colachel	6) PY-03 Oil Field
	7) Parangipettai
	8) Kaveri
	9) Vanagiri
	10) Thirukkadaiyur
	11) Thirukkuvalai
	12) Punnakkayal
	13) Udangudi
	14) Manappad
	15) Koodankulam
	16) Chettinad Tharangampadi

Cuddalore, Nagapattinam, Pamban, Kanyakumari, Kattupalli, Ennore Minor Port and Thirukkadaiyur are the operational minor ports. The

other declared minor ports are under various stages of obtaining statutory clearances.

## **15.3 ACTIVITIES OF MINOR PORTS**

### **15.3.1 Government Ports**

M/s. Chemplast Sanmar Ltd., import Vinyl Chloride Monomer (VCM) for their P.V.C. factory established at Cuddalore SIPCOT Complex through their Captive Marine Terminal Facility (MTF) located within the port limits of Cuddalore Minor port.

M/s Chennai Petroleum Corporation Ltd., (CPCL) export petroleum products from their Narimanam (Nagapattinam District) refinery through their captive open sea jetty located within the port limits of Nagapattinam port. Edible oil import take place at Nagapattinam port regularly.

Small ships are piloted through Pamban Channel.

Kanniyakumari and Rameswaram ports are used for short trip passenger ferry service.

### **15.3.2 Captive Ports**

The Captive Ports are operated by private companies for their own use. The development of entire infrastructure facilities in these captive ports are the responsibility of the companies concerned.

Kattupalli Port (Thiruvallur District), Ennore Minor Port (Thiruvallur District) and Thirukkadaiyur Port (Nagapattinam District) are permitted to

operate the port either for import / export of cargo. Kattupalli Port has been permitted to handle commercial cargo also.

## **15.4 COMMODITIES HANDLED IN MINOR PORTS**

### **15.4.1 Government Ports**

**Table 15.1: Cargo Handled in Government Ports**

<b>Sl. No</b>	<b>Port</b>	<b>Shipped</b>	<b>Landed</b>
1.	Cuddalore	----	Vinyl Chloride Monomer,
2.	Nagapattinam	Diesel and Naphtha	Edible Oil and General cargo

### **15.4.2 Captive Ports**

**Table 15.2: Cargo Handled in Captive Ports**

<b>Sl. No</b>	<b>Port</b>	<b>Shipped</b>	<b>Landed</b>
1.	Kattupalli Port	Containers	Ship building and ship repair activities take place @ Kattupalli Port, General cargo
2.	Ennore Minor Port	----	Liquid Ammonia
3.	Thirukkadaiyur	----	Naphtha and Natural Gas.

## **15.5 MINOR PORT DEVELOPMENT POLICY**

Considering the importance of the industrialization for the economic development of the State, Tamil Nadu Maritime Board encourages setting up of Captive Ports, Jetties and Moorings for the port based Oil Industries, Thermal Power Projects and also multi-user ports on Build Own Operate and Transfer (BOOT) basis. The Government of Tamil Nadu has formulated and implementing a port policy to provide for investment opportunities for the development of Minor Ports in Tamil Nadu and to optimize on the investments and the Port Infrastructure.

## **15.6 INITIATIVES OF THE BOARD IN DEVELOPMENT OF PORTS**

### **15.6.1 Development of Nagapattinam Port**

The existing Nagapattinam Minor Port, located at the estuary of the Kaduvaiyaru river, is a lighterage port handling general cargo and the port is to be offered for development into a commercial port as per the existing guidelines of minor port development policy.

### **15.6.2 Development of Cuddalore port**

The existing Cuddalore Port, located at the estuaries of the Uppanar and Paravanar rivers, is presently a lighterage port handling General cargo. Under the Sagarmala Project initiated by

Government of India through Ministry of shipping, proposals have been sent seeking financial assistance for development of infrastructure facilities such as breakwaters, a dedicated jetty, enhancing security arrangements etc., and also dredging the approach channel, in order to convert into a deep water port.

### **15.6.3 Public Private Participation**

Tamil Nadu Maritime Board will invite proposals and promote non-major Ports through private investment or on Public Private Participation (PPP) mode.

## **15.7 REVENUE OF THE BOARD FOR 2015-16**

In the year 2015-16, about 8,55,776 MT of cargo, 13,464 MT of Gas and 73,060 containers were handled through the Minor Ports and the Board earned about Rs. 40 Crore as revenue.

## **15.8 TAMIL NADU MARITIME ACADEMY**

The Tamil Nadu Maritime Academy at Thoothukudi is functioning under Tamil Nadu Maritime Board. The Academy has so far conducted 25 batches of pre-sea (GP) rating courses. It is conducting General Purpose Crew training Course of 6 months duration with 40 trainees per batch. The Academy is also conducting STCW-2010 courses namely, 'Personal Survival Techniques', 'Elementary

First Aid', 'Personal Safety and Social Responsibility', 'Oil Tanker Familiarization' and 'Fire Prevention and Fire Fighting'. The 26th batch of GP rating course has commenced from January 2016.





# MINOR PORTS IN TAMIL NADU



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### GOVERNMENT PORTS

1. CUDDALORE
2. NAGAPPATTINAM
3. PAMBAN
4. RAMESWARAM
5. VALINOKKAM
6. KANYAKUMARI
7. COLACHEL

### CAPTIVE PORTS (C.P)

1. KATTUPALLI
2. ENNORE MINOR PORT
3. MUGAIYUR
4. THIRUCHOPURAM
5. SILAMBIMANGALAM SHIPYARD
6. PARANGIPETTAI
7. PY-03 OILFIELD
8. KAVERI

### PORT UNDER PROCESS (Yet to be declared)

1. PANAIYUR (Kanchipuram District)



## **16. POOMPUHAR SHIPPING CORPORATION LIMITED**

### **16.1 INTRODUCTION**

Poompuhar Shipping Corporation Limited (PSC) was formed on 11.04.1974 under the companies Act, 1956, to transport the entire coal, required by Tamil Nadu Generation and Distribution Corporation Ltd., (TANGEDCO) erstwhile Tamil Nadu Electricity Board for generation of electricity. This is the only one, State owned Shipping Corporation in our country.

### **16.2 ADMINISTRATION**

The Corporation is headed by the Chairman. The Managing Director is the chief executive. The affairs of the Corporation are managed by the Board of Directors consisting of officers nominated by the Government of Tamil Nadu. The day-to-day activities are executed by the various departments' namely technical, operation, finance and personnel & administration headed by qualified persons in the respective fields. The human resources of the corporation is 114 personnel ashore apart from the floating staff of 102 personnel for operation of three own vessels.

## **16.3 CORE ACTIVITIES**

The core activities of the corporation are transportation of thermal coal along the East Coast of India and transportation of passengers from the shore of Kanniyakumari to Vivekananda Rock Memorial and Ayyan Thiruvalluvar statue.

## **16.4 TRANSPORTATION OF COAL**

### **16.4.1 Transportation of Coal for TANGEDCO**

The entire domestic coal allotted by Indian coal companies to TANGEDCO is transported by the corporation utilizing its three specially designed shallow draft 45000 tonnage vessels namely M.V.Tamil Anna, M.V.Tamil Periyar and M.V.Tamil Kamaraj from the load ports of Haldia, Paradip and Visakhapatnam to discharge ports at Kamarajar Port, Ennore and VOC Port, Tuticorin. In addition, depending on the requirement, eight to nine vessels are also chartered from the private shipping companies for transportation of the coal.

### **16.4.2 Transportation of Coal for NTECL**

The corporation is also transporting entire domestic coal from the load ports of Paradip/Dhamra Ports to Kamarajar Port, Ennore for M/s. NTPC Tamil Nadu Energy Company Ltd., (NTECL), a joint venture Company of TANGEDCO and NTPC, for their 3 x 500 MW thermal power

stations at Vallur, North Chennai as per the Memorandum of Understanding.

#### **16.4.3 Discharge operation and workshop at Tuticorin**

Apart from providing transportation of coal, the Corporation also undertakes the stevedoring function of discharging the coal from the hatches of the ships to the hoppers installed at the coal jetty-1 at VOC Port, Tuticorin using the ship's cranes, by engaging its own qualified manpower. The maintenance work of the front end loaders used for discharge operation and minor repairs of the vessels are being carried out by the workshop at Tuticorin.

#### **16.4.4 Ferry Service at Kanniyakumari**

This corporation is also operating passenger ferry service from the shore of Kanniyakumari to the Vivekananda Rock Memorial and Ayyan Thiruvalluvar statue. For transporting the passengers, three ferries namely M.L.Guhan, M.L.Pothigai and M.L.Vivekananda with a seating capacity of 150 passengers each are being used.

#### **16.4.5 PRICING POLICY**

As the Corporation was formed with a main objective of providing the service of transportation of coal to TANGEDCO, the Corporation operates its own vessels on "Cost plus Return on Equity of 12%" and chartered vessels on "No Profit and No Loss" basis.

The transportation of coal for NTECL is undertaken with service charges of 5% on charter hire charges of the vessels chartered for their operations

## **16.5 PERFORMANCE**

### **16.5.1 Coal transportation**

The corporation transported almost the entire coal received at the load ports during the financial year through its own and chartered vessels.

The physical and overall financial performances of the corporation during the last three financial years are given in **Table 16.1**.

**Table 16.1: Physical and overall financial performances**

<b>Year</b>	<b>Quantity of coal received at load ports</b>	<b>Quantity of coal moved</b>	<b>Turn Over</b>	<b>Profit</b>
	<b>(In Lakh MT)</b>		<b>(Rs. in Crore)</b>	
2013-14	147.24	149.65	667.21	6.85
2014-15	162.68	161.54	628.12	6.89
2015-16	192.63	192.01	559.76*	7.68*

\*Provisional

### **16.5.2 Dividend**

This corporation has declared a dividend of Rs. 111.29 Lakh being 30% of the net profit after tax for the financial year 2014-15 and paid to Government of Tamil Nadu.

### **16.5.3 Passenger transportation**

The ferry service has earned a profit of Rs. 237.72 lakh during 2013-14 and Rs. 332.36 lakh during 2014-15.

The physical and financial performances of Kanniyakumari ferry service during the last three financial years are given in **Table 16.2.**

**Table 16.2: Physical and Financial Performances of Kanniyakumari ferry service**

<b>Year</b>	<b>No.of passengers Transported (in Lakh)</b>	<b>Fare collection (Rs. in Lakh)</b>	<b>Profit (Rs. in Lakh)</b>
2013-14	18.70	719.19	237.72
2014-15	19.42	716.27	332.36
2015-16	19.80	665.56	192.41*

\*Provisional

## **16.6 PLANS FOR 2016-17**

### **16.6.1 Coal transportation**

The corporation proposes to transport the total estimated coal allotment of 200.98 Lakh MT and 58.90 Lakh MT by Indian coal companies to TANGEDCO and NTECL respectively through its own and chartered vessels.



## **17.CONCLUSION**

Highways department, under the guidance of the **Hon'ble Chief Minister of Tamil Nadu** focused towards its objective of making the State most prosperous and progressive. Despite the innumerable challenges being faced, the department with coordinated effort, firm and unwavering commitment ensures provision of good quality roads and is committed to deliver the promises made.

Highways Department has evolved strategies to address the issues involved in implementation of major road infrastructure projects. On the resource mobilization part, attempts are being made to attract considerable private investments to fulfill the goals set in the Vision 2023. The key projects under Public Private Partnership (PPP) initiatives are Chennai Outer Ring Road (phase I and II) under DBFOT, Madurai Ring Road under BOT, besides improvement of three other corridors to a length of 146 km under TNRSP II. Under PBMC, upgradation and improving of Core Road Network in three Districts (Ramnad, Krishnagiri and Tiruvallur) have been taken up during 2015-16 to maintain the roads at defined service levels through output and performance measures. This will improve the efficiency of road maintenance.

The projects such as Chennai Peripheral Ring Road, Northern Port Access road, Chennai-Bengaluru Industrial Corridor proposed for external funding would play a vital role in economic development of the State. Expeditious steps would be initiated to ensure that these projects are taken up at the earliest.

Due importance would be given to the selection of projects and it would be ensured that priority is accorded to backward districts for seamless and affordable connectivity. With proper scientific allocation of resource and better monitoring system, the department would facilitate enviable safe road network in the state.

The department is aware of the multifaceted road safety issues and its impact on the socio-economic development. The increased vehicle population from 50,12,810 in 2000 to 2,15,58,272 vehicles in 2015 and capacity of the vehicles to travel at higher speeds pose threat to the road safety. Department is working on various strategies to improve the road safety situation in the State in coordination with the other stakeholders viz., Police, Transport, Health and Education department important.

The Cuddalore Port will be developed into a Deep Sea Harbour for handling Commercial Cargo will result in increase of cargo through this port and create employment opportunities in Cuddalore region. Coal, Cement, Sugar, Clinker, Timber etc.,

are identified and there is likely possibility of transporting through this port once the existing facilities are improved.

Development of infrastructure facilities such as breakwaters, approach channel, a dedicated jetty cargo handling equipment, fire fighting equipments, pollution response equipments, Security arrangements etc., are included in this project and sent to Government of India for fund assistance. This will result in the improvement of the socio-economic development of Cuddalore Region.

While a considerable amount of success has been achieved in the past five years, the department is conscious of the challenges ahead. Provision of world class connectivity and upgradation of the delivery of services associated with a firm and unwavering commitment to the creation of core infrastructure remain our constant endeavour.

Under the inspiring leadership of our **Hon'ble Chief Minister of Tamil Nadu** the department is taking continuous and constant efforts to make Tamil Nadu as numero uno in all aspects.

**Edappadi K. Palaniswami**  
**Minister for Public Works,**  
**Highways and Minor Ports**