



Highways and Minor Ports Department

Policy Note
2019-20

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Chief Minister

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Government of Tamil Nadu
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HIGHWAYS AND MINOR PORTS DEPARTMENT POLICY NOTE – 2019-20

1. INTRODUCTION

India is a fast developing economy with the second largest road network. Easy accessibility, flexibility and reliability have made road transport significant in both freight and passenger traffic.

Tamil Nadu, the most urbanized State in the country, which is a developed, economically stable and highly literate one, is pioneer on more than one count. A lead player in Automobile sector, Manufacturing, Engineering, Leather, Garment industries, Health sector, Tourism and Cultural hotspots, it is also an agrarian based granary to the country.

The GSDP of Tamil Nadu 2018-19 is Rs.1,789,703 crore, second largest State economy in the country. Agriculture, Industries and IT sectors contribute to the same.

The significant position the State occupies in the country map, is mainly due to the well developed network of roads and persistent efforts taken for a better infrastructure.

1.1 Highways and Minor Ports Department in Tamil Nadu

For the development of road infrastructure, an exclusive department for Highways was formed in 1946. There are 66,039 km length of roads in the category of National Highways, State Highways, Major District Roads and Other District Roads. These roads serve as the economic backbone by fulfilling the transportation needs of the country.

The Highways Department functions with the aim to serve the society to achieve balanced socio-economic development by enhancing the Capacity, Connectivity, Efficiency and Safety of the highways sectors by implementing various road infrastructure projects under Plan schemes.

The Highways and Minor Ports Department comprises various units as below;



1.2 Classification of Roads in Highways Department

1.2.1 Categories of Roads

1.2.1.1 National Highways (NH)

The major road network connecting state capitals, district headquarters, ports, industrial hubs and tourist centres and running through the length and breadth of the country facilitating transportation of goods and services are called National Highways. The National Highways form the lifeline infrastructure for the

socio-economic development of the nation. The National Highways strengthen and augment the movement of men, materials and freight traffic.

There are 6634 km length of National Highways running across Tamil Nadu State. Of this, 1900 km length of road stretch is maintained by State National Highways wing and the remaining 4734 km length is maintained by the National Highways Authority of India (NHAI). The National Highways are being developed with funds from the Ministry of Road Transport & Highways (MoRT&H), Government of India (GoI) by way of widening to two lane/ two lane with paved shoulders/four lane / and strengthening. Now most of the projects are executed through Engineering, Procurement and Contract mode (EPC).

1.2.1.2 State Highways

There is 11,169 km length of State Highways (SH). The State Highways are important arterial roads providing connectivity with National Highways of neighbouring States and District Headquarters. The traffic intensity in

these roads is heavy. Around 98 % of roads are double lane and multi-lane.

1.2.1.3 Major District Roads (MDR)

There are 11,612 km length of Major District Roads. These roads connect production areas, towns, and municipal areas with District headquarters. Further connectivity is provided with National Highways and State Highways. Around 97 % of roads are Intermediate Lane and above.

1.2.1.4 Other District Roads (ODR)

The Other District Roads (ODR) serve the rural production areas and provide connectivity with marketing, health care centers and Taluk headquarters and other main roads. Depending on the traffic volume, widening of ODRs are considered. There are 1676 km of sugar cane roads also classified under the ODR. The sugarcane roads connect cultivating areas with sugar mills and marketing centers. There are 36624 km length of Other District Roads including Sugarcane roads in the State of Tamil Nadu.

During budget demand 2018-2019, it was announced that the bus-route roads of Panchayat and Panchayat Union road network would be upgraded as Other District Roads and improved to ODR standards. It was decided to select 7964 km of roads and out of this, 1436 km had been upgraded as ODR in which improvements had been taken-up in 2017-18. Government sanctioned a length of 1539 km of Panchayat/Panchayat Union roads for upgradation as ODRs during 2018-19.

The details of road network maintained by the Highways Department are given below;

Table 1.1: Details of Road Network

(Length in km)

Sl. No.	Classification of Road	Length	Maintained by
1	National Highways (NH)	1900	NH wing
		4734	NHAI
	NH Total	6634	
2	State Highways (SH)	11169	C & M Wing
3	Major District Roads (MDR)	11612	
4	Other District Roads (ODR)	36624	
Total Length of Roads other than NH		59405	
Grand Total		66039	

The details of the length of different lane configuration are furnished in table 1.2 below;

Table 1.2: Lane-wise Length Details

(Length in km)

Sl. No	Category	Single Lane (SL)	Inter mediate Lane (IL)	Double Lane (DL)	Multi Lane	Total
1	NH			3514	3120	6634
2	SH	38	215	8570	2346	11169
3	MDR	321	7186	3869	236	11612
4	ODR	30490	4960	1103	71	36624
Total		30849	12361	17056	5773	66039

2. POLICY OUTLINE

Road transport is the only link to connect all other modes of transport which is quick, easily accessible and economical. Hence, any logistic planning would necessarily involve a road network.

Tamil Nadu has a well-developed infrastructure with an excellent road and rail network, 3 major ports, 18 minor ports, and 7 airports across the State providing excellent connectivity. It is imperative on the part of this department to develop and maintain the infrastructure to facilitate improved access for public and commercial use.

The investment in road sector induces the overall growth. The schemes implemented by various wings are detailed below:

2.1 Schemes/ Major Projects Being Implemented

2.1.1 Comprehensive Road Infrastructure Development Programme (CRIDP)

Highways department maintains 59405 km length of roads in the category of State Highways, Major District Roads and Other District Roads. Government have introduced the major scheme of Comprehensive Road Infrastructure Development Programme from the year 2005-06 to cater to the infrastructure needs. Widening, strengthening/ improvement of existing roads to maintain the service level, construction of culverts, minor/major bridges, protective works etc., are all sanctioned under this scheme.

Considering the importance of maintaining good condition roads, Government have sanctioned widening and strengthening of roads under the above scheme. Out of the 59405 km length of roads maintained by the Highways Department, improvements / widening / strengthening works in 21357 km length of roads and 2263 culverts/bridges/protective

works have been completed during the past five years period.

Under CRIDP, protective works like construction of retaining wall, center median, storm water drain and geometric improvements are also sanctioned. A total amount of Rs.1152.19 crore had been sanctioned since 2014-15 for enhancing the safety aspect of the roads.

2.1.2 Bypasses

Bypasses are an integral part of the highway system and helps in regulating the through traffic, avoiding city congestion and accidents, reducing the vehicle operating cost (VOC) etc.,. Since 2011-12, 24 bypasses have been completed and opened for vehicular traffic. The construction of bypasses are in progress at 4 towns. Land Acquisition (LA) for forming bypasses at 42 towns are in progress. Further, for 24 bypasses, Detailed Project Reports (DPR) are under preparation.

2.1.3 Chennai Peripheral Ring Road (CPRR)

The Government of Tamil Nadu has planned to form Chennai Peripheral Ring Road (CPRR), to have a peripheral layer of road infrastructure which would provide connectivity to Ennore and Kattupalli Ports. The Chennai Peripheral Ring Road (CPRR) starts from Ennore port and ends at Poonjeri junction of ECR road at km 56/800 near Mamallapuram. It consists of 5 sections having a total length of 133.38 Kms. It consists 97.47 Kms of new alignment and 35.91 Kms of improvement to existing roads.

The Project encompasses amongst salient aspects like access control and provisions for Intelligent Transport System (ITS) for the entire corridor. The application of ITS in road sector is intended to benefit the service efficiency and safety of the corridor. The total cost of the project is estimated at Rs.12301 crore which also includes cost of Land Acquisition (Cost of Construction Rs.7446 crore + Cost towards LA Rs.4855 crore).

It is planned to execute Section I of this project with Japan International Cooperation Agency (JICA) – Official Development Assistances (ODA) Loan Assistance and the Loan Agreement was signed between Government of India and JICA during January 2019 to a tune of 40074 Million Japanese Yen (Rs.2473.70 crore).

2.1.4 Railway Works Programme (RWP)

The construction of Road Over Bridges (ROBs) / Road Under Bridges (RUBs) in lieu of the existing level crossings is carried out to avoid congestion / accidents and to have uninterrupted traffic flow. The criteria for conversion of a Level Crossing into an ROB / RUB on cost-sharing basis, is that the Train Vehicle Units (TVU) at particular LC should have crossed 1 Lakh unit. These works are being carried out in co-ordination with the Railways on 50:50 cost-sharing basis under RWP.

2.1.5 National Bank for Agriculture and Rural Development (NABARD) Loan Assistance Scheme / State fund

Construction / Reconstruction of Bridges and improvement of roads are being executed under NABARD loan assistance along with State fund. Upgradation of Panchayat Union Roads / Panchayat roads to Other District Roads standard are also taken-up under State Fund.

During 2018-19, 976 roads of 2963 km length and 276 Bridges have been taken-up for execution. Out of this, 424 roads of 1328 km length and 51 Bridges have been completed.

2.1.6 Chennai Metropolitan Development Plan (CMDP)

The Chennai Metropolitan Development Authority (CMDA) had envisaged the second Master Plan for the Chennai Metropolitan Area (CMA). The elaborate exercise under the Chennai Comprehensive Traffic and Transportation Study (CTTS), had explored several infrastructure project proposals for efficient transportation network throughout the

CMA. Many proposals have been developed as a shelf of projects, under the above study. The Chennai Metropolitan Development Plan (CMDP) is being implemented since 2003-04 through the State Budgetary resource, to execute major projects identified under CTTS, on priority basis.

During 2018-19, 7 Grade-Separators, 8 ROB/RUBs, 5 River Bridges, 3 Road Works as spill-over works and a new road work were taken-up. Of the above, a River Bridge has been completed at a cost of Rs.17 crore.

2.1.7 Chennai Outer Ring Road (CORR)

The project of Chennai Outer Ring Road (CORR) for a length of 60.15 km was conceived during 1995, to be implemented in two phases under Design, Build, Finance, Operate and Transfer (DBFOT) Public Private Partnership (PPP) mode. Phase-I covers 29.65 km starting from NH 45 at Vandalur and ending at NH-205 at Nemilichery. Phase-II links Nemilichery with Minjur at TPP Road for a length of 30.50 km. The total investment made by the Concessionaire for this CORR (2 phases) is around Rs.2156 crore.

The CORR, 122m wide corridor, is a radial connectivity between NH-34, NH-4, NH-205 and NH-5, serving high intensity industrial traffic. A 3 lane dual carriage way (50 m) separated by a 22m wide median – a Public Transportation Corridor (PTC), reserved for other mode of transports. A 50 m wide strip of land on the eastern end of the carriage way is allocated for future development.

The Phase-I of the above green field project has been completed and put to public use. Under Phase-II, the project has been completed except a small stretch, and the remaining works would be taken-up and completed soon on settling the LA related litigation.

2.1.8 *Tamil Nadu Road Sector Project II (TNRSP II)*

The Government have formed Tamil Nadu Road Sector Project-II for upgrading high intensity corridors for a length of 1171 Km in the State. The loan and project Agreement for US\$300 Million have been signed with the World Bank. The project covers upgradation and

maintenance of corridors, Institutional Capacity Enhancement and Road Safety measures.

Under Engineering Procurement Construction Contract (EPC), strengthening of 427 Km stretches of road of two-lane width with paved shoulders, in 10 packages for an amount of Rs.1705.00crore have been taken-up. Out of the 10 packages, 9 packages have been completed. The remaining 1 package would be completed within the current financial year.

Already upgraded TNRSP Phase I roads (Arcot to Tiruvarur road having a length of 265 Km and Nagapattinam to Tuticorin having a length of 332 Km) are taken-up in two packages under Output and Performance Based Road Contract (OPRC 01 and OPRC 02) and the works are in progress.

Under Public Private Partnership (PPP) mode, for PPP-02 work is in progress tender will be called for the PPP-01 and PPP-03.

2.1.9 Chennai Kanyakumari Industrial Corridor (CKIC)

Chennai Kanyakumari Industrial Corridor (CKIC) has been envisaged to cover 23 Districts (13 Coastal Districts, 10 Interior Districts). Asian Development Bank prepared comprehensive development plan for CKICP encompassing the sectoral developments. Under the road sector, 8047 km long road stretches have been identified for development in six phases. Of the length of 8047 km, 4318 km falls under NH and 3729 km under SH.

Now, 15 key linking corridors spread over 19 Districts under the Chennai Kanyakumari Industrial Corridor Influence Zone have been taken-up for upgrading with Asian Development Bank loan assistance under this project. The project roads connect National Highways 32, 132, 38, 138, 83, 36, 136, 536, 44, 544, 48, 716 and various State Highways which link the northern and southern parts of the State. The estimated project cost is Rs.6448 crore which includes cost of Land Acquisition to the tune of Rs.1574 crore, which would be borne by the State Government. Asian Development Bank will

fund Rs.3288.15 crore of the Civil works component and the remaining would be borne by the State Government.

2.1.10 Performance Based Maintenance Contract (PBMC)

The road assets are the primary resource and maintaining them in good condition is vital to the management. Performance Based Maintenance Contract is introduced for efficient and effective asset management. Contract conditions aim at achieving desirable road surface conditions and service levels. Payment is based on output and performance indicators under contractor's responsibility.

Under this, initial rectification, periodical renewal, minor improvements, ordinary maintenance and emergency works are taken-up in SHs and MDRs under the control of a division. The primary objective of system is to ensure comfortable ride.

During the Budget Demand 2011-12, it was announced that Performance Based Maintenance Contract through PPP for development and

maintenance of State Highways and Major District Roads will be implemented. Accordingly, Government sanctioned Rs.233.93 crore for SHs and MDRs in Pollachi division in January 2013 as a pilot. The five year contract period ended in February 2019.

Subsequently, the best practice was extended to Krishnagiri, Tiruvallur, Ramanathapuram, Virudhunagar at a total cost of Rs.2152.65 crore for a total length of 1372 km SHs and 1196 km MDR roads.

Under this contract, initial rectification, periodical renewal, minor improvements, ordinary maintenance and emergency works pertaining to the selected road are taken-up. Under the Initial Rectification component, widening and strengthening of roads in eligible stretches are taken-up in the first year. Under the Minor Improvements component, the widening requirements are considered apart from the maintenance requirement as per renewal cycle. Patrol monitoring is done to identify defects for rectification. With a view to

enhance road safety, adequate road furniture are provided which includes information boards, warning signs etc.

Contract payment is purely performance based where outputs are directly measured. Any deviations with the standards specified, would attract imposition of penalties. The highlight of this novel method of contracting is, with less effort on contract administration, there is considerable saving in time, money, and energy for the engineering workforce. The responsibility of maintaining quality network is shared and onus increases on the contractor over the time.

2.1.11 Maintenance Works

Increase in traffic volume demand capacity augmentation of existing roads and hence widening of roads to cater to the traffic needs of the growing economy are undertaken in Plan schemes. The road surface is exposed to wear and tear due to continuous flow of traffic and hence improvements to the existing surface are taken-up based on various parameters like

roughness index, deflection etc. Indian Roads Congress (IRC) guidelines prescribe norms for maintenance. Government allocates funds under Non-Plan Maintenance for carrying out these maintenance works. Under this component, special repairs, periodical renewal, other maintenance works and routine maintenance are being carried out.

Under Special Repairs and Periodical Renewal, relaying of single coat of wearing course is carried out to preserve the road in its originally constructed condition. Other repair works are taken-up to maintain the road surface by providing patches, filling up of potholes, trimming of berms, clearing vent ways of culverts/bridges, planting avenue trees, painting, lettering, repairs to structures and emergency works such as flood works.

2.1.12 Sustainable Development Goals (SDG)

The United Nations have set up the Sustainable Development Goal (SDG) for all, with 17 goals to be achieved within the year

2030. Sustainable transport, health, food, security and manufacturing have been identified as key areas of the SDG. All the member countries are committed to the same. The country has set up its own India Index and indicators for measuring its progress in this aspect. Sustainable transport which is resilient to the changes to time and climate changes is central to all the other key areas in achieving better results. The State Government has fixed time frame for all the activities involved and is closely monitoring the progress. Incidentally the State of Tamil Nadu has scored 66 points on the measurable index of SDG and ranked 3rd in the country.

The Department plays a key role in contributing towards the SDG. The CPRR, TNRSP, CRIDP, CKICP all of which deliver quality road network thereby helping in attaining the SDG framed by United Nation within 2030.

2.2 Road Safety

According to a study by the United Nations Economic and Social Commission for Asia and

the Pacific, road traffic accidents cost India nearly 3% of its gross domestic product a year, or, in absolute terms, about USD 58000 million. Nearly Rs.22,200 crore annually in Tamil Nadu in terms of cost to the victims and families like medical cost, loss of work, productivity, income besides physiological and psychological suffering, cost in terms of damage to the property.

In the SDG of United Nations it has been committed to halve the number of deaths from road crashes by 2020. There is an urgent need to scale up evidence-based interventions and investment. The onus of creating safer cities and transport systems is felt by all stake holders.

Proper intervention and a comprehensive approach in the field of Roads, Education, Health care, Traffic regulation and Law Enforcement would reduce accidents and the Highways Department is striving towards delivering safe roads to the public.

The Highways Department aims at an efficient and safe traffic system. Increased

vehicular population, advent in automobile technology is demanding safer roads.

With increasing road crashes in the country, the Hon'ble Supreme Court of India intervened in the issue and constituted a three member Committee on Road Safety (CoRS), to monitor and review the action taken to reduce accidents. Several instructions and guidelines have been issued.

On similar lines, under the World Bank funded TNRSP-II project, the issue of road safety is being addressed through Institutional Capacity Enhancement & Road Safety (ICE&RS) component. Institutional arrangements like Road Safety Executive Leadership Group (RSELG) Road Safety Management Cell (RSMC) are the salient aspects of the project.

Road safety is an integral part of road design right from planning stage and safety audit of highways has been taken-up to identify vulnerable spots. High priority has been accorded to rectification of black spots in the highways. The Highways Department had

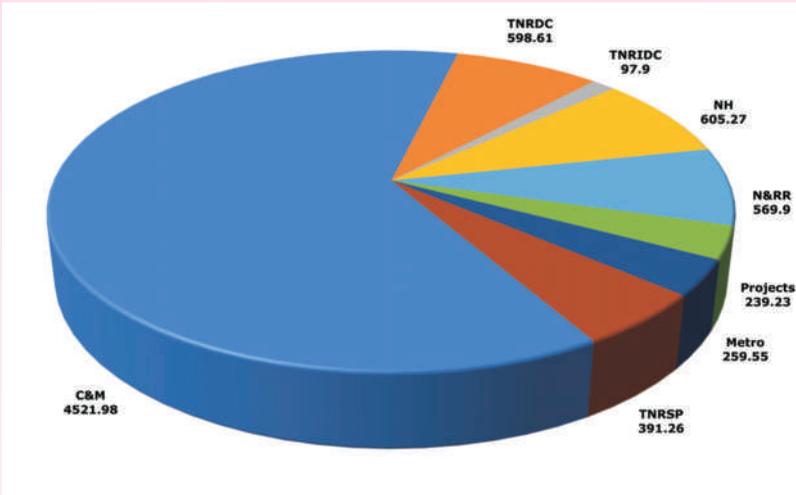
undertaken various measures to improve the road geometry and during the period of 2014-15 to 2018-19, a total amount of Rs.1152.19 crore has been allocated for these works. Apart from the CRIDP funds, works to a tune of Rs.500 crore have also been undertaken through Road Safety funds.

Under TNRSP II, two demonstration corridor projects have been taken-up and the same are in progress in Kancheepuram and Thiruvannamalai districts.

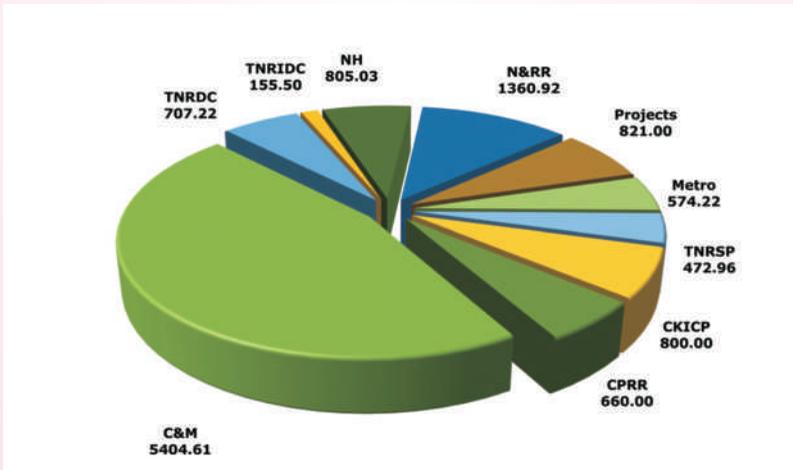
The concerted efforts of all the stake-holders and the Department in providing quality road network, have yielded better results in reduced fatalities of 24% over the previous years, in the State. A result to be heralded and carried forward with the equal co-operation and co-ordination of all the lead partners, in the years to come.

2.3 Overall Expenditure (2018-19) and Allotment for 2019-20

During 2018-19, Rs.9241 crore has been allotted for plan works. Out of which Rs.7363 crore has been incurred. Budget allotment of Rs.11749 crore has been made for implementation of various schemes for the financial year 2019-20.



Plan Expenditure during 2018-19 (Rs. in Crore)



Allotment for the year 2019-20 (Rs. in Crore)

3. STRUCTURE AND ACTIVITIES OF THE DEPARTMENT

3.1 Organisational Structure

The Highways Department is the custodian of the road assets and develops infrastructure facilities in a comprehensive manner to provide the end user with a transportation system that caters to the needs appropriately. There are several wings under this department.

The Office of the Director General undertakes overall Administrative tasks apart from technical activities. The Highways Research Station takes up applied research exclusively and the Planning, Designs and Investigation wing is involved in the design of major structures. The following seven wings execute projects of the department.

- Construction & Maintenance wing – Works funded by State Government
- National Highways wing - Works funded by Government of India

- NABARD & Rural Roads wing – NABARD loan-assisted works
- Projects wing - Railway Works Programme (on cost sharing basis)
- Metro wing - Chennai Metropolitan Development Plan (CMDP) works
- Tamil Nadu Road Sector Project – World Bank loan-assisted project
- Chennai - Kanniyakumari Industrial Corridor Project – Asian Development Bank (ADB) loan-assisted project

In addition, the following two companies are executing Special Projects.

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

The functions of all the wings are detailed as follows:

3.2 Office of the Director General

The Director General co-ordinates with all wings of the department for better and efficient functioning. The functions of the wing are as follows;

- Overall Planning for the department.
- Establishment, Personnel related issues, General Administration etc.,
- Information Technology (IT) Applications which includes
 - Co-ordination of Road Accident Data Management System (RADMS)
 - Managing the Electronic-Project, Administration, Traffic, Highway, Asset, Information Management System (e-pathai) related IT solutions.

- A centralised special land acquisition unit to co-ordinate with the field LA units for expediting acquisition of land.
- An exclusive legal cell to effectively co-ordinate with the Government Pleaders in the Court of Law, on important cases related to technical and personnel issues, on a day-to-day basis.
- Any other work entrusted by the Government.

The wing functions with the following officials.

- Three Joint Directors in the cadre of Superintending Engineer and a Chief Officer (IT) in the cadre of Divisional Engineer.
- In-house Special Land Acquisition (LA) unit headed by a serving District Revenue Officer (DRO)
- Legal Unit headed by a Law Officer through out-sourcing.

3.3 Construction & Maintenance Wing

Vested with the responsibility of constructing and maintaining the road network of SH, MDR & ODR categories in the entire State apart from constructing and Maintaining major bridges and bypasses, the salient functions of the wing are;

- Maintenance of State Highways, Major District Roads, Other District Roads, Sugarcane roads and bridges.
- Construction and Maintenance of Bypass
- Execution of spill-over works under Part-II scheme sanctioned earlier.
- Restoration of roads and bridges affected by natural calamities like monsoons, floods and Tsunami.
- Execution of road and bridge works under CRIDP including formation of bypasses.
- Forming Chennai Peripheral Ring Road from Ennore to Mamallapuram

- Implementation of road infrastructure schemes under Public Private Partnership.
- Implementation of Puduvayal Pulicat Road Phase II under TNIPP-II scheme.

The wing functions under a Chief Engineer supported by 8 Circles and 41 Divisions.

3.4 NABARD and Rural Roads Wing

- Execution of Bridges and Roads with loan assistance from NABARD.
- Construction of Road over Bridges / Road under Bridges under Railway works Programme.
- Upgradation of Panchayat Union Roads / Panchayat roads to Other District Roads standard under State fund.
- Land acquisition for forming Bypasses under State fund.

The wing functions under a Chief Engineer supported by 4 Circles and 14 Divisions.

3.5 Projects Wing

- The main objective of the Projects wing is to construct ROB, RUB in lieu of the existing level crossings under Railway Works Programme (RWP).
- Under State funds, construction of Major River Bridges, Grade Separators, Bypass Roads, Ring Roads, Elevated Corridors, Foot Over Bridge (FOB) with escalator are also carried out by this wing.
- The Chief Engineer, Projects wing heads the unit with four Superintending Engineers and ten Divisional Engineers.

3.6 Metro Wing

This is an exclusive wing formed for executing major infrastructure projects so as to provide hassle-free, smooth flow of traffic and reduce the travel time. The functions of the wing are:

- Execution of CMDP works in Chennai Metropolitan Area (CMA) which includes

Formation of roads, Construction of High Level Bridges (HLB), Construction of Grade- separators and Flyovers across road junctions, Foot Over Bridges (FOBs), Skywalks and pedestrian subways.

- Construction of ROB / RUBs within CMA.
- The Chief Engineer, Metro wing heads the unit, with the support of a Circle and 5 Divisions.

3.7 National Highways Wing

- National Highway projects are executed under Plan & Non-plan schemes with the funds provided by the MoRT&H, GoI.
- State roads viz., State Highways, Major District Roads, Other District Roads are developed under Revamped Central Road Fund Scheme (RCRF), Economic Importance and Inter-State Connectivity Scheme (EI & ISC) with the funds provided by the Government of India from Central Road Fund (CRF).

- State roads such as Other District roads which are included in the Core Road Network (CRN) of 'Rural Development Department' are developed under 'Pradhan Manthri Gram Sadak Yojana' (PMGSY) programme with the funds provided by the Ministry of Rural Development, GoI and State Government.
- NH Wing, under the Chief Engineer comprises of 4 Circles, 13 execution Divisions, 4 Quality Control Divisions and 1 Bus port Division.

3.8 Tamil Nadu Road Sector Project Wing (TNRSP)

A wing with expertise in execution of projects under the external aid namely the World Bank, and harbinger of innovations to the Department, has the following components:

- Upgradation of road works with the World Bank assistance.

- Undertaking feasibility studies for projects to be implemented through Public-Private Partnership (PPP) mode.
- Strengthening the organisational set-up of the Department.
- Road safety related works.
- The wing functions under the Project Director with a Chief Engineer, two Superintending Engineers and seven Divisional Engineers and also with an exclusive ICERS cell with one Superintending Engineer and one Divisional Engineer.

3.9 Highways Research Station

HRS being the foremost Research centre under Highways Department contributes to the following activities.

- Innovative Research studies on materials pertaining to Roads and Bridges.

- Suggestion for optimal traffic improvements with an emphasize on Road safety
- Collection of Road surface condition Data through Advanced Data Collection Equipments (ADCE).
- Imparting Training to Staff/Engineers of the department, other Government departments and students of technical institutions.
- Quality checking at all stages, of all works implemented by Highways Department, through the existing 3-tier Quality Assurance system.
- Knowledge sharing in national forums by virtue of being the permanent council member and member in various committees of IRC.
- Knowledge sharing with various Training and Research wings of CRRI, IIT, NIT and Anna University.

The above activities are carried out with 1 Joint Director (in the cadre of SE (H)), 4 Deputy Directors (in the cadre of DE (H)), 8 Divisional Engineers, Quality Control, all serving under the Director, HRS (in the cadre of CE (H)). Besides 8 Regional Laboratories function under the Director, HRS.

3.10 Planning, Design and Investigation Wing

- Carrying out field investigation and collecting required data from other departments for all major bridge works.
- Preparation of structural design, drawings and quantity estimates for High Level Bridges, Road Over Bridges, Road Under Bridges, Grade Separators and Flyovers.
- Proof checking of design and drawings prepared by consultants and alternate designs furnished by bidders.
- This wing functions under the Chief Engineer, a Joint Chief Engineer, four

Divisional Engineers and five Investigation Divisional Engineers.

3.11 Chennai - Kanyakumari Industrial Corridor Project

- Implementing road improvement works in Chennai - Kanyakumari Industrial Corridor (CKIC) with ADB loan assistance.
- Special LA units expedite LA process for the Projects

Project headed by the Project Director with field implementation units to carry-out and monitor civil works.

3.12 Tamil Nadu Road Development Company (TNRDC)

The State-Owned company, a Special Purpose Vehicle (SPV) for executing and managing major projects of the Highways Department, TNRDC functions are as follows:

- Implementing major Public Private Partnership (PPP) projects.

- Management of Chennai Outer Ring Road (CORR) works
- Concessionaire for Rajiv Gandhi IT Expressway construction and maintaining it as toll road.
- Concessionaire for East Coast Road (Chennai to Puduchery) construction and maintaining it as toll road.
- Supervision Consultancy for Ennore Manali Road Improvement Project (EMRIP).
- Managing Associate for construction of CPRR Section-I (Northern Port Access Road) project.
- Managing Associate for Rajiv Gandhi Salai Phase-II from Siruseri to Mamallapuram; stage-I for Kelambakkam – Tiruporur Bypasses.
- Implementation of Port Connectivity Improvements works as deposit work for M/s. Kamarajar Port Limited.

3.13 Tamil Nadu Road Infrastructure Development Corporation (TNRIDC)

A unit under the State department, with exclusivity of projects finalization for Industrial Corridors, TNRIDC's functions are:

- Developing road and bridge infrastructure required in industrial areas.
- Madurai Ring Road improvement work.

4. OFFICE OF THE DIRECTOR GENERAL

The Overall administration, Planning, Quality Control, related aspects and Information Technology (IT) Cell are under the control of the Director General. Special LA and Legal Cell also function under this wing.

4.1 Administration

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

4.2 Human Resources

4.2.1 Staff Strength

The total strength of the staff of the department is 7457, of which, 1790 are Engineers, 842 are Technical Staff and 4825 are Administrative and Ministerial staff.

4.2.2 Appointments

The cadre-wise sanctioned posts fall vacant due to promotions, retirements etc., and the same are filled-up through the Government recruiting agency viz., Tamil Nadu Public Service Commission (TNPSC).

During 2018, 164 Assistant Engineer, 3 Junior Assistant and 222 Assistant vacant posts were filled-up by direct recruitment through TNPSC. Further, 19 Junior Assistant, 9 Typist, 21 Record Clerk, 10 Office Assistant posts were filled through appointments on compassionate grounds.

4.2.3 Training

Training updates latest knowledge and refreshes learnt principles.

Training is approached in two ways:

1. Training to the trainees
2. Training to the trainers (ToT)

The trainers, the Engineers and staff of the department are also being deputed to undergo

training at reputed national training centres, on continual rotational basis.

Some of the reputed training organizations in the country are;

- Indian Academy of Highway Engineers (IAHE), Noida, Uttar Pradesh.
- Annual Sessions and conferences of Indian Road Congress (IRC).
- International Road Federation (IRF), New Delhi.
- Central Road Research Institute (CRRI), New Delhi.
- Institution of Road Traffic Education (IRTE), Faridabad, Haryana.
- Anna Institute of Management, Chennai.
- Anna University, Chennai.
- Department of Industries and Commerce, Chennai.
- Department of Economics and Statistics, Chennai.
- Highways Research Station, Chennai
- Civil Service Training Centre, Bhavanisagar, Erode, Tamil Nadu

4.2.3.1 Technical

Training is imparted in various technical fields viz. Highway Engineering, Road Safety Audit (RSA), Project and Contract Management etc.,

4.2.3.2 Non – Technical

Non-technical training includes Administrative procedures, Personality development, Stress Management, Pre-retirement counselling, Ethics etc.,

For the above training programmes, 790 officials were deputed, of which 478 were Engineers. In all, 282 women were trained.

4.3 INFORMATION TECHNOLOGY (IT) CELL

The IT Cell of Highways Department has been functioning to develop and upgrade various Highways related software systems, operationalizing the same and maintaining hardware for the Department. The major applications currently in use are Road Maintenance and Management System (RMMS),

Geographical Information System (GIS) and Integrated Project, Human Resource & Finance Management System (P&FMS).

4.3.1 Road Maintenance and Management System (RMMS)

The RMMS is a computerized bilingual web application system to manage and monitor the entire road network asset. Data like California Bearing Ratio (CBR), Benkelman Beam Deflection (BBD), Axle Loads and Condition, Work history, Bridges & Culverts and pavement composition data are captured and stored.

4.3.2 Geographical Information System (GIS)

GIS is a software which combines both spatial and non- spatial data. The road network information stored in RMMS application can be accessed in a spatial form.

4.3.3 Integrated Project, Human Resource & Finance Management System (P&FMS)

The P&FMS application envisages computerization and automation of the existing

manual procedures and process followed for the Project and Financial Management.

The features of the above software applications are to be revamped through World Bank funded Institutional Capacity Enhancement (ICE) Component of TNRSP-II.

4.3.4 Other Functions of IT Cell:

IT Cell has also developed and maintains the websites of Highways Department namely

- <https://www.tnhighways.gov.in>
- <https://www.tnrsp.gov.in>
- <https://www.ckicp.tnhighways.gov.in>

The websites are differently-abled friendly, in compliance with Guidelines for Indian Government Websites (GIGW) incorporating the World Wide Web Consortium (W3C) standards.

IT Cell has developed and implemented a web based Internal Project Monitoring tool "Tamil Nadu Highways Project Monitoring System (TNHPMS)" to facilitate the collection of data/details/status reports from all the wings for easy monitoring of the works.

4.4 Technical Committees

The following committees have been formed for the effective functioning of the Department:

1. **Board of Engineers (BoE)** is the apex technical authority comprising of all the Chief Engineers of the department, the Director, HRS and is headed by the Director General for taking policy decision on technical matters, concerned with the Department.
2. **Commissionerate of Tenders (CoT)** was established with Director General as its Chairman, the Secretary, Finance or his/her representative, the Chief Engineer, Construction and Maintenance, the Chief Engineer, NABARD and Rural Roads as its members and also the Chief Engineer concerned, to streamline the tender acceptance procedure.
3. **Revised Administrative Sanction Committee (RASC)** comprises of the Director General, the Chief Engineers

concerned, Chief Engineer, Planning, Designs and investigation, Additional/ Deputy Secretary to Government, Highways and Minor Ports Department and Deputy Secretary to Government, Finance Department for processing and enabling early approval of RAS proposals.

4. **Technical Audit Committee (TAC)** is a committee consisting of the Director General, Director, HRS and the Chief Engineers of all the wings as its members. Project proposals involving critical technical issues are placed before the committee. The committee offers suggestions and expert opinion on such issues, which are adopted, based on suitability.

4.5 Special Land-Acquisition Unit

A Special Unit for LA has been formed under this wing. The Special Unit is headed by a serving District Revenue Officer (DRO) assisted by Head Surveyor and supporting Staff. The field units at 8 Construction and Maintenance Circles

viz., Chennai, Villupuram, Trichy, Madurai, Salem, Tiruppur, Coimbatore and Thirunelveli function with retired Revenue Department's officials through out-sourcing mode.

Under State funded projects, around 191 projects involve LA to the tune of 1675 Ha. spread over 564 villages in 29 Districts. Government has taken effective steps to expedite the progress.

The District Collectors have been instructed to periodically update the status. Apart, video conferences are held at the highest level in the State with the district officials to sort-out long pending issues.

4.6 Special Unit for Legal Assistance

Legal issues, both technical as well as personnel related issues are often encountered, which involves considerable time, energy, monetary losses, if the directions of Hon'ble courts are not responded in time. A Legal Assistant on out-sourcing mode liases with the Hon'ble Courts to assist in hastening the litigation procedures.



Hon'ble Chief Minister, Tamil Nadu reviewed the progress of works of the department on 22.06.2019



Hon'ble Chief Minister, Tamil Nadu issued appointment orders on 12.12.2018 to new Assistant Engineers and Assistants selected through the TNPSC

5. CONSTRUCTION AND MAINTENANCE

Government Roads categorized as State Highways, Major District Roads and Other District Roads are being maintained by the Construction and Maintenance wing of Highways Department. The wing maintains a total length of 59405 km of roads under the control of a Chief Engineer with 8 circles and 41 divisions.

Widening, strengthening/improvement and Improvement of Riding Quality (IRQP) of roads, construction of Bridges, Culverts, Bypasses, Road safety works under various schemes and major infrastructure projects like construction of flyovers/grade separators are undertaken by the wing.

The details of various schemes and programme undertaken are given below;

5.1 Comprehensive Road Infrastructure Development Programme (CRIDP)

The developmental works like widening, strengthening, improving the riding condition, bypasses, bridges, culverts, road safety works etc are taken-up in a comprehensive and holistic manner under the CRIDP scheme. To meet the goals envisaged in the Road Safety Policy, interventions are included as an essential component in the scheme.

5.1.1 CRIDP - State Highways

New works of widening and improvements to 445.10 km length of roads, construction of 12 bridges/ culverts and 333 protective works were sanctioned in 2018-19 at a cost of Rs.703.77 crore and are under progress.

In addition, during 2018-19, widening/ improvements to 728 km length of roads and construction of 157 bridges/ culverts/ protective works were also taken-up as spill-over works at a cost of Rs.1227 crore.

During 2018-19, widening/ improvements in 684 km length of roads and 250 bridges/

culverts/ protective works have been completed at an expenditure of Rs.1244.93 crore.

Budget allotment of Rs.1322.18 crore has been provided for the year 2019-20.

Table 5.1: Major Ongoing Works in SH

Amount Rs. in crore

S. No	District	Name of work	Amount
1	Tiruppur	Providing Pedestrian Footpath for Palani Pilgrims at km 21/850 -31/850 of Palani - Dharapuram Road (via) Alangium including widening of pipe culvert, slab culvert and retaining wall (SH 153).	6.34
2	Madurai	Widening from Two lane to Three lane and Strengthening of Madurai - Melakkal - Samayanallur road at km 2/2-5/0 including Reconstruction of Culverts (SH 73 A).	4.50

S. No	District	Name of work	Amount
3	Vellore	Widening from Two lane to Three lane and Improvements of Ponnai - Thiruvalem Road at km 8/0-9/0 and 10/0 - 12/8 including Widening of Pipe culvert (SH 124).	3.78
4	Dindigul	Strengthening of Kodai -Ghat Road km 44/0-49/0 (SH-156) including construction of culverts, Protective works and side drain.	4.80
5	Madurai	Construction of Service Road at km 438/8 - 439/2 of Varanasi - Kanyakumari Road (Abandoned NH7) on Right Side of Sellur ROB to reach Kulamangalam Road including Construction of Retaining Wall (SH 73).	3.00

S. No	District	Name of work	Amount
6	Coimbatore	Improvements of Ooty-Kotagiri Mettupalayam - Sathi - Gobi - Erode Road at km 43/0 - 44/6, 47/4 - 47/6 and 49/6 - 50/8 including construction of V shaped drain and broken parapets (SH 15).	1.99
7	Thiruvannamalai	CC Pavement of Kancheepuram-Thiruvathipuram road at km 14/8 - 16/2 (SH 5A) excluding the curve portion at km 15/8.	1.95
8	Salem	Improvements of Sankari - Mecheri road (via) Edappady at km 34/6 - 36/2 including Dip raising and CD Works (SH 220).	1.80

S. No	District	Name of work	Amount
9	Thiruvannamalai	Construction of Retaining wall at km 28/10, 29/2, 29/6, 29/8, 31/6, 32/6, 32/8 of Polur - Jamunamarathur - Alangayam - Vaniyambadi road including Construction of Drain at km 29/4, 31/8 (SH 215).	1.75
10	Salem	Improvements of Salem Junction to Yercaud Road at km 12/0 - 13/0, 19/0-20/0, 21/0 - 22/2 and 23/4- 25/0 (SH 188).	3.70
TOTAL			33.61

5.1.2 CRIDP - Major District Roads

During 2018-19, widening and improvements to 659.03 km length of roads, construction of 17 bridges/ culverts and 262 protective works were sanctioned at a cost of Rs.607.94 crore and are being implemented.

Adding to the above, Spill-over works of widening and improvements to 779 km length of roads and construction of 134 bridges/ culverts/ protective works were also taken-up at a cost of Rs.481 crore.

Widening/ improvements in 773 km length of roads and 261 bridges/ culverts/ protective works have been completed at an expenditure of Rs.617.28 crore in the year 2018-19.

Budgetary outlay of Rs.707.42 crore has been provided for the year 2019-20.

Table 5.2: Major Ongoing Works in MDR

Amount Rs. in crore

S. No	District	Name of work	Amount
1	Salem	Widening from Intermediate lane to Two lane and Improvements of Theevattipatty-Danispet-Boomidi Road at km 8/250 - 9/050, 10/0 - 14/300, 14/8 - 15/4 and 15/8 - 18/0 including Construction of Retaining wall and CD works (MD 851).	5.60
2	Ariyalur	Widening from Intermediate lane to Two lane and Strengthening of Sendurai - Udaiyarpalayam - Anaikarai road at km 23/0-28/8 including Construction of Retaining wall, pipe culvert and cross drainage (MD684).	5.20

S. No	District	Name of work	Amount
3	Theni	Improvements of Kottur - Kamatchipuram road at km 0/0 - 4/270, 4/670 - 6/080 and 6/540 - 7/6 including construction of culvert, drain and retaining wall (MD 1185).	3.46
4	Perambalur	Widening from Intermediate lane to Two lane and Strengthening of Alathur - Ariyalur road at km 0/0-3/4 and 12/0 - 14/0 including CD works, construction of drain and retaining wall (MD 818).	5.05
5	Cuddalore	Widening from Intermediate lane to Two lane and Strengthening of Kullanchavady-Kattugudalore road at km 9/6 - 13/700 including Reconstruction of CD	3.30

S. No	District	Name of work	Amount
		works (MD-199).	
6	Cuddalore	Improvements of Veeranam Tank Bund road at km 6/2 - 6/8, 7/0- 8/4, 9/0 - 9/4 and 10/0 - 10/2 (MD 542).	2.82
7	Tuticorin	Widening from Two lane to Three lane and Rebuilding of Thoothukudi - Tharuvaikulam Road at km 0/0 - 2/0 (MD 484) including construction of Drain.	2.80
8	Kanya-kumari	Improvements of Thiruvattar-Thirparappu Road at km 3/700 - 7/900 (MD 933).	1.60
9		Improvements of Meycode-Kulasekaram Road at km 3/6 - 7/2(MD 269).	1.34
TOTAL			31.17

5.1.3 CRIDP - Other District Roads

New works of widening and improvements to 1878.09 km length of roads, construction of 38 bridges/ culverts and 527 protective works have been sanctioned at a cost of Rs.1145.93 crore in the year 2018-19 and are under progress.

During 2018-19, spill-over works costing to the tune of Rs.1669 crore comprising of widening and improvements to 2679 km length of roads and construction of 229 bridges/ culverts/protective works were taken-up.

Widening and improvements in 2653 km length of roads and 439 bridges/ culverts/ protective works have been completed in the financial year 2018-19 at an expenditure of Rs.1193.46 crore.

Budgetary allocation of Rs.1413.04 crore has been made for the year 2019-20.

Table 5.3: Major Ongoing Works in ODR

Amount Rs. in crore

Sl. No	District	Name of work	Amount
1	Theni	Rebuilding of Chinnamanur - Iravangalar road (via) Megamalai at km 35/0 - 45/0 including Construction of Culverts, Retaining wall and providing Drain.	21.00
2	Karur	Widening from Single lane to Intermediate lane and Improvements of Pavithram - Chathiram road (via) Nadupalayam at km 0/0 - 6/ 336 Including construction of box culvert.	4.30
3	Pudukottai	Widening from Single lane to Intermediate lane and Strengthening of Avudayarkoil - Kottaipattinam road at km 13/0 - 14/0 and 16/0 - 18/6 including reconstruction of slab	3.95

Sl. No	District	Name of work	Amount
		culvert and pipe culvert.	
4	Dindigul	Widening from Single lane to Intermediate lane and Strengthening of the road branching from Kottampatti - Thonthilingapuram Road and joins at km.4/8 of Samuthirapatti - Sirugudi Road at km 4/0 - 7/0 including protective works.	3.65
5	Krishnagiri	Widening from Single lane to Intermediate lane and Strengthening of Denkanikottai - Jawalagiri - Karnataka State limit road at km 1/0-9/4 including CD Works and Protective works.	7.55

Sl. No	District	Name of work	Amount
6	Kanya-kumari	Improvements of Kulasekaramputhoor - Marungoor Road at km 0/0- 5/4.	3.35
7	Theni	Strengthening of Combai - Ramakkalmettu road at km 0/0 -6/4 including Reconstruction of Culverts.	5.33
8	Villupuram	Widening from Intermediate lane to Two lane and Improvements of Melmalayanur-Sathambady road to Kaplambady road (via) Siruthalaipoondy at km 0/0 - 4/0 and including reconstruction of pipe culvert.	3.27
9	Thiruvallur	Rebuilding of Thalayaripalayam - Medipalayam Road at km 0/0 - 5/4 including reconstruction of box culvert.	3.20

Sl. No	District	Name of work	Amount
10	Thanjavur	Rebuilding of Muttakkudy - Anaigudy road at km 0/0 - 6/8 including reconstruction of pipe culvert.	3.13
TOTAL			58.73

5.1.4 CRIDP - Other District Roads - Special Component Plan

New works of widening and improvements to 414.16 km length of roads, construction of 13 protective works were sanctioned in 2018-19 at a cost of Rs.228.31 crore and are being implemented.

Spill-over works of widening / improvements to 610 km length of roads and construction of 17 bridges / culverts were taken-up in the year 2018-19 at a cost of Rs.224 crore.

Road works to a length of 680 km have been completed during 2018-19 at an expenditure of Rs.256.80 crore.

Budgetary provision of Rs.200 crore has been allotted for the year 2019-20.

Table 5.4: Major Ongoing Works in ODR-SCP

Amount Rs. in crore

S. No	District	Name of work	Amount
1	Thiruvallur	Widening from Single lane to Intermediate lane and Improvements of Chinnakavanam - Perumbedu Road at km 0/0 -7/4 using plastic waste.	7.00
2	Nilgiris	Improvements of New Avalanchi Duck Bungalow road at km 0/0-8/0 including Interlocking Paver block pavement in water logging low lying swamp portion, CD Works and Protective Works.	4.72
3	Erode	Widening from Single lane to Intermediate lane and Improvements of Thanneerpandal	3.94

S. No	District	Name of work	Amount
		palayam to Salem District limit at km 0/0 - 3/6 including Construction of Box Culvert, Widening of Pipe Culvert and Construction of Retaining Wall.	
4	Ariyalur	Widening from Single lane to Intermediate lane and Improvements of Keelakavettan kurichi-Alambadi Mettutheru road at km4/0-12/0 including Cross drainage (using plastic waste).	7.29
5	Thiruvannamalai	Widening from Single lane to Intermediate lane and Improvements of Cheyyur-Vandavasi-Polur road to Thellar Mazhayur Road (via)	3.25

S. No	District	Name of work	Amount
		Venkatapuram Kadambai at km1/2-4/4, Improvements at km0/0- 1/2.	
6	Coimbatore	Widening from Single lane to Intermediate lane and Strengthening of Kovilpalayam - Moolanur road. at km 0/0 - 3/0 including CD Works.	1.69
7	Perambalur	Widening from Single lane to Intermediate lane and Improvements of km 36/8 of Thuraiyur - Perambalur road to Vilamuthur road at km 0/2 -3/0 including CD works and construction of protective wall (Using Plastic Waste).	3.00

S. No	District	Name of work	Amount
8	Naga-pattinam	Widening from Single lane to Intermediate lane and Strengthening of Pappakoil - Karunganni Road at km 5/0 - 7/0.	1.55
TOTAL			32.44

5.1.5 Improvements of Riding Quality Program (IRQP)

New works under IRQP for 3826 km length of roads were sanctioned at a cost of Rs.850 crore during 2018-19 and works are in progress. Road works to a length of 2660 km were completed during 2018-19 at an expenditure of Rs.587.79 crore.

Budgetary provision of Rs.400 crore has been allotted for the year 2019-20.

5.2 Works in the Extended Greater Chennai Corporation Area

As per the announcement made during 2014-15, 14 works to a tune of Rs.250 crore had

been sanctioned in Phase-I, 22 works at a cost of Rs.150 crore had been sanctioned in Phase-II.

Out of the 36 works sanctioned, 35 works have been completed and 1 work is in progress. An expenditure of Rs.27.32 crore has been incurred during 2018-19.

Budget provision of Rs.67.10 crore has been allotted for the year 2019-20.

5.3 Formation of Bypasses

As per announcement, under 110 Rule during 2012-13, bypasses are being formed in SHs in Municipal towns. Bypasses ensure hassle-free through traffic relieving congestion, reducing the vehicle operating cost and saving the commuting time considerably.

Formation of bypasses in Thiruthani, Tharamangalam are in progress. Land acquisition for Manachanallur bypass has been completed. Pudukottai Ring Road has been overlapping with the Greenfield alignment of NHAI bypass and hence land acquisition is to be modified considering the link roads to proposal of NHAI.

The list of 21 bypasses for which LA is under progress is shown below;

Table 5.5: List of works where LA in progress

Length in km, Amount Rs. in crore

S. No	Bypass	Length	Amount
1	Thiruvarur	9.98	10.10
2	Thiruthuraipoondi	2.46	0.53
3	Periyapalayam	1.70	2.17
4	Sivagangai	10.60	1.00
5	Mannargudi Ring Road	21.40	10.06
6	Parthibanur Ring Road (Ramanathapuram district)	3.60	0.88
7	Sivakasi Ring Road	22.00	33.50
8	Karur Ring Road	32.10	77.00
9	Uthiramerur	4.09	7.00
10	Illupur (Pudukottai district)	5.40	4.00
11	Walajabad	6.01	66.33
12	Kamuthi	6.40	1.50
13	Kumbakonam (Phase III)	9.42	28.00
14	Valangaiman	5.40	3.14
15	Mettupalayam	7.25	99.35

S. No	Bypass	Length	Amount
16	Coimbatore Western Ring Road	32.42	320.00
17	Vellore Ring road Phase I	13.29	38.82
18	Hosur Outer Ring Road	18.40	124.96
19	Dindigul	19.25	55.00
20	Thirukattupalli	3.20	4.18
21	Rasipuram (Phase I, Part-II) (Part I- km 2/8-8/8- completed Part II- km 8/8-13/675- In progress)	10.88	36.57
Total		245.25	924.09

The DPR preparation for Attur bypass is at an advanced stage.

5.4 Performance Based Maintenance Contract (PBMC)

PBMC has been taken-up at Divisional level in SH and MDR for a 5-year contract period for effective preservation of road assets. PBMC scheme includes Initial Rectification, Periodical Renewal, Minor Improvements, Ordinary Maintenance and Emergency works.

This scheme was introduced in the State during 2012-13 in the Pollachi division, at a cost of Rs.233.93 crore. The fifth-year maintenance works have been completed in February 2019. Replicating the best practices, PBMC has been extended to Krishnagiri, Ramanathapuram, Thiruvallur and Virudhunagar Divisions. Total length of 1564 km of SH and 1382 km of MDR are being maintained under PBMC.

Government has sanctioned Rs.688.26 crore for the PBMC in 205.035 km of SHs and 302.223 km of MDRs in Palani Division.

5.5 Formation of Road Grids along Chennai Outer Ring Road (CORR)

CORR is a major connectivity corridor between Vandalur in NH 45 to Nemilicherry in NH 205, Padiyanallur in NH 5 and to Minjur in Tiruvottiyur-Ponneri-Panchetty (TPP) road. In order to facilitate development in the influence area of CORR corridor, development of road grids have been identified as per the stipulations in Second Master Plan of CMDA. During the

Budget Session of 2012-13, announcement was made under rule 110 that Detailed Project Report (DPR) for forming road grids would be taken-up and accordingly, Government have sanctioned Rs.5.22 crore for the work. The preparation of DPR for 15 grids had been completed. Now, the preparation of Land Plan Schedule (LPS) is in progress.

5.6 Tamil Nadu Investment Promotion Programme - Phase II (TNIPP-II)

In view of the proposed industrial park by the Mahindra Industrial Park Chennai (MIPCL), emerging at Puduvoyal of Gummidipoondi taluk and Eliambedu of Ponneri taluk of Tiruvallur district, four-laning of Puduvoyal – Pulicat Road (6.20 km) was taken-up to facilitate cargo container traffic.

The stretch from km 0/0 - 2/0 of the above was taken-up under CRIDP scheme 2017-18 and is completed.

The work of intermediate lane to four lane of Puduvoyal – Pulicat Road from km 2/0 - 6/2 has been taken-up under Tamil Nadu Investment

Promotion program- Phase II (TNIPP) scheme at a cost of Rs.45 crore and LA works are in progress.

5.7 Road Safety Works

Road accidents cause heavy loss to the nation in terms of human capital and loss in GDP. The alarming number of people killed in road accidents makes road safety a serious issue and all efforts are being taken to improve the various aspects of road safety to reduce the occurrence of accidents.

A comprehensive proposal to improve the accident-prone areas in the Government roads, has been prepared at an estimated cost of Rs.1130 crore.

The Government have sanctioned Rs.500crore for road safety works under Road Safety Fund. From 2014-15 onwards road safety works have been taken-up under Comprehensive Road Infrastructure Development Programme. Thus, road safety works to a tune of Rs.1652.19

crore were taken-up under road safety funds and CRIDP so far, as detailed below:

Table 5.6: Road Safety Work

Amount Rs. in crore

S. No	Year	Details of Fund allocation		
		CRIDP	Road Safety Fund	Total
1	2014-15	250.00	200.00	450.00
2	2015-16	206.87	100.00	306.87
3	2016-17	203.07	100.00	303.07
4	2017-18	200.15	100.00	300.15
5	2018-19	292.10	0.00	292.10
Total		1152.19	500.00	1652.19

During the year 2014-15 to 2017-18, 1746 Road safety works were taken-up and out of which 1293 works completed and balance in progress.

Budgetary provision of Rs.100 crore has been allotted for the year 2019-20.

5.8 State Infrastructure and Amenities Development Fund

Widening and improvements of roads are taken-up to improve the infrastructure facilities of State, through funds provided by Town and Country Planning Department, based on the approval of State Infrastructure and Amenities Promotion Committee.

Government have sanctioned 15 works at a cost of Rs.84.18 crore in Krishnagiri, Madurai, Perambalur, Sivagangai and Theni districts. These works are in progress.

5.8.1 Improvements of Works in Corporation Limits

To improve the infrastructure facilities in city road network, an announcement has been made during 2018-19 to the effect to have the DPR in 6 Corporations namely Madurai, Dindigul, Thanjavur, Thoothukudi, Trichy and Coimbatore. The Government have sanctioned Rs.252.73 lakh for the above DPR works and the same are in progress.

5.8.2 Details of DPR Works

Government have sanctioned the preparation of DPR for the following works

Table 5.7: List of DPR works

Amount Rs. in lakh

S. No	District	Name of work	Amount
1	Vellore	Construction of High Level Bridge connecting Kangeyanallur to Sathuvachari villages across Palar River.	25.00
2	Kallakurichi	Construction of High Level Bridge across Thenpennaiyar river in lieu of existing causeway at km 72/0-72/6 of Cuddalore – Citthoor Road (SH9).	25.00
3	Ariyalur and Thanjavur	Construction of High Level Bridge across Coleroon river including construction of Bridge across Manniyaru river connecting Mettutheru	37.50

S. No	District	Name of work	Amount
		in Thanjavur District and Melaramanallur in Ariyalur District including formation of link road.	
4	Coimbatore	Extension of Flyover along Athupalam and Ukkadam upto Oppanakara street in Coimbatore city.	12.00
Total			99.50

5.9 Permanent Flood Restoration Works

Considering the worst damages caused due to the North East Monsoon like inundation of flood on the roads affecting the routine life, Government have taken pro-active measures to check the adequacy of drains and culverts to drain off the excess rain water and decided to increase the capacity of Cross-Drainage works. Considering the recommendations made by the monitoring officers, several short term and long term measures are considered for adoption in a phased manner. Accordingly, Government have

sanctioned Rs.514.05 crore for construction of culverts, minor bridges, major bridges, box culvert, retaining wall, drain and equipping with pumps, excavators, to enhance handling of flood restoration works. Further Government have also sanctioned an amount of Rs.2.16 crore for preparation of Detailed Project Report for 21 bridges. All works are in progress.

5.10 Maintenance Works

Roads are one of the important public assets in many countries. Maintenance plays an important role in preserving the road asset. Due to increased vehicular population and traffic intensity, the road surface gets deteriorated which needs maintenance for smooth flow of traffic.

During 2018-19, a total length of 3826 km has been sanctioned under IRQP component in CRIDP scheme to address the maintenance requirements.

Renewal for 3284 km length of roads have been completed at an expenditure of Rs.970.78 crore.

Budget provision of Rs.1035.76 crore has been made for 2019-20.

5.11 Overall Expenditure (2018-19) and Allocation for 2019-20

During 2018-19, a total of 4790 km length of road works, 950 bridges/culverts works have been completed incurring an expenditure of Rs.4530.60crore.

For 2019-20, a total budgetary allocation of Rs.5404.62crore has been earmarked.



Flyover at Steel Plant Road Junction in Salem, inaugurated by the Hon'ble Chief Minister on 18.11.2018



Flyover at Five Road Junction, Salem (First Level from AVR Roundana to Ramakrishna Salai), inaugurated by the Hon'ble Chief Minister on 07.06.2019



Ongoing Flyover Works at Vandalur near Chennai



**Improved pedestrian footpath in Girivala Pathai at
Thiruvannamalai – Kanchi Road**

6. NATIONAL HIGHWAYS

National Highways are the top most category of road network in the hierarchy of roads as per IRC. Primary class of the roads, the National Highways connects the length and breadth of the country, State capitals, major ports and strategically important locations of the nation. A major transporter of commodities throughout the country, the National Highways cater to more than 45% of the total traffic.

Tamil Nadu State has 6634 km length of National Highway network. The State Government undertakes maintenance of 1900 km and the remaining 4734 km is maintained by NHAI. National Highways are developed and maintained from out of the funds of the MoRT&H, GoI.

The lane-wise distribution of National Highways in the State are tabulated:

Table 6.1: Lane-wise distribution of NH

S. No	Agency	Length in km				
		Single Lane	Intermediate lane	Double Lane	Multi Lane	Total
1.	State NH Wing	-	-	1608	292	1900
2.	NHAI	-	-	1906	2828	4734
	Total	-	-	3514	3120	6634

6.1 Core Activities

The National Highways Wing (NH) functions with a Chief Engineer assisted by 4 Superintending Engineers, 13 Divisional Engineers, 4 Divisional Engineers (QC-NH) and 1 Divisional Engineer (Bus Port). All works of improvements, strengthening, up gradation, and rehabilitation/ construction / reconstruction of bridges and maintenance nature of works are carried out by this wing. The quality of works are controlled by a dedicated Quality Control set up for each Circle.

The following schemes are implemented by this wing;

- **National Highways Works**

- Plan Works
- Non-Plan Works like Periodic Renewal (PR)/ Improvement of Riding Quality Program (IRQP)/ Special Repairs (SR)
- Flood Damage Restoration Works (FDR)

- **Centrally Sponsored Works**

- Revamped Central Road Fund Scheme (RCRF).
- Inter State Connectivity (ISC)/ Economic Importance (EI) Scheme.
- Pradhan Mantri Gram Sadak Yojana (PMGSY).

6.2 Projects Implemented through NH

6.2.1 Plan Works

Under Annual Plan 2018-19, MoRT&H has accorded sanction for 24 works for a total length of 142.33 km at a cost of Rs.1294.71 crore. In addition to this, 70 spill-over works for a length of 738.67 km, at a cost of

Rs.1557 crore, have also been taken-up for execution. Of this, 25 road works for a length of 292.08 km and 14 bridge works have been completed during 2018-19. The expenditure incurred is Rs.883.96 crore.

The salient completed projects are given below;

Table 6.2: Completed Projects

(Amount Rs. in crore)

S. No	Detail of Projects	Amount
1.	Construction of flyover at Marthandam and Parvathipuram in NH 47 (Kerala/Tamil Nadu Border – Kanniyakumari road)	314.02
2.	Widening to four lane with paved shoulders in km 0/0-31/8 of NH 381 (Avinashi - Tirupur - Avinashipalayam road)	162.72
3.	Construction of paved shoulder in km 81/0 – 202/6 of NH 234 (Mangalore – Villupuram road)	268.92

Following major plan works are under implementation;

Table 6.3: Projects Under Implementation

(Amount Rs. in crore)

S. No	Detail of Projects	Amount
1	Widening & Strengthening from 2 lane to 2 lane with paved shoulder in km 0/0 - 38/0 of NH 383 (Dindigul-Natham section)	240.38
2	Widening & Strengthening from 2 lane to 2 lane with paved shoulder in km 38/0 - 51/770 of NH 383(Natham - Kottampatty section)	69.73
3	Widening existing 2 lane to 2 lane with paved shoulder in km 0/0 - 56/0 of NH 234	138.06

Following are the salient Projects sanctioned by MoRTH;

Table 6.4: Sanctioned by MoRT&H

(Amount Rs. in crore)

S. No	Detail of Projects	Amount
1	Widening from 2 lane to 4 lane and strengthening in km 36/0 – 80/0 of NH 179A (Salem – Tirupathur – Vaniambadi road)	297.55
2	Construction of fly over at Kottar and Chettikulam Junctions in NH 47	278.62
3	Construction of fly over at Vadaseri and Oluginaseri Junctions in NH 47 B	212.23
4	Construction of fly over at Perianaickanpalayam Junction in NH 67	99.40
5	Construction of fly-over at km 15/2 of NH49-E (opposite to Madurai Kamaraj University)	52.04

6.2.2 Periodical Renewal (PR)/ IRQP

Under this scheme, 5 road works for a length of 41.55 km, amounting to Rs.25.76 crore have been taken-up for implementation in 2018-19. Out of 5 works, 2 road works have been completed for a length

of 22.50 km at a cost of Rs.18.51 crore. Balance 3 road works are in progress.

6.2.3 Centrally Sponsored Schemes

The Central Government created CRF as a non-lapsable fund under Central Road Fund Act, 2000, which is procured out of the cess/tax imposed on the consumption of petrol and diesel. Funds are distributed to the State for developments of Roads. The accrual of funds is distributed to the States annually, on the basis of 30% weightage to fuel consumption and 70% weightage to the geographical area of the State. Apart from the above, the Central Government provides fund for improving Rural Roads under PMGSY Scheme.

6.2.3.1 Revamped Central Road Fund Scheme (RCRF)

During 2018-19, 179 road works to a length of 1289.96 km, at a total cost of Rs.1138.09 crore were taken-up for execution under this scheme. Out of above works, 87 works for a length of 618.84 km have been

completed at an expenditure of Rs.599.41 crore and the balance works are in progress.

During the year 2018-19, 71 works have been sanctioned by MoRT&H to a length of 619.52 km at an estimated cost of Rs.1996.40 crore and are in progress.

The important projects are as given below;

Table 6.5: List of projects to decongest the traffic in and around the important cities of Chennai, Madurai and Coimbatore

(Amount Rs. in crore)

S. No	Detail of Projects	Amount
Chennai Sub-urban:		
1	Widening of Walajabad - Sunguvarchatram - Keelachery road km 0/0-19/6	121.65
2	Widening of Elichur - Palur Road from km 0/0 - 8/6	41.80
3	Widening of Kodampakkam - Sriperumbudur Road km 13/2 - 28/8	132.00
4	Widening of Chengalpattu - Thiruporur road from km 0/0 - 21/8	126.75

S. No	Detail of Projects	Amount
5	Widening of Guduvanchery - Kottayur road from km 0/0 - 17/6	76.87
Madurai city:		
6	Strengthening of Vaigai River Bank Road	303.59
7	Four Laning the Old Austinpatti Road in km 0/0 - 2/0	21.20
Coimbatore city:		
8	Construction of flyover at Ramanthapuram Junction & Sungam Junction in Coimbatore City	244.79
9	Construction of flyover at Goundampalayam Junction in Coimbatore City	64.00
10	Construction of flyover at GN Mills Junction in Coimbatore City	40.00

The aim of the above projects are to decongest the burgeoning vehicular traffic along NH-45 (**suburbs of Chennai city**), **Madurai & Coimbatore city** by widening and improving the feeder roads and construction of flyovers.

6.2.3.2 Inter State Connectivity Scheme (ISC)

During the year 2018-19, 6 spill-over road works to a length of 103.20 km were taken-up at a value of Rs.130.47 crore. Of this, 5 works for a length of 62.00 km have been completed at an expenditure of Rs.66.28 crore and the remaining 1 work is in progress.

In addition, the work of "Widening from Double Lane to Four Lane at km 2/4 - 15/8 of Pollachi - Palakkad road (SH 78A)" costing Rs.70 crore has been proposed, which has been agreed to in-principle by the MoRT&H.

6.2.3.3 PradhanMantri Gram Sadak Yojana (PMGSY)

PMGSY has been launched by the GoI for providing connectivity to unconnected habitations as part of poverty alleviation. The requisite funds for the scheme is derived from the accrual under CRF cess. The GoI endeavours to set-forth high and uniform technical standards and facilitate policy development at State level to ensure continuous maintenance of the rural

road network. The works have been taken-up in a phased manner under this scheme. The works of Phase-I & Phase -II of PMGSY-I are completed in all respects. Phase III, IV, and V of PMGSY-I and PMGSY II are in maintenance stage.

6.2.3.4 Road Safety Works

The MoRT&H, GoI gives impetus to road safety. The works enhancing road safety are being taken-up in the Annual Plan schemes addressing the issues of geometric improvements, widening of narrow culverts, lane marking, provision of bus bays, signages & boards etc.,. The road safety measures are integral to the road project.

The MoRT&H, GoI has also issued directions that RSA to be carried out for all the new road projects having length of 5 km or more at the stage of DPR / Engineering Designs itself. As per EPC agreement, the RSA is part of the scope of the work to be executed by the contractor for works costing more than Rs.5 crore.

6.2.3.5 *Rectification of Accident Black Spots*

Accident black spot is a stretch of NH of about 500m in length, in which either 5 road accidents (in all 3 years put together involving fatalities/ Grievous injuries) or 10 fatalities have taken place during the past 3 years.

Based on the fatality reports obtained from Ministry of Home Affairs (MHA), GoI, 100 accident black spots locations have been identified by MoRT&H in Tamil Nadu. Out of the above, 20 locations where occurrence of frequent accidents within NH jurisdiction of the State, have been identified and taken-up at a cost of Rs.96.80 crore. All the 20 accident black spots have been rectified.

6.3 Other Activities

6.3.1 SetuBharatam Scheme - Construction of ROB/RUBs in lieu of Level Crossings on NHs

SetuBharatam Scheme has been launched by MoRT&H, to replace LC with ROB/RUBs.

MoRT&H has engaged consultants for the preparation of DPR for the construction of 8 numbers of ROB/RUBs in lieu of existing level crossings on NH (Table 6.6). Of the above, 6 DPRs are nearing completion and the remaining 2 DPRs belong to NHA I.

Table 6.6: List of ROB/RUBs proposed under Setu Bharatam Scheme

S. No	NH No.	Location
1	49 Ext	km 22/2 (Near Checkkanurani)
2		km 72/6-7 (Near Theni)
3		km 93/4 (Near Bodi)
4	208	km 99/4 (Near Tenkasi Elanchi)
5	234	103/4 (Polur – Mathimangalam)
6		km 81/6 of (Kannamangalam – Kaniyambadi)

6.3.2 Improvement of upgraded NH

Improvement of the following recently upgraded NH, taken-up in the Annual Plan are in various stages of implementation as per the following table;

Table 6.7: List of works in upgraded NHs

(Length in km, Amount Rs. in crore)

S. No	New NH No.	Section	Length	Amount
1	383	Dindigul - Natham	38.00	240.38
2		Natham - Kottampatti	13.77	69.73
3	179A	Salem - Tirupathur	44.00	297.55

The stretch in km 80/0 – 125/0 of NH 179A will be taken-up for improvement in the ensuing Annual Plan at a cost of Rs.290 crore.

6.3.3 Declaration of New NH

The MoRT&H, GoI has declared 7 State Highways of 841 km length as NH as given in the table below.

Table 6.8: List of State Highways declared as NH

(Length in km)

S. No	Name of State Road	Length
1	Dindigul – Karaikudi road (NH- 383)	109.00
2	Perambalur- Athur road (NH-136)	55.00
3	Salem – Uthankarai –Vaniyampadi - Thiruppathur road (NH-179 A)	135.00
4	Thoppur - Mettur - Bhavani - Erode road (NH 544H)	135.00
5	Malur–Hosur-Rayakottai-Dharmapuri - Adhiyamankottai (NH-844)	120.00
6	Oragadam – Cheyyar - Thirivannamalai-Harur (NH 179-B)	230.00
7	Kumbakonam – Sirkazhi (NH-136-B)	57.00
Total		841.00

The following in-principle NH roads have been taken-up for preparation of DPR:

Table 6.9: List of State Highways declared "In-Principle" as NH

Length in km		
S. No	Name of State Road	Length
1	Thiruvannamalai - Kallakuruchi road	65.00
2	Vallioor - Thiruchendur road	70.00
3	Kollegal-Hanur-MM hills-Palar road - Tamil Nadu border extended upto Mettur in Tamil Nadu	30.00
4	Mettupalayam-Bhavani road	98.00
5	Avinashi-Mettupalayam road	38.00
6	Bhavani-Karur road	77.00
7	Palani-Dharapuram Road	31.00
8	Arcot-Tindivanam road	91.00
Total		500.00

Of this, MoRT&H has agreed to declare the upgradation of following roads, which would be notified in due course.

**Table 6.10: List of approved
"In-Principle" NH**

Length in km

S. No	Name of State Road	Length
1	Thiruvannamalai - Kallakuruchi road	65.00
2	Vallioor - Thiruchendur road	65.43
3	Palani-Dharapuram Road	30.89
4	Arcot - Tindivanam road	94.54
5	Thanjavur - Kodiakkarai road	100.50
Total		356.36

In addition to the above, 21 State roads to a length of 1497.40 km have been proposed in two phases for "In Principle" declaration as upgraded NH as per table given below:

Table 6.11: Roads proposed for upgradation as NH

Length in km

Sl. No	Nomenclature of road	Length
1	Ooty-Kothagiri-Mettupalayam (SH-15)	42.40
2	Abdullapuram-Thirupattur (SH-122)	79.50
3	Vellore- Ussoor (SH-207)	8.00
4	Thanjavur-Mannargudi-Thiruthuraipoondi-Vedaranyam-Kodiyakarai (SH-63)	113.00
5	Erode-Dharapuram (SH-83A)	78.00
6	Erode-Perundurai-Kangeyam (SH-96)	51.00
7	Sathi-Chittode-Erode (SH-15)	62.00
8	Palladam-Dharapuram (SH-174A)	37.00
9	Vatlagundu-Usilampatti-Peraiyur-Kallupatti-Kalligudi-Kariyapatti-Thiruchuli-Kamuthi-Sayalkudi (SH-154)	161.00
10	Thanjavur-Sivagangai-Sayalkudi (SH-29)	257.00
11	Aralvoymozhi-Nedumangadu (SH-45)	49.00
12	Sattur-Sivakasi-Kalugumalai (SH-187)	38.00

Sl. No	Nomenclature of road	Length
13	Ramanathapuram-Nainarkoil-Ilayangudi-Sivagangai-Melur (SH-34)	98.00
14	Aruppukottai-Valinokkam (SH-38)	80.00
15	Paruvakudi-Kovilpatti-Ettayapuram - Vilathikulam-Vembar (SH-44)	92.00
16	Bhavani-Kalingarayampalayam-Periapuliyur-Kavanthampadi	27.00
17	Gobichettipalayam-Kunnathur-Perumanallur	33.00
18	Namakkal-Thuraiyur	48.00
19	Musiri-Thuraiyur-Athur	93.00
20	Chennai ORR - SIPCOT - Sriperumpudur road (Part of SH 113 and SH110)	17.50
21	Thiruchengode-Mallasamudram-Ariyanoor (SH 86-A)	33.00
Total		1497.40

6.3.4 Bus Ports

With a view to improve the facilities for the passengers of public transport and augment with modern technological facilities, bus ports have been envisaged as a sub-component of National Corridors Efficiency Programme Component of

Bharatmala Pariyojana. The bus ports have been proposed at Salem and Coimbatore.

Of this, the MoRT&H have accorded in-principle approval for construction of bus port at Salem. The field data collection viz., topographical survey, soil investigation, bus count and passenger related survey are in progress. Based on the proposals, transfer of land for the project have been initiated by the State Revenue Department. Investigations are under way for the Bus Port proposals at Coimbatore. In this regard, the National Highways Infrastructure Development Corporation Limited (NHIDCL) is undertaking the preliminary activities in collaboration with the stake-holder, the Coimbatore Municipal Corporation.

6.3.5 Automation of Land Acquisition Process

MoRT&H, in its attempt to move towards total e-governance and avoid delay, have developed a dedicated portal (BOOMI RASHI) for LA process. The portal functions as an e-platform for processing of LA related

notifications and compensation to the affected parties thereto, for all National Highway projects. This portal is being utilized for uploading details of LA affected villages, e-verification by Competent Authority for Land Acquisition (CALA) and for notification by the Ministry.

6.3.6 Project Monitoring Information System (PMIS) e-disha

MoRT&H has developed a Project Monitoring Information System (PMIS), e-disha, a State-of-the-art, real time project tracking and monitoring system for the effective monitoring of all ongoing projects, key issues and interventions required at all levels. The system has customized user-friendly dashboards for Senior Officers to review the progress. The system is currently being used to conduct daily monitoring of active projects across different stages of execution, viz.,

- To be awarded
- Under implementation
- Detailed Project Report stage

The State NH Wing is regularly updating the dynamic data of all on-going projects. Senior Officers of MoRT&H are conducting monthly/quarterly reviews through video-conferencing, fetching the data from the dashboard of this information system for taking requisite action.

6.3.7 Works taken-up in NHAI roads by State NH

6.3.7.1 Widening of NH-45 between Irumbuliyur and Vandalur

In order to address the huge traffic congestion in Chennai Suburban areas, as an immediate remedial measure, the work for widening between Irumbuliyur to Vandalur (2.30 km) to 8-lane standards, at a cost of Rs.20.77 crore has been got approved by the NHAI and the work is in progress.

6.3.7.2 Widening of NH-45 between Vandalur and Guduvanchery

As a sequel to the improvement works being taken-up between Irumbuliyur - Vandalur, improvements from Vandalur – Guduvanchery (5.3 km) at a cost of Rs.44.48 crore has also

been approved by NHA I and the work is in progress.

6.3.8 E-Office

The MoRT&H, GoI with a view to digitize the entire office process has developed an application software “E-office” through which paperless governance is aimed. Already in application at the ministry level, the E-initiative would be implemented shortly. All necessary infrastructure, resources, training for staff are being planned.

6.3.9 Collection and analysis of bridge condition and inventory data

The MoRT&H, GoI has taken-up an initiative to access the condition of existing bridges on all National Highway stretches and appointed Consultants to carry out the same. The Consultants have furnished as follows;

- (i) Distressed bridges
- (ii) Bridges with major repairs
- (iii) Bridges with minor repairs

The proposal for the rehabilitating of the bridges have been included in the Annual Plan Scheme 2019-20.

6.4 Overall Expenditure (2018-19) and Allotment for 2019-20

An expenditure of Rs.883.96 crore & Rs.42.64 crore respectively have been incurred during 2018-19 under Plan & Non-Plan Schemes of MoRT&H for widening/ improvements of existing National Highway roads and construction of bridges entrusted to the State. Further, an expenditure of Rs.66.28 crore has also been incurred for the development of State roads under ISC/EI Schemes.

Pertaining to centrally sponsored schemes under CRF and Bharat Nirman (maintenance fund), an expenditure of Rs.604.68 crore has been incurred during 2018-19.

Moreover, an allocation of Rs.805.03 crore has been made for implementation under centrally sponsored schemes during 2019-20.

6.5 Projects Executed by National Highways Authority of India (NHAI)

The National Highways Authority of India was constituted by an Act of Parliament (NHAI Act 1988) and operationalised during 1995. NHAI is implementing National Highways Development Programme (NHDP) / Bharatmala Pariyojana. Road and bridge infrastructure projects are also being taken-up for port connectivity and other special scheme. NHAI programmes specially focus on development, maintenance and management of NHs. Since its inception, 2762 km have been upgraded to six/four/two-lane roads with paved shoulders in the State at a cost of Rs.18,485 crore.

The State extends co-operation and assistance to NHAI in all pre-construction activities viz., LA and shifting of utilities etc.,.

6.5.1 Works Under Implementation

During the year 2018-19, 22 projects of six/four/two-lane roads with paved shoulder for a total length of 1220 km at a cost of Rs.20,484 crore, are in progress, out of which 451 km has been completed. The remaining

works are in progress and would be completed in time.

6.5.2 New Works Awarded During 2018-19

Following 9 new projects for a total length of 358 km costing Rs.9470 crore have been awarded during the year 2018-19:

Table 6.12: List of works awarded

Length in km, Cost Rs. in crore

S. No	NH No	Name of the Project	Length	Cost
1	45A	Four laning of Sattanathapuram to Nagapattinam section	55.755	1872.68
2	48	Six laning of Karaipettai - Walajahpet Section	36.076	707.90
3		Six laning of Sriperumbudur Karaipettai Section	34.015	777.52
4	744A	Construction of Madurai Ring Road Phase-I (Vadipatti - Chittampatti section)	29.960	833.16

S. No	NH No	Name of the Project	Length	Cost
5	338, 36 & 383E	Four laning of Melur - Karaikudi road (Melur - Thiruppathur section of NH-338, Thiruppathur bypass on NH-36 and Thiruppathur - Karaikudi section of NH-383E)	45.860	1103.86
6	785E	Four laning of Natham - Thuvrankurichi section from Ch. 36.690 to 61.115	24.420	526.32
7	209	Four laning of Kamalapuram - Oddanchatram section from Ch.0.000 to 35.822	36.505	1038.51
8	209	Four laning of Madathukulam to Pollachi section from Ch.74.380 to 116.950	50.078	1342.62
9	209	Four laning of Oddanchatram - Madathukulam section from Ch.29.000 to	45.380	1267.87

S. No	NH No	Name of the Project	Length	Cost
		74.380		
Total			358.049	9470.44

Out of the above 9 projects, Six laning of Karaipettai - Walajahpet Section of NH-48 has been taken-up for implementation and the remaining projects would be implemented in time.

6.5.3 Projects to be Awarded During 2019-20

Following 8 projects for a total length of 396 km are proposed to be awarded during 2019-20;

Table 6.13: List of works to be awarded

Length in km, Cost Rs. in crore

S. No	NH No	Name of the Project	Length	Cost
1	844	Four laning of Jittandahalli - Dharmapuri Section from ch 61.100 to 94.460 (Package-III of Hosur-Dharmapuri	34.360	980.82

S. No	NH No	Name of the Project	Length	Cost
		section)		
2	66	Balance work of two laning with paved shoulder of Tindivanam - Krishnagiri section from ch 37.600 to 219.782.	182.182	1121.95
3	332A	Four laning of Mamallapuram to Mugaiyur Section from ch 0.000 to 31.000 (Package-I of Mamallapuram - Puducherry section)	31.000	1008.99
4		Four Laning of Mugaiyur to Marakkanam section from ch 31.000 to 62.000 (Package-II of Mamallapuram - Puducherry section)	31.000	825.94

S. No	NH No	Name of the Project	Length	Cost
5	844	Four laning of Thorapalli Agraharam - Jittandahalli Section from ch 23.350 to 60.100 (Package-II of Hosur-Dharmapuri section)	36.750	1081.66
6	844	Four Laning of Neraluru - Thorapalli Agraharam section from ch 0.000 to 23.350 in the States of Karnataka & Tamil Nadu (Package-I of Hosur-Dharmapuri Section)	23.380	952.17
7	45E & 220	Balance work of Two laning with paved shoulder of Dindigul - Theni section from ch 2.750 to 73.400 of NH-45E and Theni	44.062	390.89

S. No	NH No	Name of the Project	Length	Cost
		- Kumili section of NH-220 from ch 215.500 to 273.600.		
8	210	Balance work of Two laning with paved shoulder of Trichy – Karaikudi including Trichy Bypass road Section (Ch 10.000 to 94.000) and bypass(Ch110.016 to 135.930)	12.774	145.12
Total			395.508	6507.54

6.5.4 Works to be Implemented through the State NH

The following 4 projects have been entrusted to State NH wing for implementation with 1% Agency charges as listed below;

Table 6.14: List of works to be implemented through State NH

S. No	Name of Project
1	Thoppur – Mettur – Bhavani – Erode road (NH-544H)
2	Thanjavur – Thiruvaiyaru – Perambalur – Athur road (NH-136)
3	Irumbuliyur –Vandalur (NH-132)
4	Vandalur – Guduvanchery (NH-132)

6.5.5 Port Connectivity Scheme

With an objective to connect the 12 important ports in India, with the nearest NHs, the Port Connectivity Scheme had been approved by the Cabinet Committee on Economic Affairs (CCEA) during 2000. This is accomplished by establishing Special Purpose Vehicles (SPVs). SPVs have been established in Tamil Nadu to improve the roads connecting three major ports at Chennai, Ennore and Tuticorin. NHA is the implementing agency.

6.5.5.1 *Chennai - Ennore - Manali Road Improvement Project (EMRIP)*

NHAI had established a Special Purpose Vehicle (SPV), Chennai Ennore Port Road Company Limited (CEPRCL) with quadruplet agreement between the partners, the Government of Tamil Nadu, Chennai Port Trust, Ennore Port Limited and NHAI.

All efforts are being taken to complete the project.

Table No.6.15: Components of the Project

(Length in km)

S. No	Name of work	Length
1	Widening to four lane with service road and Improvements to Tiruvotriyur - Ponneri - Pancheti Road	9.00
2	Strengthening and improvements to the existing four lane Manali oil refinery road.	5.40
3	Strengthening and improvements of existing four lane Northern segment of Inner Ring Road by providing paved shoulder	8.10

S. No	Name of work	Length
4	Widening to four lane with service road and improvements to Ennore expressway	7.50
Total		30.00

The contribution by each share holder of the company are given as below:

Table 6.16: Contribution of each share holder

(Amount Rs. in crore)

S. No	Share holder	Contribution	Loan	Total	Contribution made so far
1	NHAI	139.80	117.50	257.30	375.03*
2	Chennai Port Trust	139.80	110.68	250.48	139.80
3	Government of Tamil Nadu	58.20	0.00	58.20	58.20
4	Ennore Port Ltd.	34.02	0.00	34.02	34.00
Total		371.82	228.18	600.00	607.03

***Note:** In addition to the contribution amount of Rs.139.80 crore, NHAI /CEPRCL has released further amount of Rs.235.23 crore for implementation of the project. Chennai Port

Trust has to release their contribution of Rs.110.68 crore towards debt.

6.5.6 Bharatmala Pariyojana

Bharatmala Pariyojana has identified six major components to develop

- (a) Economic Corridors,
- (b) Inter-corridor and Feeder routes,
- (c) National Corridors Efficiency Improvement,
- (d) Border and International Connectivity roads,
- (e) Coastal and Port Connectivity roads and
- (f) Greenfield Expressways.

6.5.6.1 DPR Projects

Preparation of DPR / Feasibility Report for 37 projects for a total length of 2671 km is in progress under Bharatmala Pariyojana (including the residual works of NHDP taken-up under Bharatmala Pariyojana). These projects will be taken-up for implementation on completion of DPR/LA process and other pre-construction activities in a phased manner.

6.5.7 Land Acquisition

LA is being carried out under the provisions of the National Highways Act 1956, for the implementation of Projects under NHAI. For acquisition of land for NHAI projects, exclusive CALA in the cadre of District Revenue Officer (DRO) along with supporting Special Land Acquisition units (SLAUs) are appointed, the cost of which is borne by NHAI.

6.5.8 Highway Operation Unit (HOU)

NHAI has established Highway Operation Units to focus on Operation of roads and IT - enabled monitoring mechanism.

The key activities are;

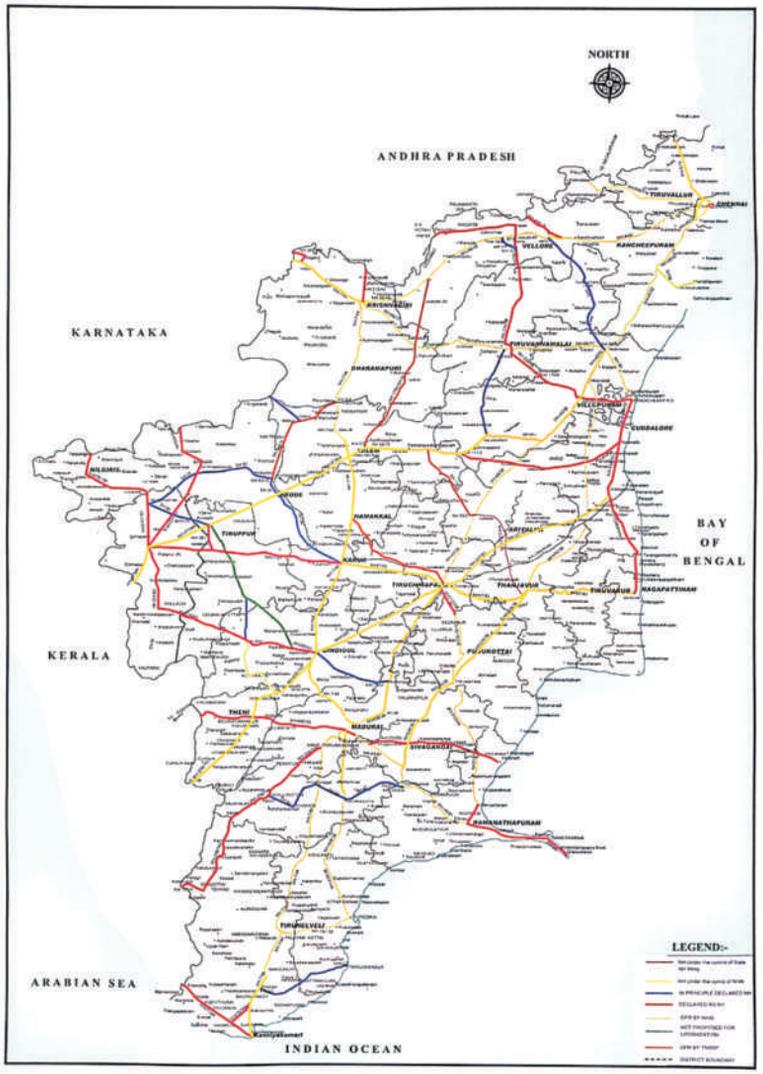
- Managing toll plaza
- Developing World class way-side amenities viz., Highway Village, Highway Nest & Highway Nest (Mini)
- Incident management
- Highway Traffic management system & Mobile Apps
- Highway Asset Management

- Highway Maintenance &
- Conducting Public awareness.

Electronic Toll Collection (ETC) system has been implemented at all Toll plazas in the State. In addition to one dedicated ETC lane on either side, implementation of Hybrid ETC system at all lanes is also in progress.

6.5.9 Elimination of Accident Black Spots

Using MoRT&H guidelines, 78 Accident black-spots have been identified on NHAI roads in the State. As an immediate step to improve those black spots temporary measures, viz. erection of sign / cautionary boards, provision of rumble strips, blinkers etc. have been completed. Permanent measures, viz. construction of Flyovers, Underpasses, Service Road, Foot Over Bridges, junction improvements, including lighting facilities, etc., are being taken-up on case to case basis. The work is in progress.



National Highways in Tamil Nadu



Four laning of Avinashi – Tiruppur – Avinashpalayam Road



**Grade Separator at Marthandam in Kerala / Tamil Nadu Border to
Kanniyakumari Road**

7. NABARD AND RURAL ROADS WING

Connecting Rural areas with quality road network is primary to overall development of the State. Apart from connecting the rural areas to the nearby cities / towns, these road network help in quickly transporting agricultural products to the nearest marketing centres and storage godowns.

With this as the sole objective the NABARD & Rural Roads wing was established in the department to focus and deliver good quality road infrastructure to the rural population of the State.

The projects are taken-up under NABARD loan assistance. The State contributes its share of 20% towards the Project funding.

Apart from roads and bridges, bypasses, ROB / RUBs across railway tracks are also being constructed by this wing. Led by the Chief Engineer, N&RR, the wing functions with 4 Circles and 14 Divisions.

Understanding the significance of the Panchayat Union Roads in the total rural connectivity, the Government has decided to upgrade the Panchayat Union Roads/ Panchayat Roads to Other District Roads (ODR) standards under the State fund.

In turn, the Government have directed the Rural Development and Panchayat Raj Department to handover the roads under their control to the Highways department for improving the standards. As per the Government order, 7964 km length of Panchayat union roads/ Panchayat roads to be handed over to the Highways Department and will be upgraded in a phased manner.

7.1 NABARD Loan Assisted Schemes

7.1.1 Construction of River Bridges in Government, Panchayat and Panchayat Union Roads

Under this scheme, the locations where bridge structures are to be erected, are in SH, MDR, ODR and Panchayat Union Roads/ Panchayat Roads.

Under this scheme 192 spill-over bridge works have been taken-up. New bridge works at 80 locations have been sanctioned and are in various stages. The total spill-over cost of the above works is Rs.710.44 crore.

Of the above, 50 bridges were completed expending Rs.115.11 crore. Rural population in 20 districts were benefitted.

For the year 2019-20, budgetary allocation of **Rs.299.60 crore** has been made.

Following is the list of Bridges completed and opened for public use.

Table 7.1: List of Completed Bridges

Amount Rs. in crore

S. No	District / Constituency	Name of work (Location)	Amount
1	Cuddalore / Bhuvanagiri	Construction of High level bridge at km 0/8 of Devangudi - Kammapuram road across Manimuktha river (Devangudi)	13.20

S. No	District / Constituency	Name of work (Location)	Amount
2	Thiruvanna- malai / Cheyyar	Reconstruction of Minor Bridge at km 2/10 of Vadaalapiranthan road (Anappathur)	1.30
3	Dharmapuri / Pappireddi- patti	Construction of Minor Bridge at km 1/4 of Pappambadi - Adidravidar colony road across Kattaru (Pethathampatti)	2.20
4	Pudukottai / Aranthangi	Construction of High level Bridge at km 0/4 of Peyadikottai to join Thiruvadana (via) Sirukambur- Vellaiyapuram road (Peyadikottai)	5.70
5	Thanjavur / Orthanadu	Reconstruction of Bridge at km 0/2 of Uranipuram - Vettuvakkottai road branching from km 2/2 of Uranipuram- Vengarai road (Vettuvakkottai)	1.99

S. No	District / Constituency	Name of work (Location)	Amount
6	Nagapattinam /Vedaranyam	Reconstruction of Bridge at km 16/6 of Sengathalai Bridge - Vedharanyam road (Neivilakku village)	2.00
7	Nagapattinam /Sirkali	Reconstruction of bridge at km 11/4 of Puthur - Pudupattinam - Pazhaiyar road (Pazhayapalayam)	1.55
8	Madurai / Thiru-mangalam	Reconstruction of minor bridge at km.2/2 of Peraiyur - Watrap road (Peraiyur)	1.32
9	Madurai / Melur	Construction of bridge at km 1/2 of Pottapatti to Othakadai Road across Palar River (Pottapatti)	1.88
10	Dindigul / Vedasandur	Reconstruction of Bridge at km 2/4 of Ayyalore - Eriodu Road (Sithuvarpatty)	1.76

S. No	District / Constituency	Name of work (Location)	Amount
11	Dindigul/ Palani	Construction of High Level Bridge at km 3/10 of Puliampatty-Palar Road (Palar)	6.22
12	Ramanathapuram / Paramakudi	Construction of bridge across Kiruthamal river near Vallakulam village (Vallakulam)	4.96
13	Ramanathapuram / Mudukulathur	Construction of Bridge at KM 1/8 of Muthaneri - Melakodumalur road (Melakodumalur)	6.00
14	Virudhunagar / Sathur	Construction of Minor Bridge at km 26/4 of Sattur- Sivakasi-Kalugumalai road (Sathirapatti)	1.46
15	Cuddalore / Kattumannarkoil	Construction of High level bridge across Old coleroon River connecting Nandhimangalam	7.32

S. No	District / Constituency	Name of work (Location)	Amount
		and Poolamedu Villages. (Nandimangalam-Poolamedu village)	
16	Thirunelveli / Tenkasi	Reconstruction of High level bridge at km 22/10 of Shencottai - Pavorchatram (Via Surandai) Road (Surandai)	4.00
17	Tuticorin / Kovilpatti	Reconstruciton of High level bridge at km 37/10 of Puliyangudi - Sankarankovil - Kalugumalai-Nalattinpudhur road (Kumarapuram)	2.00
18	Tuticorin / Ottapidaram	Construction of High Level Bridge at km.31/10 of Palayamkottai - Kurukkusalai-Kulathur-Vilathikulam - Nagalapuram	2.00

S. No	District / Constituency	Name of work (Location)	Amount
		Pandhalkudi - Aruppukottai road (K.Thalavaipuram)	
19	Tiruppur/ Madathukulam	Construction of Minor Bridge at km 1/2 of Valavadi - Therkkupoothanam Road (Palaiyur)	1.65
20	Kanchipuram/ Thiruporur	Reconstruction of High Level bridge at km.0/8 of Sadras-Chengalpattu-Kancheepuram-Arakkonam-Thiruthani road. (Sadras)	8.87
21	Thiruvallur / Gummidipoondi	Construction of bridge across Kosasthalaiyar at km 0/2 of the road connecting Guruvoyal and Azhinjivakkam. (Between Guruvoyal and Azhinjivakkam)	13.00

S. No	District / Constituency	Name of work (Location)	Amount
22	Thanjavur / Pattukkottai	Reconstruction of Bridge at KM.64/8 of Thirukattuppalli-Sengipatti-Pattukkottai Road (Nambivayal)	7.41
23	Erode / Bavanisagar	Construction of bridge at km 26/10 of Sathy-Athani-Bavani Road across the stream (Perumpallam)	2.20
24	Erode / Modakurichi	Construction of bridge at km 3/6 of Sivagiri-Vadapalani Road (Kompanaipudur)	1.98
25	Dharmapuri/ Pappireddipatty	Construcion of Minor Bridge at km 6/2 of Pappireddipatti - Morappur Road (via) Pallipatti, Thenkaraikottai Road in lieu of existing piped causeway (A. Pallipatti)	2.00

S. No	District / Constituency	Name of work (Location)	Amount
26	Namakkal / Komarapalayam	Reconstruction of High level bridge at km 8/10 of Komarapalyam - Pallipalaym - Jedarpalyam - Pandamangalam - Vellur road in lieu of existing vented causeway. (Sillankadu)	1.82
27	Thirunelveli / Thirunelveli	Construction of High level Bridge across Chittar river at km 0/6 of Seethaikurichi - Valveechurastha road (Seethaikurichi - Valveechu rastha)	4.24
28	Virudhunagar / Sivakasi	Construction of Minor Bridge at km 2/4 of Chithurajapuram - Vilampatti Road (Boatrediyapatti)	1.25

S. No	District / Constituency	Name of work (Location)	Amount
29	Virudhunagar / Sivakasi	Construction of Minor Bridge at km 13/6 of Amathur - Lakshmiyapuram Road (Rengapalayam)	1.58
30	Cuddalore / Vridhachalam	Construction of bridge at km 0/6 of Nallur -Elangiyanur road (Elangiyanur)	12.10
31	Thiruvallur / Madhavaram	Construction of High level bridge at km 1/10 of Pothur road. (Pothur)	3.85

7.1.2 Improvements to Major District and Other District Roads

A scheme assisted by the NABARD loan, it is intended to improve the rural segment of road connectivity. Spill-over works of 2 roads to a length of 6 km at a cost of Rs.1.89 crore had been completed.

7.1.3 Construction of River Bridges on Government roads

In this scheme, spill-over work of "Reconstruction of High Level bridge at km 0/8 of Sadras – Chengalpattu – Kancheepuram – Arakkonam - Thiruthani road" in Kanchipuram District at a cost of Rs.0.94 crore had been completed.

7.1.4 Improvements to Rural Roads

The spill-over of high level Bridge between Tharapakkam and Anakaputhur at a cost of Rs.1.17 crore was sanctioned under this scheme. For this work, land belonging to Indian Air Force (IAF) is required for which land alienation process is under progress. After completion of land alienation process, the work will be resumed.

7.2 State funded scheme

7.2.1 *Upgradation of Panchayat Union Roads / Panchayat Roads*

Under this scheme, spill-over of 1418 km of 458 Panchayat Union Roads / Panchayat Roads at a spill-over cost of Rs.508.33 crore and newly sanctioned 516 Panchayat Union Roads/ Panchayat Roads for a length of 1539 km at a cost of Rs.882.62 crore have been taken-up for upgradation.

Totally 422 Roads to a length of 1322 km have been completed benefiting people residing in 31 districts. An expenditure of Rs.437 crore has been incurred during the year 2018-19.

For the year 2019-20, budgetary allocation of Rs.1050 crore has been made.

7.3 Construction of ROB / RUBs

21 ROB/RUBs at a spill-over cost of Rs.261.65 crore in lieu of existing level crossings were taken-up for execution under RWP. The details are given below:

Table 7.2: Details of ROB/RUBs

Cost Rs. in crore

S. No.	District / Constituency	LC No./ Location	Cost
Completed works:			
1	Thanjavur / Thanjavur	LC 304, Thanjavur	52.12
2	Villupuram / Villupuram	LC 2 , Venkatesapuram	34.75
3	Tiruvarur / Mannarkudi	LC 22 , Needamangalam	27.17
4	Erode / Erode West	LC 124, Sastri Nagar	10.10
Works in Progress:			
1	Thiruvallur / Avadi	LC 7, Annanur	52.98
2	Thiruvallur / Avadi	LC 2, Pattabiram West	52.11
3	Thiruvallur / Avadi	LC 9, Hindu college	20.58
4	Thiruvallur / Poonamallee	LC 16, Putlur	33.09
5	Tiruppur/ Tiruppur North	LC 131, Tiruppur	18.19
6	Tiruppur/ Tiruppur North	LC 132, Tiruppur SRC Mill Gate	48.26

S. No.	District / Constituency	LC No./ Location	Cost
7	Coimbatore / Singanallur	LC 4, Irugur	21.16
8	Coimbatore / Singanallur	LC 5, Neelikonampalayam	58.52
9	Coimbatore / Coimbatore South	LC 6, Thanneerpandal	12.65
10	Coimbatore/ Goundampalayam	LC 9, Avarampalayam	54.70
11	Coimbatore / Coimbatore North	LC 10, Peelamedu	11.90
12	Dindigul / Dindigul	LC 309, Dindigul yard	26.40
13	Madurai/Madurai west	LC 366, Palanganatham	46.28
14	Madurai / Thiruparangundram	LC 371, Thiruparangundram	24.53
15	Thirunelveli / Thirunelveli	LC 18, Thirunelveli Yard	29.12
16	Tuticorin / Kovilpatti	LC 439, Kovilpatti	17.19
17	Virudhunagar / Virudhunagar	LC 403, Virudhunagar	26.75

7.4 Bypasses

Bypasses at 13 locations have been proposed, in which the Government have accorded sanction for proceeding with L.A for 11 bypass proposals. Sanction has been provided for preparing DPR for remaining 2 proposals. The details are provided in the table below:

Table 7.3: Details of Works

Cost Rs. in crore

S.No.	Name of Towns	Cost
LA works		
1	Tenkasi	13.34
2	Sankarankovil	24.08
3	Ambasamudram	27.29
4	Mudukulathur	7.11
5	Bhavani	7.16
6	Namakkal	10.70
7	Tiruchengodu	5.89
8	Arcot	2.01
9	Thirupathur	8.53
10	Tiruvannamalai	8.57
11	Mayiladuthurai	21.33

S.No.	Name of Towns	Cost
DPR works		
1	Palladam	0.45
2	Koothanallur	0.18

An expenditure of Rs.16.61 crore has been incurred under this scheme during the year 2018-19.

For the year 2019-20, budgetary allocation of **Rs.11.32 crore** has been made.

7.5 Overall Expenditure (2018-19) and Allocation for 2019-20

During 2018-19, an expenditure of Rs.569.90 crore was incurred for the above schemes. A total of 479 works which includes 424 Roads for a length of 1328.19 km 51 Bridges and 4 ROBs have been completed.

For 2019-20, a budget outlay of Rs.1360.92 crore has been made.



ROB at Vayakalathur in Tiruvarur District, inaugurated by Hon'ble Chief Minister on 22.02.2019



High Level Bridge at Sadras in Kancheepuram District, inaugurated by Hon'ble Chief Minister on 14.09.2018



High Level Bridge across Manimutharu at Elangyanur in Cuddalore District, inaugurated by Hon'ble Chief Minister on 31.10.2018



ROB at Villupuram, inaugurated by Hon'ble Chief Minister on 12.12.2018

8. PROJECTS

The free flow of traffic is ensured through construction of ROB / RUBs at Railway level crossings, to reduce congestion, pollution due to emission and accidents.

The Projects wing is a specialized wing in the construction of ROB / RUBs in co-ordination with the Railways on 50:50 cost sharing basis under Railway Works Programme (RWP).

Apart from this, construction of Major River Bridges across water bodies, reconstruction of dilapidated & narrow bridges, construction of Bypasses, Ring roads, Elevated corridors in urban environment and Foot Over Bridges (FOB) with escalators are taken-up by this wing under State Funded schemes.

8.1 Road Over Bridges / Road Under Bridges at Railway Level Crossings

Implementation of ROB/RUB works involves the following activities;

Based on the feasibility of construction of ROBs/ RUBs/ Limited Use Subway (LUS) works

are recommended by the Government for inclusion under RWP every year. General Arrangement Drawing (GAD) is concurred by the Departments of Highways and Railways. Based on GAD, design and estimate is prepared. Simultaneously, LA and utility shifting processes are carried out. On obtaining Administrative Sanction, work is technically sanctioned and taken-up for execution.

8.2 Railway Works Programme

Out of 102 works under RWP, 54 works were sanctioned for execution and remaining 48 works were sanctioned for DPR preparation/Preliminary works.

8.2.1 ROB/RUBs sanctioned for execution

Under this Programme, totally 54 works were sanctioned at a total cost of Rs.1758.29 crore for construction.

Of the 54, 6 ROB's have been completed at Rs.247.03 crore (Table 8.1) and 32 works are in progress for a value of Rs.1086.94 crore (Table 8.2). The remaining 16 works are in

various pre-construction stages for Rs.424.32 crore (Table 8.3).

Table No.8.1: Completed works

Cost Rs. in crore

S. No.	District	Level Crossing No. & Location	Cost
1	Villupuram	93, Tindivanam	24.50
2	Trichy	1136, Trichy Junction	115.58
3	Coimbatore	10, Karamadai	41.40
4		162, Podhanur	22.60
5	Dharmapuri	43, Kumarasampatti	22.60
6	Dindigul	8, Dindigul	20.35
		Total	247.03

Table No. 8.2: On-going works

Cost Rs. in crore

S. No.	District	Level Crossing No. & Location	Cost
1	Thiruvallur	21, Kadambathur	25.74
2		15, Sevvapet	24.50
3		13, Perumalpattu	28.72
4	Kancheepuram	36, Urappakkam	34.50
5		47, Singaperumal Koil	52.89
6		29, Ponnerikarai	49.42

S. No.	District	Level Crossing No. & Location	Cost
7	Vellore	86, Jolarpet	21.57
8		78, Kannadikuppam	25.30
9		126 & 127, Vellore Town	36.38
10		80, Valayampattu	25.55
11		123, Vellore Cantonment	21.96
12		59, Virinjipuram	22.27
13		Salem	187, Leizh Bazaar
14	184, Mulluvadi gate		83.00
15	183, Anaimedu		45.63
16	Trichy	228, Lalgudi	26.60
17		380A, Srirangam	125.00
18	Dindigul	2, 27 & 308, Dindigul	59.80
19		6, Gujjiliamparai	16.18
20	Madurai	346, Sholavandan	18.18
21	Thirunelveli	6, Palayamkottai	23.91
22		82B, Valliyoor	14.52
23	Ariyalur	201, Ariyalur	28.40
24		206, Kallagam	29.00
25	Dharmapuri	38, Devarasampatti	12.08
26	Villupuram	88, Olakkur	20.96
27		144, Madapattu	22.63
28	Thiruvanna- malai	80, Polur	27.87
29		55, Thiruvannamalai	38.74

S. No.	District	Level Crossing No. & Location	Cost
30	Virudhunagar	449, Rajapalayam	41.90
31	Coimbatore	13, Kannapan Nagar	14.00
32	Ramanathapuram	501, Ramanathapuram	23.39
Total			1086.94

Table No. 8.3: Works at pre-construction stage

Cost Rs. in crore

S. No	District	Level Crossing No. & Location	Cost
1	Coimbatore	3, Irugur	26.70
2	Kancheepuram	59, Ottivakkam	30.40
3		75, Acharapakkam	32.30
4		64, Karunguzhi	29.50
5	Thirunelveli	4, Kulavanigarapuram	25.51
6	Tuticorin	486 & 487, Tuticorin	27.50
7	Vellore	81, Vaniyambadi	13.00
8		128, Katpadi	53.35
9	Vellore	70, Valathur	14.10
10		37, Anvarthikhanpet	16.04
11	Thiruvarur	34, Singalancherry	27.60
12	Coimbatore	5, NGGO Colony	26.11
13		122, Pollachi	48.48

S. No	District	Level Crossing No. & Location	Cost
14	Salem	18, Mecheri	19.34
15		15, Tholasampatty	18.44
16		7, Perumachur	15.95
Total			424.32

8.2.2 Preliminary / DPR Works

Under Railway Works Programme, 21 ROB / RUBs are sanctioned for DPR preparation/ LA/ Shifting of Utilities at a cost of Rs.271.98 crore (Table 8.4). The preliminary works are under progress.

For 27 ROB / RUBs, DPR works are in progress at a cost of Rs.8.33 crore (Table 8.5).

**Table 8.4: Works sanctioned for DPR/ LA/
Shifting Utilities**

Cost Rs. in crore

S. No	District	Level Crossing No. & Location	Cost
1	Coimbatore	4, Thudiyalur	8.48
2		137, Sedapalayam	15.02
3		141, Karavazhi Madhappur	5.26
4		142A, Rasipalayam	4.73
5		11, Karamadai	16.79
6	Cuddalore	138, Panruti	2.10
7	Dharmapuri	41, Teachers Colony	11.90
8	Krishnagiri	104, Muneeswarar Nagar, Hosur	13.93
9	Nagapattinam	48, Akkaraipettai	23.74
10	Salem	185, Mulluvadi Gate (Bretts road)	43.60
11		159, Vazhapadi	6.99
12	Thiruvallur	14, Nandhiyampakkam	11.05
13		26, Chinnakavanam	7.11
14		25, Thiruvalangadu	4.57
15	Thiruvarur	20, Needamangalam	10.68
16		16, Peralam	16.42
17	Trichy	226, Kattur	20.33
18	Trichy	323, Keelakalkandar	28.23

S. No	District	Level Crossing No. & Location	Cost
		kottai	
19		249, Trichy Town	17.05
20		67, Goodanagaram	2.04
21	Vellore	72, Lakshmiammalpuram	1.96
Total			271.98

Table 8.5: Works sanctioned for DPR only

Cost Rs. in crore

S. No	District	Level Crossing No. & Location	Cost
1	Coimbatore	135, Semandapalayam	0.23
2	Cuddalore	157, Kammiyampettai	0.21
3	Dindigul	63, Palani Town	0.25
4		49, Mahindra city	0.39
5	Kancheepuram	30, Thimmasamudram	0.43
6		74, Sothupakkam	0.35
7	Kanyakumari	15B, Viricode	0.40
8	Karur	54, Kulithalai town	0.25
9	Madurai	377, Thirumangalam	0.39
10		228, Thiruvilandur	0.47
11	Nagapattinam	229, Mappadugai	0.40
12		21, Kunjandiyur	0.35
13	Salem	10, Omalur	0.41
14		131, Attur Town	0.31
15	Salem	169, Ayothiyapattinam	0.23
16	Thirunelveli	74B, Kavalkinaru	0.20

S. No	District	Level Crossing No. & Location	Cost
17	Thiruvallur	26, Harichandrapuram	0.39
18	Vellore	95, Pachur	0.25
19		92, Damalerimuthur	0.23
20		91, Kudiyankuppam	0.25
21		28, Mosur	0.27
22		51, Sevir	0.21
23		55, Jaffarpet	0.22
24		57, Latteri	0.22
25		Virudhunagar	424, Thiruthangal
26	427, Sivakasi		0.24
27	424, Sattur		0.40
Total			8.33

8.2.3 Expenditure and Allocation

An amount of Rs.279.20 crore was incurred under the RWP scheme during 2018-19. A budget provision of Rs.726.82 crore has been allocated for the year 2019-20.

8.3 Works taken-up under State Funds

Out of the 91 works sanctioned under State Funds, 26 works have been sanctioned for execution and remaining 65 works have been sanctioned for carrying out DPR and preliminary

works such as LA, Shifting of Utilities and investigation.

8.3.1 Works Sanctioned for Execution

Out of 26 sanctioned works, 3 works have been completed at a cost of Rs.88.36 crore in the year 2018-19 (Table 8.6).

19 works are in progress for a value of Rs.398.97 crore (Table 8.7) and 4 works are in pre-construction stage at a cost of Rs.66.62 crore (Table 8.8).

Table 8.6: Completed works

Cost Rs. in crore

S. No	District	Location	Cost
A) High Level Bridges			
1	Cuddalore	Bhuvanagiri, Vellar river	22.57
2	Dharmapuri	Pappireddipatti, Vaniyar river	7.25
B) Grade Separator			
3	Erode	Near Govt. Hospital, Erode	58.54
Total			88.36

Table 8.7: Ongoing works

Cost Rs. in crore

S. No	District	Location	Cost
A) High Level Bridges			
1	Tiruppur	Tiruppur, Noyyal river	3.85
2	Pudukottai	Chithirambur, Pambar river	18.82
3	Thanjavur	Kallanai, Coleroon river	61.02
4	Sivagangai	Kannankudi-Kookudi road, Virusuli river	9.00
5	Tiruvannamalai	Thandarai - Eraiyur road, Cheyyar river	17.04
6	Cuddalore	Thittakudi - Sirupakkam road, Wellington Reservoir	11.85
7	Cuddalore & Villupuram	Mettupalayam-Melkumara mangalam road, Pennaiyar river	27.92
8	Villupuram	Rettanai - Marur road, Sankaraparani river	8.61

S. No	District	Location	Cost
9	Villupuram	Alagramam-Thenputhur road, Thondiayar river	8.65
10		Arunkurukkai, Gedilam river	10.05
11	Madurai	Paravai-Thuvariman road, Vaigai river	16.13
12	Ariyalur & Cuddalore	Kottaikadu-Pennadam road, Vellar river	11.51
13	Krishnagiri	Pathakotta, Thenpennai river	2.85
14	Thirunelveli	Thamirabarani river	16.50
B) ROB			
15	Tiruppur	Tiruppur, Chikkanna College	19.78
C) LUS			
16	Namakkal	S.P.B Mills, Pallipalayam	20.15

S. No	District	Location	Cost
D) Road works			
17	Erode	Erode Outer Ring Road, Phase - III	69.30
18	Madurai	Kuruvikaran Salai	14.85
E) Grade Separator			
19	Madurai	Madurai – Thondi	51.09
Total			398.97

Table 8.8: Works at Pre-construction stage

Cost Rs. in crore

S. No	District	Location	Cost
A) Foot Over Bridges			
1	Coimbatore	Near Coimbatore Railway Station	8.09
2		Near Nanjundapuram junction	10.72
B) Bypass/ Road work			
3	Coimbatore	Formation of Western Bypass to Pollachi Town starting from Zameen Uthukuli at km 81/0 of SH-19 to Achipatti at km 26/6 of NH-83 via Nallur,	45.84

S. No	District	Location	Cost
		Thalakkarai and R. Ponnapuram	
4	Cuddalore	Improvements to Jawans Bhavan Road km 0/0 – km 1/8 as a Diversion road for the construction of ROB at LC 157 Kammiyampettai	1.97
Total			66.62

8.3.2 Preliminary/ DPR Works

65 works were sanctioned for carrying out preliminary/ DPR preparation/ LA / Shifting of utilities for a cost of Rs.190.41 crore.

Out of the 65 works, 9 works are in preliminary stage at a cost of Rs.174.23 crore (Table 8.9) and 56 works are in DPR stage for Rs.16.18 crore (Table 8.10).

**Table 8.9: Works sanctioned for DPR/
LA/ Shifting Utilities**

Cost Rs. in crore

Sl. No	District	Location	Cost
A)	ROB		
1	Vellore	Ambur	6.97
B)	HLBs		
2	Karur & Trichy	Unniyur - Nerur, Cauvery river	2.37
3	Perambalur	Kalpadi, Maruthayar river	0.23
C)	Bypasses/ Road work		
4	Coimbatore	Alternate route from Pollachi to Coimbatore via Chettipalayam	4.10
5	Thirunelveli	Western Bypass to Thirunelveli	79.83
6	Virudhunagar	Western Bypass to Aruppukottai town	35.40
7	Karur	Forming and improving the road connecting NH 7 (Sukkaliyur) and NH 67 (Thaneerpandal)	23.45

Sl. No	District	Location	Cost
8	Trichy	Thuraiyur Bypass (Phase-II)	20.00
9	Krishnagiri	Shoolagiri Bypass	1.88
Total			174.23

Table 8.10: Works sanctioned for DPR only

Cost Rs. in crore

S. No	District	Location	Cost
A)	ROB/ RUBs		
1	Tuticorin	Additional ROB at km 5/4 of Thoothukudi - Quilon road	0.27
2	Madurai	LC No. 5, Silaiman	0.23
3	Chennai	Thillai Ganga Nagar	0.51
4	Coimbatore	Reconstruction of RUB at km. 170/4 of Salem - Cochin road (SHU 52).	0.22
5	Madurai	Reconstruction of ROB No 4-A at km 399/8 of Varanasi- Kanyakumari road (Abandoned NH7) SHU 100 near Palanganatham	0.25
6	Pudukottai	LC No. 376, Pudukottai	0.36
7		LC No. 372, Vellanur	0.41

S. No	District	Location	Cost
B)	High Level Bridge		
8	Ariyalur	Keelapalur – Poondi Road, Kattu Odai	0.05
9	Cuddalore	Kallipadi – Kavanur Road, Vellar river	0.14
10		Narimedu – Palapattu Road, Gedilam	0.08
11	Erode	Karattadipalayam Road, Bhavani river	0.14
12	Kanchipuram	Nerumbur-Pudupattinam Road, Palar river	0.30
13		Uthiramerur-Kanchipuram Road, Cheyyar river	0.20
14		Walajabad-Sungavarchathiram Road, Thenneri Lake	0.09
15		Kodambakkam-Sriperumpudur Road	0.23
16	Madurai	Varanasi - Kanyakumari road (Abandoned NH7) Thirumangalam Town, Gundar river	0.07
17		Alampatti – Sedapatti road, Goundaar river	0.07
18	Namakkal & Erode	Pilikalpalayam, Cauvery river	0.33

S. No	District	Location	Cost
19	Perambalur	Thiruvalandurai, Vellar river	0.16
20	Salem	Mulluvadi, Vasista river	0.06
21	Thanjavur	Ayyampettai-Ganapathy agraharam, Kudamuruti river	0.14
22		Thirukattupalli, Vennar river	0.17
23		Musiri-Kulithalai Road, Poonaikuthi river	0.07
24		Pattukottai - Peravurani Road, Poonaikuthi river	0.08
25		Pattukottai - Peravurani - Aranthangi road, Ambuliyar river	0.08
26		Pappanadu - Madhukur - Perugavazhndan Road, Kannanar river	0.14
27	Thiruvallur	Tiruttani- Nagalapuram Road, Kosathalaiyar river	0.17
28		Korattur - Thinnanur - Periyapalayam Road, Coovam river	0.14
29	Thiruvanna- malai	Arcot - Villupuram road, Kamandala Naganadhi	0.15
30		Puduppadi - Illuppai - Vadailluppai- Perumbakkam - Vishar -	0.25

S. No	District	Location	Cost
		Kanchipuram Road (SH116A), Palar river	
31	Thiruvarur	Melapalayam - Ivar samathi, Bamini river	0.08
32	Trichy	Thirumanur - Karuppampatty road, Thuraiyur, Ayyaru River	0.10
33	Vellore	Thandalam - Perambakkam - Thakkolam - Arigilpadi road, Viruthagasiraga river	0.10
34		Arakkonam Ocheri road, Kallar river	0.05
35	Villupuram	Gingee-Vadapalai road, Varagha Nadhi	0.05
36		Sankarapuram to Vadasiruvallur Road, Mani river	0.03
37	Villupuram	Villupuram - Kavanipakkam road, Malatar river	0.17
C) Bypasses/ Road works			
38	Coimbatore	Formation of bypass to Annur town	0.51
39		Formation of bypass to Karamadai on the Eastern side by Widening and Improving the 7.20 km Intermediate Lane Road	0.20

S. No	District	Location	Cost
		from Chinnamathampalayam to Bellathi and Widening and Improving the Two Lane Karamadai – Sirumugai Road (km 3/8-9/6) to Multi Lane Road.	
40		Formation of Western Bypass to Karamadai Town from Bettathapuram pirivu at km 39/10 of Coimbatore – Mettupalayam – Ooty – Gundalpet road (NH-181) to Thimmapalayam joining at km 0/8 of Karamadai – Tholampalayam road.	0.11
41	Cuddalore	Formation of Bypass to Thittagudi town starting from Kozhiyur at km 28/0 of Virudhachalam – Tholudur road (SH 141) to Keelcheruvai at km 34/6 of Virudhachalam – Tholudur road (SH 141)	0.33
42	Dindigul	Providing Bypass on Eastern side of Batlagundu town to connect NH-7 (Dindigul – Madurai stretch) to Kodaikanal	0.03

S. No	District	Location	Cost
		Ghat road	
43	Erode	Formation of Bypass to Gobichettipalayam Town at km 0/0-8/6.	0.19
44		Widening and Improving the road to Multilane branching from Thindal junction at km 7/2 of Erode - Perundurai - Kangeyam road (SH 96) to km 158/4 of Ooty - Kothagiri - Mettupalayam - Sathy - Gobi - Erode road (SH 15) near Kaniravutharkulam via Vilarasampatty.	0.09
45	Madurai	Widening and Improvements to the existing roads to multi lane by connecting NH-45B near Arumbanur to NH-7 at Nagari by connecting the existing Government roads via Arumbanur, Kulamangalam and Kumaram. (Formation of link road connecting NH 45B and NH 7)	0.30

S. No	District	Location	Cost
46		Formation of Link road from Madurai – Natham road km 0/0 to Madurai Inner Ring Road km 1/6 through MGR Bus Stand (Mattuthavani Integrated Bus Stand) for 2km length.	0.09
47	Namakkal	Forming Bypass to Rasipuram Town Phase – II starting from km 30/6 of Malliyakkarai – Rasipuram – Tiruchengode – Erode road (SH-79) and ends at km 52/4 of Mohanur – Namakkal – Sendamangalam – Rasipuram road (SH-95)	0.39
48	Perambalur	Forming Bypass road around Perambalur town from km 9/075 to km 16/465 (Phase III) to meet NH 45 at km 275/6	0.25
49	Thanjavur	Formation of Ring road (Third phase) to Pattukottai Town from km 7/4 – 21/8	0.30

S. No	District	Location	Cost
50	Thiruvallur	Forming bypass road to Thiruvallur town from km.0/0 - 6/546	0.40
51	Virudhunagar	Formation of Link Road between Rajapalayam - Sankarankovil- Thirunelveli Road (SH 41) near Rajapalayam New Bus Stand to Tirumangalam - Kollam Road (NH 744) near Rajapalayam Government Hospital.	0.08
D)	Elevated Corridor		
52	Coimbatore	Construction of Elevated corridor along Avinashi Road in Coimbatore City from Upplipalayam to Chinniyampalayam - Kalapatti Airport.	3.41
53	Erode	Construction of Elevated Bridge for a length of 5.40km from Kalingarayan Illam to Thindalmedu (km 2/0 to km 7/4 of Erode - Perundurai - Kangeyam road)	1.50

S. No	District	Location	Cost
E) Grade Separator			
54	Karur	Construction of Grade Separator at km 217/400 of Nagapattinam-Gudalur-Mysore road (SHU 115) at Karur Bus Stand junction	0.30
F) Flyover			
55	Tiruppur	Construction of Fly Over from km 0/0 to 6/2 of Tiruppur – Perumanallur – Kunnathur – Perundurai road (SH – 196) (Pushpa Theatre to Pandian Nagar)	1.46
G) Widening of a bridge arm			
56	Madurai	Widening of Pasumalai side arm at Level crossing No. 370 Road Over Bridge from two lane to four lane for road safety in abandoned NH-7 (SHU-101) at Madakkulam Tank – Thirupparankundram bypass road	0.10
Total			16.18

8.3.3 Expenditure and Allocation

In the year 2018-19, an expenditure of Rs.32.41 crore has been incurred for the works taken-up under State Fund and a provision of Rs.94.17 crore has been allocated for the year 2019-20.

8.4 Works Completed

Six ROBs at a cost of Rs.247.03 crore, two HLBs at a cost of Rs.29.82 crore and one Grade separator at a cost of Rs.58.54 crore have been completed.

8.5 Overall Expenditure (2018-19) and Allocation for 2019-20

During 2018-19, an expenditure of Rs.311.61 crore was incurred and budgetary allocation of Rs.821 crore has been provided for 2019-20.



**ROB at MSP Camp Road in Trichy, inaugurated by
Hon'ble Chief Minister on 16.07.2018**



**Grade Separator near Government Hospital Junction in Erode,
inaugurated by Hon'ble Chief Minister on 28.02.2019**



**ROB at Dindigul, inaugurated by Hon'ble Chief Minister
on 31.10.2018**



**ROB at Tindivanam in Villupuram District, inaugurated by Hon'ble
Chief Minister on 31.10.2018**

9. METRO

The economic growth and development of a Metropolitan city within a State is a growth indicator. The infrastructural developments provide the necessary trigger. Faster and safer mobility, seamless multi-modal traffic movement is the key solution. With this objective, to provide better connectivity and sustainable transport solutions to the growing demand of Chennai Metropolitan Area (CMA), the Chennai Comprehensive Traffic and Transportation Study (CTTS) was initiated by the Chennai Metropolitan Development Authority (CMDA). An exhaustive study was conducted during 2007 through the nook and corner of CMA, exploring all the resources.

The goal of CTTS is to provide solutions for the challenging transportation issues and shoulder the increasing traffic burden within CMA. Various transport strategies have been proposed to address the growing traffic demands in CMA.

Metro wing was established to implement the projects for the improvement of transport

network in and around Chennai City. This wing is headed by the Chief Engineer and functions with a Superintending Engineer and 5 Divisional Engineers. The Metro wing plays a significant role in realizing the vision of 2nd Master plan.

With an aim to decongest the urban traffic stream and to reduce road accidents within the CMA, the road network improvement plans such as Grade-separated facilities, High level bridges, ROB / RUBs, Widening of roads / bridges and forming link roads, Pedestrian - specific projects such as Foot Over Bridges(FOB), Skywalks and Subways are being implemented by this wing.

The projects are as follows:

9.1 Grade Separators

The Flyover/Grade Separator is a long-term solution for sustainable transportation.

During 2018-19, 7 spill-over works were taken-up. The total cost of the works is Rs.593.65 crore. Out of this, 6 works are in progress. The LA is under progress for the remaining work. The details are given below;

Table No 9.1: Various Stages of Grade Separators

Cost Rs. in crore

S. No	Name of work	Cost
a. Work in Progress.		
1	Construction of a Grade Separator at the junction of Kundrathur road and Santhai road at Pallavaram in GST road	82.66
2	Construction of a Grade Separator at the junction of Taramani road, Tambaram – Velachery road and Velachery bypass in Velachery Vijayanagaram junction.	108.00
3	Construction of a Grade Separator connecting the junctions of Mofussil bus entrance of CMBT and Kaliamman Koil Street junction in Jawaharlal Nehru Salai (IRR)	93.50

S. No	Name of work	Cost
4	Grade Separator at Medavakkam – Sholinganallur road junction, Medavakkam – Mambakkam road junction and Mount – Medavakkam junction in Marmalong Bridge – Irumbuliyur (MBI) road.	146.41
5	Construction of Grade Separator at the intersection of Mount - Medavakkam road and Pallavaram - Thuraipakkam road near Kilkattalai	64.00
6	Construction of a Grade Separator at the junction of Perambur – Redhills road near Kolathur Retteri (RHS) in Inner Ring Road	41.08
b. LA in Progress		
7	Forming Grade Separator at the junction of ECR–Thiruvanmiyur road	58.00
Total		593.65

The preparation of DPR is in progress for the following 15 Grade Separator proposals.

1. At the junction of **ECR** and Lattice Bridge road at **Thiruvanmiyur**.
2. At intersection of Southern Sector of Inner Ring Road with Mount-Medavakkam road at Madipakkam.
3. In EVR salai at the inter section of Nelson Manickam road and Anna Nagar 3rd Avenue road (Section –IV) second level.
4. At the intersection of Mount – Poonamallee –Avadi road and Poonamallee – Kundrathur road with Chennai – Chittur - Bengaluru road at Poonamallee - Kattupakkam
5. In EVR salai at the intersection from Raja Muthiah Salai to Pulla Avenue.
6. Forming six lane of ECR from km: 11/8-23/2 Thiruvanmiyur to Akkarai including Grade Separator.

7. Providing Four lane Grade Separator at km 76/8 of NH-205 (Chennai -Thiruthani - Renigunta Road) & junction of km 6/4 of Vanagaram- Ambattur Road.
8. Construction of Grade Separator at km 68/4 of NH-205 (Chennai Thiruthani Renigunda Road) and SH-55 (Mount-Poonamallee Avadi Road) at km 20/8.
9. Construction of Grade Separator at the Junction of km 4/2 of Madhavaram - Redhills road and km 19/100 of Inner Ring Road.
10. Construction of Multi-level Grade separator on Mount - Poonamallee - Avadi road from MIOT Hospital to Mugalivakkam (via) Ramapuram, L&T and DLF.
11. Construction of Grade Separator at km 17/2 of Marmalong Bridge - Irumbuliyur Road at the intersection of MBI Road and Madambakkam road.

12. Construction of Grade Separator at km 80/7 in Chennai – Thirutani - Renigunta Road (NH205) at Korattur
13. Construction of Grade Seperator at the intersection of Pallavaram - Kundrathur Road and CKS Road at Kundrathur.
14. Extension of Vadapalani Grade Separator up to Ashok Pillar Junction.
15. Construction of Grade Separator at km 6/5 of Marmalong Bridge - Irumbuliyur road near Kaiveli, Madipakkam.

9.2 RoB/ RUBS WITHIN CMA

During 2018-19, 8 spill-over works were taken-up. The total cost of works is Rs.366.87 crore. Out of this, one work is in progress. Remaining works are in various pre-construction stages. The details are given below;

Table No. 9.2: Various Stages of ROB/RUBs
(Cost Rs. in crore)

S. No	Name of work	Cost
a. Work in progress		
1	LC No.4 –Construction of RUB near Korattur Railway station	19.97
b. Work to be taken-up		
2	LC No.32 – Construction of ROB near Perungalathur Railway station	206.83
c. Work in LA & DPR stage		
3	LC No.14 – Construction of ROB near Veppampattu Railway station (LA)	29.50
4	LC No.4 –Construction of RUB near Tiruvotriyur -Ennore Railway stations (DPR & LA)	28.00
5	LC No.6 – Construction of RUB near Tiruvotriyur - Wimco Nagar Railway stations (DPR)	25.50

S. No	Name of work	Cost
6	LC No.16 –Construction of ROB near Nandhiyampakkam – Minjur Railway stations (DPR & LA)	28.32
7	LC No.22 –Construction of RUB near Tirusulam (DPR)	14.00
8	LC No.27 –Construction of LUS near Chrompet Radha Nagar (DPR & LA)	14.75
Total		366.87

9.3 Widening of ROBs within CMA

As the width of the existing ROBs in the following locations is in-sufficient for the present day traffic requirement, widening is proposed.

- Widening of ROB at km 20/8 of Mount - Poonamallee - Avadi road at a cost of Rs.12 crore is proposed for inclusion under Railway Works Programme 2019-20 on cost-sharing basis.
- DPR for Widening of ROB to dual four lane at km 12/2 - 13/2 of Inner Ring Road is

being prepared. On completion of DPR, the works would be taken-up by the Department.

9.4 River Bridges

During 2018-19, 5 spill-over works were taken-up. The total cost of the works is Rs.119.04 crore. Out of this, one bridge work was completed.

One work is in progress and LA is in advanced stage for 2 river bridges. For the remaining work, DPR is in progress. The stages are listed below;

Table No.9.3: Various Stages of Works in River bridges

(Cost Rs. in crore)

S. No	Name of work	Cost
a. Work Completed		
1	Widening of High Level Bridge (HLB) at km 2/6 across the river Adyar in Mount – Poonamallee Road near Ramapuram	17.00

S. No	Name of work	Cost
b. Work in Progress		
2	Construction of HLB across Buckingham Canal at km 0/6 of Thiruvotriyur - Ponneri- Panchetty Road.	58.64
c. LA in progress		
3	Construction of HLB across Coovum river at km 14/4 of Mount - Poonamallee - Avadi road at Paruthipattu - Thiruverkadu Municipal Road.	7.40
4	Construction of HLB across Coovum river at Nolambur road junction in NH 4.	36.00
d. DPR in progress		
5	Construction of HLB across Coovum River at Padikuppam connecting Mugappair East with Koyambedu CMRL Station.	0.00
Total		119.04

9.5 Formation of New Link/ Widening of Road Works

In order to ease traffic congestion, improvements to vital missing links are essential.

During 2018-19, LA for widening / formation of 2 road works and formation of 1 link road were taken-up as spill-over. The total cost of the works are Rs.634.36 crore and the works are in progress. One new work costing Rs.36.69 crore has been taken-up and the work commenced.

The details are given below;

Table No. 9.4: Various Stages of Road Works

Cost Rs. in crore

S. No	Name of work	Cost
a. LA in progress		
1	Formation of Tambaram Eastern bypass Road km 0/0 – 8/4 (LA only)	75.50
2	Six laning of ECR from Thiruvanmiyur to Akkarai km 11/8 – 23/2 (LA only)	354.66

S. No	Name of work	Cost
3	Forming link road and construction of Bridge across Buckingham canal connecting Rajiv Gandhi Salai and East Coast Road at Neelankarai	204.20
Total		634.36
b. Work in Progress		
4	Formation of Tambaram Eastern bypass Road km 5/450 – 8/080 (LA Completed Stretch)	36.69
Grand Total		671.05

9.6 Pedestrian Infrastructure Facilities

Pedestrian, the most Vulnerable Road User (VRU), is often the victim of road traffic accidents. Through pedestrian specific projects, pedestrian fatalities are prevented and reduced.

2 Spill-over Pedestrian subway works at the following locations had been taken-up in CMA.

- Near A.G Church in Anna Salai, Chennai.
- Near M.K.N road junction at Guindy in GST road.

The DPR for the above two works would be taken-up shortly.

9.7 Skywalk

An innovative approach such as Skywalk, which is an elevated walkway built over a road, linking 2 or more locations, is an appropriate solution for safe & secured pedestrian crossing.

The gateway to the Chennai City is Tambaram. Railway station, Mofussil bus terminal and Metropolitan Transport Corporation (MTC) bus stand in Tambaram are located on both sides of the GST road. High volume Pedestrian traffic is experienced at this location. The FOB and Skywalk with escalator connecting Tambaram Railway Station and Bus Stand have been sanctioned for Rs.19.75 crore, to alleviate this problem. The work is in progress.

Further, DPR is being prepared for Providing Skywalk, Escalator and other accessories connecting Eastern and Western parts of Tambaram town with the existing Bus stand, Tambaram Railway station including improvements to existing Bus stand.

9.8 Works Sanctioned During 2018-19

The feasibility study is being carried-out to decongest the traffic at the following locations.

1. Construction of ROB at km 75/6 of Chennai- Thiruttani – Renigunta Road (SHU148) in lieu of Existing two lane ROB.

2. Construction of Grade Separator at the junction of Sardar Patel Road and Rajiv Gandhi Salai at Madhyakailash.

3. Construction of Foot Over Bridge with Escalator at km 9/300 in Inner Ring Road near Kendriya Vidhyalaya School.

9.9 Overall Expenditure (2018-19) and Allocation for 2019-20

An expenditure of Rs.259.55 crore has been incurred during 2018-19 in implementing various projects under CMDP.

For the year 2019-20, a budgetary allocation of Rs.574.22 crore has been made under the above scheme.



Ongoing Grade Separator at Koyambedu in Chennai



Ongoing Grade Separator at Kolathur Retteri Junction in Chennai

10. TAMIL NADU ROAD SECTOR PROJECT-II

In furtherance of Tamil Nadu Road Sector Project – I, TNRSP-II was formed for executing road corridors of special nature within the State. This is an Externally Aided Project, funded by the World Bank.

With an aim and objective to develop corridors to cater to high density traffic, an agreement was signed with the World Bank for extending loan assistance of US\$300 Million (Rs.1800 crore) for supporting the above Project. The State has committed Rs.3371 crore as its share for the above Project.

The Project involves upgradation and maintenance of high intensity traffic corridors of 1171 km. These Project corridors had been identified based on thorough studies undertaken through DPRs, funded by TNIDB, covering Thiruvannamalai, Kancheepuram, Cuddalore, Villupuram, Thirunelveli, Thoothukudi, Namakkal, Salem, Tiruppur and Dindigul Districts.

Apart from upgradation and maintenance of Project roads, TNRSP-II has taken-up Institutional Capacity Enhancement (ICE) of the Highways Department and Improving Road Safety activities within the State. An allocation of Rs.186 crore has been made towards the above component, wherein Rs.66 crore for ICE and Rs.120 crore for Road Safety have been earmarked.

The Project is adopting e-procurement system (through NIC platform) for International Competitive Bidding (ICB)/ National Competitive Bidding (NCB) procurement. The TNRSP is the first wing in the Department to procure completely through online.

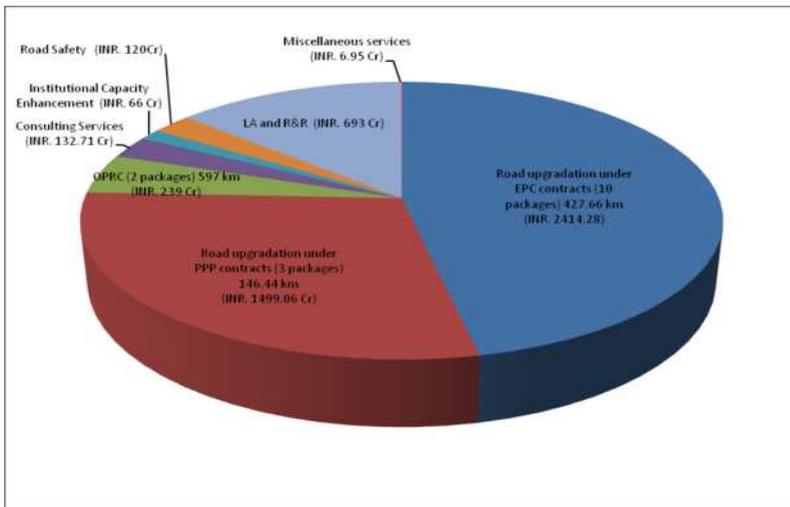
In order to expedite the LA and Resettlement implementation, 3 units headed by Special District Revenue Officers have been formed and LA progress is monitored online through an exclusive software.

Environmental and social impacts due to Project Implementation are given due priorities.

Following are the components approved under TNRSP-II:

10.1 PROJECT COMPONENTS

Total Estimate Amount Rs.5171 Cr (As per G.O (D) NO.117 H&MP (HN2) Dept DT: 29.05.2015)



The above project components have been executed by adopting newer mode of contracts viz., OPRC, EPC & PPP. These new contract modes are pioneer effort by the Highways Department in the State, through standard documents approved by the World Bank.

10.2 EPC BASED CONTRACTS

EPC approach relies on assigning the responsibility for design, construction and maintenance to the contractor for a lump sum price determined through competitive bidding. The objective is to ensure implementation of the Project to the specified standards with a fair degree of certainty relating to costs and time while transferring the construction risks such as soil conditions, weather and technical risks to the contractor.

The contractors have freedom to plan the construction schedule for efficient use of their manpower, equipment and other resource while payments are linked to specified stages of construction in contrary to the routine payment (Bill Of Quantities based) for individual items.

Construction of civil works for widening and upgrading of 427.66 km of roads of Core Road Network (CRN) to two-lane with paved shoulders standards and maintenance for 5 years have been awarded and works are in progress. Table shows the details of works under EPC packages.

Table No 10.1: EPC Works

Length in km, Amount Rs.in crore

Contract	SH No.	Name of the work	Length	Amount
EPC01	SH 116	Upgrading Kanchipuram - Vandavasi Road Km14/300 to km 36/700	22.34	184.98
	SH 58	Upgrading Sadras - Chengalpattu - Kanchipuram Arakkonam - Thiruthani Road km 0/000 to km 26/811	26.14	
EPC02	SH4	Upgrading Arcot - Villupuram Road km 29/800 to km 110/ 165 and km 113/325 to km 114/600	83.08	320.02
EPC03	SH9	Upgrading Cuddalore - Chittoor Road	28.45	95.22

Contract	SH No.	Name of the work	Length	Amount
		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 SH 137 (km 66/190 to km 71/147)		
EPC04	SH 70	Upgrading Vridhachalam - Parangipettai Road km 0/000 to km 35/800	35.80	162.41
EPC05	SH 86	Upgrading Omalur - Sankari - Thiruchengode - Paramathy road km 54/800 to km 81/000	26.20	103.81
EPC06	SH 79	Upgrading Malliyakarai - Rasipuram-	50.50	224.06

Contract	SH No.	Name of the work	Length	Amount
		Trichengode - Erode Road km 0/000 to km 30/600 and km 51/400 to km 71/300		
EPC07	SH 95	Upgrading Mohanur - Namakkal - Senthamangalam -Rasipuram Road km 0/000 to km 13/100	13.10	63.95
EPC08	SH 89	Upgrading Nanguneri - Bharatavaram - Ovari Road upto ECR junction km 0/000 to km 35/200	35.20	110.99
EPC09	SH 44	Upgrading Paruvakudi - Kovilpatti - Ettayapuram -	31.65	152.97

Contract	SH No.	Name of the work	Length	Amount
		Vilathikulam - Vembar Road km 22/500 to km 38/750 and km 41/300 to km 56/700		
EPC10	SH 41	Upgrading Raja palayam - Sankarankoil- Thirunelveli Road km 1/800 to km 28/000 and km 33/800 to km 82/800	75.20	286.50
TOTAL			427.66	1704.91

Out of 10 packages, 9 packages namely EPC-01, 02, 03, 05, 06,07,08, 09 and 10 have almost been completed. Regarding EPC-04 package, Tender would be invited shortly to complete the balance works.

10.3 Output and Performance Based Road Contracts (OPRC)

In this new mode of contract, the minimum essential technical standards and service level for roads are prescribed and only upon output matching the standards, contract is valued.

OPRC increases the efficiency, effectiveness of road asset management, and maintenance to ensure good condition of the roads over the entire period of contract.

This novel approach emphasizes quicker response towards standard level of maintenance uniformly throughout the contractual period and delivering satisfactory output. The payment is linked to the various performance standards.

Following roads have been taken-up for maintenance under OPRC mode for a period of 5 years, maintenance being completed for 3 years.

Table 10.2 : OPRC works

Length in km, Amount Rs. in crore

Pkg. No	Name of the work	Length	Amount
OPRC-1	OPRC for the maintenance of Arcot - Tiruvarur corridor	265.300	94.12
OPRC-2	OPRC for the maintenance of Nagapattinam - Tuticorin corridor	314.240	125.96
Total		579.540	220.08

10.4 Upgradation and Maintenance through PPP under Modified Annuity Mode

In the Public Private Partnership (PPP) Design, Build, Finance, Maintenance, Operation and Transfer (DBFMOT) mode, the contractor has to Build maintain and operate the road on his own financial resources and transfer the road after 10 years. The cost of Construction, Maintenance and Operation will be paid to the Contractor as Annuity in the Maintenance period.

The PPP DBFMOT mode on modified Annuity basis has been adopted for the following roads;

Table 10.3: PPP DBFMOT mode Road works

Length in km, Amount Rs. in crore

Contract	Name of the work	Length	Estimated Project	Stage
PPP-01	Gobi - Erode Road (SH15) km 123/000 to km 153/600	30.60	280.00	LA Process is geared up after vacating stay by the Honble High Court. Tender will be invited shortly

Contract	Name of the work	Length	Estimated Project	Stage
PPP-02	Oddan chatram – Dhara puram- Tiruppur Road (SH37) km 37/400 to km 108/400	70.20	713.45	Work is in Progress.
PPP-03	Tirunelveli – Tenkasi Road (SH-39) km 5/000 to km 50/600	45.66	412.89	Bid Process initiated
Total		146.46	1406.34	

10.5 Consultancy Services

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

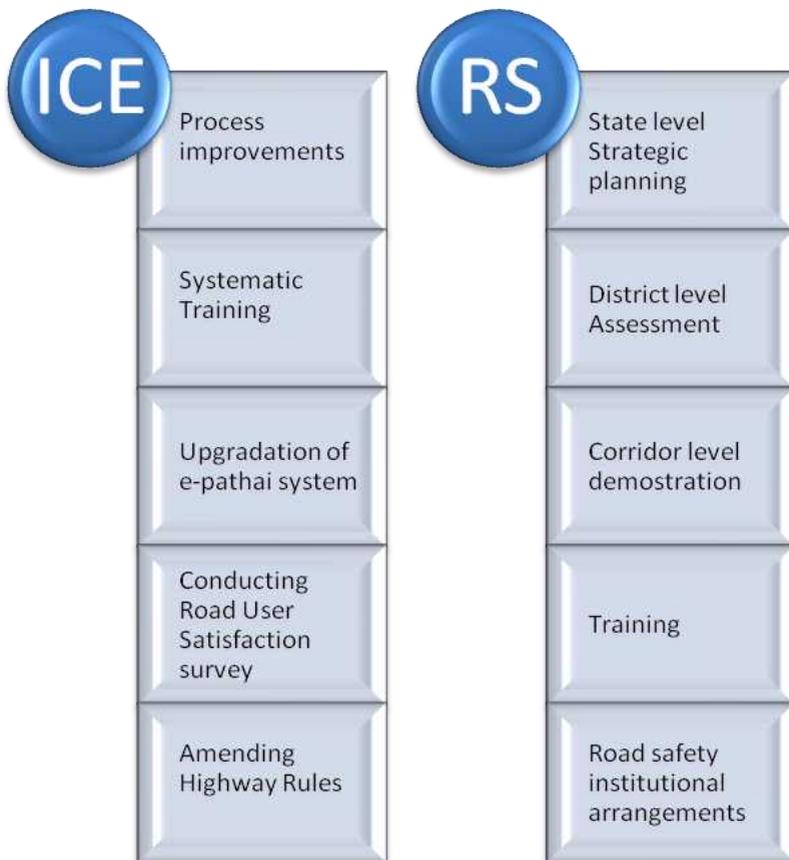
to monitor the two OPRC Contracts. LA Consultant for Land Acquisition and also a monitory consultant for Rehabilitation and Resettlement have been engaged for EPC and PPP package works. An amount of Rs.132.71 crore has been provided for procurement of consultancy / advisory services, third party audit consultancy, Front End Fee and Project Contingencies. Out of three PPP works, an Independent Engineer has been appointed to supervise the PPP 02 (SH 37) works. Procuring the consultancy services to act as Independent Engineer for the other two PPP works is under process.

10.6 Institutional Capacity Enhancement (ICE) and Road Safety (RS)

In order to have special focus and exclusivity in delivery of the ICE&RS components to the department, a separate cell has been formed by the Government by 2015. The Institutional Capacity Enhancement (ICE) and Road Safety (RS) cell, is headed by a Superintending Engineer, assisted by a Divisional Engineer and sub-staff.

ICERS components involves process improvements, capacity enhancement through training, updation of rules and acts, Re-Engineering proposals for optimization, Road safety etc.

Institutional Capacity Enhancement & Road Safety Cell carry out the procurement, inter & intra departmental coordination for the effective implementation of ICE & RS components approved under TNRSP-II.



10.6.1 Institutional Capacity Enhancement (ICE)

The increase in demand for quality road network exerts constant challenges in the supply chain. Apart from, material resources and

technological solutions to meet the above demand, there lies an inherent urge to develop the Human Resource & the Institution, to meet the challenge sustainably. This calls for strategic and structured programs to inculcate the best practices to achieve the desired results.

In turn, the World Bank have been appraised on the need of the soft skill component, which in turn had been included under TNRSP-II.

The key assignments taken-up under the ICE components are given below:

10.6.1.1 Road-User Satisfaction Survey (RUSS):

Underlining the significance of the level of satisfaction experienced by the road-user, a newer approach in gauging the project totally from the end-user perspective, RUSS has been instituted under this programme.

Consultant has been appointed to carry out the road-user satisfaction survey in the selected roads. About 8500 samples of road-users were surveyed. Sample type includes all road users from pedestrian to Truck drivers and household

living adjacent to roads. Structured Questionnaire was used in the survey to understand the road user's perception about the road quality, safety and facilities.

The Key areas of outcome of survey are;

- Improved road facility and drastic reduction in journey time.
- Accidents and pollution.
- Road side amenities

The survey provides insight to prepare policy and plan to provide need-based facilities.

10.6.1.2 Amendment of TN Highways Rules, 2003

There is an urgent need to revamp the codal provisions and acts relating to LA, in tune with the present day requirement of execution of major projects, including of the best interest of all the stakeholders.

Consultant has been appointed to accommodate the Compensation and Resettlement and Rehabilitation provisions of RFCTLARR Act, 2013, in above Rules.

The proposed amendments include:

- Time-line for LA activities
- Compensation as per Central Act to the affected families
- Provisions for protecting the Highway boundaries.

The preparation of draft amendment is under progress.

10.6.1.3 Process Re-engineering

This service envisages to study the existing processes of Technical, Accounting and Administrative procedures and to identify the gaps and to incorporate the best practices to improve the efficiency of the department, standard bidding documents, highway manual updations and their e-version are the key deliverables. All the above are being prepared.

10.6.1.4 Training Need Analysis

Sustainable result-orientated training plan based on the needs of the department, is planned under this task. Visits to National and

International Organizations to ape the best practices are planned, so that, the same could be locally implemented.

As part of their services, the Consultant has carried-out sample survey covering staff of the Department to assess the training need. In-house Trainers are also to be identified. Further, the exposure visit for 50 Engineers to developed countries to observe the best practices in the Highways sector, is to be arranged by the consultant.

Residential training for engineers and staff is to be imparted by the Consultant. Need Assessment Report, Policy, Calendar, e-library and Manual for Training are the deliverables.

10.6.1.5 Review and Upgradation of e-Pathai System

Highways department is pioneer in harnessing Information Technology in Highway sector and have developed RMMS, GIS, P&FMS and RADMS. To maximize the use of IT in day to day functioning e-pathai system has to be revamped. The management Consultant appointed for the above work, would review and

suggest improvements to the system which is under progress.

Road condition data collection through advanced data collection equipment (ADCE) is to be facilitated by the Consultant.

10.6.1.6 Upgrading the existing Hardware

To augment the existing hardware ELCOT has been appointed as procurement agency and the procurement is at an advanced stage.

10.6.2 Road Safety (RS)

Accident scenario in the State is a cause of concern. Addressing this issue, specific road safety components are taken-up under this project.

Comprehensive proposal for the improvement of Road safety, would involve two level approach:

- **At the State level,** focusing on comprehensive strategy, policy interventions, investment plan, multi-stake-holders shared responsibilities
- **At the operational level-** implementation of the road safety projects, monitoring and evaluation (M&E)- at District level.

10.6.2.1 Road Safety Audit (RSA)

RSA has been conducted for SH and MDR for a length of 1480 km in Kancheepuram and Tiruvannamalai districts.

10.6.2.2 International Road Assessment Programme (i-RAP) survey

An International survey for road safety assessment from the user perspective has been planned for 500 km of selected stretch. Video camera borne vehicle fitted with special equipments would capture all road related information such as road condition, availability of foot path, shoulder, median, obstruction etc.

The coded information, upon evaluation would be star-rated on a scale of 1 to 5 on safety.

10.6.2.3 Demo Corridor:

From out of the i-RAP study, 100 km critical section of corridor would be selected to be developed as Model Safety Corridor wherein the co-ordinated efforts of multi stakeholders would be put in enhancing the road safety. The best practices learnt would be scaled up to the entire State.

The Road Safety Management (RSM) Consultant appointed for this project, is entrusted the task of carrying out all the above. The above tasks are at various stages of implementation.

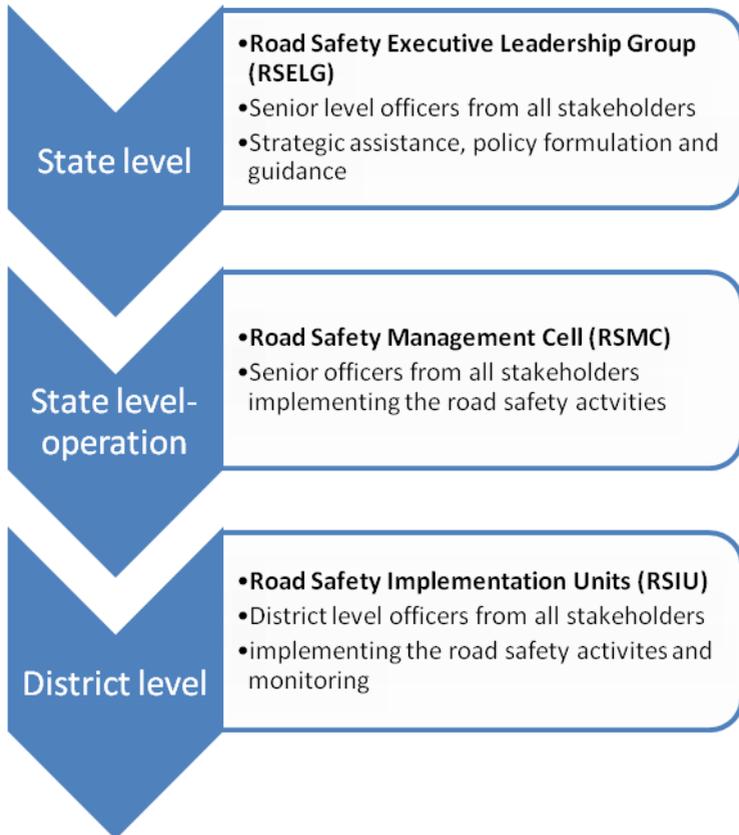
ICERS Cell also coordinates with all stake-holders for the combined effort in achieving the safety of road users.



10.6.2.4 Institutional Arrangements established for Road Safety

Government has established the following institutional arrangement for tackling road safety

issues to reduce road accidents.



10.6.2.5 Short term initiatives

The Short-term Road Safety initiatives are:

- Automatic Speed Enforcement and Traffic Management System in ECR- Rs.8.25 crore

- Center of excellence in Trauma care at District HQ Hospital – Rs.8.55 crore
- Training of Health care personnel in Emergency Management Skills- Rs.1.14 crore
- Creating Road Safety awareness at School level - Rs.0.45 crore

The above short-term initiatives at Kancheepuram district are at an advanced stage.

10.6.2.6 Training on Road Safety:

Under the sub-component of Knowledge Support and Capacity Building, professional development program is programmed for all stake holders. 19 Officers from Police, Highways and Transport were trained at Institute of Road Traffic and Education (IRTE), Haryana. 50 more Engineers were trained through Anna Institute of Management, Chennai in Road Safety. Plans are afoot for training 200 Engineers in RSA and i-RAP survey during the year. It is also planned to nominate senior officers from stake holder departments for immersion workshop on Road Safety to be held at Melbourne, Australia conducted by Vic-Roads, Australia, to be held during August 2019.

10.7 Proposed Consultancy Services

The Tamil Nadu Infrastructure Development Board (TNIDB) has now allotted an amount of Rs.132.76 crore for preparation of Detailed Project Report (DPR) for a length of 3319 km of roads vested with the Highways Department by engaging consultants through TNRSP II. The above stretch of roads fall within and outside the influence zone of CKICP. The RFP for the preparation of Detailed Project reports of roads to a length of 1181.635 km in 5 packages have been issued to the TNIDB empanelled consultants.

10.8 Land Acquisition (LA), Resettlement and Rehabilitation (R&R) activities.

Government has approved the Resettlement Policy Frame work (RPF) for the Project in line with the new 'Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (RFCTLARR) Act 2013' and the World Bank's Operational guidelines for compensating land acquisition for the Project Affected People. Also the RPF covers the principles and objectives of resettlement, process for conducting census survey of PAP,

socio-economic surveys and preparation of Entitlement Matrix (EM). The Entitlement Matrix is approved by the Government and is available in the Public Domain. Based on this Entitlement Matrix, Resettlement Action Plan is prepared individually for the Project roads. After the approval of RAP by the World Bank, the compensation is arrived and disbursed to this PAP's.

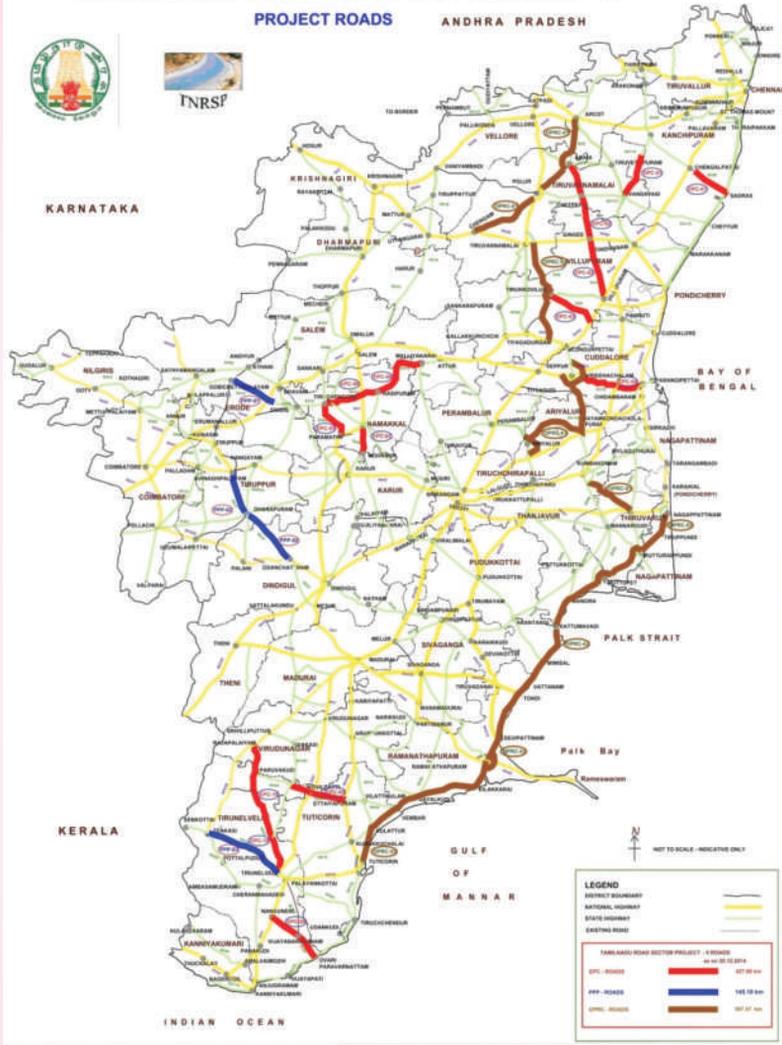
RAP addresses all issues and concerns regarding LA including impact assessment, valuation, consultation etc. Rules for RFCTLARR Act has been notified by the Tamil Nadu Government. Based on the above, final awards are being passed by the TNRSP II.

10.9 Overall Expenditure (2018 – 2019) and Allocation for 2019 – 2020

The total budget allotment for the year 2018-19 was Rs.503.13 crore and an expenditure of Rs.391.37 crore have been incurred upto March 2019 for implementation of various works under the above schemes.

For this financial year of 2019-20, a total budgetary allocation of Rs.472.97 crore has been made for this Project and an expenditure of Rs.1.46 crore has been incurred upto April 2019. An Overall expenditure incurred in the scheme is Rs.2397.55 crore.

TAMIL NADU ROAD SECTOR PROJECT - II



Map showing the roads taken-up under the World Bank Loan Assisted TNRSP-II



Upgraded Malliakkarai – Rasipuram – Thiruchengodu – Erode Road



Upgraded Arani to Villupuram section of State Highway

11. CHENNAI KANYAKUMARI INDUSTRIAL CORRIDOR PROJECT (CKICP)

Numerous road infrastructure projects are being implemented by the Department for the economic and industrial development of the State, which embrace, State supported, centrally sponsored and externally funded schemes. Chennai Kanyakumari Industrial Corridor Project has been established to implement industrial connectivity projects within influence zone of CKICP. East Coast Economic Corridor (ECEC) is one among the five Industrial Corridors announced by the Department of Industrial Policy and Promotion, Government of India based on the overall development of Country and States. The Government of India have proposed to develop ECEC with loan assistance from Asian Development Bank.

Asian Development Bank has prepared a comprehensive development plan for CKIC addressing the development plan for various sectors. Under the road sector, 8047 km road stretches have been identified in the CKIC

influence zone for development in 6 phases covering 13 Coastal Districts and 10 Interior Districts. Out of 8047km road network, 4318 km are National Highways and 3729 km are State Highways.

Presently, CKICP has been planned to connect National Highways 32, 132, 38, 138, 83, 36, 136, 536, 44, 544, 48, 716 and various State Highways and corridors spread over 19 districts in the CKIC influence area.

The Project Unit is headed by a Project Director supported by a Chief Engineer, 2 Circles and 6 Divisions. Also, to carry out Land Acquisition works, 5 Special LA units headed by Special District Revenue Officers are functioning under this unit.

11.1 Roads to be improved

It is proposed to take up the following 15 roads under first phase for development with ADB loan assistance on fast track mode as the DPR for all these roads have already been prepared and kept ready through Tamil Nadu Road Sector Project-II.

Table 11.1: Details of Roads to be Improved

Length in km, Cost Rs. in crore

S. No	Section	Total Length	Project Cost	LA cost	Proposal
1	Cheyyur to Polur (SH115) including ECR link	110.00	529.96	64.70	2L+PS
2	Chengelpet to Kancheepuram Road (30/0 - 63/450) (SH 58) including Military Road km0/0- 6/310	39.75	419.95	68.85	4L+PS
3	Kanchipuram - Tiruthani Road (SH 58) (Km 66/940- 108/720)	41.78	389.95	67.00	4L+PS
4	Tiruchendur to Ambasamudram via Palayamkottai (SH 40)	74.90	407.64	31.09	2L+PS

S. No	Section	Total Length	Project Cost	LA cost	Propo sal
5	Melur to Karaikudi via Tirupattur, Kundrakudi (SH 191 & SH 191A)	46.90	213.71	16.34	2L+PS
6	Thanjavur to Mannargudi (SH 63)	27.59	143.63	10.95	2L+PS
7	Kumbakonam to Mannargudy (SH 66)	34.26	177.90	13.56	2L+PS
8	Kumbakonam to Sirkazhi (SH 64)	38.07	307.49	145.22	2L/ 4L+PS
9	Mayiladuthurai to Thiruvavarur (SH 23)	31.28	199.04	137.16	2L+PS
10	Thuraiyur to Perambalur (SH 142)	31.49	107.41	25.00	2L+PS
11	Virudhachalam to Ulundurpettai (SH 69)	20.88	114.92	21.00	2L+PS

S. No	Section	Total Length	Project Cost	LA cost	Propo sal
12	Cuddalore to Madapattu Junction(SH9)	40.60	379.16	284.16	4L+PS
13	Mohanur - Namakkal - Santha mangalam- Rasipuram Road (SH 95)	46.44	249.32	162.42	4L/ 2L+PS
14	Tiruchengode to Erode (SH79)	10.27	205.59	115.12	4L/ 2L+PS
15	Omalur to Tiruchengode via Sankakiri including Tiruchengode Bypass (SH 86)	54.80	539.17	411.52	4L/ 2L+PS
TOTAL		654.54	4384.84	1574.09	
2L: 2 Lane, 4L: 4 Lanes, PS: Paved Shoulders					

The project cost is Rs.6448.24 crore which includes cost of Land Acquisition to the tune of Rs.1574.09 crore. The cost of land acquisition has to be borne by State Government. Of the

total Construction cost, Rs.3288.15 crore will be supported by Asian Development Bank loan assistance and remaining would be borne by the State Government. The Government has accorded administrative sanction for the project in the month of March 2018 and land acquisition works have commenced.

11.2 Project Preparatory Works

A Project Implementation Unit (PIU), headed by the Project Director, has been created to carry out the above project. To expedite the execution of the project, an exclusive Wing consisting of 295 Staff, under a Chief Engineer and Special Land Acquisition unit with 293 Staff have been formed. The Unit started functioning from August, 2018.

It is proposed to provide due Compensation, Rehabilitation and Resettlement benefits to the Project Affected Persons (PAP), as per the social safe-guards norms of the ADB. Private negotiation for Land Acquisition is also contemplated, to quicken the process.

As per ADB norms and guidelines, 2 consulting firms have been engaged to assist the implementation of the LA, Rehabilitation and Resettlement (LARR) activities. Action is being taken to ensure that all the project affected persons are entitled to suitable compensation, rehabilitation and resettlement benefits as per the RFCTLARR Act, 2013 and ADB's Safeguard Policy.

Procurement process for engaging consultant to monitor the LARR activities based on ADB safeguard policy and 5 construction supervision consultants have been initiated and necessary clearance from Asian Development Bank has been obtained. Bids have been invited for the LARR Monitoring Consultancy Service. The DPR prepared by TNRSPP are being revalidated to accommodate the requirements of ADB and to incorporate the Climate adaptation measures primarily.

Project Reports are being updated considering the revision in estimate based on current schedule of rates, 7-year maintenance provision including renewal of wearing surface in

the 6th year, inclusion of GST, revalidation of Social Impact Assessment and Resettlement Action Plan based on the ADB's Social Safeguards Policy. On approval by the Review Committee the DPRs are to be sent to ADB for final concurrence and tenders will be initiated.

It is proposed to adopt e-procurement procedure to entrust the Road Upgradation works under EPC mode of contract as per the ADB guidelines. The loan negotiation with ADB is planned in the first quarter of 2020.

11.3 Chennai Peripheral Ring Road Project

Chennai Peripheral Ring Road (CPRR), one of the key projects envisaged in Vision 2023 is conceptualized linking the principal radial arterials, viz. NH-5, NH-205, NH-4, NH-45. The key objective of CPRR is to provide efficient commercial transportation & Port connectivity. and enhance operational efficiency.

Alignment of CPRR starts at Ennore Port and ends at Poonjeri Junction near Mamallapuram for

a length of 133.38 km which is split into 5 sections as below:

Section	Starting from	End at	Length (km)
I	Ennore Port	NH 5, Thatchur	25.11
II	NH5	Thiruvallur Bypass	26.40
III	Thiruvallur Bypass	NH4, Sriperumpudur	30.60
IV	NH 4	NH45, Singaperumal koil	23.80
V	NH 45	ECR	27.47

This comprise, 97.47 km of new alignment and 35.91 km existing roads.

The total cost of the project is estimated at Rs.12301 Crore which also includes cost of Land Acquisition (Cost of Construction Rs.7446 Crore + Cost towards LA - Rs.4855 Crore). LA for Section-I has been sanctioned for Rs.951 crore. Government accorded administrative sanction for **Land Acquisition** for **Section II, III & V** which involves **558.53 hectares** at cost of **Rs.2603.32** Crore.

The Environmental Clearance has been obtained. Coastal Regulatory Zone (CRZ) clearance is expected shortly. It is planned to execute Section I of this project with JICA, ODA Loan Assistance and the Loan Agreement was signed on 18th January 2019. Consultants to facilitate the projects are being procured. The physical work will commence in 2020-2021.

12. HIGHWAYS RESEARCH STATION

The size and magnitude of infrastructural projects have increased considerably in tune with the growing demand from the public. The rate at which the projects are delivered has a sure impact on the available natural resources. Major projects and their timely execution pose a huge challenge on the deployment of men and material resource. This calls for constant exploration of innovative technological solutions for timely execution of projects, finding alternate materials in-place of depleting resources and optimal utilization of human resources. This is addressed by the research in the area of Highway Engineering.

With the primary objective of improving roads to enable all categories of traffic to move safely, expeditiously, economically and comfortably, the Highways Research Station was formed in 1957. Continuous study and research on materials used for road construction, technical support and expert guidance field related issues, suggestions for remedial measures for accident reduction, quality

assurance at all stages of the project, training and capacity building are all the primary areas of functions.

The only research station of State Highways Department with Director as Head of Institution, it has a Joint Director, four Deputy Directors and eight Divisional Engineers (Quality Control) fulfilling the objectives.

12.1 Quality Control System

The quality of Highways works are effectively monitored by the three tier quality control system adhering to the specifications. Circle level and Division level labs are established to meet this objective. Effective quality control at the initial stages and at all stages of project, both on the materials as well as techniques of construction, in adherence to standard codal provisions, result in considerable savings of time and financial resources outlay for the project. A robust quality control system pays rich dividends in the form of more durable, long lasting roads and bridges.

12.2 Laboratories

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

HRS is involved in designing the pavements based on traffic and assessing the Vehicle Damage Factor (VDF) by axle load tests, structural evaluation by carrying out Benkelman Beam Deflection (BBD) test, evaluation of surface characteristics of roads by conducting surface roughness tests, conducting pile load tests for bridges, non-destructive tests on concrete members, tests on steel, concrete and bituminous mix designs for all elements and layers of roads and bridges.

The traffic flow characteristics at road junctions in Tamil Nadu are studied and based on the data collected and detailed analysis, road junctions are redesigned and improved for reducing road accidents.

The laboratories of HRS have conducted 24119 tests on materials during the year 2018-19 and earned Revenue to the tune of Rs.18.23 crore.

12.3 Tamil Nadu Innovation Initiatives (TANII) - PROJECT

The Government with a view to encourage and foster research activities in the departments has initiated innovative schemes/projects funded through the TANII scheme. The State Planning Commission (SPC) is the funding agency sponsoring research projects. In HRS, the research scheme namely "Study on effect of nanoclay in bituminous mixes" was sanctioned for Rs.4.00 lakh in the year 2018-19 and the same is in progress.

12.4 Training

Training is an inherent part of any organization which paves way for updation of knowledge of the human resources leading to the growth & development of the organization. Continuous improvement is essential for the advancement of the individuals & organization.

Hence, continuous training programmes are conducted to ensure updation of the technical knowledge and to bring out the latest technologies practiced world wide.

Technical lecture programme are being conducted in the field of highway engineering, management, administration, health and social awareness by presentation and dissemination of earned knowledge by the eminent professors of technical institutions, professionals from the specified fields and department engineers.

The students of reputed Engineering Universities and Colleges, such as IITs, NITs, Anna University etc., are trained in exposure visits, in-plant training at laboratories of HRS and guided on their project works.

Following training programmes were conducted during the year 2018–19:

Table 12.1: Details of Training Programmes conducted during 2018–19

S. No	Participant's cadre	Duration in Days	Period	No of Participants
	Quality Control Training – 1 st Batch			
1	ADE & AE	5	25.06.18-29.06.18	15
	Geotechnical Investigation & Pile load test – 1 st Batch			
2	DE, ADE & AE	1	29.08.18	26
	Principles of Concrete Mix Design			
3	DE, ADE & AE	1	31.08.18	22
	Road Safety Audit – 1 st Batch			
4	DE, ADE & AE	3	18.09.18-20.09.18	30
	Eco Friendly materials used in Bituminous layers			
5	DE, ADE & AE	1	26.09.18	16
	Motivation			
6	Ministerial staff, Draughting officers, AEs & ADEs	1	04.10.18	73

S. No	Participant's cadre	Duration in Days	Period	No of Participants
	Road Safety Audit – 2 nd Batch			
7	DE, ADE & AE	3	10.10.18-12.10.18	19
	GST Training			
8	ADE, AE & Accounting Officers	1	15.10.18	70
	Quality Control Training – 2 nd Batch			
9	ADE & AE	5	22.10.18-26.10.18	39
	Geotechnical Investigation & Pile load test – 2 nd Batch			
10	DE, ADE & AE	1	31.10.18	50
	Insight about the functions/ works executed in Highways Department – 1 st Batch			
11	Secretariat Officials	2	12.11.18-13.11.18	16
	Insight about the functions/ works executed in Highways Department – 2nd Batch			
12	Secretariat Officials	2	19.11.18-20.11.18	17

S. No	Participant's cadre	Duration in Days	Period	No of Participants
	Road Safety Audit – 3 rd Batch			
13	DE, ADE & AE	3	17.12.18- 19.12.18	39
	Orientation programme for the newly recruited Assistant Engineers- 1 st Batch			
14	AE	10	21.01.19- 01.02.19	41
	Orientation programme for the newly recruited Assistant Engineers- 2 nd Batch			
15	AE	10	28.01.19- 08.02.19	41
	Orientation programme for the newly recruited Assistant Engineers- 3 rd Batch			
16	AE	10	04.02.19- 14.02.19	40
	Orientation programme for the newly recruited Assistant Engineers- 4 th Batch			
17	AE	10	11.02.19- 22.02.19	39

12.5 NEWS Letter

News letter is being brought out by HRS as a quarterly issue which is a communication tool amongst the departmental engineers for dissemination of information. So far 16 issues have been brought out since 2015.

12.6 Co-ordination with IRC

The Indian Roads Congress (IRC), New Delhi has accorded permanent council membership to the Director, Highways Research Station taking into account the contributions made by HRS. Apart from this, the Director, HRS is a member of Road Maintenance and Asset Management Committee (H-6), Human Resource Development Committee (G-2), Identification, Monitoring & Research Application (IMRA) Committee and Accreditation of new materials & Techniques Committee of IRC.

“The IRC publication sales extension counter” is functioning in HRS since 2013, where latest publications of IRC codes are easily available at HRS library to the Highway Engineers. There is a continuous participation of the engineers from

HRS in the annual session of IRC for presenting technical papers. In the recent 79th Annual session held at Nagpur, Maharashtra, Engineers from HRS have participated and presented a technical paper.

12.7 Memorandum of Understanding (MoU) with IIT-M

MoU has been entered into with IIT-Madras & Trainings on “Road Safety Audit” was conducted at HRS for 88 Engineers of Highways Department, by the experts from IIT-Madras.



Quality Control Tests during Field Inspection



Field Training on Road Safety Audit

13. PLANNING, DESIGNS AND INVESTIGATION

The Highways Department, State of Tamil Nadu is unique with a resourceful in-house exclusive wing for Planning, Designs and Investigation. The wing investigates road and bridge works right from their inception stage.

The Design wing has expertise in the field of Bridge Engineering and in designing major Highway structures.

Way back during 1971, the hitherto unit of Designs started to function under a separate circle headed by a Superintending Engineer with two divisions. Keeping in tune with the exponential growth of infrastructure developments and thereby the increase in bridge structural design and having grown with knowledge and experience in the field of Bridge design, the circle was upgraded as Design and Investigation wing under a Chief Engineer in the year 1995.

The Chief Engineer heads the unit with the support of a Joint Chief Engineer and four Divisional Engineers in Chennai. 5 Investigation Divisions at Chennai, Madurai, Tirunelveli, Salem and Coimbatore, collect field data relevant for design work.

13.1 Activities of the Wing

13.1.1 Investigation Divisions

The Investigation divisions undertake the following field works:

13.1.2 Field Investigation and Subsoil Exploration

- Detailed investigation and collection of field data for bridge works.
- Collection of required data from Public Works Department (PWD) for river bridges and from Railways for ROB / RUB works.

- Geotechnical investigation to ascertain the bearing capacity of the subsoil and to decide the foundation of the bridges.

13.1.3 Preparation of Detailed Reports And Drawings

- Preparation of site plans incorporating all the field details.
- Preparation of alignment drawings.
- Preparation of cross sectional and longitudinal sectional drawings along the water bodies & alignment and computation of hydraulic particulars.
- Recommendation of suitable proposal based on field investigation and subsoil exploration.

13.2 Design Divisions

A detailed study is done on the field data along with the tentative proposal received from the Investigation Division and a bridge proposal is formulated.

The major factors influencing the formulation of proposal are

- Site conditions and constraints
- Type of subsoil stratum
- Type of super structure as warranted by site (PSC or RCC) and type of sub structure.

The proposal is finalized based on the above factors and design, structural drawings, Bill of Quantities for the highway structures such as HLB, ROB, RUB, FOB etc., are prepared.

Other activities are as follows:

- Proof checking the DPR prepared by the consultants engaged by various wings.
- Proof checking the alternative designs furnished by the contractors.

- Re-designing the bridge components, if warranted, in accordance with the subsoil conditions and other site constraints during execution.
- Scrutinizing and according approvals for the structural design of bridges to be constructed by other departments.
- Scrutinizing the recommendations to facilitate the issue of permit for non-standard heavy motor vehicles to ply on roads/bridges.

13.2.1 Important Projects Carried Out During 2018-2019

Major projects for which design work is carried-out in Designs wing require a special mention with respect to the complexity of design in structural forms and challenges in field conditions. Projects worth mentioning are as follows;

- Flyover at Varanasi - Kanyakumari road (Madurai - Dindugal stretch) (SHU-100) Kalavasal Junction including at grade improvements at Kalavasal junction

and Arasaradi junction – **Dual Two lane with 33m PSC span.**

- Construction of ROB in lieu of LC No.32 and Pedestrian Subway in lieu of LC No.33 at Perungalathur in between Tambaram and Vandalur stations – **Elliptical Rotary with six arms.**
- Reconstruction of HLB across Bhavani river of Puliyampatti - Bhavanisagar - Bannari road – **in close proximity to Bhavanisagar dam.**

13.3 Works Completed During 2018 to 2019

- Preparation of design, drawings and estimate for 8 ROBs / RUBs / LUS, 60 River bridges, 5 Fly overs and 1 Grade separator.
- Remarks on the movement of a non-standard heavy vehicle which carried two heavy idols of Sri Maha Vishnu statue from Vandavasi to Bengaluru.

- Revision / modification in design and drawings of 3 river bridges and 1 ROB.
- Proof checking of design and drawings furnished by consultants for 5 river bridges / ROB / RUB / FOB.
- Proof checking the design and drawings for revision / modification of 2 Flyovers.

Totally, **86 Bridge design works** have been completed during 2018-19.

13.4 Preparation of Ready – Reckoner for Highway Engineers

As per the announcement made during the budget demand for 2018-2019, the ready-reckoner comprising the details of Highway Engineering principles and practices for the benefit of all the Engineers of this department is nearing completion and is to be released shortly.

13.5 Works to be taken-up during 2019-20

As on date 60 works are in progress at various stages. The design for the works to be sanctioned during 2019-20 would be taken-up.



**Second level Flyover along Chinnasamy road at
Gandhipuram area in Coimbatore city**



Two Tier Flyover at Vijayanagar Junction, Velachery in Chennai

14. TAMIL NADU ROAD DEVELOPMENT COMPANY LTD

The Tamil Nadu Road Development Company (TNRDC) Ltd, a fully State-owned company is a joint venture of TIDCO and TIDEL, with 50:50 shares, under the Additional Chief Secretary, Highways and Minor Ports Department, who is the Board Chairman. The board comprises of stake-holder members as well as independent Directors, registered under Companies Act.

This venture has been initiated since 1998 for executing major infrastructure projects, technological interventions, newer methods of contracts in the State.

14.1 Projects Implemented

14.1.1 East Coast Road (ECR) Project

The corridor along the coastal line of Bay of Bengal, is a road network with natural scenic beauty. The TNRDC jurisdiction of the ECR starts from Akkarai (km 22/300) on the outskirts of Chennai, upto Koonimedu (km 135/500) on the outskirts of Puducherry.

The 113.20 km long, two lane plus paved shouldered corridor is to be improved, operated and maintained under PPP mode for a period of 30 years since 2002.

The increasing road traffic along the corridor and the number of accidents have necessitated further widening to 4 lane with a central divider, to increase capacity as well as segregate the traffic.

The two lane plus paved shoulder corridor has been widened to four lane with a central median, from Akkarai to Mamallapuram (km 56/0). From Mamallapuram to Puducherry the road has been improved to geometrical standards. The above intervention apart from augmenting the capacity has also helped in reducing accidents.

14.2 Projects Under Implementation

The TNRDC apart from implementing projects directly is also venturing as a Managing Associate. Such projects implemented are detailed below;

14.2.1 Chennai Outer Ring Road – Phase I

This project under DBFOT model connecting Vandalur on NH-45 and Nemilichery on NH-205 (via) Nazarathpet on NH-4 for a length of 29.65 km is undertaken at a cost of Rs.1081.40 crore. The stretch from Mannivakkam to Nemilichery has almost been completed and put to public use. Certain portions of the project stretch are under prolonged litigation, which would be settled soon and project completed.

14.2.2 Chennai Outer Ring Road - Phase II

The Phase-II of the CORR, from Nemilichery (NH – 205) to Minjur (crossing NH-5), for a length of 30.50 km, under DBFOT at a cost of Rs.1075.00 crore, has been almost completed except for a meager length of 0.50 km which is under litigation. The same would be settled early, work will be completed and put to public use.

14.2.3 Chennai Peripheral Ring Road - Section-I

Chennai Peripheral Ring Road, from Mamallapuram to Ennore, has five sections with Section-I connecting NH-5 at Thatchur, with Ennore Port plus one spur link road to Chennai Outer Ring Road at Minjur, is for a total length of 24.85 km, is undertaken by TNRDC.

The Green Field Project sanctioned at a cost of Rs.2673.42 crore, is aimed at providing the vital connectivity to the heavy Industrial Corridor, Ennore Port and traffic leading to all the intervening NHs.

As a preliminary step towards the project preparation, the Government have sanctioned Rs.951.00 crore for LA. The LA works is in progress for 15 villages in Ponneri Taluk, Thiruvallur District. The project is funded by the Japan International Cooperation Agency (JICA). The procurement of Project Management Consultancy is in progress. The work is to be commenced by 2020 and expected to be completed by 2023.

14.2.4 Construction of a Four Lane High Level Bridge at Ilayanarkuppam in ECR

The construction of a four-lane high level bridge at km 69/300 in ECR road at Ilayanarkuppam, a work under the announcement during 2017-18, is taken-up at a cost of Rs.23.78 crore. Work is in progress.

14.2.5 Widening and providing Rigid Pavement in North Chennai Thermal Power Station Road and Kamarajar Port Road

TNRDC has taken-up the widening of the existing North Chennai Thermal Power Station Road and the road leading to Kamarajar Port Main Gate from 2 lane to 4 lane for 7.2 km length is on deposit terms. The Rigid pavement section is at a cost of Rs.195 crore.

The work of four laning 2.8 km long Kamarajar Port Road is under progress. The North Chennai Thermal Power Station Road is to be implemented during this year.

14.2.6 Improving the connecting road from NH4 to Sojitz Motherson Industrial Park at Singadivakkam in Kancheepuram District

The road leading to Sojitz Motherson Industrial Park at Singadivakkam, Kancheepuram District is to be widened to four lane configuration. The 2.8 km long Rigid pavement is taken-up under Tamil Nadu Investment Promotion Programme (TNIPP) at a cost of Rs.24.00 crore is in progress.

14.3 IT Expressway Ltd., (ITEL)

M/s IT Expressway Ltd., (ITEL) was incorporated by TNRDC during February 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.

14.3.1 Project Completed by ITEL

14.3.1.1 Rajiv Gandhi Salai (IT Expressway) Phase-I

The Old Mahabalipuram Road from Chennai Madhya Kailash to Siruseri for 20.10 km, IT Expressway, Phase-I including the 2.15 km link to ECR, is under toll maintenance.

14.3.2 Project in Pipeline with ITEL

14.3.2.1 Rajiv Gandhi Salai (IT Expressway) Phase-II

IT Expressway (Rajiv Gandhi Salai) Phase – II extension from Siruseri to Mamallapuram for a length of 25 km with six lane road including two bypasses at Kelambakkam and Tiruporur under PPP mode have been planned by the Government of Tamil Nadu.

The Government have sanctioned Rs.465.13 crore for acquisition of required land to an extent of 88.62 ha. in 13 villages for a width of 60m Right of Way for implementing the 6 lane proposals. Presently, acquisition has been completed in nine villages and the land

acquisition is in progress in the remaining villages.

The DPR for a length of 25 km from Siruseri to Mamallapuram including two bypasses was prepared and the estimated cost is Rs.573.99 crore. For first stage, Administrative Sanction had been accorded for Rs.243.70 crore for forming two bypasses at Kelambakkam (4.675 km) & Tiruporur (7.45 km) alone in the above total 25 km stretch, under TNIPP-II and is under progress.

14.3.2.2 Multi Level Car Parking (MLCP) at Siruseri

The Multi Level Car Parking (MLCP) at Siruseri under PPP mode, with nine floors for car parking and a commercial complex is planned under DBFOT at a cost of Rs.200 crore. DFR has been prepared.

Since the alignment proposals of CMRL phase-II falls within the MLCP portion, the DFR is now being modified to incorporate the above changes. The same would be finalized soon and taken-up for implementation.

14.3.2.3 Elevated Corridor

Elevated Corridor from Taramani to Siruseri under Phase-I and from Siruseri to Mamallapuram under Phase-II, for a total length of 45 km had been announced with an allocation Rs.5 crore for DPR.

DPR has been completed for Phase-I. The DPR is now being revised to incorporate proposals of CMRL Phase-II. The project is to be executed with funds under JICA assistance.

Preliminary Project Report (PPR) has been sent to MoRTH, GoI seeking external funding assistance.



Chennai Outer Ring Road Phase II



Roller Safety Barrier at Vilambur in East Coast Road

15. TAMIL NADU ROAD INFRASTRUCTURE DEVELOPMENT CORPORATION

With a view to augment infrastructure facilities in the State of Tamil Nadu under any Plan, Programme, Scheme of the State, upon direction by the Government, Tamil Nadu Road Infrastructure Development Corporation (TNRIDC) was instituted since 2005-06. The unit wholly owned by Government is a non-profit organization implementing special projects of road infrastructure.

The Chairman cum Managing Director of TNRIDC is the Additional Chief Secretary, Highways and Minor Ports Department and the Board of Directors are the representatives from various Departments of Government of Tamil Nadu.

15.1 Projects being Implemented BY TNRIDC

15.1.1 Oragadam Industrial Corridor Project

The State of Tamil Nadu is a rapidly growing industrialized State which has major manufacturing and engineering industrial units. Many of the units are collaborative in nature with National and International Organizations. Four SIPCOT units which includes many Multi-National Companies, 6 global car manufacturing industries, National Automotive Testing and R&D Infrastructure Project (NATRIP) are all part of industrial estate situated in Oragadam and Sriperumbudur of Kanchipuram district.

The industrialization of this zone has generated high intensity of traffic flow which needs better infrastructure. With this special focus, Oragadam Industrial Corridor Project has been taken-up in phased manner as mentioned below.

Phase - I

The work of widening from two lane into four lane and improvements to Singaperumalkoil – Sriperumpudur road (24.00 km part of SH-57) and Vandalur – Wallajabad road (33.40 km part of SH-48) were taken-up at a cost of Rs.300 crore for a total length of 57.40 km including one Grade Separator at the junction of the above two roads. This scheme is under implementation at a revised estimate cost of Rs.612.82 crore.

Out of 57.40 km, 56.90 km of road work and one Grade Separator at Oragadam junction have been completed and opened to traffic except 0.5 km (Sriperumpudur).

Phase - II

The work of Improvements from four laning to six laning of Singaperumalkoil – Sriperumpudur road from km 12/6 to 24/6 was taken-up during 2011-12 at a cost of Rs.86.65 crore. This scheme is under implementation at a revised cost of Rs.108.66 crore. Out of 12 km,

11.20 km has been completed except 0.8 km (Sriperumpudur and Mathur).

The balance 0.80 km in Sriperumpudur and Mathur being held up due to LA and court cases and will be taken-up after completing LA and settling the court cases.

Phase – III

The work of improvements from four laning to six laning of Singaperumalkoil – Sriperumpudur road km 0/6 – 12/6 (SH-57) was taken-up for implementation during 2014-15 at a cost of Rs.115 crore. Out of 12 km, 11.70 km have been completed and balance work is in progress.

Phase – IV

The work of “improvements from four laning to six laning of Vandalur to Wallajabad road km 30/4 – 47/0 including Land Acquisition for formation of Padappai Bypass Road” was taken-up for implementation during 2015-16 at a cost of Rs.189.81 crore and 90% of work have been completed. In Padappai village award has been pronounced and the work is in progress.

Phase – V

The work of Improvements from Four laning to Six laning of Vandalur – Wallajabad Road km 47/0 – 63/8 has been taken-up for implementation during 2017 -18 at a cost of Rs.180.09 crore. The widening work is in progress.

15.1.2 Four Laning of Madurai Ring Road

Madurai Ring Road connects the abandoned NH-45B (near Meenakshi Mission Hospital and Dr. M.G.R. integrated bus stand) with NH-7 (near Kappalur Industrial Estate) for a total length of 27.20 km. Based on the sectoral growth and traffic needs, the project of “Widening the Madurai Ring Road from double lane to four lane from km 0/0 – 27/2” has been sanctioned under BOT (Toll basis) at a cost of Rs.213.69 crore, with a Viability Gap Fund (VGF) of Rs.80 crore from the State. The ring road is a vital link to Madurai – Sivagangai road (SH-33), Madurai- Rameswaram Road (NH-49), Madurai Airport and Tuticorin Port leading to southern districts. The project includes widening of the existing two lane into four lane with additional

two lane Bridge across Vaigai river and 2 ROB works. The concession period is 20 years.

With 90% of the work completed the remaining portion of the project would be completed soon and put to public use.

15.2 Permanent Flood Restoration Under CRIDP 2018 –19

As a part of flood restoration works, in order to increase the capacity of cross drainage works in Adayar River, permanent restoration under CRIDP 2018-19 the work of construction of minor bridge at km 33/6 of Vandalur – Wallajabad road (SH-48) has been taken-up for implementation during 2018-19 at a cost of Rs.4.80 crore. The work is in progress.

15.3 Deposit Work

The Government of Tamil Nadu had entered into a Memorandum of Understanding (MoU) with M/s Daimler India Commercial Vehicle plant at Oragadam to provide an access road to Daimler India Commercial Vehicle Plant at a cost of Rs.7.50 crore, on deposit basis from SIPCOT. This access, branches at km 46/342 of Vandalur

- Wallajabad road (SH 48) at Oragadam on the rear side of their Company, and the project is under implementation.

15.4 Overall Expenditure (2018-19) and Allocation for 2019-20

During 2018-19 an expenditure of **Rs.97.90 crore** have been incurred for implementation of the aforesaid schemes.

For 2019-20, Budgetary allocation of **Rs.155.50 crore** has been made.



Four Laning Madurai Ring Road



Six Laning Vandalur - Wallajabad Road

16. TAMIL NADU MARITIME BOARD

Tamil Nadu Maritime Board was established under the Tamil Nadu Maritime Board Act 1995 (Act 4 of 1996) on 18.03.1997 for the purpose of Administration, Management and Control of Minor Ports in the State of Tamil Nadu. The main objectives and functions of TNMB are detailed below:-

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 ensure port connectivity to the industries located in the Central & Western Districts of Tamil Nadu state.
3. To decongest the major ports in the State of Tamil Nadu.
4. To decongest goods movement on Highways and Railways by providing facilities for coastal shipping

5. To promote maritime training activities on par with international standards.

16.1 Coastline and Ports

The State of Tamil Nadu has a coast line of about 1076 Kms. Three Major Ports, namely, Ennore (Kamarajar), Chennai and Tuticorin (V.O.C) notified under the Major Port Trust Act, 1963 and 18 (Non-Major) Minor Ports notified under the Indian Ports Act 1908, are located on its coastline. The major ports are under the control of Government of India and the Non-Major Ports are under the control of the Government of Tamil Nadu.

16.2 Minor Ports in Tamil Nadu

The following are the declared Minor Ports in Tamil Nadu:

Government Ports	Captive ports
1) Cuddalore	1) Kattupalli
2) Nagapattinam	2) Ennore Minor Port
3) Pamban	3) Panaiyur
4) Rameswaram	4) Thiruchopuram

Government Ports	Captive ports
5) Kanyakumari 6) Colachel	5) Silambimangalam 6) Parangipettai 7) PY-03 Oil Field 8) Thirukkadaiyur 9) Chettinad Tharangampadi 10) Thirukkuvalai 11) Udangudi 12) Koodankulam

Cuddalore, Nagapattinam, Pamban, Rameswaram, 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, development, etc.,.

16.3 Activities of Minor Ports

16.3.1 Government Ports

The existing Cuddalore port, which is an open sea anchorage port, is being developed into a deep water, all weather, direct berthing port with the revenue of Tamil Nadu Maritime Board and also with the financial support of

Government of India under Sagarmala Programme / Coastal Berth Scheme.

Nagapattinam port handles import of Edible oil regularly through barges.

Poompuhar Shipping Corporation is operating passenger ferry service from Kanyakumari port to Vivekananda Rock Memorial and Ayyan Thiruvalluvar Statue and vice versa.

Small ships are piloted through Pamban Channel. Indian Railways have decided to modernise the Railway bridge span at Pamban, to facilitate uninterrupted movement of crafts through Pamban channel.

Rameswaram port is used for short trip passenger ferry service.

16.3.2 Captive Ports

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

M/s. Chemplast Sanmar Ltd., imports 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.

Kattupalli Port apart from import / export also handles commercial cargo. The Ennore and Thirukkadaiyur Minor Ports handle only import of cargo.

16.4 Commodities Handled in Minor Ports

16.4.1 Government Ports

Table 16.1: Cargo Handled in Government Ports

S.No	Port	Shipped	Landed
1.	Cuddalore	General cargo	Vinyl Chloride Monomer

S.No	Port	Shipped	Landed
2.	Nagapattinam	Diesel and Naphtha	Edible Oil and General cargo

16.4.2 Captive Ports

Table 16.2: Cargo Handled in Captive Ports

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

16.5 Minor Port Development Policy

Tamil Nadu Maritime Board encourages in setting up of new captive Ports, Jetties and Moorings in order to stimulate the economic development along with the fast industrialization of the State. The policy has flexible approach and envisages development of ports, for port

based Oil Industries, Thermal Power Projects and also multi-user ports.

The Port policy formulated by the Government of Tamil Nadu is intended for attracting new investments for the development of infrastructure facilities in sea ports.

16.6 Initiatives of the Board in Development of Ports

16.6.1 Development of Cuddalore port

Cuddalore Minor port is an intermediate anchorage port. Occasionally, General Cargo is handled through barges from ships anchored at sea.

Presently, Cuddalore Port is being developed as Deep water, all weather port at a cost of Rs.135 crore under Sagarmala / Coastal Berth Scheme with 50% of the project cost as Grant from Government of India, and the balance 50% of the Project cost is to be funded by Tamil Nadu Maritime Board. This facility will attract small and medium size vessels, coastal vessels to call Cuddalore Port of handling cargo / passengers. The development works which include Extension

of Breakwaters, Construction of Coastal Berths and Dredging of Channel, etc., have commenced and works are expected to complete by May 2020.

16.6.2 Development of Kanyakumari Port

Kanyakumari port is being developed at a cost of Rs.20 crore under Sagarmala Programme / Coastal Berth Scheme of Government of India. It consists of extension of Passenger Jetty at Vivekananda Rock Memorial for a length of 100 metres. The Project will be implemented with 50% funding from Poompuhar Shipping Corporation Limited and 50% from Government of India grant under Sagarmala Programme / Coastal Berth Scheme.

16.6.3 Public Private Participation

Tamil Nadu Maritime Board invites proposals for development of Non-Major Ports having potential of export / import opportunities through private investment or Public Private Participation (PPP) mode on need basis.

16.7 Revenue of the Board for 2018-19

In the year 2018-19 about 9,62,894 MT of cargo, 4,11,792 containers and 201 Motor Vehicles have been handled through the Minor Ports and the Board earned a revenue of about Rs.65.28 crore.

16.8 Tamil Nadu Maritime Academy

Tamil Nadu Maritime Academy functioning at Thoothukudi is under the control of Tamil Nadu Maritime Board. The Academy is conducting pre-sea General Purpose rating course of 6 months duration with 40 trainees per batch and have conducted training 31 batches so far. The 32nd batch of the course has commenced since January 2019. The Academy also trains candidates on 'Personal Survival Techniques', 'Elementary First Aid', 'Personal Safety and Social Responsibility', 'Oil Tanker Familiarization' and 'Augmentation of Fire Prevention and Fire Fighting' courses.

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MINOR PORTS IN TAMIL NADU



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GOVERNMENT PORTS

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

CAPTIVE PORTS (C.P)

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. KATTUPALLI 2. ENNORE MINOR PORT 3. PANAIYUR 4. THIRUCHOPURAM 5. SILAMBINGALAM 6. PARANGIPETTAI | <ol style="list-style-type: none"> 7. PY-03 OILFIELD 8. THIRUKKADAIYUR 9. CHETTINAD THARANGAMBADI 10. THIRUKKUVAI 11. UDANGUDI 12. KOODANKULAM |
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Minor Ports in Tamil Nadu

17. POOMPUHAR SHIPPING CORPORATION LIMITED

The Poompuhar Shipping Corporation Limited (PSC) was created on 11.04.1974 under the companies Act, 1956 to transport the coal required for Tamil Nadu Generation and Distribution Corporation Ltd., (TANGEDCO) for the generation of electricity. This is the only State Government owned Shipping Corporation in our country with the above objective.

17.1 Administration

The affairs of the Corporation are managed by the Board of Directors consisting of officers nominated by the Government of Tamil Nadu. The Corporation is headed by the Chairman and Managing Director. The day-to-day functions are carried out by the various departments namely technical, operation, finance and personnel & administration headed by the qualified officers from the respective fields. The number of regular employees of the corporation is 80.

17.2 Core Activities

The core activities of the corporation are (a) Transportation of thermal coal along the East Coast of India and (b) Ferrying of tourists from the shore of Kanniyakumari to Vivekananda Rock Memorial and Ayyan Thiruvalluvar statue and back.

17.3 Transportation of Coal

17.3.1 Transportation of Coal for the TANGEDCO

The entire domestic coal allotted by the Indian coal companies to the TANGEDCO is transported from the load ports of Haldia, Paradip, Dhamra and Vishakapattinam to discharge ports at Ennore, Karaikal and Tuticorin. The transportation of the coal is met through 15 chartered vessels

17.3.2 Transportation of Coal for NTECL

The corporation is transporting the entire domestic coal from the load ports of Paradip and Dhamra to Ennore for NTPC Tamil Nadu Energy Company Ltd., (NTECL) also, a joint venture company of the TANGEDCO and NTPC, for their

3 thermal power stations with 500MW each at Vallur, North Chennai as per the Memorandum of Understanding.

17.4 Coal transport and Performance

17.4.1 Coal transport

With the 15 chartered vessels, the maximum coal transporting capacity of the corporation is 309 lakh Metric Tonnes per annum. Of which 243 lakh Metric Tonnes intended for Ennore delivery port and 66 lakh Metric Tonnes for Tuticorin port. However, the maximum transporting capacity of the Corporation depends on the time and delivery of coal stock by the Indian coal companies to the TANGEDCO and the NTECL.

The physical and financial performance of the corporation during the last three financial years is given below:

Table No 17.1: Physical performance

Quantity in lakh MT

Year	Quantity of coal received at load ports	Quantity transported
2016-17	171.86	169.37
2017-18	190.00	188.85
2018-19*	210.06	205.02

*2018-19 Provisional

17.4.2 Plan for Coal transport during 2019-2020

During the year 2019-2020 the Corporation proposes to transport the coal allotment of 200.98 Lakh Metric Tonnes and 58.90 Lakh Metric Tonnes for the TANGEDCO and the NTECL respectively through chartered vessels.

17.5 Pricing Policy for Coal Transport

The Corporation was formed with the main objective of transporting coal for the TANGEDCO. Accordingly, the Corporation receives actual cost of operation on the basis of

“No Profit and No Loss” and proportionate share of administrative cost from the TANGEDCO.

NTECL contributes 5% as service charges to the corporation on the hire amount.

17.5.1 Ferrying of Tourists at Kanniyakumari

The Corporation ferries tourist passengers from the shore to Vivekananda Rock Memorial and Ayyan Thiruvalluvar Statue. Presently three ferries namely M.L.Guhan, M.L.Pothigai and M.L.Vivekananda with a seating capacity of 150 each are being operated.

The Corporation has issued work order for constructing two new ferries for Rs.8.24 crore with capacity of 150 & 75 each. The project has been sponsored by the Tamil Nadu Tourism Department with the financial assistance of Asian Development Bank (ADB) loan. The two new ferries would be pressed into service during this year.

New avenues of development are being explored for sustenance of the corporation.

The ferries normally start their operations at 8 AM, and during the peak seasons at 6 AM for the benefit of the tourists

Table No 17.2: Physical and Financial Performance of Kanniyakumari Ferry Service

No. and Rs. in Lakh

Year	No.of tourists	Gross earnings	Profit
2016-17	21.00	697.46	187.82
2017-18	21.67	979.11	268.90
2018-19*	19.93	1124.40	225.47

2018-19* Provisional

17.5.2 Financial Performance of the Corporation

The Corporation has declared a dividend of Rs.33.54 Lakh being 30% on the operating profit of Rs.111.78 lakh for the financial year 2017-18.

Table No 17.3: Financial Performance

Rs. in lakh

	Turn Over	Net operating profit (PAT)	Dividend declared
2016-17	42715.00	295.01	88.50
2017-18	52163.00	111.78	33.54
2018-19*	78543.23	400.00	-

**Figures are Provisional*

18. CONCLUSION

The development in Transportation network has induced the economic and overall development in the State. The State fully understanding the significance and importance of the Infrastructural development in Roads and Bridges sector, has focused in providing quality road network connecting all the parts of the State. Emphasis had been laid in providing connectivity to rural areas with the nearby towns/cities, Industrial zones, Marketing centres, Health care units, Roads leading to Ports of Air/Sea and high density corridors. All these have been contributing towards the improvement of the State economy and livelihood of the citizen.

The Tamil Nadu Highways Department provides quality road network connectivity which ensures, quicker, safer, more comfortable journey reducing the vehicle operating costs. The State envisions provision of multi-lane corridors and two-laned corridors with paved

shoulders, in core road network. This would spur the movement of commercial and cargo transportation along with the public transport. The year 2023 had been fixed as the time-line for achieving the targeted growth profile. The Sustainable Development Goals (SDG) under themes 3, 9 and 11 set the indicators as Safe, durable and resilient road infrastructure. These projects have a direct bearing on improving the living standards of the general public.

Providing quality road network, increases the mobility whose adverse effects are road accidents. Conscious about the increasing Road Traffic Accidents, the department had taken-up two model districts viz., Kanchipuram and Tiruvannamalai, to demonstrate concerted efforts of Road safety through all the Stakeholder's co-ordination. A World Bank funded project under TNRSP-II, the component also includes institutional arrangements to tackle the accident menace. Black-spot improvements under State funds, technological interventions as Automatic Speed Enforcement System using

Radar based Cameras at East Coast Road, Kanchipuram District, dedicated Road Safety funds - all aim at reducing the road traffic accidents, which needs to be halved by the year 2020 as per the SDG targets.

The delivery of all the above is efficiently managed by harnessing the potential of Information Technology by implementing e-pathai which includes RMMS, GIS and P&FMS, TNRADMS, TNHPMS, etc.,. The best practices in Highway Engineering across the globe and nation are taken-up for adoption in our system with suitable regional modifications. Memorandum of Understanding (MoU) has been entered into with Vic Roads, Australia, IIT-M etc.

Training activities are planned and implemented in better scale with an objective of overall personality development of the Human resources of the department.

The ever-increasing automobile population, increased traffic demand, the growth of various sectors propelled by the infrastructural facilities,

have all to be met with efficient network by the Highways Department. The resources of the Highways Department are geared-up to achieve the best results effectively, aiding the equitable socio-economic development of the State.

Edappadi K. Palaniswami
Chief Minister