Highways and Minor Ports Department

POLICY NOTE
2014-2015

DEMAND NO. 21

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HIGHWAYS AND MINOR PORTS DEPARTMENT

POLICY NOTE - 2014-15

1. INTRODUCTION

Infrastructure is the prerequisite for the development of any economy. Transport, telecommunications, energy, water, health, housing and educational facilities have become part and parcel of human existence. These are vital to the household life as well as to the economic activity.

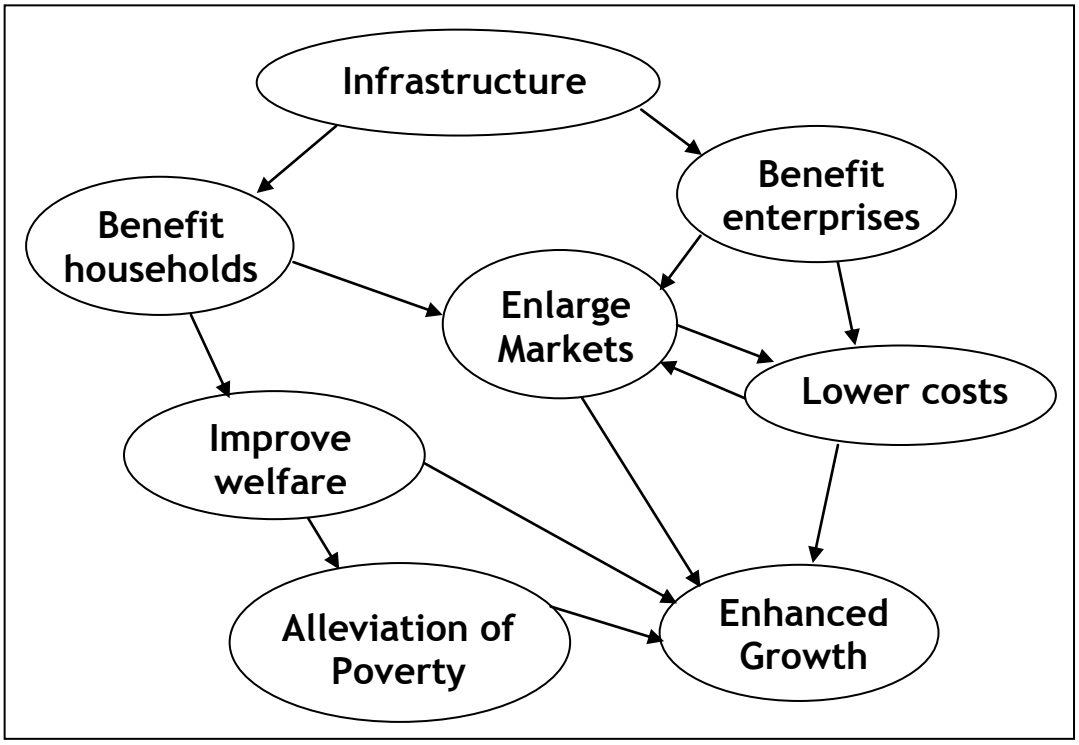


Figure 1.1: Schematic diagram depicting contribution of infrastructure to growth

In today’s rapidly changing world, the road transportation network system has become very crucial to boost economic growth, physical transformation, and the emergence of an outward-looking, pluralistic population. Greater access to road network is needed to bring equitable development and social empowerment. It is an important pre-condition for sustainable economic and social development. Infrastructural investments in road sector play a strategic role in the development process and make a significant contribution towards growth.

In India, the planning for development of roads was done on a long term basis in consonance with the Indian Roads Congress (IRC). The 20-year plans viz., 1943-61 plan, 1961-81 plan, 1981-2001 plan, Road Development Plan-Vision: 2021, which were formulated under the guidance of the IRC have served as reliable reference framework for the Central and State governments to formulate their successive Five Year Plans.

The Indian Roads Congress (IRC) is the premier technical body of Highway Engineers in the country. The IRC was constituted in December, 1934 on the recommendations of the Indian Road Development Committee best known as Jayakar Committee set up by the Government

of India with the objective of Road Development in India. As the activities of the IRC expanded, it was formally registered as a Society in 1937 under the Societies Registration Act of 1860. Over the years Indian Roads Congress has burgeoned and grown into a multi-dimensional, multi-faceted organisation, devoted to the cause of better roads & bridges in the country. The Indian Roads Congress provides a National forum for sharing of knowledge and pooling of experience on the entire range of subjects dealing with the construction & maintenance of roads and bridges, including technology, equipment, research, planning, finance, taxation, organisation and all connected policy issues.

The Highway development planning process was started in the year 1943. Nagpur Road Plan or First Twenty year Road Plan fixed a target of 5,32,700 km of road network, to achieve road density of 16 km per 100 Sq.km area. Second Twenty Year (1961-1981) Bombay Road Plan was initiated by Indian Roads Congress (IRC) to attain a total road length of 10,57,330 km. It was planned to achieve density of 32 km per 100 Sq.km area. The Lucknow Plan (1981-2001) also fixed a target of 82 km per 100 Sq.km area. The total road network of India stood at 33,73,520 km with the density of 102.62 km per 100 Sq.km area at the end of

2001. The total length of Indian Road network stood at 48,65,394 km with the density of 148 km per 100 Sq.km area, as per road statistics 2012.

This network transports over 60 per cent of all the goods in the country and 85 per cent of total passenger traffic. With greater connectivity between cities, towns and villages in India, road traffic has increased over the years. The growth in automobiles and freight movement necessitate a better road network in the country now.

Tamil Nadu Government has always emphazised the importance of development of the road network. The total road network of this department was improved to 60,212 km in 2000 compared to 46,438 km in the early 1990's. The density of road network in Tamil Nadu is 177 km per 100 Sq.km area which is well above the all India average of 148 km. per 100 Sq.km. area. Now, Tamil Nadu has very good road infrastructure which is far ahead of other states.

The standard double lane length increased from 10308 km in 2003 to 20007 km in 2014 due to the extensive widening programme completed under plan schemes.

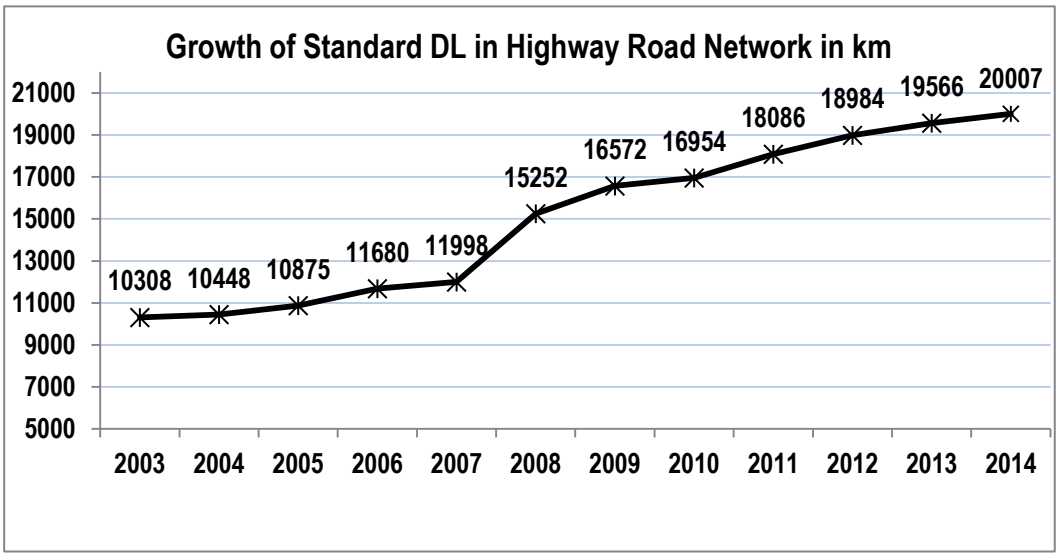


Figure 1.2: Growth of Standard Double Lane Road Network in TamilNadu

1.1. TAMIL NADU VISION 2023

The **Hon'ble Chief Minister** has released the Vision 2023 document on 17.03.2012 which conceptualises a strategic plan for the comprehensive development of Road Infrastructure in the State. The second phase of the Vision 2023 containing reports on the sector strategy, profiles of infrastructure projects to be implemented in six major sectors viz., Energy, Transport, Industrial and Commercial infrastructure, Urban Infrastructure and services, Agriculture and Human Development was released on 17.02.2014. It envisages a proposed investment of Rs.1,34,600 Crore in road sector.

This document has the listing of various road infrastructure projects viz., six/eight lane

triangular corridors between Chengalpattu-Coimbatore-Thoothukudi, Chennai-Bangalore expressway, Chennai Peripheral Ring road and Northern Port Access Road. This also includes Expansion of Strategic roads in Northern, Central, Southern and Western Tamil Nadu, Upgradation of State Highways(SH), Major District Roads(MDR), Other District Roads(ODR), Bypasses and Ring Roads etc. Suitable strategies are being devised to attain the goals enumerated in the road sector.

1.2. HIGHWAYS AND MINOR PORTS DEPARTMENT IN TAMIL NADU

Highways is the pioneer Department of the State established in the year 1946 with a **vision** to "**increase the *capacity, connectivity, efficiency and safety*"** of the road network so as to enable balanced socio-economic development of all sections of the people and all regions of the State. Better connectivity, broader roads, Ring roads, Bridges, Railway Over Bridges (ROB)/ Railway Under Bridges (RUB) and development of minor ports are aimed to achieve this vision. This department is maintaining 62,017 km of road network spread across the entire State with a mandate of creating, augmenting and maintaining the Road and Port infrastructure of the State. The department is

also incharge of improvement and maintenance of the National Highways in the State.

The Highways and Minor Ports Department comprises of

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

1.3. CATEGORIES OF ROADS

1.3.1. NATIONAL HIGHWAYS

Roads connecting different State Capitals, Major Ports, large industrial areas and tourist centres with heavy traffic intensity are classified as the National Highways.

The total length of National Highways in Tamil Nadu is 4974 km of which 2250 km are under the control of State National Highways wing and 2724 km are under the control of the National Highways Authority of India (NHAI). National Highways are being widened to two lane with paved shoulder/ four lane / six lane and

strengthened using Government of India Funds or under Public Private Partnership (PPP) mode.

1.3.2. STATE HIGHWAYS

The State Highways provide connectivity to District headquarters with National Highways and neighbouring States. These stretches have heavy traffic intensity. The total length of State Highways in Tamil Nadu is 11594 km.

Roads classified as State Highways are required to follow standards such as

- Minimum carriageway width of 7m (double lane)
- Right of Way of minimum 30m
- All the culverts and bridges to have a minimum width of 12m

1.3.3. MAJOR DISTRICT ROADS

The Major District Roads connect towns and municipal areas with District headquarters. These roads link to production and marketing centres and these centres in turn are connected with the National Highways and State Highways. In Tamil Nadu, the length of Major District Roads is 11289 km.

Roads classified as Major District Roads are required to follow standards such as

- Minimum Carriageway width of 5.50m (Intermediate Lane)

- Right of way of minimum 30m
- All the culverts and bridges to have a minimum width of 12m

1.3.4. OTHER DISTRICT ROADS

The Other District Roads (ODR) connect villages and marketing centres with Taluk headquarters and other important roads nearby. These roads are the backbone of the rural economy. The Other District Roads are maintained as Single Lane or Intermediate Lane based on the traffic intensity of the roads.

Apart from this, the Other District Roads connecting the sugarcane production centres with Sugar mills and in turn with nearby marketing centres are being improved and maintained under the category of Sugarcane roads. There are 34160 km Other District Roads including Sugarcane roads.

Roads classified as Other District Roads are required to follow standards such as

- Minimum carriageway width of 3.75m (single lane)
- Right of Way of minimum 12m

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

Table 1.1: Details of Road Network

Sl. No.	Classification of Road	Length (Km)	Maintained by
1	National Highways (NH)	2250	NH wing
		2724	NHAI
	NH Total	4974	
2	State Highways (SH)	11594	C & M Wing
3	Major District Roads (MDR)	11289	
4	Other District Roads (ODR)	34160	
	Grand Total	**62017**	

The lanewise length details are given in Table 1.2.

Table 1.2: Lane-wise Length Details

Length in km

Sl. No.	Category	Single Lane	Intermediate Lane	Double Lane	Multi Lane	Total
1	NH	12	4	2778	2180	4974
2	SH	96	481	9710	1307	11594
3	MDR	883	7251	3012	143	11289
4	ODR	30406	2877	827	50	34160
Total		**31397**	**10613**	**16327**	**3680**	**62017**

The efforts taken on the infrastructure development front have paved way for the overall improvement of the economy of the state. The figure given below shows the growth of Plan allotment on road sector of the State.

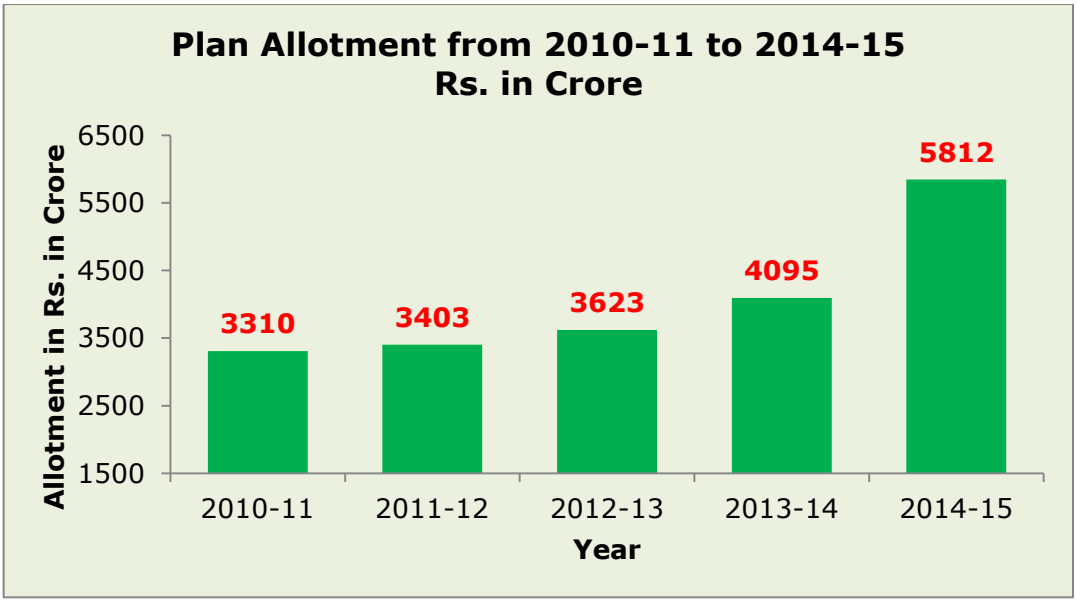


Figure 1.3: Plan Allotment Details

1.4. CAPACITY AUGMENTATION

Roads cater to the rising demands of the traffic. In view of the exponential growth of the traffic due to industrialization and urbanization, the existing capacity of roads is planned to be increased.

1.4.1. Widening of roads

National Highways are widened and strengthened to the capacity of two lane with paved shoulders, four lane and six lane with the funds provided by the Government of India.

To augment the traffic capacity of state roads, widening works of all Intermediate Lane State Highways to Double Lane (7.0m width) and all Single Lane Major District Roads (MDR) to Intermediate Lane (5.50m width) are being executed.

1.4.2. Providing additional connectivity

Roads are being formed along new routes to connect important towns.

1.4.3. Formation of Bypasses / Ring Roads

To avoid traffic congestion in major cities and towns, bypasses / ring roads are being formed.

1.4.4. Construction of ROBs / RUBs

ROBs / RUBs are being constructed at Level Crossings (LC) to avoid the traffic congestion and accidents and also to enhance free flow of traffic and road safety.

1.4.5. Construction of Bridges

Construction of bridges across un-bridged crossings and reconstruction of dilapidated and narrow bridges are undertaken to ensure uninterrupted traffic flow.

1.5. CAPACITY BUILDING

Government have come up with integrated e-pathai system under Institutional Development comprising of Road Maintenance Management System (RMMS), Geographical Information System (GIS) and Project, Human Resources and Finance Management System (P&FMS) for effective, efficient and transparent functioning of the department. These systems help in all the

processes starting from plan formulation till monitoring the execution of works. Utilizing the state of art facilities, the department is striving to improve the condition of all roads to achieve service levels on par with International Standards by fixing suitable indicators based on roughness.

Analysis has been undertaken to identify skill gaps at all levels of technical and non-technical staff on all components and training has been imparted for effective delivery of various IT solutions. Periodical training on quality assurance and refresher courses are being extended to all the Engineering staff through Highways Research Station.

Training on various aspects of latest technological developments and administrative skills are being given to all the staff, utilizing the services of various training institutions in the country. To augment the infrastructure facilities of the department, Government have sanctioned construction of Training Centre with state of art facilities and Hostel at Highways Research Station campus at a cost of Rs.15.57 Crore.

2. POLICY OUTLINE

The Vision 2023 document emphasizes the enhancement of 2000 km of roads into six / eight lane expressway corridors, the modernisation of State Highways covering 5000 km of four lane roads and the conversion of 16,000 km of Other State Highways to two lane roads with paved shoulders, at a proposed investment of Rs.1,34,600 Crore.

Based on the Vision document the strategic plan for the year 2014-15 for the comprehensive development of road infrastructure of the state has been crafted.

2.1. SCHEMES/ MAJOR PROJECTS BEING IMPLEMENTED

2.1.1. Comprehensive Road Infrastructure Development Programme (CRIDP)

The **Hon'ble Chief Minister** introduced this scheme in the year 2004-05. Under this programme, infrastructure development like widening and improvement of roads, construction of bridges, culverts, protective works, center medians, drains and formation of bypasses are undertaken.

As a result of large scale widening taken up under CRIDP, the percentage of Double lane State Highway roads have increased from 59%

as on 1.4.2004 to 95% as on 1.4.2014 and the Intermediate Lane roads in Major District Roads have increased from 36% as on 1.4.2004 to 92% as on 1.4.2014.

This year, widening of balance feasible stretches will be taken up and completed. Thus the Government of Tamil Nadu will achieve the distinction of having 100% of Double Lane State Highways and Intermediate Lane Major District Roads.

2.1.2. Non-Plan Works

Appropriate maintenance of road infrastructure is essential for hassle free movement of traffic. Periodical maintenance of roads reduces construction cost and routine maintenance of bridges enhances the life span of these structures.

In addition, maintenance of cross drainage works will facilitate easy drainage of flood water during monsoon and reduces the damage to the riding surface.

Maintenance of roads and bridges are carried out as per Indian Roads Congress norms utilizing Non-plan maintenance fund including Special repairs and Periodical renewal.

The graph given in Figure 2.1 indicates the allotment made including the grant-in-aid given by Finance Commission towards the maintenance

of roads and bridges. Thirteenth Finance Commission has recommended a grant-in-aid of Rs.1865 Crore for the period 2010-2011 to 2014-2015. State Government have recommended an amount of Rs.16011 Crore for maintenance of roads and bridges including maintenance of panchayat and panchayat union roads for the Fourteenth Finance Commission Period 2015-2016 to 2019-2020 considering the imperative need to maintain the roads in good condition and meet the service level norms.

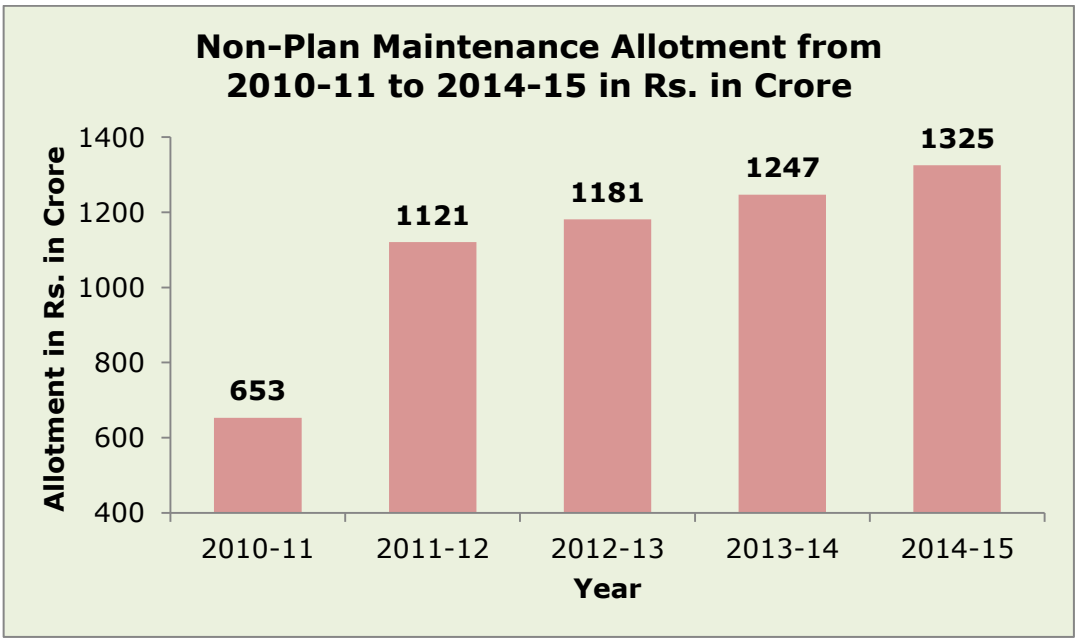


Figure 2.1: Non -Plan Maintenance Allotment

2.1.3. Bypasses

Tamil Nadu has the unique distinction of having more number of bypasses. Bypasses are an integral part of the transport system which helps in reducing, traffic congestion in towns and

cities, reduction of travel time, savings in fuel and vehicle maintenance cost and assumes top priority in managing the traffic growth in major cities.

The Department takes up formation of bypasses in two phases (viz) land acquisition in the first phase and formation of road works in the second phase. The State Government have taken up construction of 80 bypasses to the Corporations, Municipalities and Town Panchayats, of which 26 bypasses have been completed and 6 works are in progress. Land acquisition is in progress for 29 bypasses and 19 works are in DPR Stage. Besides the above, 77 bypasses have been completed by the National Highways Authority of India (NHAI) and works are in progress in 24 bypasses.

The **Hon'ble Chief Minister** had announced during the 2012-2013 budget session that detailed study will be taken to develop Radial and Ring roads to corporations to facilitate hassle free traffic. Detailed Project Report (DPR) is being prepared for formation of ring roads / radial roads for 5 Corporations and the details are as given below in Table 2.1.

Table 2.1: Status of Radial and Ring Roads to coporations

Corporation	Radial, Ring Road status.
Coimbatore	DPR for Western Bypass as a part of Ring Road for this city is under Preparation
Tirunelveli	DPR for Western Ring Road is under preparation.
Thoothukudi	DPR is under preparation.
Erode	2 phases of Outer Ring Road to this town have been completed. LA is in progress for 3rd phase.
Vellore	DPR is under preparation.

The **Hon'ble Chief Minister** has also announced to take up formation of bypasses to municipal towns located along state Highways. Various stages of bypass works in Municipalities are given below in Table 2.2.

Table 2.2: Details of Bypasses to Municipalities

Total Municipalities	152
Municipal towns along the State Highways requiring bypasses	78
Completed	24
Work in progress	5
LA in progress	23
Detailed Project Report Stage	26

2.1.4. Railway Works Programme

With a view to reduce the accidents, traffic congestion and travel time at railway level

crossings, the level crossings where the TVU (Train Vehicle Unit) exceeds one Lakh are replaced with ROB/RUB under Railway Works Programme on 50:50 cost sharing with Railways. The bridge proper in railway portion is executed by the Railways and the approaches by the Highways Department**.**

So far, 284 Level Crossings across the state have been converted into ROB/RUBs under various schemes. At present, there are 1277 manned Level crossings and 778 Unmanned Level crossings in the State. These will also be converted into ROB/RUBs in a phased manner.

2.1.5. NABARD Loan Assistance Scheme

Construction / Rehabilitation of Bridges are being implemented utilizing NABARD loan assistance. Improvement and Rebuilding of Other District Roads and Major District Roads are also taken up under this scheme.

During 2013-14, 312 Bridges & 129 Roads to a length of 431.12 km have been taken up for execution. Out of which 105 Bridges & 127 Roads to a length of 422.42 km have been completed.

2.1.6. Part II Scheme

Under Part II scheme, infrastructure facilities are being improved. The State Government

allocates funds every year to this department for construction of buildings, travellers' bungalows, purchase of office equipment, laboratory equipment, software and for conducting research.

The provision of adequate facilities for the working environment enhances productivity besides asset creation. For this purpose, construction of new office buildings replacing the existing old damaged buildings and offices functioning in rented buildings are being taken up under this scheme.

During 2013-2014, Government sanctioned for the construction of 11 office buildings and 8 Traveller's Bungalows at a total cost of Rs.5.75 Crore and works are in progress.

2.1.7. Chennai Peripheral Ring Road

The proposed Chennai Peripheral Ring Road (CPRR) starts at Poonjeri junction at km 56/800 of East Coast Road (ECR) in Mamallapuram and connects the proposed Northern Port Access Road at km 29/500 of NH-5 near Thatchur and the proposed Northern Port Access Road connects Thatchur to Ennore Port. Government have sanctioned Rs.10 Crore for the preparation of Detailed Project Report for this work and the same is in progress.

The Peripheral Ring Road will provide better connectivity around the city catering to future traffic requirements besides helping in achieving efficient commercial transportation and port connectivity. This will also cater to the road transportation needs of the Ennore and Katttupalli Ports.

2.1.7.1. Northern Port Access Road:

The Northern Port Access Road (25.50 km) is an important link to the fast growing Ennore Port which handles major cargo movements. The proposed new road will connect the Northern Gate of Ennore Port and the Thatchur on NH-5 with an additional spur road (4.35 km) for connecting to the Thiruvottiyur-Ponneri-Pancheti (TPP) Road. This completes the loop of CPRR connecting Ennore Port.

2.1.8. Public Private Partnership (PPP)

A paradigm shift is needed from the earlier approach of restricting planning from fixed budget allocation to a newer dimension in order to achieve the ambitious target of Rs.1,34,600 Crore in Vision 2023. Plans are to be evolved in an integrated and holistic manner, which requires mobilization of huge resources. PPP is one of the alternate method through which resource mobilisation is possible to ensure faster delivery of infrastructure.

PPPs are claimed to enable the public sector to harness the expertise and efficiencies that the private sector can bring to the delivery of certain facilities and services traditionally procured and delivered by the public sector.

2.1.9. Tamil Nadu Road Sector Project (TNRSP) Phase II

A Strategic Options Study II (SOS II) was carried out to arrive at a project proposal for TNRSP Phase II for implementation through externally aided funding. In this study, roads to a length of 2867 km were analysed and prioritized based on economic return criteria.

Subsequent to SOS II Project Preparation, consultants have been engaged by TNRSP-II for various road improvements for a length of about 2079 Km as prioritized from SOS study.

As part of detailed project report study Tamil Nadu Road Sector Project under phase II is in the initiation process of adopting PPP model for some of the potential roads.

2.1.10. Chennai Outer Ring Road

Chennai Outer Ring Road (ORR) is one of the major projects being executed by Highways and Minor Ports Department under Design, Build, Finance, Operate and Transfer (DBFOT) mode at an investment of Rs.2160 Crore. The project is being executed in 2 phases. Phase-I covers

29.6 km starting from South Chennai in NH 45 to West Chennai in NH205. The second phase links NH 205 in west and North Chennai upto Minjur for a length of 32.65 km. It is a six lane access controlled road. The Roadway includes 22 m gap in the center for future public transport corridor. Provision of 50 m width corridor along the entire stretch has been made available for future development. This road will serve through traffic and traffic meant for ports and industries. Phase-I of the project is nearing completion and the second phase is in progress.

2.1.11. Forming of Road Grids along Chennai Outer Ring Road

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

2.1.12. Performance Based Maintenance Contract (PBMC)

Performance Based Maintenance Contracts for roads are designed to increase the efficiency

and effectiveness of road asset management and maintenance. PBMC ensures the physical condition of the roads under contract is adequate for comfort travel of road users. This type of contract significantly shifts the focus from only execution of works to the efficient management and conservation of road assets.

Minimum road conditions and Service Levels are defined through output and performance measures for which the contractor is responsible. Under this contract initial rectification, periodical renewal, minor improvements, ordinary maintenance and emergency works are taken up.

Maintenance of 191 km of State Highways and 186 km Major District Roads in Pollachi Division have been taken up as a model project under Performance Based Maintenance Contract (PBMC) for 5 years.

2.1.13. Oragadam Industrial Park Infrastructure Development Scheme

Road infrastructure facilities in Oragadam Industrial Corridor Project have been taken up for Rs.549.07 Crore to facilitate the development of industries in and around Sriperumpudur in Kancheepuram District. This project is being executed in two phases.

Phase-I involves four laning of Singaperumalkoil - Sriperumpudur road (SH-57)

(24.00 km) and Vandalur – Walajabad road (SH-48) (33.40 km) including construction of Grade Separator at Oragadam junction and works are in progress .

Under phase-II, Six laning of the stretch from Oragadam to Sriperumbudur of SH-57 has been taken up and is in progress.

2.2. LAND ACQUISITION

The Highways Department acquires land required for road infrastructure projects following the provisions of special enactment called TN Highways Act, 2001, wherein the determination of compensation was guided by the provisions of the old central Land Acquisition (LA) Act, 1894.

The Government of India have enacted Right to Fair Compensation and Transparency in Land Acquisition & Rehabilitation and Resettlement (RFCTLARR) Act, 2013 (with effect from 01.01.2014), which has repealed the old central LA act, 1894.

The Highways Department is implementing over 300 works valued over Rs.7000 Crore which involves acquisition of over 2100 Ha. of land. The land acquisition for these projects have to be carried out only by amending the TN Highways Act, 2001 by incorporating the provisions of the RFCTLARR Act, 2013.

The RFCTLARR Act, 2013, can be put into operation only after framing necessary rules and availing the flexibility admitted for states in the Government of India Act with the approval of state legislature. Also, the implementation of this act requires establishment of various institutional structures, framing of norms for Social Impact Assessment and Procedure and manner for Rehabilitation & Resettlement.

The provisions of RFCTLARR Act 2013 can be implemented only after creation of institutional arrangements viz, Commissioner of Rehabilitation and Resettlement, Social Impact Assessment Appraisal Team, Authority for disputes resolution in LA, Rehabilitation and Resettlement (R&R) etc,.

The cost of LA has increased substantially, due to the enactment of new RFCTLARR Act, 2013. Further the possession of land can be taken up only after completion of the resettlement process. An amendment to the RFCTLARR Act, 2013 has been passed by the assembly in February, 2014 for getting the State Land Acquisition Acts exempted from the purview of RFCTLARR Act, 2013, for a period of one year as done in case of 13 Central LA related Acts. A comprehensive amendment proposal for the

existing Tamil Nadu Highways Act, 2001 is being prepared.

Government have also given executive instructions to proceed with the land acquisition process.

2.3. OVERALL EXPENDITURE (2013-14) AND ALLOTMENT FOR 2014-15

This Department implements different projects under various schemes every year utilizing funds from state, central and external funding agencies. The department has taken up various road and bridge works to the tune of **Rs.9540 Crore** for implementation during 2013-14 and the abstract of works completed are detailed below:

1. Road widening in 2440 km roads at a cost of Rs.1037.97 Crore.
2. Strengthening / Improvements of road works in 4629.69 km of roads at a cost of Rs.1756.67 Crore
3. 157 Nos. of River bridges completed at a cost of Rs.286.30 Crore
4. Construction of 14 ROB / RUBs at a cost of Rs.326.45 Crore

For the year 2013-14, Rs.4096 Crore has been allotted to Highways Department for implementation of plan works and an expenditure of Rs.3875.36 Crore have been

incurred. An amount of Rs.5812.38 Crore have been allotted to Highways Department for the year 2014-15.

2.4. ROAD SAFETY

Sustainable safe mobility must be a key foundation stone of the 'social protection floor', like access to education, supply of clean water and sanitation, and provision of health care - the minimum level of social provision that makes life civilised. Today, we consider ourselves to live in advanced and modern societies and still people lose their lives in a road crash everyday which is not acceptable. Road traffic injury is one among the cause of death and disability for people, everywhere. Road safety must be recognised and included in the framework for Sustainable Development Goals.

2.4.1. Road Accidents and its Effects

The increasing loss of human lives due to Road Traffic Accidents has earned notoriety of being tagged as 'Man Made Disaster'. Many a times, accidents cause irreversible or irrecoverable damage to the victim and their close kith and kin.

Statistics also reveal that, the victims of road accidents are the bread-winners of the families, in their prime of youth, between 18 and 40. Any loss of life or disability of any form, to

this category causes huge loss to the near family of the victim.

2.4.2. Causes of Accidents

The latest technological innovations in the Automobile Industry, Globalization of the economy, increased foreign direct investments; all have propelled the Infrastructure development in the country and resultant cascading effect on the road traffic. The increased buying power of the common public, have resulted in the exponential increase of automobile population. This has resulted in comfortable journey of the road user but on the other hand resulted in increased the vulnerability of the road user to road accidents.

In our country the road crashes are attributable to the following pattern/causes;

Driver's fault	83.5%
Pedestrian fault/passenger fault	4.7%
Mechanical defect of the vehicles	3.0%
Bad roads	1.1%
Bad Weather	0.9%
Others	6.8%

Source: IX Plan document of Department of Road Transport and Highways

2.4.3. Road Safety Action Plan

Government of Tamil Nadu approved a comprehensive Road Safety Policy and a Road Safety Action Plan. Road Accident Data

Management System (RADMS) was developed using the funds provided by the World Bank. The details of each accident that occurs across the state are recorded by Police, Transport and Highways departments in RADMS and analysis reports are used for the road safety action plan.

2.4.4. Road Safety Audit

Safety status in the roads upgraded under TNRSP have been reviewed, to identify safety related problems, deficiencies and shortcomings for suggesting remedial measures. The suggestions from the Road Safety Audit, for 724 Km of roads have been implemented. Efforts are being taken to extend the road safety audit to select stretches every year.

2.4.5. Road Safety Awareness Programme

State wide Road Safety awareness programme has been conducted extensively involving stakeholders to reduce the road accidents involving pedestrians, two wheelers, buses and other heavy vehicles so as to create awareness among the road users. Road safety awareness programme have been conducted under supervision of the Institute of Road Transport, Chennai utilizing the consultancy services to educate the drivers and road users. The students were also trained on various road

safety aspects. The World Bank has appreciated Highways Department on the efforts taken to reduce the accidents.

2.4.6. Road User Satisfaction Survey (RUSS)

The benefits of better road construction are ultimately passed on to the Road User. The quality and efficiency of the road systems impinge on road user satisfaction. Feedback from the Road-User regarding the quality of the road and an effective system to incorporate such feedback would help optimal allocation of budgetary resources for road projects and evaluation of utility of such projects.

Maintenance and improvements works are taken as and when feed back is obtained from the public representatives and road users. A web site is being maintained to share with the road users information about various projects under execution, their current status etc.

2.4.7. General Recommendations / Suggestions to Improve Road Safety and Avoid Accidents

Though, each location/spot may be unique, in its own way, the recommendations / suggestions may apply to most of the situations;

1. Junctions with minor roads to be improved to proper standards, which would help in

channelising the traffic flow, improve inter-visibility, ensuring accident-free traffic flow.

2. Segregation of traffic based on speed and carrying-capacity.
3. Special safety zones for moving alongside/ across the roads, during peak hours.
4. Providing bus-bays, wherever possible, for safe commuter travel and usage and Relocating/Shifting of the ill-located Bus-stops.
5. Sparing/Limited use of one-way, exercising maximum restraint, in choosing the options.
6. Pedestrian safety as the "Top-most" priority, in considering the provisions for roads.
7. Providing signages, proper reflective strips, enhancing the nighttime visibility, which reduces the accidents.

Promoting and encouraging use of public transport in a bigger way and discouraging the preference of private transport – with an objective of carrying more people than more vehicles.

2.4.8. Road Safety Measures

The identification, analysis and treatment of road accident black spots are widely regarded as one of the most effective approaches to mitigate road accidents. It is well established that considerable safety benefits may accrue from the application of appropriate road engineering or traffic management measures at hazardous road

locations. Results from such applications at “black spots” demonstrate high returns from relatively low cost measures.

In spite of the precautionary measures undertaken, certain inadequacies in the existing road infrastructure lead to accidents. In order to mitigate the road accident levels and improve safety measures, Government announced a special project to attend the black spots in highly accident prone areas including urban roads. An amount of Rs.300 Crore is being provided for this purpose to this Department.

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

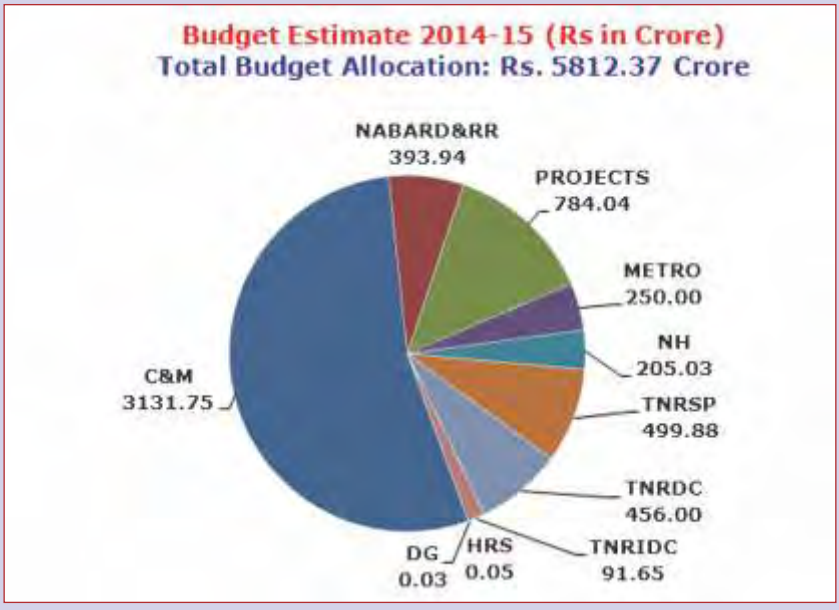
1. Widening of narrow culvert (where width of the culvert is less than carriage way).
2. Widening of narrow culvert (where width of the culvert is narrow as per IRC).
3. Realignment of 'S' curve (radius of the curve is less than 90m).
4. Realignment of 'S' curve (radius of the curve is more than 90m).
5. Construction of safety wall/crash barrier around the road side open well/tank bunds.
6. Construction of safety wall/crash barrier along high embankment.

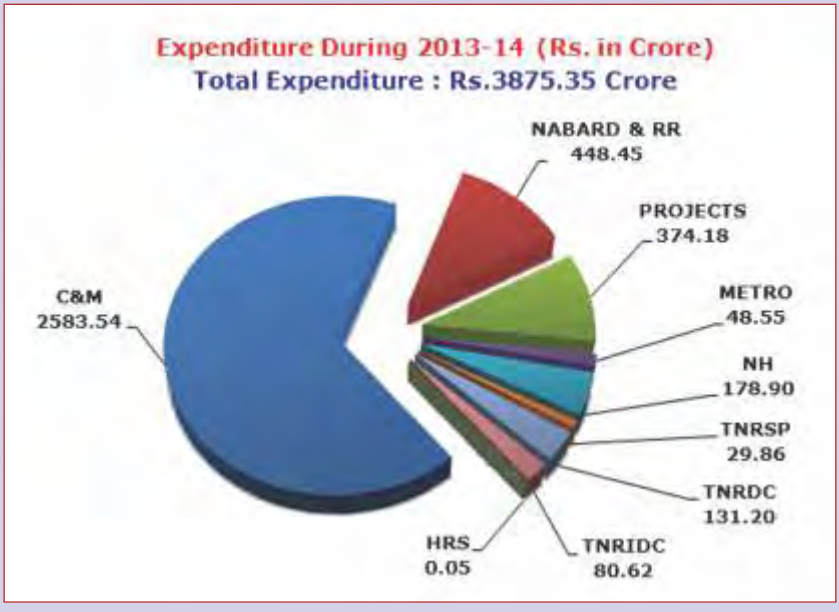
7. Construction of safety wall/crash barrier along hill road.
8. Construction of center median.
9. Provision for road furniture (gantry boards, studs, delineators, center line marking).
10. Junction improvements.

The above road safety works are proposed to be implemented in the phased manner in two years as tabulated below (Table 2.3)

Table 2.3: Plan of Action for Road Safety

Year	Scheme	Amount Rs.in Crore
2014-15	Road Safety	150
	CRIDP	250
2015-16	Road Safety	150
	CRIDP	350


Budget Estimate 2014-15 (Rs in Crore)
Total Budget Allocation: Rs. 5812.37 Crore
NABARD&RR
393.94
PROJECTS
784.04
METRO
250.00
NH
205.03
TNRSP
499.88
TNRDC
456.00
TNRIDC
91.65
HRS
0.05
DG
0.03
C&M
3131.75


Expenditure During 2013-14 (Rs. in Crore)
Total Expenditure : Rs.3875.35 Crore
NABARD & RR
448.45
PROJECTS
374.18
METRO
48.55
NH
178.90
TNRSP
29.86
TNRDC
131.20
TNRIDC
80.62
HRS
0.05
C&M
2583.54

3. STRUCTURE AND ACTIVITIES OF THE DEPARTMENT

3.1. ORGANISATION STRUCTURE OF THE DEPARTMENT

Highways Department functions with 8 wings under the overall coordination of the Director General. Planning, Design & Investigation wing and Highways Research Station wing are non execution wings and there are six wings for execution of works of the department.

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

In addition, two companies are executing Special Projects.

1. Tamil Nadu Road Development Company
    a) ITEL Subsidiary of the Tamil Nadu Road Development Company

2. Tamil Nadu Road Infrastructure Development Corporation.

The functions of all the wings are detailed as follows:

3.2. OFFICE OF THE DIRECTOR GENERAL

The post of Director General has been created for smooth and efficient functioning of the department and to coordinate the work of all the eight wings. The Director General is also the head of all the Technical Committees.

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

3.3. CONSTRUCTION & MAINTENANCE WING

- Maintenance of State Highways, Major District Roads, Other District Roads and bridges.
- Execution of Part – II scheme works.
- Restoration of roads and bridges affected by natural calamities like monsoons, floods and Tsunami.
- Execution of road and bridge works under Comprehensive Road Infrastructure Development Programme including formation of bypasses.
- Implementation of road infrastructure schemes under Public Private Partnership.
- Maintenance of ODR - Sugarcane Roads.
- Works are carried out by 8 Circles and 40 Divisions.

3.4. NABARD & RURAL ROADS WING

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

3.5. PROJECTS WING

- Road Over and Under Bridges at Railway level crossings under Railway Works Programme.
- Major Bridge works with State funds and NABARD assistance.
- Formation of Ring Roads and Radial Roads.
- Formation of Sugarcane Roads with Sugar Cess fund.
- Works are carried out by 4 Circles and 10 Divisions.

3.6. METRO WING

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

3.7. NATIONAL HIGHWAYS WING

- Execution of National Highways plan and non-plan works with the funds of the Government of India.

- Revamped Central Road Fund scheme works.
- Inter State Connectivity Scheme works.
- Economic Importance scheme works.
- Bharat Nirman works.
- Hill Area Development Programme works
- Works are carried out by 4 Circles and 8 Divisions.

3.8. TAMIL NADU ROAD SECTOR PROJECT WING (TNRSP)

- Road upgradation works with the World Bank assistance.
- Undertaking studies for projects to be implemented through Public Private Partnership.
- Strengthening the organisational set-up of Highways Department.
- Works are carried out by one Circle and 7 divisions.

3.9. HIGHWAYS RESEARCH STATION

- Research activities relating to roads and bridges.
- 3 tier quality assurance for all works implemented by this department.

- Recommendations for road safety and traffic improvement works.
- Quality assurance and research works along with testing are being carried out by 4 Deputy Directors and 8 Divisional Engineers (Quality Control).

3.10. PLANNING, DESIGN AND INVESTIGATION WING

- Carrying out investigation for new road and bridge works.
- Preparation of structural designs, drawings and estimates for bridge works costing Rs.2 Crore and above.
- This wing comprises one Joint Chief Engineer, 4 Divisional Engineers and 6 Investigation Divisions.

3.11. TAMIL NADU ROAD DEVELOPMENT COMPANY (TNRDC)

- Implementing major PPP projects.
- Management of Chennai Outer Ring Road works.
- Undertaking Rajiv Gandhi IT Expressway works and maintaining as toll road.

- Improving and maintaining the East Coast Road (Chennai to Puduchery) as toll road.

3.12. TAMIL NADU ROAD INFRASTRUCTURE DEVELOPMENT CORPORATION (TNRIDC)

- Developing of road and bridge infrastructure required in industrial areas.

4. OFFICE OF THE DIRECTOR GENERAL

The office of the Director General is responsible for the overall administration, Planning and Quality Control, and modernization of departmental works through Information Technology Cell. The Director General coordinate with the heads of all other wings of the Highways Department for effective and efficient management of the works.

4.1. ADMINISTRATION

The overall responsibility for the establishment and personnel administration matters of all the staff of Highways Department lies with the office of the Director General. This office is solely responsible for assessment of vacancies in all cadres and for the new recruitments made through the Tamil Nadu Public Service Commission (TNPSC).

In addition, direct recruitment for certain posts, as and when vacancies arise due to retirements and promotions are filled up by promotion of eligible candidates after following procedures in accordance with Service Rules.

4.2. HUMAN RESOURCES DEVELOPMENT

4.2.1. STAFF STRENGTH

The Highways Department currently functions with a total cadre strength of 1656 Engineers, 812 Technical Staff and 4629 Administrative and Ministerial staff. Details of Posts are given below:

Engineering Staff:		
Chief Engineer	-	9
Superintending Engineer	-	28
Divisional Engineer	-	137
Assistant Divisional Engineer	-	485
Assistant Engineer / Junior Engineer	-	997
		1656
Technical Staff:		
Technical Staff	-	812
(Includes HDO, SDO, DO, JDO etc.,)		
Administrative and Ministerial Staff:		
Administrative Staff	-	4629
(Includes CPO, AO, Superintendent, Assistant, HRS staff.,etc)		
Work-charged establishment:		
Road Inspectors	-	1801
Gang Mazdoors	-	14872

The above cadre strength is fixed based on the work load of the department.

4.3. COMPUTERISATION

Highways Department is the first department in the Government of Tamil Nadu to formulate and approve Information and Communication Technology (ICT) strategy. One of the main objectives of ICT strategy is the formation of core IT team.

Highways Department is in the process of implementation of IT to facilitate better performance and service delivery. It includes standardizing and computerizing all the processes like traffic surveys, designing, estimation and preparation of BOQs, bidding, preparation of tender documents and agreements, measurement, billing, accounts, audit, etc.

The entire Highways department has been computerized and necessary hardware and software for this purpose have been installed. In National Highways wing, e-tendering is being implemented.

4.4. INFORMATION TECHNOLOGY CELL

An Information Technology Cell has been newly formed in October 2012, for maintenance of the IT initiatives, with Chief Officer (IT) in the rank of Divisional Engineer as head and functions

under the control of Director General in the campus of Highway Research Station. The main objective is to implement and maintain the various software systems developed and hardware procured for Highways Department.

4.5. ROAD MAINTENANCE MANAGEMENT SYSTEM (RMMS)

Road Maintenance Management System is a computerized web enabled bilingual system developed by Highways Department for economic analysis and prioritization of roads for effective planning using Highways Development & Management (HDM4) software.

The RMMS will enhance the capabilities of Highways Department by providing a readily accessible source of correct and relevant information on the road system as well as providing analytical tools to take up improvement works based on scientific decision making.

Initially, data collection was completed using ROMDAS equipment for about 21,000 km of core road network and uploaded in RMMS. The **Hon'ble Chief Minister** handed over two Advanced Data Collection Equipment to the Highways department on 27.01.2012. Road data for 22,000 km of length has been collected in a cyclic manner through ADCE from the year 2012

to 2014. These data after processing has been uploaded into RMMS for the core road network. In the next cycle, road data for another 4200 km length of core road network has been collected, processed and uploaded in the system. Further, field information are updated by the department engineers at sub-division level. Relevant information can be accessed by general public through website. Out of 2867 km length of roads taken up under SOS II of Tamil Nadu Road Sector Project Phase – II, data has been collected for a length of 2477 km and uploaded in RMMS.

4.5.1. Advanced Data Collection Equipment

Advance Data Collection Equipment (ADCE) consists of automated laser based equipments like Laser Crack Measurement System (LCMS) to measure potholes, cracks, rut depth and Laser Profilometer to measure roughness, Bump-Integrator for measuring the roughness, Differential Global Positioning System (DGPS) instrument to collect the global position of the road network and three video cameras for recording the visual condition of the roads, road side utilities, furniture within the right of way.

One cycle data collection for all SH and MDR in all the eight Circles for about 22000 km,

(including TNRSP Phase II project roads and roads under SOS II extended study) has been completed. Second cycle of data collection has been commenced from March, 2014 and is in progress.

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

The Integrated Project, Human Resource & Finance Management System P&FMS aims at statewide computerization to automate the existing manual procedures and process followed for Project Management, Financial Management and Employee Record System for improved information, communication, project monitoring and office management. Using the P&FMS software up to date digital database for Project, Financial Management and Employee Record System would be created.

All the data related to important projects are digitized and made available in the system in electronic format. Also establishment related particulars are stored in the data base. This will ensure efficient and transparent functioning of the Highways department.

Workshop for about 700 Highways officials has been inaugurated at Chennai by the Principal Secretary to Government, Highways and Minor

Ports Department, which was successfully conducted at 8 Regional circles of the Highways department.

The additional customization work has been taken up by the consultants for Estimation and MORTH Data and the same has been incorporated in the P&FMS Application.

Training in this software for Establishment and Finance Module has been completed for all Highways offices throughout Tamil Nadu. Training for 1000 Highways Engineers has commenced from January 2014, and is in progress. The training will be completed before the software go live during August 2014.

4.5.3. Geographic Information Systems (GIS)

A GIS software has been developed to effectively prioritize the road works using a computerized system suitable for operating on a GIS platform and enable policy makers of the Highways department to utilize the resources optimally.

The GIS software is web based bilingual and interfaced with applications such as RMS and P&FMS for representing Road and Bridge Information System in a schematic way. The RMS database is the backbone for visualization of road information graphically. The GIS software

has been customized and developed based on the latest digital maps of Survey of India.

The **Hon'ble Chief Minister** has launched e-pathai (electronic Project, Administration, Traffic, Highway Assets and Information management system) software with Geographical Information System (GIS), Project and Financial Management System (P&FMS) and Road Maintenance Management System (RMMS) on 19.06.2012 for better maintenance of roads in the State.

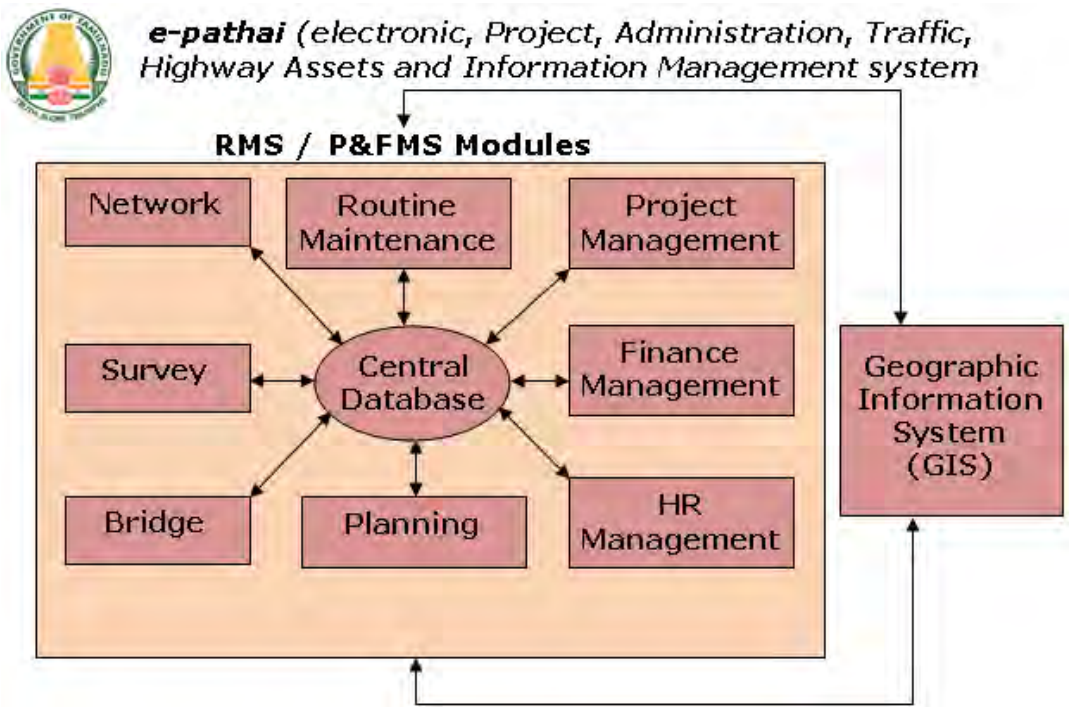


Figure 4.1: IT Solutions under e-pathai

A one day workshop was conducted for senior level Engineers. Training for about 400 engineers from all over Tamil Nadu and 3 days core training for 50 engineers have also been completed.

The Geospatial Media and Communications Forum have awarded Geo-Spatial Excellence Award under infrastructure category for 2013 for e-pathai GIS.

The RMS software has been enhanced with new interface support for the data collected by ADCE and Tamil interfacing.

4.5.4. Website Maintenance

A new domain namely www.tnhighways.gov.in has been registered and made functional by using NIC services. An exclusive mail server for Highways department has been created and established in the in-house Server. Email IDs for all the Engineers of the Highways department has been created and will be made available to the users for effective and secured communication. Action is being taken for changing the domain name of the existing website www.tnrsp.com to www.tnrsp.gov.in.

4.6. COMMITTEES:

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

1. **Board of Engineers (BoE)** is the highest technical authority comprising of all the Chief Engineers of the Highways department

and is headed by the Director General for policy decision on technical matters.

2. **Commissionerate of Tenders (CoT)** was established to streamline the tender acceptance procedure. The Government has issued orders vide, G.O.(Ms).No.16, Highways and Minor Ports (HN1) Department, dated 11.02.2013 for reconstitution of the Commissionerate of Tenders with the following members :-

    - Director General, Highways as Chairman
    - The Secretary, Finance/ Representative
    - The Chief Engineer, Highways, Construction and Maintenance as member
    - The Chief Engineer, Highways, NABARD and Rural Roads as member
    - The Chief Engineers and the Superintending Engineers, who initiate the proposal will also be special invitees.

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

4.7. TRAINING

Training is essential to improve knowledge, skills and attitudes of the personnel in the Highways department.

There is a need to develop and sustain the core competency of the Highways department on a continuous basis. The areas which require attention include project planning and surveys, design and investigation, project implementation, quality control, traffic management and transportation planning and road safety aspects.

Apart from this, training is also required in the areas of emerging technologies, alternate materials, construction methodologies, monitoring methods including IT enabled tools.

The department has therefore embarked on a mission to impart training on a continuous and comprehensive basis to the Department Engineers and supporting staff using the latest state of the art facilities. The training will cover both new recruits (induction training) and those already in service (in-service training). The periodicity of such training will be need based.

4.7.1. Induction Training for Fresh Engineers

The technical training include fundamental concepts related to highway and bridge engineering design, project management and

monitoring, construction practices and methodologies, quality control procedures, traffic and transportation, road safety etc. For better understanding of the functioning of the department, newly recruited engineers were given training on various aspects including administrative procedures, accounting and financial procedures apart from the technical and management part.

It is proposed to make the induction training more purposeful and focused so that the newly recruited Engineers become more productive and sense of Camaraderie is inculcated amongst them right from the beginning.

4.7.2. In-Service Training (Refresher Course)

Periodic training on quality control aspects is being given to the Engineers of the Department by Highways Research Station Wing. It is proposed to totally revamp and restructure the in-service training for Engineers. The following aspects will be the highlights:-

All Engineers will have to undergo periodic training to update and familiarise themselves with the latest trends in Highway Engineering. The training will be of three kinds.

1. Regular in-house training to be conducted by Highways Research Station Wing.

2. Advanced training in certain focus areas on a need basis for selected group of Engineers interested in specialization.
3. Refresher courses conducted by external institutions like IIT, Central Road Research Institute (CRRI), Indian Academy of Highway Engineers (IAHE).

Apart from this, Senior Engineers of this Department are taking part in IRC Seminars.

To achieve the training objectives, it is necessary that there exists a group of trainers and experts within the department. This will be done through 'Training of Trainers (TOT) programmes'.

4.7.3. Training for Administrative Staff

Training on office administration to all the ministerial staff at Bhavanisagar Training Centre, Erode District is given.

5. CONSTRUCTION AND MAINTENANCE

A total length of 57,043 km of Government Roads categorised as State Highways, Major District Roads and Other District Roads are maintained by this wing. Widening and Strengthening of roads, renewal of roads, including construction of Bridges/Grade Separators, formation of bypasses etc., are being implemented by this wing.

For executing these works, 8 circles and 40 divisions are functioning under the control of Chief Engineer.

The schemes undertaken by this wing are as follows:

5.1. COMPREHENSIVE ROAD INFRASTRUCTURE DEVELOPMENT PROGRAMME (CRIDP)

The **Hon'ble Chief Minister** introduced the Comprehensive Road Infrastructure Development Programme (CRIDP) in 2004-05 wherein Widening of roads to increase capacity, Strengthening of roads, bypasses are undertaken to enhance the existing road infrastructure facilities in a comprehensive and holistic manner.

Allocation of funds under CRIDP scheme since its inception is given below:

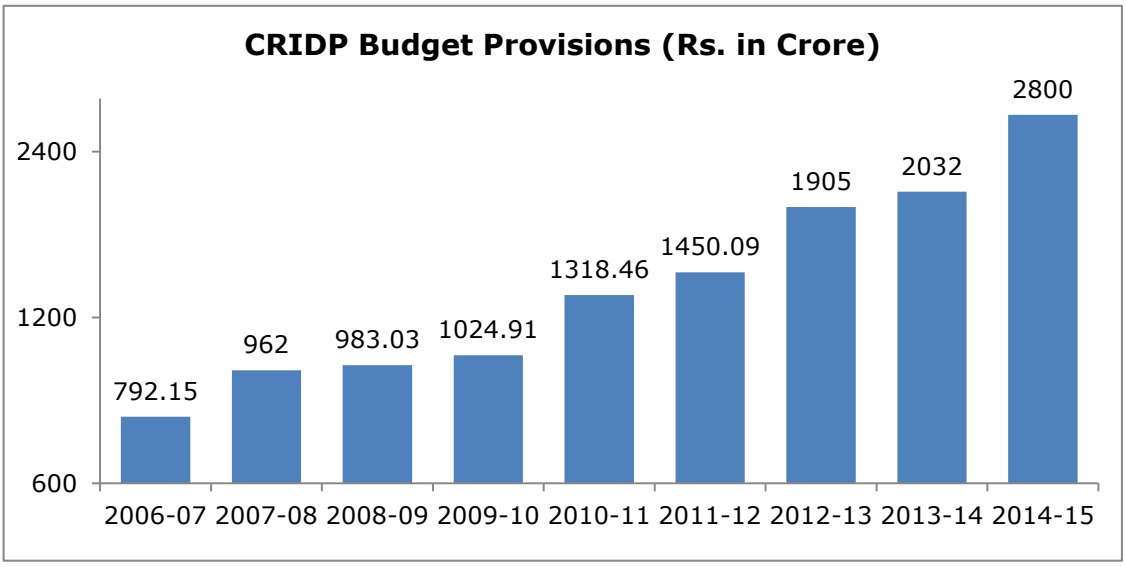


Figure 5.1: CRIDP Budget Provision

This being the major scheme, special attention is given in selection of works and broader outline on methodology adopted is discussed below:

5.1.1. Methodology Adopted in Selection of Works

The department has moved to a need based approach from fund based approach. Earlier in the fund based approach, usually an aggregation of the proposals submitted from the field level upwards and is limited to the declared or budgeted availability of funds.

In the selection of new works, a balanced approach is adopted to satisfy the requirements based on policy guidelines, industrial growth, improvement pattern during the past years. The proposals formulated at the field level are prioritized based on the following criteria.

5.1.1.1. Policy Guidelines

The policy guideline of the Government is to widen all the State Highways to a minimum of double lane and all Major District Roads to a minimum of intermediate lane width.

5.1.1.2. Scientific Approach:

The wearing surface of the roads is designed to serve for a period of 5 years. The selection of works are based on scientific data obtained from Road Management System (RMS). The road conditions of State Highways and Major District Road were collected and analyzed utilizing IT enabled solutions.

The data help in prioritization of works to be selected for this financial year. Due importance is given for maintaining better riding quality over the entire stretch of any selected major Highway Corridor.

5.1.1.3. Road Safety Consideration

Road safety is an integral part of the Road Policy. The Government of Tamil Nadu has formulated a **Road Safety Policy (2007).** The Data collected from Road Accident Data Management System (RADMS) and suggestion given by the stakeholders during the District level road safety meeting is considered in deciding road safety related works.

5.1.1.4. Other Factors

In addition, the following points are also considered based on the economic criteria and public representations during the works selection.

1. Vision of the Government is to provide road infrastructure for a balanced socio-economic growth of the entire State.
2. To ensure equity and balance, new road works are identified considering the density of road network per unit area and unit population and taken up in phased manner.
3. Development of new industries and economic zones require adequate access facilities for their transportation needs. Specially designed roads catering to heavy axle loads are considered to suit industrial needs.
4. Based on the representations received from various public representatives, works are grouped into various categories and are prioritized based on the classification of road, necessity, population to be served etc.,

Following the above guidelines, under CRIDP scheme 15971 km of roads have been widened and improved and 678 Nos. of bridges/culverts have been completed in the last 3 years at a cost of Rs.6134.97 Crore.

The key projects completed under CRIDP include

1. Bypasses to Vandavasi, Dharapuram, Pattukottai (phase I), Ilayankudi and Perambalur town.
2. Strengthening of Tambaram - Mudichur - Sriperumbudur road to facilitate faster movement of traffic leading to industries in Sriperumbudur area.
3. Construction of High level Bridge across Vaigai river at Km 436/10 of abandoned National Highways-7 (Kamaraj Bridge) in Madurai District.
4. Construction of Major Bridge across Sankarabarani river at Km 6/6 – 7/0 of Perumpakkam – Thiruvakarai – Kodukkur road in Villupuram District.
5. Construction of Limited Use vehicular underpass near Paravai in Madurai District.
6. Widening and Strengthening of Natham – Pillayarnatham road in Dindigul District.
7. Improvements to Urban stretches of Madurai – Kanniyakumari road in Tirunelveli District.

During 2013-14, widening and improvements of 1687 km roads and improvements of 3529 km roads, 229 Nos. of construction of culverts, bridges and protective works were taken up under this scheme for which Rs.2950 Crore was sanctioned and the highlights are as follows.

- Widening of 1329 km to Intermediate Lane, 229 km to Double Lane and 129 km to Multi Lane
- Widening and strengthening of Padi – Thiruninravur section of Chennai-Tiruttani-Renigunta
- Land acquisition for forming of Ilupur bypass in Pudukottai District and Construction of Thanjavur bypass (Phase II)
- Improvements to junction at Sathy-Kodiveri-Kadambur road
- Improvements to 81.53 km National Highways urban stretches abandoned due to forming of bypasses by NHAI
- Construction of 101 culverts and bridges

5.1.2. CRIDP - State Highways

During 2013-14, Spill over works of widening/ improvements to 800 km roads and construction of 64 bridges/ culverts/ protective works were taken up at a cost of Rs.894.67 Crore.

New works of widening/improvements to 1224 km roads and construction of 76 bridges/ culverts/ protective works have been sanctioned at a cost of Rs.1021.27 Crore in the year 2013-14.

The abstract of works sanctioned under CRIDP –State Highways 2013-14 is as follows:

Table 5.1: Works Sanctioned Under CRIDP-State Highways

Work Description	No of works	Length in km	Cost in Crore
Widening & Improvements	47	53	82.80
Widening & Strengthening	39	67	159.10
Widening	32	54	47.94
Strengthening	81	146	122.20
Improvements	321	866	449.95
Rebuilding	22	28	35.39
CC Pavement	2	1	3.10
Formation	4	9	52.00
Bridges/Culverts/ others	76		68.79
Grand Total	**624**	**1224**	**1021.27**

During 2013-14, widening/improvements in 1729 km roads and 52 bridges/ culverts/ protective works have been completed incurring an expenditure of Rs.933.61 Crore.

A budget provision of Rs.1199.48 Crore has been allotted for the year 2014 -15.

5.1.3. CRIDP - MAJOR DISTRICT ROADS

During 2013-14, Spill over works of widening/ improvements to 950 km roads and construction of 15 bridges/culverts/protective works were taken up at a cost of Rs.590.69 Crore.

New works of widening/ improvements to 1857 km roads and construction of 58 bridges/ culverts/ protective works have been sanctioned at a cost of Rs.1178.89 Crore in the year 2013-14.

The abstract of works sanctioned under CRIDP – Major District Roads 2013-14 is tabulated below.

Table 5.2: Works Sanctioned Under CRIDP-Major District Roads

Work Description	No of works	Length in km	Cost in Crore
Widening & Improvements	182	370	280.00
Widening & Strengthening	107	233	170.62
Widening	159	484	206.71
Strengthening	36	79	46.28
Improvements	269	639	363.06
Rebuilding	41	51	66.46
CC Pavement	2	1	1.15
Bridges/Culverts/ others	58		44.61
Grand Total	**854**	**1857**	**1178.89**

During 2013-14, widening/improvements in 2127 km roads and 29 bridges/ culverts/ protective works have been completed incurring an expenditure of Rs.917.93 Crore.

A budget provision of Rs.1022.34 Crore has been allotted for the year 2014 -15.

5.1.4. CRIDP - OTHER DISTRICT ROADS

During 2013-14, Spill over works of widening/ improvements to 432 km roads and construction of 42 bridges/culverts were taken up at a cost of Rs.136.21 Crore.

New works of widening/improvements to 1351 km roads and construction of 73 bridges/culverts/protective works have been sanctioned at a cost of Rs.467.90 Crore in the year 2013-14.

The abstract of works sanctioned under CRIDP– Other District Roads 2013-14 is given below:

Table 5.3: Works Sanctioned Under CRIDP- Other District Roads

Work Description	No of works	Length in km	Cost in Crore
Widening & Improvements	56	142	82.61
Widening & Strengthening	12	22	17.68
Widening	42	140	45.07
Strengthening	30	44	14.12
Improvements	376	989	251.68
Rebuilding	11	10	18.70
CC Pavement	6	2	3.61
Formation	1	2	0.85
Bridges/Culverts/ others	73		33.58
Grand Total	**607**	**1351**	**467.90**

During 2013-14, widening/improvements in 1200 km roads and 71 bridges/ culverts/ protective works have been completed incurring an expenditure of Rs.334.13 Crore.

A budget provision of Rs.263.17 Crore has been allotted for the year 2014 -15.

5.1.5. CRIDP - OTHER DISTRICT ROADS – SPECIAL COMPONENT PLAN

During 2013-14, Spill over works of widening/improvements to 766 km roads and construction of 46 bridges/culverts were taken up at a cost of Rs.124.99 Crore.

New works of widening/improvements to 859.20 km roads and construction of 22 bridges/culverts/protective works have been sanctioned at a cost of Rs.281.97 Crore in the year 2013-14.

The abstract of works sanctioned under CRIDP – Other District Roads-Special Component Plan 2013-14 is given in Table 5.4.

Table 5.4: Works Sanctioned Under CRIDP-Other District Roads-Special Component Plan

Work Description	No of works	Length in km	Cost in Crore
Widening & Improvements	42	119	59.47
Widening & Strengthening	8	17	12.89
Widening	17	50	19.54
Strengthening	9	29	9.87
Improvements	227	619	158.46
Rebuilding	9	25	10.97
CC Pavement	1	0.2	0.70
Bridges/Culverts/ others	22		10.07
Grand Total	**335**	**859.20**	**281.97**

During 2013-14, widening/improvements in 1337 km roads and 28 bridges/ culverts/ protective works have been completed at an expenditure of Rs.315 Crore.

A budget provision of Rs.315 Crore has been allotted for the year 2014 -15.

5.2. PART II SCHEME

During the year 2013-14, spill over works of one bridge and 33 buildings were taken up for construction. New works have been sanctioned for constructing office buildings for 2 divisions, 7 sub divisions, one section office, one Quality Control (QC) lab and 8 travellers' bungalows at a

cost of Rs.5.75 Crore. These works are in progress.

During 2013-14, one bridge and 28 buildings have been completed at an expenditure of Rs.31.26 Crore.

The **Hon'ble Chief Minister** has inaugurated the buildings comprising one Circle office building, 3 Division office buildings, 11 Sub-division offices, one QC laboratory building and 8 of travellers' bungalows completed under this scheme.

5.3. TSUNAMI REHABILITATION PROGRAMME

During 2013-14, spill over works of 14 bridges to a value of Rs.90.72 Crore were taken up.

During 2013-14, one bridge work has been completed in Ramanathapuram district and an expenditure of Rs.23.75 Crore has been incurred in this scheme.

12 bridge works are in progress. The bridge at Pasiyavaram in Thiruvallur district is located in Pazhaverkadu Bird Sanctuary area. The Environmental Clearance from Ministry of Environment and Forests is under process. The status of ongoing bridges is given below.

Table 5.5: Status of Tsunami Bridge Works

District	No. of works	Status
Kancheepuram	4	2-bridges nearing completion and 2 bridges will be completed by March 2015.
Tiruvallur	1	work will be completed by March 2015.
Nagapattinam	6	All bridges are in progress and will be completed by March 2015
Tuticorin	1	Bridge completed. Approaches in progress.
Total	**12**	

5.4. FORMATION OF BYPASSES

Bypasses play a major role in the diversion of through traffic and help in reduction of traffic congestion in major towns.

During 2013-14, bypasses to Dharapuram phase-I, Pattukottai phase-I, and Perambalur phase-II have been completed. The status of bypass works being carried out by this wing is as follows:

Table 5.6: Status of Bypasses

DESCRIPTION	Nos.
Completed	11
In progress	3
LA work in progress	15
DPR work in progress	7
Total	**36**

Construction of Thanjavur bypass (Phase-II) in km 0/0-9/0 at a cost of Rs.88 Crore is in progress. Government have sanctioned an amount of Rs.38.93 Crore for formation of bypass to Edapady Town and land acquisition is in progress.

Land Acquisition for the bypasses to the following towns has been sanctioned at a cost of Rs.192.06 Crore and land acquisition works are in progress.

Table 5.7: Details of Land Acquisition for bypasses

S. No	Bypass	Length in Km	Cost in Crore
1	Tiruvarur	9.98	10.10
2	Thiruthuraipoondi	2.46	0.21
3	Periyapalayam	1.70	2.17
4	Edappadi	8.80	6.00
5	Sivagangai	10.60	1.00
6	Tharamangalam	2.93	1.10
7	Tirutani	3.24	11.61
8	Manachanallur (Trichy District)	2.62	14.40
9	Mannargudi Ring Road	21.40	10.06
10	Pudukottai Ring Road	21.25	13.60
11	Parthibanur Ring Road (Ramanathapuram district)	3.60	0.31
12	Sivakasi Ring Road	22.00	33.50
13	Karur Ring Road	32.10	77.00
14	Uthiramerur	4.09	7.00
15	Ilupur (Pudukottai district)	5.40	4.00
	Total	**152.17**	**192.06**

5.5. RAILWAY OVER BRIDGE AT RAILWAY LEVEL CROSSING

Construction of Railway Over Bridge in lieu of L.C No. 13, Athipattu in Thiruvallur District at a cost of Rs.16.40 Crore is in progress under Railway works programme.

National Highways Authority of India has taken up feasibility studies for widening 2/4 lane from Dindigul – Palani – Pollachi – Coimbatore – Sathy – Kollegal - Bangalore Km 0/0 – 265/8 of National Highways 209, hence, no funds has been allotted from Government of India for taking up any original nature of works. Construction of ROB at Echanari and Textool in Coimbatore District has been taken up utilizing state funds. Among these, ROB at Echanari has been completed.

Textool ROB lies at the heart of Coimbatore city, The existing two lane ROB is inadequate to carry the traffic volume. It is absolutely essential to construct additional two lane ROB at this location to ease the traffic congestion. Construction of additional two lane ROB at Km 162/4 – 163/0 (near Textool) is essential. Construction of additional two lane ROB was sanctioned under CRIDP at a cost of Rs.20 Crore and is in progress.

In Nagappattinam District, Construction of ROB at Sirkali (LC.- 216) was completed by Railway Authorities and feasibility study has been taken up by NHAI for improvements in NH. Construction of approaches to ROB was taken up through State funds to facilitate traffic flow. This work has been sanctioned at a cost of Rs.12 Crore and is in progress.

5.6. MAJOR WORKS ANNOUNCED BY THE HON'BLE CHIEF MINISTER DURING THE COLLECTORS' CONFERENCE

5.6.1. Rebuilding of Damaged Stretches in Ariyalur and Perambalur Districts

There are many cement factories and lime stone quarries in Ariyalur and Perambalur districts. The raw materials from the limestone mines are transported to the factories and the finished products are conveyed from the factories to various districts and the construction materials such as sand, blue metal and gravel from various quarries are also conveyed through these roads only. Further the soil in this area is of black cotton (or) clayey in nature. For most of the roads, the CBR is 2 to 3 and the existing crust was very weak.

Road stretches serving these industrial units carry heavy axle loads. Most of the stretches

lying in close proximity to quarries are rapidly deteriorating and distress noted. These stretches have developed localized depressions, settlements and wavy pavement surface due to poor sub grade conditions. The severely damaged stretches in and around the cement factories, limestone quarries are considered for improving the riding quality of the road.

These stretches are considered for rebuilding from the sub base level due to the poor soil condition as per IRC codal provisions.

Government sanctioned a total amount of Rs.174.84 Crore for Ariyalur district and Rs.65.92 Crore for Perambalur district for rebuilding of the damaged stretches in phased manner. 50% of the works have been completed.

Table 5.8: Abstract of Sanction of Rebuilding Works for Ariyalur and Perambalur Districts

District	Category	Length	Cost
Ariyalur	SH	20.8	47.16
	MDR	25.8	55.89
	ODR	37.4	71.79
Total		**84.0**	**174.84**
Perambalur	SH	8.0	15.23
	MDR	18.8	34.56
	ODR	10.0	16.13
Total		**36.8**	**65.92**
Grand Total		**120.80**	**240.76**

5.6.2. Construction of fly over near V.V.D junction in Thoothukudi District

Considering the future developments of Thoothukudi port city, construction of fly over at km 2/10 of Thoothukudi – Quilon Road is absolutely necessary to tackle the present and future traffic needs. Government have sanctioned an amount of Rs.4.90 Crore for land acquisition and shifting of water mains in the first phase. These works are in progress.

5.6.3. Improvement of roads leading to Fire Work Units in Sivakasi

Sivakasi is the town famous for fire works and Printing works. It attracts huge number of business people from all over India and abroad. Most of the factories are located in rural areas providing employment. Since the roads are narrow in these locations, widening of 20.145 km length of roads has been sanctioned at a cost of Rs.7.40 Crore. Works are in progress.

5.6.4. Improvement of roads in Kancheepuram town and roads connecting East Coast Road

Strengthening of 5.80 km roads in Kancheepuram town and providing storm water drain has been sanctioned for Rs.16.68 Crore. The road works have been completed and the drain work are in progress.

Government sanctioned an amount of Rs.10.10 Crore for improving 32.084 km length of roads providing connectivity to East Coast Road and the works have been completed.

5.6.5. Construction of bridges at Orakkattupettai in Kancheepuram district and at Palakarai near Kumbakonam in Thanjavur district.

Government have sanctioned construction of high level bridge across Palar River on the road connecting Orakattupettai with Sadras - Chengalpattu – Kancheepuram - Arakonam-Thiruthani road (SH 58) at a cost of Rs.24 Crore. The work is in tender stage.

Government have sanctioned construction of high level bridge at km 123/10 of Vikravandi-Kumbakonam-Thanjavur road (SH-8) at a cost of Rs.5 Crore across the Cauvery river in Thanjavur district. This is an important bridge connecting the SH 8 with Kumbakonam town. The construction of bridge is in progress.

5.6.6. Widening of hill roads in Kodaikanal in Dindugal District

Government have sanctioned an amount of Rs.32.65 Crore for widening and improvements in 20.40 km of State Highways and 10.20 km of Major District Roads in and around Kodaikanal to

facilitate free flow of traffic throughout the year. Works are nearing completion.

5.7. INTEGRATED CHIEF ENGINEERS' OFFICE BUILDING

Highways Department consists of eight separate wings headed by Director General and 7 Chief Engineers. All the offices of the Chief Engineers of the Department are functioning at various locations in rented buildings / other department buildings except the Office of the Director, Highways Research Station. Construction of an Integrated Chief Engineer's office, housing all the seven Chief Engineers of this Department, except Director, Highways Research Station for effective coordinated functioning of all Chief Engineers of the department, is in progress.

Approval for additional sanction of Rs.21.61 Crore for taking up Interior Arrangements, Elevation, Electrical installations (both HT & LT works), Fire protection systems, Design, supply, installation, testing & commissioning of 10 persons passengers lifts (geared type), Plumbing arrangements, supply, installation, testing and commissioning of 125 kWh diesel generator set is under the consideration of the Government.

5.8. RESIDENTIAL QUARTERS FOR CHIEF ENGINEERS

The Integrated Chief Engineers' office is being constructed in the HRS campus, Guindy. Construction of Quarters for Director General and 7 Chief Engineers in the same campus was sanctioned at a cost of Rs.6 Crore. Work is in progress and will be completed by March 2015.

5.9. PERFORMANCE BASED MAINTENANCE CONTRACT (PBMC)

Performance Based Maintenance Contracting for roads is designed to increase the efficiency and effectiveness of road asset management and maintenance. PBMC ensures the physical condition of the roads under contract is adequate for the need of road users with comfort travel, over the entire period of the contract.

Performance Based Maintenance Contract (PBMC) is being implemented in 191.40 Km of State Highways (SH) roads and 185.98 Km of Major District Roads in Pollachi Division for a period of five years at a cost of Rs.233.93 Crore. This scheme includes Initial Rectification, Periodical Renewal, Minor Improvements, Ordinary Maintenance and Emergency works.

5.10. CHENNAI PERIPHERAL RING ROAD

Government have sanctioned Rs.10 Crore for the preparation of Detailed Project Report for a new connectivity between Mamallapuram and Ennore Port through Singaperumalkoil, Sriperumbudur, Thiruvallur, Thamaraipakkam, Periyapalayam and Kattupalli.

The Peripheral Ring Road will provide better connectivity around the city catering to future traffic requirements besides helping in achieving efficient commercial transportation and port connectivity.

Preparation of Detailed Project Report for the above road has been entrusted to the Consultant on 20.5.2013 and is in progress. Inception report furnished by the consultant has been approved by the Steering Committee and alignment has been finalised. The proposed peripheral road starts at Poonjeri junction of ECR in Mahabalipuram and ends at Ennore Port which includes Northern Port Access Road. Length of proposed peripheral road will be around 136.5 km in which 59 km will be new formation, 52 km will be improvement of existing road and 25.5 km Northern Port Access Road.

5.10.1. Proposed Cross Section & ROW:

The Right of Way (RoW) proposed is 100m which will have 8 lane main carriageway (Divided 4 lane) with 2 lane service road on either side with a 22m gap at centre for other modes of public transport. In some stretches, the proposed Right of Way (RoW) is 60 m for the stretch of SH-57 from km 0/000 to km 24/6, which is under improvement by Tamil Nadu Road Infrastructure Development Corporation. All the link roads will have 4-lane divided carriageway with 60m wide right of way.

SECTION: I MAMALLAPURAM TO SINGAPERUMALKOIL

Based on the traffic projection for 30 years, the carriageway width proposed is 4 lane width with paved shoulder besides two lane service road on either side. Facility for the intersection of Old Mamallapuram Road (OMR), ECR and Thirukkalukundram - Mamallapuram Road (SH 49B) has been finalized to have a single elliptical rotary at grade is proposed. The intersection at NH 45 near Singaperumalkoil is a complex one and a suitable facility to synchronise with the existing ongoing ROB at LC 47 is under study through consultants.

SECTION: II SINGAPERUMALKOIL TO SRIPERUMBUDUR (24.70 km)

This stretch is having a total length of 24.70 Km from National Highways 45 to National

Highways 4. The ROW for the stretch is already fixed as 60.00 m. Six laning of this stretch is in progress. The proposed carriageway configuration is divided six lane with 2 lane service road on either side. The cross over facility for the intersection of the project road with National Highways 4 at Sriperumbudur has been finalized as a flyover with clover leaf arrangements on all 4 sides.

SECTION: III SRIPERUMBUDUR TO END OF THIRUVALLUR BYPASS (26.85 KM LENGTH)

This stretch is following the alignment of existing SH 57 from Km.28/0 – 38/7 except the Thodukadu village where 2.50 Km length of realignment is proposed. Divided eight lane carriageway with 2 lane service road on either side with 22m reserve at centre is proposed.

SECTION: IV FROM THIRUVALLUR BYPASS TO THAMARAIPAKKAM AND ON TO NH 5 AT THATCHUR COVERING A DISTANCE OF 29.30 KM.

The carriageway configuration is divided eight lane with two lane service road on either side with a centre 22 m reserve for future use. The alignment is finalized in such a way that it joins National Highways 5 at Thatchur where the Northern Port connectivity road takes off. As far as the intersection at National Highways-5, a full fledged fly over with 4 clover leaf arrangement is proposed.

FROM THATCHUR TO ENNORE PORT (NORTHERN PORT ACCESS ROAD).

Detailed Project Report for the Northern Port access road will also be a part of Chennai Peripheral Ring Road. The requirements of the stakeholders namely Ennore Port, Kattupalli Port etc., will also be taken into account in finalizing the configuration.

KEY PROJECT IN CHENNAI – BANGALORE INDUSTRIAL CORRIDOR (CBIC)

Chennai – Bangalore Industrial Corridor was conceptualised to develop infrastructure in the Chennai - Bengaluru industrial corridor in order to boost manufacturing and create jobs. Japan International Cooperation Agency (JICA) appointed a joint venture to prepare Comprehensive Regional Perspective Plan for Chennai Bengaluru Industrial Corridor Region. This Comprehensive Regional Perspective Plan for 20 years is planned to transform the region into a globally competitive investment destination and suitable nodes to be created for industrial development within the project influence area are being identified.

Under the CBIC development, improvement of the current main roads between Chennai and Bengaluru, i.e., NH4, NH7 and NH46, are necessary. The construction of roads to access

the industrial clusters centered on industrial parks from these main roads is a priority issue. Highways are needed to be constructed on the mid-to-long-term as one of the main roads connecting industrial clusters within CBIC.

Further the Chennai –Bangalore Industrial Corridor project has identified the above Chennai Peripheral Ring Road as one of the key infrastructure projects in Tamil Nadu region for increasing access between CBIC region and other industrial clusters.

TENTATIVE PROJECT COST

Land acquisition to a total extent of 837 hectare is involved. Preparation of land plan schedule is in progress. The modalities are being arrived as per the "The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013". The total cost of the project including Land Acquisition is Rs.12000 Crore. It is proposed to mobilise funds also from JICA and Government of India for executing the project.

5.11. FORMING OF ROAD GRIDS ALONG CHENNAI OUTER RING ROAD

Government have proposed to create Road Grids for effective dispersal of traffic emanating from Chennai Outer Ring Road and sanctioned

Rs.5.22 Crore for preparation of DPR. 18 roads have been identified comprising of 242 km length of roads which needs to be developed in consonance with the second master plan of CMDA.

The preparation of DPR is in progress and will be completed by September 2014.

5.12. CONSTRUCTION OF BRIDGE ACROSS KOLLIDAM

Government have sanctioned construction of four lane bridge across Kollidam river connecting Srirangam and Trichy toll gate including a minor bridge of the same width across Ayyan canal and junction improvements at a cost of Rs.77.72 Crore. The bridge with 24 Nos. of 33 m span is in progress.

5.13. NON-PLAN MAINTENANCE WORKS

During 2013-14, an allocation of Rs.1088.07 Crore has been made for maintenance of roads and bridges. This is inclusive of Rs.318.67 Crore provided out of the Grant–In-Aid recommended by the 13th Finance Commission. Further the allocation also includes provision for salary component of the Work-charged Establishment.

An amount of Rs.159.33 Crore has been provided for maintenance of Panchayat Union roads taken up by Rural Development and Panchayat Raj department out of the grant–in-aid recommended by the 13th Finance Commission.

During 2013-14, renewal of 4682 km roads has been completed and an expenditure of Rs.1133.37 Crore has been incurred under maintenance.

A budget provision of Rs.1157.07 Crore has been made for 2014-15.

5.14. OVERALL EXPENDITURE (2013-14) AND ALLOCATION FOR 2014-15

During 2013-14, an expenditure of Rs.2583.54 Crore was incurred by this wing for all schemes. A total of 6392 km road works, 2 bypasses, 28 buildings and 181 bridges/ culverts/ protective works have been completed.

A total budgetary allocation of Rs.3131.75 Crore has been made for the year 2014-15.

Railway Over Bridge at Echanari, Coimbatore District inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 11-11-2013

Dharapuram Bypass, Tiruppur District inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 11-11-2013

Limited Use Subway at Paravai, Madurai District inaugurated
by the Hon'ble Chief Minister of Tamil Nadu on 12-06-2014.

High Level Bridge at Murugankudi,
Kilimangalam in Cuddalore District inaugurated
by the Hon'ble Chief Minister of Tamil Nadu on 12-06-2014.

High Level Bridge at Ervadi in Tirunelveli District inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 24-02-2014.

High Level Bridge at Mookaiyur in Ramnad District inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 12-06-2014.

Travellers Bungalow at Yercaud, Salem District inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 20-06-2013

Travellers Bungalow at Tiruvaiyaru, Thanjavur District inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 24-02-2014

Proposed alignment for Chennai Pheripheral Road

6. NATIONAL HIGHWAYS

The National Highways roads play an important role to the mobility of the citizens as well as transportation of essential commodities by providing vital link with different State capitals, Major Ports, Industrial Areas and other tourist centres of the Nation. Hence these roads always have to cope with heavy intensity of traffic.

The total length of National Highways in the State of Tamil Nadu is 4974 Km of which 2250 Km are under the control of State National Highways wing and the balance 2724 km are under the control of National Highways Authority of India (NHAI). Nowadays National Highways roads are being widened to two lane / four lane / six lane with paved shoulders and strengthened with the funds from the Ministry of Road Transport and Highways, Government of India as well as by Public Private Partnership mode.

The lane-wise details of National Highways roads in the State are given below in Table 6.1

Table 6.1: Lane-wise Details of National Highways

Length in Km

Sl. No	Maintained by	SL	IL	DL	ML	Total
1	NH wing	12	4	2157	77	2250
2	NHAI	-	-	621	2103	2724
	Total	**12**	**4**	**2778**	**2180**	**4974**

6.1. CORE ACTIVITIES

The Tamil Nadu State National Highways wing functions under the administrative control of one Chief Engineer. It consists of four Circles and eight Divisions. The development of National Highways road works such as improvements, widening, strengthening, construction of bridges/underpasses and normal maintenance are being carried out by utilizing the funds from Ministry of Road Transport and Highways, Government of India.

The following schemes are being implemented by this wing.

- National Highways - Plan and Non-Plan schemes.
- Revamped Central Road Fund Scheme (RCRF)

- Inter State Connectivity Scheme (ISC)
- Economic Importance Scheme (EI)
- Hill Area Development programme (HADP)
- Bharat Nirman Scheme works with the funds from Ministry of Rural Development, Government of India.

6.2. PROJECTS AND SCHEMES IMPLEMENTED BY NATIONAL HIGHWAYS WING

6.2.1. National Highways Works

The National Highways roads under the control of State National Highways wing are being widened, strengthened/improved and maintained using funds from Ministry of Road Transport and Highways, Government of India.

6.2.2. Plan Works

During 2013-14, spill over works costing Rs.230.62 Crore comprising 34 road works to a length of 178.45 Km and 5 bridge works were taken up. Further, the Ministry of Road Transport and Highways, Government of India has sanctioned 26 road / protective works to a length of 114.46 Km and 5 reconstruction / rehabilitation of bridge works amounting to Rs.186.29 Crore under Annual Plan 2013-14. In addition to this the Ministry has sanctioned 6 road works to a length of 247.44 Km & 3 bridge works costing Rs.428.44 Crore under

Engineering Procurement & Construction (EPC) mode of execution.

Out of the above, 23 road works to a length of 188.65 Km and 2 bridge works were completed at a cost of Rs.210.27 Crore during the financial year 2013-14. Balance works will be completed in the subsequent financial years. Tentative allotment of Rs.200.00 Crore is expected from the Ministry of Road Transport and Highways under this scheme for the year 2014-15.

6.2.3. Non-Plan Works

Under Special Repairs/Periodical Renewal, 7 road works to a length of 47.70 Km amounting Rs.23.38 Crore were taken up as spill over during 2013-14 and these works have been completed.

In addition to this, the Ministry of Road Transport and Highways, Government of India has sanctioned 15 road works to a length of 159.55 km at a cost of Rs.108.20 Crore under PR/IRQP scheme. Further, the Ministry has additionally sanctioned an amount of Rs.49.87 Crore under PR/IRQP for certain stretches to a length of 149.20 Km (6 Nos.) of National Highways Authority of India roads which were recently taken-over by the State National

Highways wing for maintenance based on the instructions of the Ministry.

Out of the above sanctioned works, 128.50 Km length of 8 road works were completed during 2013-14. Balance works will be completed during this financial year. An amount of Rs.103.14 Crore has been spent under PR/IRQP head during 2013-14.

Under this scheme, a tentative allotment of Rs.100.00 Crore is expected from the Ministry of Road Transport and Highways for the financial year 2014-15.

6.2.4. Recently Taken Over NHAI Stretches for Maintenance

The NHs 45C, 47, 67, 67 Extn, 205(22 km Padi – Thirunindravur Urban Stretch), 226 & 227 are under the control of NHAI from 2005. Even after a lapse of 8 years these stretches were neither awarded to the concessionaires nor maintained by NHAI. The poor maintenance of these roads brought lot of public as well as media criticism to the State Government. On intensive pursuance of State Government, the Ministry has handed over the 750 km of above said NHs in December 2013 to State NH wing for maintenance only (NH 205 urban stretch is being maintained by State Highways wing). During 2013-14 the Ministry has sanctioned

Rs.49.87 Crore for maintenance of certain stretches and the works are in progress. Estimates for Rs.111.10 Crore has been sent to Ministry for maintenance of some more stretches during the year 2014-15.

6.3. CENTRALLY SPONSORED SCHEMES

Government of India has set-up Central Road Fund with the accruals from 50% cess levied on the consumption of High Speed Diesel and entire 100% cess on Petrol for development of National Highways and other State roads. From this, 30% of the amount is being earmarked annually for development and maintenance of State roads under Revamped Central Road Fund Scheme, Economic Importance Scheme and Inter State Connectivity Scheme.

6.3.1. Revamped Central Road Fund Scheme

Under this scheme, 15 road works to a length of 186.52 Km costing Rs.118.50 Crore were taken up as spill over during 2013-14. Apart from this, the Ministry of Road Transport and Highways, Government of India has accorded administrative approval for 31 road works to a length of 306.68 Km and one bridge

work to the tune of Rs.255 Crore as new works during 2013-14.

Out of these, 20 road works to a length of 179.97 Km were completed at a cost of Rs.163.92 Crore during 2013-14. Balance works are at various stages and will be completed in the subsequent financial years.

A budget provision of Rs.189 Crore has been made for the financial year 2014-15 under this scheme.

6.3.2. Inter State Connectivity Scheme

In 2013-14, the Ministry of Road Transport and Highways, Government of India has sanctioned 5 road works to a length of 44.89 Km amounting to Rs.39.03 Crore under this scheme. These works will be completed during 2014-15.

A budget provision of Rs.10 Crore has been made under this scheme for the financial year 2014-15.

6.4. BHARAT NIRMAN PROGRAMME

Government of India, Ministry of Rural Development has launched PMGSY / Bharat Nirman Programme earmarked from the accruals of 50% cess levied on High Speed Diesel to provide road connectivity to the eligible unconnected habitations of rural India (Habitations with - 1000+ population first, 500+

population next and 250+ population last) and upgradation of existing rural roads. Out of this, upgradation of Other District Roads which have been included in the Core Net work are being executed by the National Highways wing.

6.4.1. BHARAT NIRMAN PROGRAMME – PHASE III

Under this scheme, 330 Other District Road works to a length of 1062.55 Km amounting to Rs.278.54 Crore have been taken up. Out of these, 228 Other District Road works to a length of 662.36 km were completed at a cost of Rs.238.79 Crore upto 2013-14 and the balance works will be completed during 2014-15.

6.5. HILL AREA DEVELOPMENT PROGRAMME

The Hill roads in Western Ghats of Nilgiris District are improved/maintained with the funds provided by Government of India.

During 2013-14, spillover works numbering 4 road works to a length of 4.00 Km and 2 Cross Drainage works amounting to Rs.2.35 Crore were taken up and these works have been completed.

In addition, the Government has sanctioned 4 road works to a length of 4.40 Km and 2 Nos. of works providing paver block/ CC drain amounting to Rs.2.40 Crore during 2013-14 and these works have been completed.

An amount of Rs.3.25 Crore has been spent during 2013-14 under this scheme.

6.6. OVERALL EXPENDITURE (2013-14) AND ALLOCATION FOR 2014-15

An initial allocation of Rs.283.05 Crore has been made by the Ministry of Road Transport and Highways, New Delhi for NH works and Rs.327.56 Crore was spent during 2013-14 availing additional sanctions. Further an amount of Rs.182.15 Crore has been spent under the State Plan Schemes during 2013-14.

Tentative allotment of Rs.300 Crore is expected from the Ministry of Road Transport and Highways for NH works during 2014-15. Apart from this, a budget provision of Rs.205.03 Crore has been earmarked under State Plan Schemes for the financial year 2014-15.

6.7. PROJECTS EXECUTED BY NATIONAL HIGHWAYS AUTHORITY OF INDIA (NHAI)

The National Highways Authority of India was constituted by an Act of Parliament, the National Highways Authority of India Act 1988 for the development, maintenance and management of National Highways entrusted to it and was operationalised in February 1995. The

NHAI is implementing the National Highways Development Programme (NHDP) approved by Government of India in seven phases. Apart from this, roads, flyovers, underpasses are being constructed and improved under Port Connectivity Project and Other Special Projects.

National Highways 4, 5, 7, 7A, 45, 45A, 45B, 45C, 46, 47, 47B, 49, 66, 67, 68, 205, 209, 210, 220, 226 & 227 in Tamil Nadu are being improved by Government of India under NHDP through NHAI in association with State Government.

State Government extend its co-operation and assistance to NHAI in the matters of pre-construction activities such as land acquisition, shifting of utilities etc.

6.7.1. WORKS COMPLETED BY NHAI

2089 Km length of roads at a cost of Rs.13079 Crore have been upgraded to four lane / six lane.

6.7.2. Works Under Implementation by NHAI

1083 Km length of roads at a cost of Rs.8649 Crore are under execution and 1799 Km length of roads is to be awarded.

6.7.3. Port Connectivity Scheme

Cabinet Committee on Economic Affairs (CCEA) approved the port connectivity scheme in

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

6.7.4. CHENNAI - ENNORE - MANALI ROAD IMPROVEMENT PROJECT (EMRIP)

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

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

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

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

The above project works are in progress and it is proposed to be completed by August 2014.

Table 6.2: Chennai - Ennore - Manali Road Improvement Project (EMRIP)

Sl. No	Name of work	Length in Km
1	Widening to four lane with service road and Improvements to Tiruvotriyur – Ponneri - Pancheti Road	9.00
2	Strengthening and improvements of existing four lane Manali oil refinery road.	5.40
3	Strengthening and improvements of existing 4 lane Northern segment of Inner Ring Road by providing paved shoulder	8.10
4	Widening to four lane with service road and improvements to Ennore expressway	7.50
	Total	**30.00**

Table 6.3: Cost Sharing Details Of EMRIP

Sl. No	Contributed by	Contribution Amount	Loan	Total	Contribution made so far
		Rupees in Crore			
1	National Highways Authority of India	139.80	117.50	257.30	182.87
2	Chennai Port Trust	139.80	110.68	250.48	139.80
3	Government of Tamil Nadu	58.20	--	58.20	58.20
4	Ennore Port Ltd.	34.02	--	34.02	34.00
	Total	**371.82**	**228.18**	**600.00**	**414.87**

6.7.5. LAND ACQUISITION

For implementation of NHDP, land is being acquired under the provisions of the National Highways Act 1956. Out of 4476 Ha. of land to be acquired for ongoing as well as those projects proposed to be taken up, 2399 Ha. of land has been acquired and acquisition of balance 2077 Ha. is in progress.

6.7.6. BYPASSES TAKEN UP AND EXECUTED BY NHAI

As part of NHDP, 101 bypasses have been taken up by NHAI for execution. Out of this, 77 bypasses have been completed and work of 24 bypasses is under progress (**Table – 6.4 and Table 6.5).**

Table 6.4: List of Bypasses Under Construction by NHAI

Sl. No.	Name of the Bypass	NH No.	Length in Km.
1	Vathalakundu	45 Extn.	4.826
2	Devadanapatti		3.371
3	Periyakulam		12.150
4	Theni		6.200
5	Tindivanam	66	4.669
6	Gingee		4.777
7	Kilpennathur		4.260
8	Tiruvannamalai		9.699
9	Chengam		5.756
10	Singarapettai		3.437
11	Uttangarai		4.434

Sl. No.	Name of the Bypass	NH No.	Length in Km.
12	Samalpatti	66	3.701
13	Mathur		3.216
14	Trichy (Western side)	67	17.305
15	Trichy (Eastern side)		25.910
16	Tiruvallur	205	6.200
17	Thanneer Kulam		0.800
18	Thozhur & Sevapet (combined)		3.300
19	Vepampattu		3.600
20	Gudalur	220	3.828
21	Cumbum		5.697
22	Uthamapalayam		4.577
23	Chinnamannur		3.238
24	K.G.Chavadi	47	3.220

Table 6.5: List of Bypasses Constructed by NHAI

Sl. No.	Name of the Bypass	NH No.	Length in Km.
1	Sunguvarchathram	4	2.400
2	Baluchettichathram		1.600
3	Wallajahpet		0.600
4	Kaveripattinam	7	5.150
5	Periyampatti		1.750
6	Matlampatti		1.180
7	Dharmapuri-Adhiyamankottai – Nallampally (combined)		15.550
8	Omalur		2.400
9	Salem		8.400

Sl. No.	Name of the Bypass	NH No.	Length in Km.
10	Mallur	7	2.150
11	Puthuchathiram		1.500
12	Chellamppampatti		1.830
13	Namakkal		8.400
14	Velur		3.780
15	Karur		9.600
16	Vedanchadhur		5.700
17	Kodai Road		3.550
18	Vadipatti		6.100
19	Madurai		14.350
20	Thirumangalam		6.250
21	Chinnodaipatti		1.800
22	Kayathar		3.680
23	Tirunelveli		19.660
24	Valliyur		6.560
25	Nanguneri		26.600
26	Kavalkinaru		1.700
27	Palavoor		1.340
28	Karunkulam		1.700
29	Anjugramam – Kanniyakumari (Combined)		11.690
30	Tindivanam	45	4.990
31	Villupuram		8.600
32	Ulundurpet		6.100
33	Samayapuram		1.250
34	Trichy	45B	5.100
35	Viralimalai		3.950
36	Thuvarankurichi		3.860
37	Kottampatti		3.770

Sl. No.	Name of the Bypass	NH No.	Length in Km.
38	Melur	45B	7.280
39	Othakadai		5.800
40	Kariyappatti		4.700
41	Kallkurichi		3.200
42	Pandalkudi		6.200
43	Bargur	46	5.200
44	Natrampalli		2.700
45	Vaniyambadi		2.300
46	Kondalampatti	47	3.480
47	Sankari		10.150
48	Pallakkapalayam		1.410
49	Chithode		4.650
50	Nasiyanur		2.280
51	Perunthurai		7.600
52	Vijayamangalam		2.270
53	Pallagoundapalayam		1.480
54	Chengapalli		1.200
55	Avinasi		7.850
56	Perumanallur		4.740
57	Thiruchitrambalam	66	6.230
58	Kiliyanur		5.580
59	Vallam	67	3.900
60	Kulithalai		10.000
61	Karur		14.800
62	Chinnasalem	68	4.600
63	Thiyagathurugam		3.900
64	Elavarasanurkottai		4.000
65	Ulundurpet		2.570
66	Narasingapuram – Athur		7.200

Sl. No.	Name of the Bypass	NH No.	Length in Km.
67	Kallakurichi	68	5.100
68	Udaiyarpatti		6.400
69	Vazhapadi		4.620
70	Veerapandi	220	5.200
71	Kiranur	210	4.100
72	Pudukottai		10.400
73	Tirumayam		2.500
74	Karaikudi		19.670
75	Laxmipuram	205	1.200
76	Arcotkuppam		1.700
77	Kanakammachatram		1.800

Tamilnadu National Highways Map

7. NABARD AND RURAL ROADS

This wing is headed by a Chief Engineer with four Circles and 14 Divisions. It is entrusted with the works of construction of River Bridges and improvements of roads with loan assistance from National Bank for Agriculture and Rural Development (NABARD).

Construction of Railway over Bridges, Railway under Bridges under Railway Works Programme and land acquisition for Bypasses are also undertaken.

During the year 1995, NABARD has created Rural Infrastructure Development Fund (RIDF) for improving the basic amenities and infrastructure facilities like Water Supply, Irrigation, School Buildings, Road Connectivity, Bridge construction etc., all over the country, for upliftment of social and economical status of people in rural area. Since then, every year NABARD is sanctioning one RIDF with a number of projects covering each and every department which are associated in Rural Development activities.

Bridges and Road works spread in Rural areas all over Tamil Nadu sanctioned under NABARD loan assistance scheme are taken up by this wing since the year 1996, starting from

RIDF II. Based on the allocation of NABARD fund allotted to this wing by the Government, every year new proposal for construction of Bridges / Improvements of Government Roads is sent to NABARD. After sanction of NABARD and subsequent Administrative sanction, works will be taken up for execution.

7.1. NABARD LOAN ASSISTANCE SCHEMES:

7.1.1. CONSTRUCTION OF RIVER BRIDGES IN GOVERNMENT AND PANCHAYAT UNION ROADS

Under this scheme 184 bridges at a cost of Rs.370.25 Crore have been taken up as spill over works and new works of 125 bridges at a cost of Rs.256.00 Crore were sanctioned during 2013-14. A cumulative total of 309 bridges at a cost of Rs.626.25 Crore were taken up for execution.

Of the 125 bridge works sanctioned in 2013-14, 86 works are in progress, 12 works are in tender stage and for the remaining 27 works, estimates are being prepared and tender to be called for shortly. The details of major bridge works sanctioned in 2013-14 are given in Table 7.1.

Table 7.1: Major River Bridges Sanctioned in 2013-14

Sl. No	District / Constituency	Name of work	Cost Rs.in Crore
1	Thoothukudi / Srivaikundam	Construction of High Level Bridge across Thamiraparani river connecting km 37/6 of Tiruchendur - Palayamkottai - Ambasamudram - Tenkasi - Courtalam - Shenkottai road (SH 40) and km 5/4 of Kongarayakurichi - Manakarai Road(ODR)	16.32
2	Pudukottai / Aranthangi	Construction of High Level Bridge across river Vellar at km 2/2 of Aranthangi- Kamangadu road	9.84
3	Thiruvallur / Avadi	Construction of High Level Bridge branching at Km 3/6 of Melpakkam - Kannampalayam Road and joining to Avadi (across Coovam river)	6.60
4	Cuddalore / Kattumannar koil	Construction of High Level Bridge across old Coleroon River Connecting Nandhimangalam and Poolamedu villages	6.10

Sl. No	District / Constituency	Name of work	Cost Rs.in Crore
5	Erode & Karur / Modakurichi / Aravakurichi	Construction of Bridge across Noyyal River connecting Avudaiyarparai in Erode district and Noyyal in Karur district	6.00
6	Tiruppur & Dindigul / Dharapuram	Construction of High Level Bridge at km 0/4 of Kallivalasu - Murungaivalasu road branching from km 22/4 of Udumalpet - Dharapuram road to Kallivalasu across Amaravathi river.	5.87
7	Pudukottai / Aranthangi	Construction of High Level Bridge across river Vellar at km 0/6 of the road branching from km 2/4 of Avudayarkovil-Perumaruthur road to Sirumaruthur road (via) Thumbaithidal and Vadamaruthur	5.84
8	Vellore / Arakkonam	Construction of High Level Bridge at km 0/2 of Thakkolam - Anandapuram road across Kosasthalai river.	5.70

During 2013-14, a total of 104 bridges have been completed incurring an expenditure of

Rs.232.60 Crore. The details of Major Bridge works inaugurated by the **Hon'ble Chief Minister** are given in Table 7.2.

Table 7.2: Major Bridges Inaugurated by the Hon'ble Chief Minister during 2013-14

Sl. No.	District / Constituency	Nomenclature	Cost Rs.in Crore
1	Erode / Bhavani	Construction of bridge at Km 0/10 of Vairamangalam-Thalavaipettai road across river Bhavani including improvements to the road Km 0/0-1/4	5.96
2	Villupuram/ Mailam	Construction of bridge across Sankaraparani river in km 1/0 of Kongarampattu - Marur (via) Melsevur.	5.20
3	Trichy / Thiruverumbur	Construction of a bridge at K.M.3/6 of road branching from K.M.6/8 of (NH210) to Anna Nagar Road	4.64
4	Krishnagiri / Hosur	Construction of High Level Bridge at Km 14/4 of Athimugam-Perandahalli -Thorapalli-Kelamanagalam Road across Thenpennai River	3.44
5	Salem / Yercaud	Reconstruction of Bridge at Km 5/6 of Valapady - Belur Road	2.00

Sl. No.	District / Constituency	Nomenclature	Cost Rs.in Crore
6	Ariyalur / Jayankondam	Construction of Bridge at Km.7/2 of Vilangudi Annakkaranpettai road (via) T.Palur	1.95
7	Sivaganga / Karaikudi	Construction of Highlevel bridge at km 37/4 of Ilayankudi - Vandal - Sukkirapatti road	1.92
8	Coimbatore / Pollachi	Construction of bridge at Km.0/8 of Vadachitoor - Chettipalayam road.	1.92
9	Coimbatore / Udumalpet	Construction of bridge at Km.1/10 of Avilchinnampalayam Kongalappampalayam road.	1.53
10	Virudhunagar / Sattur	Construction of Minor Bridge at km 34/6 of Sattur - Sivakasi - Kalugumalai road (SH)	1.40
11	Dindigul / Vedasandur	Reconstruction of bridge at km 3/4 of Vadamadurai - Oddanchatram road	1.35
12	Thiruppur / Kangeyam	Construction of bridge at km 33/2 of Erode - Muthur - Vellakoil - Puduppai (via) - Moolanur road	1.35

Sl. No.	District / Constituency	Nomenclature	Cost Rs.in Crore
13	Dindigul / Nilakottai	Reconstruction of weak & narrow Minor Bridges at km 15/8 & 17/4 of Ammayanaickanur - Vathalagundu road	1.33
14	Cuddalore / Kattumannar koil	Reconstruction of High level bridge at Km 0/4 of Thirunaraiyur Road	1.32
15	Dharmapuri / Pappireddipatti	Construction of Bridge at Km 13/8 of A. Pallipatti - Morappur Road in lieu of existing piped causeway.	1.22
16	Trichy / Lalgudi	Construction of Bridge at Km 2/2 of Mangudi Natham road across Drainage channel	1.19
17	Dindigul / Vedasandur	Reconstruction of Minor bridge at Km 4/10 of Vadamadurai-Sengurichi road	1.13
18	Dindigul / Natham	Reconstruction of minor bridges at Km 1/2 &1/6 of Mulaiyur-Alanganallur road	1.10
19	Trichy / Manachanallur	Construction of Minor Bridge at K.M. 13/10 of Pulivalam - Abinimangalam - Edumalai road.	1.10

Sl. No.	District / Constituency	Nomenclature	Cost Rs.in Crore
20	Dindigul / Natham	Reconstruction of Culverts at Km. 31/8, 34/4 and minor bridge at km.34/10 of Madurai- Natham Road	1.04
21	Dindigul / Natham	Reconstruction of Minor Bridge at km 1/6 of Dindigul-Vattanam road to Uralipatty	0.87
22	Erode / Perundurai	construction of minor bridge in lieu of existing Bed level causeway at km 9/10 of Perundurai - Maccanancombai road	0.85
23	Tirupur / Perundurai	Reconstruction of arch bridge at km 30/4 of Gobi Uthukuli Padiyur road	0.74
24	Pudukkottai / Gandarvakkottai	Reconstruction of RCC slab culvert in lieu of existing narrow vented causeway at km 30/4 of Thirukattuppalli - Sengipatti - Pattukkottai road	0.62
25	Dharmapuri / Pappireddipatty	Construction of a Bridge at km 2/10 of Sindhalpadi - Athur road	0.57

Sl. No.	District / Constituency	Nomenclature	Cost Rs.in Crore
26	Pudukkottai / Gandarvakkottai	Reconstruction of R.C.C. Slab culvert in lieu of narrow piped causeway at km 32/4 of Thanjavur-Karambakudi-Seethambalpuram road	0.55

For the year 2014-15, an allotment of Rs.265.00 Crore has been given.

7.1.2. Improvements to Other District Roads and Major District Roads

Under this scheme, spill over works of 130 roads to a length of 433.72 Km (318.16 Km Strengthening & 115.56 Km Widening) at a cost of Rs.201.17 Crore have been taken up.

During 2013-14, 127 roads to a length of 422.42 Km (313.86 Km strengthening and 108.56 Km widening) incurring an expenditure of Rs.191.60 Crore have been completed.

For the year 2014-15, an allotment of Rs.100.00 Crore has been given.

7.1.3. Construction of River Bridges on Government roads:

Under this scheme, spill over works of 2 bridges at a cost of Rs.4.41 Crore were taken up for execution during 2013-14.

During 2013-14, one bridge was completed incurring an expenditure of Rs.1.61 Crore. The details of one ongoing work is given below. (Table 7.3)

Table 7.3: Ongoing Bridge work

Sl. No.	District / Constituency	Nomenclature	Cost Rs.in Crore
1	Kanchipuram / Thiruporur	Reconstruction of a bridge on the Sadras - Chengalpattu – Kanchipuram – Arakkonam – Tiruttani road	5.87

For the year 2014-15, Rs.2.46 Crore has been allocated.

7.1.4. Improvements to Rural Roads:

Under this scheme, spill over work of one bridge at a cost of Rs.1.43 Crore in Panchayat Union Roads has been taken up for execution.

The details of the ongoing bridge work is given below:

Table 7.4: Ongoing bridge work

Sl. No.	District / Constituency	Nomenclature	Cost Rs.in Crore
1	Kanchipuram / Alandur	Construction of a bridge across the Adyar between Tharapakkam – Anakaputhur	5.51

For the year 2014-15, Rs.1.53 Crore has been allocated.

7.2. TSUNAMI REHABILITATION PROGRAMME

Under this scheme, spill over works of two bridges and 3 roads to a length of 6.20 km at a cost of Rs.7.33 Crore have been taken up for execution. Of the above two Bridge works, the Bridge portion have been completed and land acquisition process is under progress for the approach road portions. All the 3 road works have been completed. During 2013-14 an expenditure of Rs.2.14 crore has been incurred.

The details of the ongoing bridge works are given below.

Table 7.5: Ongoing works

Sl. No.	District / Constituency	Nomenclature	Cost Rs.in Crore
Bridge works			
1	Nagapattinam / Sirkazhi	Improvements to the Thirumullaivasal-Keelamoovarkarai road including the construction of a Major Bridge on the Vellapallam Upanar river	27.50
2	Nagapattinam / Poompuhar	Improvements to Kumarakudy – Veppanchery road including construction of a bridge across the Ammanar river	6.12

7.3. CONSTRUCTION OF RAILWAY OVER BRIDGES/ UNDER BRIDGES

21 Railway Over Bridges and 5 Railway Under Bridges at a cost of Rs.414.76 Crore in lieu of the existing Level Crossings have been taken up for execution under the Railway Works Programme. Of these, one ROB LC29 – Oddanchatram in Dindigul district at a cost of Rs.1774.00 lakhs has been completed and 10 works are in progress, as given in Table 7.6.

Table 7.6: Ongoing ROB/RUB Works

S. No	District / Constituency	LC No./ Location	Cost in Crore
1	Coimbatore / Singanallur	LC 2, Irugur	18.69
2	Coimbatore / Singanallur	LC 4, Irugur	21.16
3	Madurai / Madurai west	LC 366, Palanganatham	33.00
4	Madurai / Thiruparan kundram	LC 371, Thiruparangundram	18.30
5	Tirunelveli / Tirunelveli	LC 18, Tirunelveli Yard	29.12
6	Tiruppur/ Tiruppur North	LC 132, Tiruppur SRC Mill Gate	48.26
7	Tiruppur/ Tiruppur North	LC 133, Tiruppur	27.68
8	Tuticorin / Kovilpatti	LC 439, Kovilpatti	12.95
9	Erode / Erode West	LC 124, Sastrinagar	9.18
10	Dindigul / Dindigul	LC 309, Dindigul	24.00

The details of 15 works for which tenders are to be called for are given below (Table 7.7).

Table 7.7: ROB/RUB Works in Tender / Pre-Tender Stage

Sl. No.	District / Constituency	LC No./ Location	Cost Rs.in Crore
1	Tiruvallur / Avadi	LC 2, Pattabiram West	33.48
2	Tiruvallur / Avadi	LC 7, Annanur	15.60
3	Tiruvallur / Avadi	LC 9, Hindu college	8.55
4	Tiruvallur / Poonamallee	LC 16, Putlur	10.42
5	Villupuram / Villupuram	LC 2, Venkatesapuram	31.60
6	Coimbatore / Singanallur	LC 5, Neelikonampalayam	17.00
7	Coimbatore / Coimbatore South	LC 6, Thanneerpandal	12.65
8	Coimbatore / Coimbatore South	LC 7, Irugur	30.50
9	Coimbatore/ Goundampalayam	LC 9, Avarampalayam	22.55
10	Coimbatore / Coimbatore North	LC 10, Peelamedu	11.90
11	Tiruppur/ Tiruppur North	LC 131, Tiruppur	13.38
12	Thanjavur / Thanjavur	LC 304, Thanjavur Oriental tower	41.00
13	Tiruvarur / Mannargudi	LC 22, Needamangalam	23.19

Sl. No.	District / Constituency	LC No./ Location	Cost Rs.in Crore
14	Virudhunagar / Virudhunagar	LC 403, Virudhunagar	20.53
15	Virudhunagar/ Virudhunagar	LC 406, Virudhunagar	3.25

7.4. OVERALL EXPENDITURE (2013-14) AND ALLOCATION FOR 2014-15

During 2013-14, an expenditure of Rs.448.45 Crore was incurred for all Plan Schemes including expenditure towards land acquisition for bypasses. 127 roads to a length of 422.42 km at a cost of Rs.191.60 Crore and 105 bridges at a cost of Rs.234.23 Crore were completed. For 2014-15, a total budgetary allocation of Rs.393.94 Crore has been made.

Railway Over Bridge at Ottanchatram, Dindigul District, inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 24.02.2014

High Level Bridge at Ilayandipattu, Villupuram District inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 12-06-2014

High Level Bridge at Pazhamarneri, Thanjavur District inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 12-06-2014

High Level Bridge at Veriyappur, Dindigul District inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 20.06.2013

8. PROJECTS

The Projects Wing was formed in 1998 and the prime function of the wing is to construct Railway Over Bridges and Railway Under Bridges in lieu of existing level crossings in co-ordination with the Railways on 50:50 cost sharing basis under the Railway Works Programme. Major river bridges, Grade Separators, Bypass roads, Ring Roads and Junction improvement works are also carried out by this wing.

It functions under the control of a Chief Engineer with four Circles and ten Divisions.

The main activity of the wing is to construct Railway Over Bridges and Railway Under Bridges in lieu of existing level crossings in coordination with Railways and liaison with Revenue Department and other Service Departments.

The various stages involved in the execution of ROB / RUB works and the approximate time taken are as follows (Table 8.1):

Table 8.1: Various stages in the execution of ROB/RUB Works

1.	Preparation of site plan - alignment approval - sending to Railways	3 months
2.	Obtaining Railway GAD	6 months
3.	Preparation of Land Plan schedule	3 months
4.	15(2) Notification	6 months
5.	15(1) Notification	6 months

6.	Preparation of Valuation	3 months
7.	Approval of Valuation	3 months
8.	Passing of Award / Payments / Taking Possession	6 months
9.	Shifting of utilities	3 months
10.	Preparation of Design and Drawing	6 months
11.	Estimate Preparation and Technical sanction	3 months
12.	Tendering and Award of works	3 months
13.	Execution of work	30 months

8.1. RAILWAY OVER BRIDGES AND RAILWAY UNDER BRIDGES AT RAILWAY LEVEL CROSSINGS

8.1.1. Railway Works Programme

Under the Railway Works Programme, 115 Spillover works were taken up in 2013-14 by various Department, of which, 73 works (Table 8.2) were taken up by the Projects wing at a cost of Rs.1983.77 Crore.

Table 8.2: Spill over Works

Sl. No.	District	No. of ROBs/RUBs	Cost (Rs.in Crore)
1	Tiruvallur	5	110.49
2	Chennai	1	80.68
3	Kancheepuram	10	334.22
4	Vellore	11	222.09
5	Krishnagiri	2	35.02
6	Villupuram	4	88.09
7	Salem	4	168.86

Sl. No.	District	No. of ROBs/RUBs	Cost (Rs.in Crore)
8	Coimbatore	11	228.20
9	Dindigul	2	77.45
10	Trichy	8	288.03
11	Thanjavur	2	40.84
12	Cuddalore	4	84.60
13	Madurai	1	22.00
14	Tuticorin	1	27.50
15	Tirunelveli	3	82.71
16	Kanyakumari	1	21.40
17	Triuppur	2	34.44
18	Ramanathapuram	1	37.15
	Total	**73**	**1983.77**

During 2013-14, 12 works (Table 8.3) have been completed at a cost of Rs.264.55 Crore and 28 works (Table 8.4) are in progress for a value of Rs.806.06 Crore. The remaining works are in various stages of pre-construction.

Table 8.3: Completed ROB/RUBs

Sl. No	District	Level Crossing No. & Location	Cost (Rs.in Crore)
1	Kancheepuram	54, Chengalpattu	43.92
2	Kancheepuram	1, Chengalpattu	31.44
3	Krishnagiri	98, Dasampatti	10.63
4	Coimbatore	144, Irugur	15.85
5	Coimbatore	139, Somanur	15.88
6	Dindigual	5, Dindigul	17.65
7	Trichy	325, Craw ford, Trichy	28.58

Sl. No	District	Level Crossing No. & Location	Cost (Rs.in Crore)
8	Trichy	279, Manapparai	20.80
9	Thanjavur	309, Budalur	16.30
10	Madurai	370,Tiruparankundram	22.00
11	Tirunelveli	502, Tenkasi	24.50
12	Tiruppur	134,Vanjipalayam	17.00
		Total	**264.55**

Table 8.4: Ongoing ROB/RUBs

Sl. No	District	Level Crossing No. & Location	Cost (Rs.in Crore)
1	Thiruvallur	38, Elavur	23.37
2	Chennai	Vyasarpadi	80.68
3	Kancheepuram	40, Guduvanchery	29.04
4	Kancheepuram	36, Urappakkam	34.50
5	Kancheepuram	47, Singaperumal Koil	52.89
6	Vellore	66, Gudiyatham	10.50
7	Vellore	69, Ulli	12.00
8	Vellore	82, Vaniyampadi	19.54
9	Vellore	89, Pachal	21.54
10	Krishnagiri	96, Samalpatty	24.39
11	Villupuram	102, Mailam	22.43
12	Salem	113,Suramangalam	22.50
13	Coimbatore	21, Nanjudapuram	11.80
14	Coimbatore	11, Ratnapuri	19.50
15	Trichy	228, Lalkudi	20.50
16	Trichy	248, Trichy	44.52
17	Trichy	281, Manapparai	21.53

Sl. No	District	Level Crossing No. & Location	Cost (Rs.in Crore)
18	Trichy	1136, Trichy	74.00
19	Trichy	380A, Srirangam	43.00
20	Thanjavur	302,Thanjavur	24.54
21	Cuddalore	181,Eraiyur(Pennadam)	23.00
22	Cuddalore	168,Virudachalam (Vayalur)	24.00
23	Cuddalore	166A,Cuddalore Pachayankuppam	16.35
24	Cuddalore	135A, Panruti	21.25
25	Tirunelveli	118A,Palayamkottai	32.70
26	Kanyakumari	32B, Nagercoil	21.40
27	Tiruppur	95, Udumalaipet	17.44
28	Ramanathapuram	473, Paramakudi	37.15
		Total	**806.06**

In the year 2012-13, the Government has accorded Administrative Sanction for Rs.100.90 Crore to carry out preliminary works for 12 ROBs/RUBs, which are in various stages of pre-construction.

In the year 2013-14, the Government has accorded Administrative Sanction for Rs.231.487 Crore to carry out preliminary works such as Land Acquisition, Shifting of Service Utilities and Investigation for 18 ROBs/RUBs (Table 8.5) which are in progress. On completion of preliminary works, Administrative Sanction will be accorded for carrying out main bridge works.

Table 8.5: Preliminary Works Sanctioned during 2013-14

S. No	District	LC No.	Location	Preliminary/ Initial cost Rs.in Crore
1	Thiruvallur	14	Nandiyambakkam	11.016
2	Thiruvallur	26	Chinnavakkam	7.114
3	Kancheepuram	29	Kancheepuram	4.494
4	Vellore	59	Vaduganthangal	4.212
5	Vellore	123	Vellore	6.286
6	Thiruvanna -malai	55	Thiruvannamalai	3.299
7	Thiruvanna -malai	80	Polur	5.234
8	Villupuram	144	Madapattu	2.036
9	Salem	185	Mulluvadi gate	43.600
10	Coimbatore	142A	Rasipalayam	4.725
11	Trichy	323	Keelakalkandar Kottai	28.235
12	Trichy	226	Manakkal	20.327
13	Nagapattinam	48	Nagapattinam	23.740
14	Thiruvarur	20	Needamangalam	10.678
15	Thiruvarur	34	Singalanchery	20.801
16	Thiruvarur	16	Peralam	16.419
17	Tirunelveli	82B	Valliyoor	12.272
18	Salem	159	Valappady	6.992
Total				**231.487**

During 2013-14, an expenditure of Rs.359.09 Crore was incurred under this scheme. A provision of Rs.748.54 Crore has been made for this scheme for the year 2014-15.

8.2. CONSTRUCTION OF BRIDGES WITH NABARD ASSISTANCE

In order to provide necessary road access in rural areas, bridge works with NABARD loan assistance are being carried out. Under this scheme, spill over works of 3 river bridges were taken up, to a value of Rs.93.85 Crore (Table 8.6) in 2013-14.

Three bridge works are in progress and one will be completed in 2014-15.

Table 8.6: Ongoing River Bridges under the NABARD Scheme

Sl. No	District /Name of Work	Cost (Rs.in Crore)
	Karur, Namakkal	
1	Construction of a High Level Bridge across Cauvery river Connecting Mohanur (Namakkal Dist.) and Vangal (Karur Dist.)	43.50
	Cuddalore, Nagapattinam	
2	Construction of High level bridge across the Coleroon river between Muttam village of Cuddalore District and Manalmedu village of Nagapattinam District.	48.85
	Thiruvarur	
3	Reconstruction of the bridge across Vellaiyar on the of Mannargudi – Tiruvarur road.	1.50
Total		**93.85**

An expenditure of Rs.6.32 Crore was incurred under this scheme in the year 2013-14. A provision of Rs.7.77 Crore has been made for this scheme for the year 2014-15.

8.3. CONSTRUCTION OF BRIDGES WITH HUDCO ASSISTANCE

In 2013-14, one river bridge work was taken up as spillover work and completed at a cost of Rs.4.30 Crore (Table 8.7).

Table 8.7: Completed River Bridge under the HUDCO Scheme

Sl. No	District /Name of Work	Cost (Rs.in Crore)
	Thiruvarur	
1	Bridge across Arasalar on SH 23 (Mayiladuthurai – Thiruthuraipoondi road)	4.30
	TOTAL	**4.30**

8.4. WORKS TAKEN UP WITH STATE FUNDS

8.4.1. Erode Outer Ring Road

In order to mitigate the heavy traffic congestion in Erode Town and to have a free flow of traffic, Government has accorded sanction under Comprehensive Road Infrastructure Development Programme for Rs.22.00 Crore towards land acquisition for the formation of a ring road from Kokkarayanpettai

to Thindal to a length of 14.80 km. Land Acquisition has been completed in the stretch from Km 0/0 to 7/6 and in the remaining stretch from Km7/6 to 14/8, is in progress.

In Phase I, the work of formation of the outer ring road from km 0/0 to 2/2 including construction of a high level bridge across Cauvery River was taken up as spillover work and completed at a cost of Rs.14.00 Crore and opened by the **Hon'ble Chief Minister** on 24.02.2014. (Table 8.8)

In phase II, the stretch from km 2/2 to 7/6 was taken up as spillover work in 2013-14 and completed at a cost of Rs.12.00 Crore and opened by the **Hon'ble Chief Minister** on 12.06.2014. (Table 8.8)

Table 8.8: Completed Works in Erode ORR

Sl. No	District /Name of Work	Cost (Rs.in Crore)
Bridge Work		
	Namakkal & Erode	
1	Construction of High Level Bridge across Cauvery river between Kokkarayanpettai – Lakkapuram including approaches upto Karur road km 0/0 – 2/2 (phase I)	14.00
Road Work		
2	Formation of Outer Ring Road around Erode town km 2/2 – 7/6. (phase II)	12.00
TOTAL		**26.00**

8.4.2. Erode Outer Ring Road phase III

The Government have accorded Administrative Sanction for Rs.69.30 Crore for the phase III of formation of Erode outer ring road for a length of 7.20 kms from km 7/6 to 14/8. After completion of Land Acquisition, work will be taken up.

8.4.3. Erode Government Hospital Junction Improvement

The work on improvements to the junction of the Erode–Perundurai–Kangeyam road near the Government Hospital including Land Acquisition to a value of Rs.11.00 Crore has been taken up under Comprehensive Road Infrastructure Development Programme as a spillover work in 2013-14 . Land acquisition has been completed and the work will be completed in 2014-15.

8.4.4. Construction of Grade Separator in Erode District

The Government have accorded Administrative Sanction for preiminary works for Rs.22.93 Crore for construction of Grade Separator at km 1/8 of Erode – Perundurai–Kangeyam Road Government hospital Junction. On completion of land acquisition, Administrative Sanction will be accorded for carrying out main bridge works.

8.4.5. Railway Over Bridge at Pallipalayam

The Government have accorded Administrative Sanction for Rs.40.16 Crore for construction of Railway Over Bridge in State Highways 79 at chainage 90/2 in Nammakal district. After completion of Preliminary works, the work will be taken up.

8.4.6. Railway Over Bridge at Ambur

The Government have accorded Administrative Sanction for preliminary works for Rs.6.97 Crore for construction of Railway Over Bridge at Bethlegam area in Ambur Town, between Ambur and Vaniyambadi Railway Stations in Vellore district. On completion of Preliminary works, Administrative Sanction will be accorded for carrying out main bridge works.

An expenditure of Rs.8.01 Crore was incurred under this scheme (excluding CRIDP) in the year 2013-14. A provision of Rs.27.72 Crore has been made for this scheme for the year 2014-15.

8.5. SUGARCANE ROAD DEVELOPMENT SCHEME

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

During 2013-14, Government accorded Administrative Sanction for execution of 14 new road works and one High level bridge under Sugarcane Road Development Scheme in Co-operatives, Public Sector and Private Sugar Factory areas at a cost of Rs.19.66 Crore.

During 2014-15, these works will be taken up for implementation.

8.6. WORKS ANNOUNCED DURING THE COLLECTORS' CONFERENCE

The Government have accorded Administrative Sanction for Rs.3.60 Crore for preparation of Detailed Project Report for 24 works (River bridges–13 Nos., Bypass–5 Nos., Railway Over Bridges- 4 Nos., Limited Use Subway – 1 No. & Grade Separator – 1 No.).

The Detailed Project Report are under preparation for these works and after completion of the same, Administrative Sanction will be accorded for these works.

8.7. OVERALL EXPENDITURE (2013-14) AND ALLOCATION FOR 2014-15

During 2013-14, an expenditure of Rs.374.18 Crore was incurred on all schemes. For 2014-15, a total budget allocation of Rs.784.04 Crore has been made for Projects Wing.

Railway Over Bridge at Tenkasi, Tirunelveli District, inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 11.11.2013.

High Level Bridge between Kokkarayanpettai in Namakkal and Lakkapuram in Erode District inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 24-02-2014

Railway Over Bridge at Ulundurpet, Villupuram District, inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 11.11.2013

Erode Outer Ring Road, Erode District inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 12-06-2014.

9. METRO

Metro wing was formed in 2008 headed by a Chief Engineer with four Divisions. During 2010 and 2013 a circle and an additional division was formed respectively. Now the wing is headed by a Chief Engineer with one circle and five divisions.

Improvements of road and bridge infrastructure facilities, construction of Foot Over Bridges, Subways, Railway Over Bridges and Railway Under Bridges are being taken up by the Metro wing in the Chennai Metropolitan Area with state budgetary allocation and World Bank loan assistance.

9.1. CHENNAI METROPOLITAN DEVELOPMENT PLAN (CMDP)

To improve the road and bridge infrastructure facilities in the Chennai Metropolitan Area, the Chennai Metropolitan Development Plan is being implemented since 2003-04 with State budgetary allocation. The Comprehensive Traffic & Transportation Study for the Chennai Metropolitan Area and the Second Master Plan of the Chennai Metropolitan Development Authority (CMDA) has recommended the projects that are required to be implemented in a span of 15 years (2010-2025). In the above report, about

340 works have been identified at an approximate cost of Rs.14,070 Crore.

So far, the Government has given its approval for 259 improvement works at a cost of Rs.1478 Crore which includes 481km. of Road works, 15 Bridges, 9 Grade Separators, 10 Railway Over Bridges/Railway Under Bridges, one Sky walk and 5 Pedestrian subways.

Major works under implementation are detailed below:-

9.1.1. Grade Separators

Work on five Grade Separators at a cost of Rs.330.93 Crore is in progress. The details of the works are given below.

Table 9.1: List of Grade Separators

Sl. No	Nomenclature	Cost (Rs.in Crore)
Thiruvallur District		
1	Grade Separator at the intersection of Mount - Poonamallee road with Kodambakkam - Sriperumpudur road at Porur	34.72
2	Grade Separator at the intersection of Madhavaram High road with G.N.T Road at Moolakkadai	49.55
Chennai District		
3	Grade Separator at the intersection of Anna Nagar IInd Avenue and Mogappair road with Inner Ring road at Thirumangalam	60.23

Sl. No	Nomenclature	Cost (Rs.in Crore)
4	Grade Separator at the intersection of N.S.K Salai (Arcot Road) with Inner Ring road at Vadapalani	69.43
5	Grade Separator on EVR Salai at the intersection of Nelson Manickam road and Anna Nagar 3rd Avenue road.	117.00
	Total	**330.93**

9.1.2. River Bridges:

The **Hon'ble Chief Minister** has inaugurated and opened to traffic the following 2 bridges during 2013-14.

Table 9.2: List of River Bridges inaugurated

Sl. No	Nomenclature	Cost (Rs.in Crore)
Thiruvallur District		
1	High level Bridge across Coovam river at the road connecting GWT road at km11/2 and Mogappair near Nerkundram	16.04
2	High level Bridge across Ennore Creek on the road connecting Ennore Expressway with North Chennai Thermal Power station.	52.66
	Total	**68.70**

9.1.3. Railway Over Bridges/Under Bridges at Railway Level Crossing

The Government have accorded Administrative Sanction for the following 10 works at a cost of Rs.318.04 Crore.

Table 9.3: List of ROB / RUB works in Metro Area

Sl. No	Nomenclature	Cost (Rs.in Crore)
Thiruvallur District		
1	LC No.3 – Construction of Railway Over Bridge near Tiruvotriyur - Mattumandhai	47.00
2	LC No.4 – Construction of Railway Under Bridge near Tiruvotriyur Railway station.	28.00
3	LC No.6 – Construction of Railway Under Bridge near Tiruvotriyur - Wimco Nagar Railway station.	25.50
4	LC No.5 – Construction of Railway Over Bridge near Pattaravakkam	35.00
5	LC No.14 – Construction of Railway Over Bridge near Veppampattu Railway station	29.50
6.	LC No.4 – Construction of Railway Under Bridge near Korattur Railway station	19.97
7.	LC No.16 – Construction of Railway Over Bridge near Nandhiyambakkam-Minjur Railway station	28.32

Sl. No	Nomenclature	Cost (Rs.in Crore)
Kancheepuram District		
8.	LC No.32 & 33 – Construction of Railway Over Bridge near Perungalathur Railway station	76.00
9.	LC No.22 – Construction of Railway Under Bridge near Thirisulam	14.00
10.	LC No.27 – Construction of Limited Use Subway near Chrompet Radha Nagar	14.75
	Total	**318.04**

The Hon'ble Chief Minister has inaugurated and opened to traffic the Patravakkam Railway Over Bridge. Works in 2 ROBs (LC No. 3 & 14) are in progress. The balance 7 works are at different stages of pre-construction.

9.1.4. Road Works:

The following two road works have been administratively sanctioned by the Government in which Tambaram Eastern By-pass work (the stretch of 3 km out of total 9 km where LA has been completed) will be completed during this financial year. The second road work will be taken up in the current financial year.

Table 9.4: List of Road Works

Sl. No	Nomenclature	Cost (Rs.in Crore)
1	Formation of new link road connecting MBI road at km 17/4 in Rajakilpakkam and Tambaram Eastern Bypass at Agaram then salai. (only completed LA portions).	25.00
2	Forming New Link Road connecting Puzhal Chennai GNT Road and Amullaivoyal in IRR at Km 20/8	20.00

9.2. WORKS TO BE COMMENCED:

a. During 2012-13, to improve infrastructure facilities, the Government has accorded Administrative Sanction for the following 3 Grade Separators at a cost of Rs.231.68 Crore. The first two works are in Tender Stage. Estimate is under scrutiny for the third work. These works will be taken up for execution during the year 2014-15.

Table 9.5: Grade Separators taken up

Sl. No	**Nomenclature**	**Cost Rs.in Crore**
1.	Construction of a Grade Separator at the junction of Kundrathur road and Santhai road at Pallavaram in GST road	80.74
2.	Construction of a Grade Separator at the junction of Perambur – Redhills road near Kolathur Rettai Eri in Inner Ring Road	52.72
3.	Construction of a Grade Separator at the junction of Taramani road, Tambaram – Velachery road and Velachery bypass in Velachery Vijayanagaram junction	98.22
Total		**231.68**

b. Further, Government has accorded Administrative Sanction for 15 works which have been prioritized for implementation under the CMDP scheme.

Table 9.6: List of works sanctioned under CMDP

Sl. No	Nomenclature	Rough cost Rs.in Crore
I. Pedestrian Subway/Sky walk		
1.	Near A.G Church at Chinna Malai in Anna Salai.	3.50
2.	Near M.K.N road junction at Guindy in GST road.	3.50
3.	At km 1/6 of Jawaharlal Nehru Salai (IRR) near Malladi Company at Ekkattuthangal.	3.50
4.	At km 2/7 Nehru Salai (IRR) near Kasi theatre.	3.50
5.	At km 7/7 of Jawaharlal Nehru Salai (IRR) near CMBT.	5.00
	Sky walk	
6.	A Sky walk connecting Central station, Park station and GH in EVR Salai.	20.00
	Total (6 works)	**39.00**
II. Grade Separator		
7.	Construction of a Grade Separator connecting the junctions of Mofussil bus entrance of CMBT and KaliammanKoil road junction in Jawaharlal Nehru Salai (IRR)	40.00

Sl. No	Nomenclature	Rough cost Rs.in Crore
	Total (1 work)	**40.00**
	III. Bridge works	
8.	Construction of additional 3 lane bridge across the river Coovam near Aminjikarai in EVR Salai	8.00
9.	Widening of Bridge at Km.3/4 of Mount – Poonamallee - Avadi road (SH-55)	1.00
10.	Construction of an additional two lane bridge at Km.15/8 of Mount – Poonamallee - Avadi road (SH-55)	5.00
11.	Construction of an additional two lane bridge at Km.62/2 of SingaperumalKoil – Sriperumpudur –Thiruvallur – Senkundram road (SH-57)	2.00
12.	Construction of a high level bridge at Km.14/4-14/8 of Karanodai-Minjur road	9.00
13.	Construction of a bridge at Km.16/6 of Tambaram - Mudichur road (SH110)	2.00
14.	Construction of a bridge at Km.13/8 of Chennai – Kodambakkam - Sriperumpudur Road (SH113)	2.00
15.	Construction of a bridge at Km.27/6 of Chennai – Kodambakkam - Sriperumpudur Road(SH113)	1.00
	Total (8 works)	**30.00**
	Grand Total (15 works)	**109.00**

Among these 15 works, the alignment proposals have been approved by the Steering Committee for the first 7 works. Out of remaining 8 bridge works, one work (Sl.No.8) is in progress, 3 works (Sl.No.9, 11 & 13) are in Tender Scrutiny, 2 works (Sl.No. 10 & 12) are in Estimate stage and 2 works (Sl.No.14 & 15) are transferred to TNRSP Phase-II. The balance works will be taken up for execution in 2014-15.

c. Works under DPR Stage:

The Government has accorded Administrative Sanction for the preparation of DPR for 12 works, the details of which are as indicated below.

Table 9.7: Works in DPR Stage

Sl. No	Nomenclature	Rough cost Rs.in Crore
1	New link road connecting Rajiv Gandhi Salai (OMR) with East Coast Road at Palavakkam (2.0 km)	50.00
2	Grade Separator at the junction connecting Medavakkam road and Pallavaram- Thuraipakkam road near Keelkattalai	60.00
3.	Grade Separator at Medavakkam – Sholinganallur road junction, Medavakkam – Mambakkam road junction and Mount – Medavakkam junction in MaramalaiAdigal Bridge – Irumbuliyur (MBI) road.	90.00

Sl. No	Nomenclature	Rough cost Rs.in Crore
4.	Grade Separator at the junction of ECR – Thiruvanmiyur road	160.00
5.	High level bridge across Coovam river in NH 4 at Nolambur road junction	27.00
6.	High level bridge across Coovam river in M.P. road-Paruthipattu road at km 0/6	8.00
7.	Widening of ROB at km 20/8 of Mount-Poonamallee-Avadi road.	15.00
8.	Widening of ROB to dual four lane at km 12/2 -13/2 of Inner Ring Road	20.00
9.	New link road connecting Rajiv Gandhi Salai (OMR) with East Coast Road at Neelankarai (2.0 km)	50.00
10.	Grade Separator at the junctions connecting Mount – Poonamallee-Avadi road, Chennai – Chittor- Bengaluru road, Kundrathur road near Poonamallee Kattupakkam	60.00
11.	RUB at the junction of Mount – Medavakkam road and Southern Sector of Inner Ring Road	25.00
12.	Widening of high level bridge across the river Adyar in Mount – Poonamallee Road near Ramapuram	8.00
Total		**573.00**

DPR for these works are under preparation and Alignment proposals have been approved by the Steering Committee for the first 10 works.

9.3. TAMIL NADU URBAN DEVELOPMENT PROJECT–III (TNUDP-III)

The TNUDP–III Scheme was formulated in 2005 and is being implemented with World Bank loan assistance.

9.3.1. Road Works:

Under the traffic component, five road projects for a length of 36 km at a cost of Rs.167 Crore have been taken up of which four have been completed and the remaining one road work at a cost of Rs.38.94 Crore is in progress.

Table 9.8: Ongoing Road Work under TNUDP-III

Sl. No	Nomenclature	Cost (Rs.in Crore)
Chennai District		
1	Widening and strengthening of the Taramani link road km 0/0-3/650 from two lane to six lane. Work completed on left side and the work is in progress on the right side.	38.94

9.3.2. Foot Over Bridges

The **Hon'ble Chief Minister** has inaugurated 5 Nos. of Foot Over Bridges (FOB) in the following five locations where the volume of

pedestrian traffic is high constructed at an estimate of Rs.36.85 Crore.

1. G.S.T Road, near Chrompet Railway station.
2. G.S.T Road, near MEPZ, Tambaram.
3. Inner Ring Road, near SBOA School road junction, Thirumangalam.
4. Taramani Link Road, near TCS.
5. Taramani Link road, near Perungudi junction.

All the above 5 foot over bridges is provided with escalator and roofing arrangement and it is first of its kind in Tamil Nadu. Since Chromepet & MEPZ are more crowded area, Multi Model Integration and with Solar Panel for lighting purpose and Public Addressing System, CCTV Surveillance are provided for safety purpose. This has considerably reduced the traffic in that particular area and eliminated two signal in the GST road.

9.3.3. Improving the Arterial Roads to World Class Standards

To improve the traffic infrastructure facilities and ease the traffic flow in Chennai Urban Area, the following roads have been identified for improvement to world class standards:-

1. GST road km 0/0 - 27/4
2. GWT road km 0/0 - 14/2

3. Inner Ring Road km 0/0 - 17/5 and
4. Southern Sector of Inner Ring Road including Taramani Link Road km 0/0-9/2.

For these works, DPR is in progress. Based on the DPR, the works will be taken up for implementation to the world class standards in the ensuing years on completion of Chennai Metro Rail Limited (CMRL) works.

Since the World Bank loan assistance under TNUDP–III is only upto the financial year 2013-14, the balance works will be executed under State funds.

9.4. NEW PROPOSALS:

Based on the Comprehensive Traffic & Transportation Study (CTTS), the following 17 works for a value of Rs.2000 Crore have been proposed under JICA funds.

Table 9.9: Abstract of New Proposal

Sl. No	Description	Nos.	Cost Rs.in Crore
1	Grade Separators	12	1725.00
2	Skywalk	1	50.00
3	Foot Over Bridge	1	20.00
4	River Bridge	1	15.00
5	Road Works	2	190.00
	Total	**17**	**2000.00**

9.5. OVERALL EXPENDITURE (2013-14) AND ALLOCATION FOR 2014-15:

During 2013-14, an expenditure of Rs.159.82 Crore have been incurred for implementation of various works under the above schemes.

For the year 2014-15, a total budgetary allocation of Rs.426.02 Crore has been made for Metro wing.

High Level Bridge at Ennore creek, Tiruvallur District inaugurated
by the Hon'ble Chief Minister of Tamil Nadu on 24-02-2014

Foot Over Bridge on Chennai Inner Ring Road
near SBOA School Junction inaugurated
by the Hon'ble Chief Minister of Tamil Nadu on 12-06-2014.

Railway Over Bridge at Patravakkam, Tiruvallur District inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 12.06.2014.

High Level Bridge at Nerkundram, Chennai inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 11-11-2013.

10.TAMIL NADU ROAD SECTOR PROJECT

10.1. TAMIL NADU ROAD SECTOR PROJECT II (TNRSP II):

The Tamil Nadu Road Sector Project (TNRSP) was formed by the Government, vide. G.O. (Ms) No. 115, Highways and Minor Ports (HN2) Department, dated 15.05.1998. TNRSP was formed to implement the works taken up with the loan assistance from International Bank for Reconstruction and Development (commonly known as the World Bank). Under TNRSP, roads were upgraded for 725 km in two major corridors i.e. Arcot to Tiruvarur and Nagapattinam to Tuticorin and enhanced maintenance works of roads were carried out for 1330 km among other works like Road Safety, Black spot improvements works and institutional development, etc. The total project cost was Rs.2442 Crore.

Based on the experience and completion of TNRSP (phase I) of the project, Strategic Options Study II was carried out to arrive at candidate projects for improvement through World Bank loan assistance. The study was conducted through M/s. Indian Institute of Technology Madras (IITM), Chennai and roads to a length of 2867 km were studied and prioritized based on economic return consideration.

The Project proposal for TNRSP II to upgrade 1678 Km length of roads at a cost of Rs.8583 Crore was submitted to Department of Economic Affairs (DEA) seeking external assistance for funding to a tune of Rs.2848 Crore (570 Million American Dollar) through Ministry of Road Transport and Highways (MoRTH). This proposal was reviewed by Department of Economic Affairs (DEA) during August 2012 as prelude to TNRSP II external funding and the action plan. The project proposal was recommended and sent to the World Bank for funding to a tune of US$ 300 Million American Dollar by Department of Economic Affairs (DEA) during September 2012. World Bank team has reviewed the project proposal formulated the Project Concept Note and suggested an action plan during November 2012. This action plan has been agreed by the Government of Tamil Nadu and various actions are already in progress.

From the IIT SOS study, roads for a length of 2079 Km have been selected for Detailed Project Report (DPR) preparation as candidate roads for World Bank and other sources of funding. The Tamil Nadu Infrastructure Development Board (TNIDB) under the Chairmanship of the **Hon'ble Chief Minister** has allotted an amount of Rs.65 Crore for carrying out the DPR Preparation.

Project Preparation Consultants for preparing Detailed Project Report (DPR) for various road improvement works have been engaged under TNRSP II in five packages for the selected 2079 Km of road network spread across the State.

Under TNRSP II, following components are under consideration through World Bank funding.

1. a) Road upgradation works through Engineering Procurement Contract mode – 800 Km.
   b) Road upgradation works through PPP mode – 200 Km.
2. Road maintenance under Output and Performance Based Road Contract (OPRC) mode – 2000 Km.
3. Road Safety Component.
4. Institutional Capacity Enhancements.

Table 10.1: Component-wise Estimated Cost (as agreed by the World Bank)

S. No.	Component	Length (Km)	Total Cost Rs.Cr	Bank Contribution	
				%	Rs.Cr.
1a	Road Upgradation (EPC+)*	800	2800	50%	1400
1b	Road Upgradation (PPP)*	200	1200	20%	240
2	Road Maintenance (PBMC)*	2000	400	20%	80

S. No.	Component	Length (Km)	Total Cost Rs.Cr	Bank Contribution	
				%	Rs.Cr.
3	Road Safety		96	50%	48
4	Institutional Capacity Enhancement		60	50%	30
	Grand Total	**3000**	**4556**	**39%**	**1798**

*Including associated consultancies/services for supervision of works.

Detailed Project Report (DPR) preparation is currently in progress and survey works have been substantially completed. From the 2079 Km, roads to a length of 427 Km have been identified on priority fast track mode based on minimum social and environmental impacts consideration and planned for tendering by September 2014.

Table 10.2: Details of "Fast-Track" Roads

S. No	State Highway No.	Name of the "fast track" road	length (km)	Proposed improvement
Likely Contracting Mode: EPC+5YR Maintenance				
1	SH 116	Kancheepuram–Perunagar-Magaral-Theturai-Vandavasi Road	22.4	2L+PS
2	SH 4	Arani–Chetput-Gingee-Villupuram Road	81.8	2L+PS

S. No	State Highway No.	Name of the "fast track" road	length (km)	Proposed improvement
3	SH 58	Sadras–Thirukkalukundram-Chengalpattu Road	26.8	2L+PS
4	SH 70	Vridhachalam–Kammapuram-Bhuvanagiri Road	35.8	2L+PS
5	SH 9	Madapattu-Sevalai-Tirukoilur Road	28.0	2L+PS
6	SH 86	Tiruchengode–Kandhanpalayam-Paramathy Road	26.2	2L+PS
7	SH 95	Namakkal–Ariyur-Karur Road(uptoMohanur)	13.1	2L+PS
8	SH 79	Malliyakarai–Thiamma naickkanpatti-Mangalapuram-Rasipuram Road	30.6	2L+PS
9	SH 79	Rasipuram–Vaiyappamalai-Errachipalayam-Tiruchengode Road	19.9	2L+PS
10	SH 89	Nanguneri–Vijayanarayanam-Thisayanvilai-Edayankudi-ECR Junction Road	35.2	2L+PS

S. No	State Highway No.	Name of the "fast track" road	length (km)	Proposed improvement
11	SH 44	Naduvapatti–Kovilpatti-Ettayapuram Road	31.7	2L+PS
12	SH 41	Rajapalayam-Sankarankoil-Tirunelveli Road	75.0	2L+PS
Total length in km			**426.5**	
Likely Contracting Mode: PPP (Modified Annuity)				
13	SH 15	Gobi – Erode Road	30.4	4 lane
14	SH 37	Oddanchatram–Tirupur Road	88.8	4 lane
15	SH 39	Tirunelveli–Tenkasi Road	45.6	4 lane
Total length in km			**164.8**	

Detailed Project Report (DPR) preparation involves carrying out detailed Environmental and social impact studies and mitigation measures. A detailed Environmental management plan and a detailed Resettlement Action Plan will be prepared. The DPR for the balance length of 1652 Km is expected to be completed by December 2014.

Major critical items which needs special attention:

1. TNRSP involves acquisition of lands for upgradation in more than 20 districts
2. The new Land Acquisition Central Act 2013 aligned with the World Bank norms are to be followed including Resettlement & Rehabilitation of the project affected persons.
3. Environmental clearances wherever necessary are to be obtained.
4. Utilities like Electric poles, under ground pipelines, telecommunication cables, etc. are to be shifted in order to widen the roads. This has to be done in the most of the stretches.

In order to carry out the task of handling the major land acquisition and shifting of utilities, one Circle & 7 field Divisions have been created.

5. Also, 3 Special District Revenue Officers, 3 Resettlement officers (Dy. Collectors) and 5 Tahsildars posts have been created.

10.2. OUTPUT & PERFORMANCE BASED ROAD CONTRACTS

As per the action plan agreed with World Bank for TNRSP II, it is proposed to maintain 642 kms of roads upgraded under TNRSP I Project adopting Output and Performance based Road Contracts (OPRC) Concept. Under this concept, different components of road maintenance such as Initial Rectification Ordinary Maintenance, Periodic Maintenance, Minor

Improvement works etc, are to be given on a long term period of five years. This will ensure timely maintenance interventions so as to achieve the design life of the roads upgraded under huge capital cost.

Consultancy services to prepare DPR for implementing OPRC for these roads was awarded to Lea Associates South Asia Pvt. Ltd. The draft DPR and draft bid document has been submitted by the consultant and it is under review. Tentative cost of the OPRC works is about Rs.220 Crore and bids are to be invited shortly.

List of roads proposed for OPRC maintenance is given in Table 10.3. and 10.4.

Table 10.3: List of Roads (OPRC I)

Sl. No.	Road Name	Length in Km
1.	Arcot Arni Road Km 0/0-24/6	24.60
2.	Arni Bypass Km 24/6-30/0	5.40
3.	Arni Ettivadi Road Km 2/2-17/8 & Polur Bypass Km 50/8-55/0	19.80
4.	Polur Chengam Road Km 0/0-45/0	45.00
5.	Thiruvannamalai Thirukkovilur Road Km 91/0-118/8	27.80
6.	Thirukkovilur Bypass Km 118/8-123/0	4.20
7.	Thirukkovilur-Ulundurpet Road Km 123/0-150/2	27.20
8.	Vridhachalam Bypass Km 0/0-9/2	9.20

Sl. No.	Road Name	Length in Km
9.	Vridhachalam Jayankondam Road Km 2/700-36/400	33.70
10.	Jayankondam-Sendurai Road Km 4/8-23/6	18.80
11.	Sendurai-Ariyalur Road Km 2/0-20/2	18.20
12.	Ariyalur Bypass Km 24/4-32/0	7.60
13.	Sirkazhi Bypass Km 0/0-7/6 & Link Road Km 0/0-1/2	8.80
14.	Chidambaram Bypass Km 0/0-7/6 & Link Road Km 0/0-3/2	10.80
15.	Chidambaram Pitchavaram Tourism Road Km 0/0-3/4	3.40
16.	Kumbakonam Thiruvarur Road Km 0/0-35/6	35.60
Total length of the road		**300.10**

Table 10.4: List of Roads (OPRC II)

S.No.	Road Name	Length
1	Nagapattinam Bypass Km 0/0-10/2 as part of SH 200	10.2
2	Nagappattinam to Thiruthuraipundi Km 10/2-46/7 as part of SH 200	36.5
3	Thiruthuraipundi Bypass Km 46/7-49/8 as part of SH 200	3.1
4	Thiruthuraipundi to Muthupet Km 49/8-69/4 as part of SH 200	19.6
5	Muthupet Bypass Km 69/4-74/2 as part of SH 200	4.8
6	Muthupet to Manora Km 74/2-99/8 as part of SH 200	25.6

S.No.	Road Name	Length
7	Manora to Kattumavadi Km 99/8-117/4 as part of SH 200	17.6
8	Kattumavadi to Mimisal Km 117/4-148/9 as part of SH 200	31.5
9	Mimisal to Tondi Km 148/9-172/4 as part of SH 200	23.5
10	Tondi to Thirupalakudi Km 172/4-198/3 as part of SH 200	25.9
11	Thirupalakudi to Ramanathapuram Km 198/3-217/3 as part of SH 200	19.0
12	Ramanathapuram Bypass Km 0/0-10/4 as part of SH 200	10.4
13	Ramanathapuram to Edampadal Km 217/3-242/79 as part of SH 200	25.49
14	Edampadal to Sayalkudi Km 242/79-271/98 as part of SH 200	29.19
15	Sayalkudi to Kulathur Km 271/98-310/52 as part of SH 200	38.54
16	Kulathur to Tuticorin Km 310/52-331/97 as part of SH 200	21.45
Total Length in km		**342.37**

10.3. OVERALL EXPENDITURE (2013-14) AND ALLOCATION FOR 2014-15

During 2013-14, an expenditure of Rs.29.864 Crore have been incurred for implementation of various works.

For the year 2014-15, a total budgetary allocation of Rs.499.880 Crore has been allotted for Tamil Nadu Road Sector Project-II.

11.HIGHWAYS RESEARCH STATION

The Highways Research Station (HRS) is functioning under the control of the Director, since 1957. Research on Road and Testing of Materials, Quality Assurance & Quality Control for Road & Bridge works are the primary duties of this wing. It also provides technical advice and guidance for the Design and Execution of Roads and Bridges. A Joint Director, Four Deputy Directors (Research) and Eight Divisional Engineers (Quality control) are in charge of the activities of HRS. The objectives and functions are as follows;

- Assessing the quality and suitability of all the construction materials used in road and bridge construction
- Assurance of quality standards for all the materials used in the construction of roads at all stages of works for all the works executed by the Department
- Continuous Research in all aspects of Highway Engineering with a view to utilize the resources optimally for achieving the best quality road network

The above procedures of test are in strict accordance to the Indian Roads Congress

guidelines and other standards in vogue, from time to time.

11.1. QUALITY CONTROL MECHANISM

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

11.2. LABORATORIES

Four laboratories at Chennai viz., Bitumen, Soils, Concrete, and Traffic are functioning under the control of the Director, Highways Research Station. Apart from this, eight regional laboratories one each at Thanjavur, Coimbatore, Madurai, Tirunelveli, Trichy, Tiruppur, Villupuram and Salem also functioning under the control of the Director.

The broad functions of the above laboratories are;

- Assessing the suitability and Quality of basic materials used in the construction of roads and bridges.

- Ascertaining the quality standards for the materials and composite materials used in the construction of roads by conducting lab tests and field tests.
- Closer scrutiny of performance behaviour of materials used in the road construction.
- Problem-assistance to field Engineers for arriving at a solution in distressed areas.
- Identifying accident-prone areas and suggesting suitable remedial measures to minimize the accidents.
- Conducting laboratory studies for identifying innovative, sustainable and economical alternate materials in concrete.

This apart, HRS is involved in the design of flexible & rigid pavements, sub-soil exploration works, pile load tests for bridges, non-destructive tests on concrete members, tests on steel and cement, evolving Concrete and Bituminous mix designs, evaluation of surface characteristics of roads etc., Pavement evaluation is by carrying out Benkelman Beam Deflection (BBD) tests, and Vehicle Damage Factor is assessed by Axle load tests.

Non-standard junctions are highly prone to accidents. The junction pattern and existing

characteristics are closely studied and based on the data collected and detailed analysis, road junctions are redesigned and improved to reduce Road Traffic Accidents.

Co-ordination with Government agencies such as Traffic Police Department on transportation and traffic related issues, offering expert advice on technical specifications for road safety related components etc., are also the functions of Highways Research Station.

Effectively carrying-out all the above activities, during 2013-14, the Highways Research Station has earned Revenue to the tune of Rs.8.35 Crore to the State's exchequer by way of Laboratory and field tests.

11.3. RESEARCH ACTIVITIES

During the year 2013-14, two research schemes were undertaken by this Institute and are as follows:

- Study on the Luminosity of street lighting on select stretches of corridors at urban, semi -urban stretches of the city.
- To study the possibility of using copper slag as fine aggregate in Cement concrete pavement.

For the year 2014-15, the following Research studies are proposed to be taken up.

- Study on the use of Reclaimed Bituminous Mix.
- Identifying accident black spots in SHs based on prioritized information from RADMS with suitable suggestions and remedial measures.
- Study on the economics of using mineral admixtures in concrete.
- Study on Relationship between immediate CBR and Soaked CBR for soils.

11.4. TRAINING:

Training activities have been given a fresh impetus by the HRS. In the year 2013-14, about 148 Engineers of the Department from all cadres have been trained on various aspects of Quality Control in Highway Engineering with a focus on all round development of the Engineers.

During 2013-14, about 120 students of all premier Engineering institutions all over the State have completed their project thesis works and in-plant training at HRS. Around 336 students have undergone one day training at HRS.

The Research activities of HRS and the field data collected for its various schemes and works, state of the art technologies / equipments

deployed, skilled manpower expertise in Highway Engineering - all make this a favorable institution for undergoing training which imparts fresh, practical, real-time knowledge experience to students.

Plans are afoot to impart quality training to the Engineers of the department in all cadres, not only to the fresh Engineers but also to the in-service Engineers as a refresher course, on salient aspects of Highway Engineering. Training programmes are also planned for staff at all levels of the department, under appropriate topics.

Sustainability of quality road network depends upon maintaining high level of quality while constructing pavements.

To achieve the same, the Contractors who are the primary stakeholders in building the infrastructure along with the Government, also needs to be sensitized on the importance of quality standards. Training programme needs to be inculcated to the representatives of the Contractors, on Quality aspects.

Apart from Engineers of this department, quality training could also be extended to the Engineers of State Departments, Local Bodies, Municipal authorities, Town Planning Agencies etc., throughout the country.

Not restricting to the Engineering discipline of Highways alone, training may also involve collateral agencies, Academic Experts, Researchers, Non-Governmental Organisations (NGOs), Environmental experts, Emergency Care specialists, Revenue authorities, Planners, Health care experts, Life style consultants, Natural therapist, Yoga & Meditational Gurus/ Practitioners etc., on a variety of topics aiming at an holistic and complete development in a Highway personnel.

A year long training schedule is drawn-up chalking out the programme for the entire calendar year. Training related expenses are met from out of the funds sanctioned by the Government as of now, every year. However, once the exclusive training centre is in place, the activity plan for future years would be submitted to the Government for approval, well in advance.

To suit the above need and requirement, a dedicated, exclusive Training Centre with all the latest state of-art facilities has been sanctioned in the HRS premises at cost of Rs.15.57 Crore, to impart quality training programme to the Engineers from different parts of the country, throughout the year.

The Training Centre would also undertake research programmes and co-ordinate with other

premier research institutes and Technical Bodies such as Indian Roads Congress (IRC), Central Road Research Institute (CRRI), Maharashtra Engineering Research Institute (MERI), Gujarat Engineering Research Institute (GERI), Indina Academy of Highway Engineers (IAHE), Indina Institute of Technology (IITs), Reputed Engineering Institutions etc. to promote technical excellence and research.

As a part of our routine training activity, currently Weekly Technical Lecture programmes are organized on Tuesday evenings, every week, to foster sharing of technical knowledge, expertise, experience gathered in the profession amongst the Engineers of the department.

Conducted at HRS, the forum has speakers drawn from different walks of the profession ranging from the departmental Engineers, Academicians from leading Institutions such as IITs, Anna University, Engineers from the Industry, Consultants, Scientists from leading Research Organization, Health Care Experts, Yoga & Stress relief practitioners, Students from premier Institutions whose projects were guided by HRS, etc.,

Widely attended by the Engineers, the platform is an instant success with vivid

interaction and exchange of knowledge, crossing over 60 programmes as of now.

11.5. CO-ORDINATION WITH IRC:

The Indian Roads Congress (IRC) is the apex technical body for Highway Engineering in the country. It is a collective body of practicing Engineers drawn from all walks of professional stream viz., Departmental Engineers, Consultants, Academic Experts, Researchers, representatives of Major Road Construction agencies, etc., The IRC meet and discuss frequently on vital technical issues concerned to Road Building activity and draw standards, guidelines suiting the field situations throughout the country.

In the process the IRC constitutes number of committees and sub-committees to discuss and formulate amendments / revision of major codes based on need and requirement. The Director, HRS and Deputy Director representing the Director, HRS are members of such committees, who share the technical experience and expertise gained through the work knowledge. The contributions of HRS to such forums are valuable and knowledge gained by interacting with co-members is mutually beneficial.

Recognising fully the potential of HRS, the IRC have set up their 'IRC Publication Sale

Extension Counter' at the library of HRS, which enables buyers to get the latest IRC publications at HRS itself.

Recently, the World Bank has approached HRS to train and help the Engineers of the state of Assam for setting up their own Road Research Labs at Guwahati. A presentation on the capacity of HRS was also made at World Bank, New Delhi, to enlighten the visiting Delegates of Afghanistan, who are in the process of establishing the research lab facilities for Afghan road development, under the World Bank Assistance.

11.6. INFRASTRUCTURE FACILITIES AT HRS

A combined Integrated Office Complex housing the Offices of all the Wings of Highways Department, an exclusive Training Centre with Training Building and separate Hostel facilities for Men and Women participants, Housing Quarters for all the Chief Engineers of the department, are all planned and are at various stages of development within the campus of Highways Research Station.

To infuse capacity lung space, greenery and artistic landscaping is proposed within the campus of the Highways Research Station, which is sure to improve its aesthetic appearance.

12.PLANNING, DESIGNS AND INVESTIGATION

This wing comprises one Chief Engineer, one Joint Chief Engineer, four Designs Divisions at Headquarters and six Investigation Divisions with their Headquarters at various places in Tamil Nadu.

This wing undertakes field investigation works at bridge sites, preparation of detailed designs, preparation of detailed drawings and quantity estimates and giving technical guidance for the bridge projects and detailed project reports for road projects proposed and implemented by various wings of the Highways Department.

Design divisions functioning at Headquarters carry out the design works. The field works are being carried out by the Investigation Divisions.

12.1. INVESTIGATION DIVISIONS AND THEIR ACTIVITIES

The Six investigation divisions with their Headquarters at Chennai, Trichy, Madurai, Tirunelveli, Salem, and Coimbatore undertake the following field works:-

12.1.1. Field Investigation

- Detailed investigation at bridge site and collection of field data.

- Obtaining required particulars from Public Works Department for River Bridges and from Railways for ROBs and RUBs.

12.1.2. Sub-Soil Investigation for Foundation Design

- Sub-soil investigation through exploratory bores to arrive at the bearing capacity of the sub-soil to design the foundation of the bridges.

12.1.3. Preparation of Reports and Drawings

- Recommending suitable proposals based on field and sub-soil investigations.
- Preparation of cross sectional and longitudinal sectional drawings along the stream & alignment and arriving at hydraulic particulars.
- Preparation of alignment drawings and specification report for the proposals and obtaining approval for the feasible proposals.
- Preparation of site plans and details for the works of formation of new bypasses and link roads.

12.2. DESIGNS DIVISIONS AND THEIR ACTIVITIES

The activities of designs divisions are as follows:

- Preparation of designs, drawings, quantity estimates and technical guidance for river bridges, ROBs, RUBs and grade separators and other highway structures.
- Scrutinizing the alternative designs furnished by the contractors and according approval.
- Checking the Detailed Project Reports prepared by the consultants who are engaged by the various wings of the department.
- Re-designing the bridges if there is any change in alignment and in Railway proposals etc.,
- Re-designing the foundation of bridges and other bridge components, if warranted as per the subsoil condition during execution.
- Scrutinizing and giving recommendations to facilitate issue of permit for non-standard heavy motor vehicles to ply on roads based on the rules prescribed.
- Scrutinizing and according approval for the structural design of bridges to be constructed by other departments.

12.3. WORKS COMPLETED IN 2013-14

During the above period, Preparation / Proof Checking of design and drawings for 22 ROBs / RUBs, 34 River Bridges, 5 Grade Separators, 2 Fly overs and 9 design modifications totalling 72 Bridge works have been completed by the Design Divisions.

12.4. WORKS TO BE TAKEN UP IN 2014-15

During 2014-2015, it is proposed to collect field particulars and prepare design for 45 ROBs / RUBs, 35 River Bridges, 3 Grade Separators, 2 Flyovers and one Pedestrian subway and 2 design modifications totalling 88 Bridge works. The design proof checking for integrated Chief Engineer's Office Complex in HRS Campus and other ROBs/ RUBs proof checking prepared by the consultants are also to be taken up.

13.TAMIL NADU ROAD DEVELOPMENT COMPANY LTD

Tamil Nadu Road Development Company (TNRDC) Ltd, a joint venture of Tamil Nadu Industrial Development Corporation Ltd (TIDCO) and a private sector company namely, Infrastructure Leasing & Financial Services Ltd (IL&FS), was incorporated in 1998 for identifying and implementing major infrastructure projects in road sector in the State of Tamil Nadu under Public Private Partnership format by attracting and mobilizing private sector investments.

In November 2009, TIDEL Park Ltd (TIDEL), promoted jointly by TIDCO and Electronic Corporation of Tamil Nadu (ELCOT), has completely acquired the equity shares of TNRDC held by IL&FS and thus TNRDC became a 50:50 joint venture company of TIDCO and TIDEL, both of which are undertakings of Government of Tamil Nadu.

13.1. PROJECTS IMPLEMENTED BY TNRDC SO FAR :

(a) East Coast Road Project (ECR) – Chennai Akkarai to Puducherry (km 22/300 – km 135/500)

TNRDC had entered into a long term Concession Agreement with Government of Tamil Nadu in December 22, 2000 and taken up the 113.20 km stretch from Kudimiyandithoppu near

Chennai-Akkarai to Koonimedu on the outskirts of Puducherry for improvement, operating and maintenance under PPP format.

TNRDC had completed the project at a cost of Rs.60 Crore much ahead of the scheduled completion date and the commercial toll operations started on March 24, 2002. The salient features of the project are:

(i) Widening the existing road to a two lane carriageway with paved/ hard shoulder configuration;

(ii) Realignment of several dangerous curves;

(iii) Value added services such as 24 hrs trauma care and ambulance services, round-the-clock highway patrolling and security services, vehicles break-down/tow away services, etc.

The regular maintenance works are also being carried out by TNRDC.

13.2. PROJECTS COMPLETED BY TNRDC AS MANAGING ASSOCIATES

(a) Railway Over Bridge (ROB) on NH 67 at Lalapet, Karur District

The Department of Road Transport and Highways, Government of India has proposed to construct a Railway Over Bridge on the level crossing at Lalapet on NH67 connecting Coimbatore and Thoothukudi and had appointed

TNRDC as its Managing Associate for the Project. The project costing about Rs.40 Crore has been completed and was opened for public use.

(b) Integrated Infrastructure Improvement of Guindy Industrial Estate

The Thiru Vi. Ka. Industrial Estate was the first Industrial Estate to be set up in the country and is situated in Guindy within the Chennai Metropolitan Area. Small Industries Development Corporation (SIDCO) which is Managing Associate has engaged TNRDC as its Managing Associate for implementing a comprehensive Integrated Infrastructure Development Programme at a cost of Rs.27.95 Crore. The scope of work included improvement of roads, construction of storm water drains, development of parking lots and provision of road furniture. The work assigned to TNRDC was completed in the year 2012.

13.3. PROJECTS UNDER IMPLEMENTATION BY TNRDC AS MANAGING ASSOCIATE

(a) Chennai Outer Ring Road – Phase I

The Government of Tamil Nadu has decided to provide a major connectivity Corridor on the western side to ease the congestion for free and quick flow of traffic. Administrative sanctions have been accorded for the development of

Chennai Outer Ring Road Project Phase-1 as a Green Field Project with the formation of dual three lanes with Service Roads for a length of 29.65 Km from Vandalur in NH-45 to Nemillichery in NH-205 Via Nazarathpet in NH-4 at a cost of Rs1081.40 Crore.

Tamil Nadu Road Development Company Ltd has been appointed as the "Managing Associate" for this project under Design, Build, Finance, Operate and Transfer (DBFOT) model with a Concession Period of 20 years.

At present 96% of the works have been completed. Provisional Completion Certificate for the part of the Project Highway from Ch:0+150 to Ch:28+550 has been issued. On completion of acquisition of additional land, the entire project will be completed soon.

(b) Chennai Outer Ring Road - Phase II

The Government have sanctioned the Chennai Outer Ring project Phase-II, a major six lane road connectivity project to a length of 30.50 Km from Nemilicheri in NH-205 to Minjur in Thiruvottiyur Ponneri Pancheti (TPP) Road via Padiyanallur in NH-5 at a cost of Rs.1075 Crore under the DBFOT with Semi Annual Annuity payment on the same model as Phase-I. TNRDC has been appointed as "Managing Associate" for Chennai Outer Ring Road Project Phase-II.

M/s.GVR Infra Projects Ltd – Ashoka Buildcon Ltd., Consortium have been awarded the work on Semi Annual Annuity basis. The Concession Agreement has been executed between Government of Tamil Nadu and M/s.GVR Ashoka Chennai ORR Ltd., Chennai on 18.09.2013 with a Concession Period of 20 years.

93% of Lands have been handed over to the Concessionaire on 10.03.2014 and the preliminary works are under progress. On completion of Land acquisition, the balance stretch of land will be handed over.

(c) Ennore Manali Road Improvement Project (EMRIP)/ Chennai Ennore Port Road Connectivity Project

The Project envisages the improvement of about 30 km road network in North Chennai with the objective of establishing seamless and efficient road connectivity from Chennai and Ennore Ports to NH network. The roads that are being improved include the Ennore Expressway, Manali Oil Refinery Road, Northern part of Inner Ring Road and Thiruvottiyur-Ponneri-Panchetti Road.

Recognizing the pioneering role played by TNRDC in conceptualizing and developing the Project, NHAI, the project lead sponsor, has engaged TNRDC as its Managing Associate.

Subsequently, due to modification of its scope, TNRDC has been re-designated as Supervision Consultant.

As on date, 85% of the works have been completed and the remaining works will be completed soon.

Under the rehabilitation and resettlement programme for the project affected families in Ennore Expressway, 1824 tenements have been constructed at Ernavoor. So far, 1791 families have been shifted to the new tenements.

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

M/s. Toshiba, a Japanese concern-JSW (JV) Turbine and Generator Pvt. Ltd., have set up a manufacturing plant in Andarkuppam Km.6/150 of Thiruvottiyur – Ponneri -Panchetti Road. The heavy Special Transport Vehicle (525T) will have to travel 7.35 km on the Thiruvottiyur-Ponneri-Panchetti (TPP) road, 4.8 km on North Chennai Thermal Power Station (NCTPS) road and 2.4 km on the Ennore Port road to reach Ennore Port. Among these three roads, Thiruvottiyur-Ponneri-Panchetti Road which is part of the Ennore Manali Road Improvement Project (EMRIP) is being improved in EMRIP project.

For the other two roads (i.e.)

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

(ii) Ennore Port Road km 0/0 – 2/4

The Government have sanctioned Rs.84 Crore for improvement of the above roads including cost for construction of bridges, Railway Over Bridge diversion road, shifting of utilities and land acquisition costs etc. Out of this, 75% of the cost will be borne by the Government and 25% shall be met from Assistance to States for Infrastructure Development of Exports (ASIDE) funds. The TNRDC will be the Managing Associate for this project.

Ennore Port Road work including construction of the Ennore Creek Bridge and the Buckingham Canal Bridge and a Bridge over utility pipes commenced on 02.09.2013 and as of now, 67% of work is completed.

Due to escalation in cost of raw materials and increase in amount of contribution payable to Railways. The project cost has increased to Rs.186.00 Crore which has been accepted 'in Principle' by the Government and under consideration of Tamil Nadu Investment Promotion Programme (TNIPP).

(e) Northern Port Access Road

The proposed Northern Port Access Road is an important link to the fast growing Ennore Port which handles major cargo movements. The proposed new road will connect the Northern Gate of Ennore Port and Thatchur on NH-5 with an additional spur road for connecting to the Thiruvottiyur – Ponneri - Pancheti (TPP) Road. This will also cater to the needs of the recently developed Kattupalli Ship Yard.

The total length of this road connecting Ennore Port to Thatchur will be about 21.15 Km and length of the TPP link Road will be 4.35 Km.

The Detailed Feasibility Report for this project was originally done by the Consultants for the NHAI and TNRDC has engaged the same consultant to update the Feasibility study and fixing the alignment with new Topographic Survey.

The Consultant made a presentation to the officers of TIDCO, TNRDC and Highways Department. The revised alignment was approved and demarcation of ROW by fixing stones is completed. The work is proposed for execution in two phases as under:

Phase-I: Construction of the road from Ennore Port entrance to Neidavoyal village (Km 0+000 to Km 6+200), from Neidavoyal village to

Vallur Link road (Km 4.350) totaling 10.550 Km length.

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

Orders have been issued to Highways Department to initiate Land acquisition under Highways Act 2001.

(f) Widening of East Coast Road from double lane into four lane from km 22/300 to km 55/800 including improvements to 13 curved stretches and 7 junctions from km 55/800 to km 135/500

The East coast Road from Akkarai to Puducherry state border was improved in 2001 to a two lane carriage way with paved shoulders and is being maintained by TNRDC as a Toll Road. The phenomenal increase in traffic over the past few years, increasing accidents in the absence of centre median and insufficient carriageway to cater to the growing traffic have necessitated the widening of this road to four lane with divided carriageway from Akkarai to Mamallapuram as phase I including curves and junction improvements between Mamallapuram to Puducherry border wherever necessary.

Based on the Detailed Project Report submitted to the Government by TNRDC, Administrative sanction was accorded for Rs.272.10 Crore.

A sum of Rs. 108.84 Crore was sanctioned being 40% of project cost to TNRDC and the balance will be mobilized by TNRDC. Tenders were called for and finalised and the agreement was signed on 28.02.2014.

The preliminary works are under progress.

(g) Reconstruction of existing bridge and Construction of additional two lane Bridge across River Palar in ECR (km 76/000)

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

Based on the above, an estimate for Rs. 85.19 Crore was prepared by the consultants for the "Construction of an additional new Four Lane Bridge on the upstream side and retaining the existing bridge for slow moving vehicles and pedestrians". The works is in progress**.**

13.4. IT EXPRESSWAY LTD (ITEL)

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

13.5. PROJECT SO FAR COMPLETED BY ITEL

(A) Rajiv Gandhi Salai (IT Corridor) Phase-I

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

1) The existing road is widened to a dual three lane carriageway with service road and Footpath
2) Provided trees and shrubs in the central median and maintained aesthetically.
3) Construction of service ducts/trenches for conveying utility lines including electrical, telephony and optic fibre cables/wires to avoid digging of road in future;
4) Water and sewer lines constructed beneath the footpath;
5) Implementation of a comprehensive Rehabilitation and Resettlement plan for rehabilitating the project affected families/ structures;

6) For safe road crossing, 15 FOBs have been provided at various locations;
7) Provision of value added services such as 24 hrs trauma care and ambulance service on call basis, round the clock patrolling and security service, vehicles break-down/ tow away services, etc;
8) Street lights for entire stretch on the road and automatic traffic signals at 16 locations maintained.

Besides the above, regular maintenance works are also being carried out by ITEL

13.6. PROJECT IN PIPELINE WITH ITEL

(a) Rajiv Gandhi Salai (IT Corridor) – Phase-II

In view of extending the Phase–I of Rajiv Gandhi Salai (IT Corridor) upto Mahabalipuram, the Government has proposed the formation of six lane road from Siruseri to Mahabalipuram for a length of 25 km, including two bypasses (Kelambakkam and Thiruporur) in Phase– II of Rajiv Gandhi Salai, under a viable financial arrangement through public private partnership.

The Government have sanctioned Rs.294.68 Crore for land acquisition works in 1st Phase.

At present the Land acquisition work is in progress. The Land Acquisition comprises of

13 villages to have 60 m width of road of which land has been acquired so far in 6 village. The total area of land to be acquired is 88.62 Hectares and the area so far acquired is 32.40 Hectares. Further Land Acquisition is in progress in various stages.

Furthermore DPR for the above scheme is in scrutiny.

(b) Multi Level Car Parking (MLCP) at Siruseri

The Honourable Chief Minister of Tamil Nadu has made an announcement, under Section 110, in the Legislative Assembly held on 1.4.2013, for "The Construction of a Multi Level Car Parking (MLCP) at Siruseri, under Public Private Partnership mode". It will be designed with 20 floors to accommodate 2000 cars and Bus Parking area to park 50 buses at a time. The project will be executed under Design, Finance, Build, Operate and Transfer (DBFOT) basis. The cost estimate is Rs. 200 Crore. The Tenders are under scrutiny for the preparation of DPR for this project.

(c) Elevated Road

The Honourable Chief Minister of Tamil Nadu, has made the announcement, under the Section 110, in the legislative Assembly held on 1.4.2013, for the construction of an Elevated Road from Taramani to Siruseri under Phase-I

and from Siruseri to Mahabalipuram under Phase-II, for a total length of 45 Km. Administrative sanction of Rs.5 Crore has been accorded for the preparation of DPR for the above work. The Tenders are under scrutiny for the preparation of DPR for this project.

13.7. FINANCIAL PERFORMANCE

13.7.1. TNRDC

Income from toll operations for the financial year 2013-14 is Rs.14.42 Crore in comparison to the previous year 2012-13 of Rs.13.83 Crore. The profit after tax for the financial year 2013-14 is Rs.5.65 Crore as against Rs.8.90 Crore in the previous year 2012-13. This is on account of periodic maintenance undertaken in the financial year 2013-14.

13.7.2. ITEL

Income from toll operations for the financial year 2013-14 is Rs.39.38 Crore in comparison to Rs.37.39 Crore in the previous financial year 2012-13. The profit after tax for the year 2013-14, has shown an increase from Rs.2.60 Crore in the year 2012-13 to Rs.4.22 Crore in year 2013-14.

Mannivakkam Flyover constructed across
SH-48 in Chennai Outer Ring Road

View of Amudhurmedu Busbay in Chennai Outer Ring Road

14.TAMIL NADU ROAD INFRASTRUCTURE DEVELOPMENT CORPORATION

Tamil Nadu Road Infrastructure Development Corporation (TNRIDC) was incorporated in the year 2005 as a wholly owned non-profit making Government of Tamil Nadu company under Section 25 of the Companies Act, 1956 to formulate, undertake, implement, upgrade and maintain the road infrastructure in the State of Tamil Nadu under any plan, programme, scheme of the State upon direction by the Tamil Nadu Government.

There were speedy developments of industries in and around Oragadam in Kancheepuram District. In order to encourage development of industries and to attract further industrial investment, Government initiated action to develop the road infrastructure facilities during the year 2005-06 and at an estimated cost of Rs.300 Crore and the scheme is under implementation with the revised estimated cost of Rs.462.42 Crore.

14.1. ORAGADAM INDUSTRIAL CORRIDOR PROJECT- PHASE-I

The following works were taken up for implementation in the first phase:

(i) **Singaperumalkoil-Sriperumpudur road (SH-57) (24.00 Km**) – Widening the road from single lane to four lane with centre median

(ii) **Vandalur – Wallajabad road (SH-48) (33.40 Km)** – Widening the road from two lane to four lane with Centre median.

(iii) **Construction of Grade Separator** at Oragadam junction in Vandalur-Wallajabad road.

These four laning road works are in progress by splitting the same into four packages as follows:

1	From Singaperumalkoil to Oragadam	12.00 km
2	Oragadam to Sriperumpudur (Including formation of Bypass to Ponthur village for a length of 2.39 Km)	12.00 km
3	From Vandalur to Oragadam	16.60 km
4	From Oragadam to Wallajabad	16.80 km

Out of 57.40 Km of the project corridor 44.60 Km have been completed. Out of the 44.60 Km, 32.16 Km have been handed over to Highways, Construction & Maintenance wing on 07.11.2013 for further maintenance. For a length

of 5 Km, forest clearance obtained. For a length of 4 Km Land Acquisition has to be completed and action is being taken to complete the Land Acquisition at the earliest. The work of construction of Grade separator has been completed on Right Side and opened for traffic and the Left Hand Side work will be completed within a couple of months. An expenditure of Rs.382.25 Crore has been incurred so far towards works and land acquisition

14.2. ORAGADAM INDUSTRIAL CORRIDOR PROJECT- PHASE-II

The Government have entrusted the second phase work of "Widening the stretch from 12/600 to 24/600 of Singaperumalkoil to Sriperumpudur road from 4 lane to 6 lane" at an estimated cost of Rs.86.65 Crore." The work is in progress. An expenditure of Rs.28.32 Crore has been incurred so far. The project is proposed to be completed by July 2015.

15.TAMIL NADU MARITIME BOARD

15.1. TAMIL NADU MARITIME BOARD

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

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

15.2. COASTLINE AND PORTS

The State of Tamil Nadu has a coastline of about 1076 Kms. Along this coastline, there are three Major Ports, namely, Ennore, Chennai and Tuticorin notified under the Major Port Trust Act, 1963 and 23 Non-Major (Minor) Ports notified under the Indian Ports Act 1908. The major ports come under the control of Government of India and the non-major ports come under the control of the State Government.

15.3. MINOR PORTS IN TAMIL NADU

The following are the minor ports either active or under various stages of development in Tamil Nadu:-

Table 15.1: Minor Ports in Tamil Nadu

Government Ports	Captive ports	Ports under process yet to be notified
1) Cuddalore 2)Nagapattinam 3) Pamban 4)Rameswaram 5) Valinokkam 6) Kanyakumar 7) Colachel	1) Kattupalli 2) Ennore 3) Mugaiyur 4) Thiruchopuram 5)Silambimangalam Shipyard 6) PY-03 Oil Field 7) Parangipettai 8) Kaveri 9) Vanagiri	1)Cheyyur (Panaiyur) 2)Marakkanam 3)Combined port facility at Sirkazhi Taluk

Government Ports	Captive ports	Ports under process yet to be notified
	10) Thirukkadaiyur 11) Thirukkuvalai 12) Punnakkayal 13) Udangudi 14) Manappad 15) Koodankulam 16) Chettinad Tharangampadi	

All the minor ports in Tamil Nadu, except Kattupalli port, are anchorage ports without berthing facilities and hence cargoes are transshipped from the vessels at mid-stream to the shore and vice-versa through barges or submerged pipelines.

15.4. ACTIVITIES OF MINOR PORTS

15.4.1. Government Ports

Out of the seven Government Ports, M/s. Chemplast Sanmar Ltd., imports Vinyl Chloride Monomar (VCM) for their P.V.C. factory established at Cuddalore SIPCOT Complex through their Captive Marine Terminal facility located within the port limits of Cuddalore Minor port limits. Similarly, M/s Chennai Petroleum Corporation Ltd., (CPCL) exports Diesel and Naphtha from their Narimanam (Nagapattinam

District) refinery through their captive open sea jetty located within the port limits of Nagapattinam port. Import of wooden logs and edible oil and Export of Cement are done occasionally at Cuddalore and Nagapattinam ports respectively. Small ships are piloted through Pamban Channel. Kanniyakumari and Rameswaram ports are used for passenger ferry service. There is no activity in other ports.

15.4.2. Captive Ports:

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

Out of the sixteen Captive ports, five ports, viz., Kattupalli Port (Thiruvallur), Ennore Minor Port (Thiruvallur), PY-03 Oil Field (Cuddalore), Thirukkadaiyur Port (Nagapattinam) and Koodankulam Port (Thirunelveli) have been permitted to operate the port either for import / export of cargo for their captive industry.

Out of the above five ports, at Ennore Minor Port and Thirukkadaiyur Minor Port, Liquid ammonia and Naphtha are being transferred directly from the vessel at Buoy Mooring System to the storage tank on shore through sub-marine pipelines and Containers, General and Project

Cargo and Automobiles are handled through Kattupalli port. Presently, there are no activities in the ports of PY-03 Oil Field, Thiruchopuram and Koodankulam. The remaining eleven ports are under various stages of obtaining the requisite statutory approvals / financial closure to commence the construction of the port based industry/port.

15.5. COMMODITIES HANDLED IN MINOR PORTS

15.5.1. Government Ports:

Sl. No	Port	Shipped	Landed
1.	Cuddalore	----	Vinyl Chloride Monomer, Timber Logs
2.	Nagapattinam	Diesel and Naphtha	Edible Oil and General cargo

15.5.2. Captive Ports:

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

15.6. MINOR PORT DEVELOPMENT POLICY

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

15.6.1. Objectives of the Port Policy

- To facilitate establishment of Port based Thermal Power Plants by providing exclusive port facilities to Import Coal, Naphtha, Oil and Natural Gas.
- To provide port facilities to promote export oriented industries and port based industries along the coastal Districts of Tamil Nadu.
- To decongest Highways and Railways by providing facilities for coastal traffic along the East Coast.

- To promote Tourism, Cruises and Coastal trade.
- To provide facilities to encourage ship repairing and construction of floating crafts.

15.7. INITIATIVES OF THE BOARD IN DEVELOPMENT OF PORTS

15.7.1. Kattupalli Port

The **Hon'ble Chief Minister** inaugurated, the Shipyard-cum-Minor Port complex constructed by M/s L&T Shipbuilding Limited at Kattupalli on 30.01.2013.

As part of the port operations, the company has been handling, General and Project Cargo in addition to the captive activities at the Shipyard-cum-Minor Port complex.

15.7.2. Development of a Green Field Port at Nagapattinam

The existing Nagapattinam Minor Port, located at the mouth of the Kaduvaiyaru river, is a lighterage port handling general cargo. Historically this port was serving the passenger trade between Nagapattinam and Singapore/Malaysia. The port was also used for import of wheat and fertilizers. Consequent to the passenger ship meeting with the fire accident and reduction of import of wheat and fertilizers due to the change in Import Policy, the activities

at the port came to a standstill. With the Nagapattinam town situated around the Nagapattinam Minor Port, expansion of the existing port became difficult.

As such, it was proposed to prepare a Techno Economic Feasibility Report by engaging I.I.T., Madras to develop an All Weather, Deep Water, Direct Berthing, Greenfield Port, adjacent to the existing Nagapattinam Minor Port. The I.I.T., Madras, in their report, has recommended developing this port as an All Weather, Deep Water, Direct Berthing Port at an estimate of Rs.380 Crore.

The primary and secondary hinterland of the proposed port at Nagapattinam comprises of Nagapattinam, Perambalur, Villupuram, Salem, Namakkal, Karur, Thanjavur, Thiruvarur and Erode districts.

Accordingly, the Government vide G.O.Ms. No.7, Highways and Minor Ports (HF-2) Department, dated 20.01.2012, have approved development of an All Weather, Deep Water, Direct Berthing, Greenfield Port at Nagapattinam on Public Private Participation (PPP) mode through a competitive bid process.

Tamil Nadu Maritime Board has engaged M/s. i-Maritime Consultancy Private Limited, Mumbai as a consultant for providing consultancy

service for the selection of the prospective developer. The draft model concession agreement & bid document has been submitted by the consultant. The Board has formed a Technical Sub-Committee to examine these documents. The technical sub-committee has submitted its recommendations which have been referred to consultant. M/s. i-Maritime Consultancy Private Limited, Mumbai have been requested to get the Techno Economic Feasibility Report, updated till 2013, so that, it reflects the correct status of the project viability in line with the cargo handling potential, so that bid document can be finalised.

15.7.3. Development of a Port at Cuddalore

The primary and secondary hinterland of the proposed Greenfield port at Cuddalore comprises of Cuddalore, Perambalur, Villupuram, Salem, Namakkal, Karur, Thanjavur, Thiruvarur and Erode districts. The Cuddalore district has a sizeable industrial composition with over 30 large scale industries. It also has a number of Small Scale Units and Cottage industries engaged in the development of small, medium and large scale industries in Tamil Nadu. SIPCOT has set up 1,266 acres of Industrial complex in phases. Apart from the SIPCOT complex, SIDCO also houses and industrial complex at Semmandalam, which caters to a number of Small Scale Units.

The Government of India has approved the proposal of the Tamil Nadu Government for setting up a Petroleum, Chemical and Petrochemical Investment Region (PCPIR) in Cuddalore and Nagapattinam districts. Many imported coal based Thermal Power Plants are planned/under implementation in Cuddalore District.

Tamil Nadu Maritime Board has decided to approve the proposal of appointment of a consultant for developing the existing Cuddalore Minor Port on PPP Mode. The Project Concept Note of the development of Cuddalore Minor Port and the application for assistance from Project Preparation Fund for engagement of consultant was sent to the Government for obtaining the approval of TNIDB for the engagement of the consultant. TNIDB has approved an in-principal approval for sanction of Rs.40,00,000/- from the Project Preparation Fund of the TNIDB for engagement of a consultant for preparation of Techno Economic Feasibility Report, Bid Document, Concession Agreement for developing the existing Cuddalore Minor Port on PPP mode to Tamil Nadu Maritime Board. The Tamil Nadu Maritime Board decided to call for final quotations from the listed companies of TNIDB abstract dated 28.12.2013. The bids which

received from the companies approved by TNIDB are under process now.

15.7.4. Expression of Interest for the development of Ports at Silambimangalam Ship Yard Port.

The Tamil Nadu Maritime Board has decided to invite an Expression of Interest for the development of ports at Silambimangalam ship yard port area location. The draft Expression of Interest (EOI) for the development of minor ports and port related facilities / activities at Silambimangalam region in Cuddalore District, Tamil Nadu has been approved by the Board and expression of interest has been called for, and under process.

15.7.5. Development of Ports of Rameswaram, Valinokkam and Kanyakumari.

The Tamil Nadu Maritime Board decided to engage a consultant through a bidding process to analyse the potential viability of developing the ports of Rameswaram, Valinokkam and Kanyakumari. The consultancy work has been awarded to M/s. ITCOT Consultancy and services Limited, Chennai. The Techno Economic Feasibility Report has been prepared by M/s. ITCOT Consultancy and Services Limited, Chennai and under process.

15.8. OTHER INITIATIVES OF THE BOARD.

15.8.1. Construction of New Administrative Office Building.

The Government, vide G.O.Ms.No.52, Highways and Minor Ports (HF2) Department, dated 30.03.2012, has approved the revised administrative sanction for construction of a New Office building for Tamil Nadu Maritime Board in the 8 grounds and 554 Sq. Ft. of land owned by Tamil Nadu Maritime Board at Greenways Road, Adyar, at a cost of Rs.14.90 Crore.

This Board has occupied third and fourth floor for its own purpose and rented out the first and second floors to Tamil Nadu Road Sector Project and National Highways Authority of India respectively.

The building is provided with the latest amenities, viz., U.G. Sump, Water treatment and R.O. plant, Sewage Treatment plant, A.C, 24x7 D.G. backup, The Administrative Building of Tamil Nadu Maritime Board was inaugurated by Hon'ble Chief Minister of Tamil Nadu on 20.06.2013.

15.8.2. Establishing a Maritime College at Tuticorin.

In the engineering colleges around Chennai, Maritime courses are taught under a Department and there is no dedicated Maritime College. As such, the Board had proposed to establish a dedicated Maritime College at Tuticorin. The Government vide G.O.Ms.No.6, Highways and Minor Ports (HF 2) Department, dated 19.01.2012 had approved the above proposal and instructed that it be done on Public Private Participation (PPP) mode. For the purpose of establishing this College, 6 hectares of land at Tharuvaikulam in Tuticorin District was identified. The District Collector, Tuticorin has also granted enter upon permission for this land. To assist Tamil Nadu Maritime Board in the bid process, M/s ITCOT Consultancy and services were engaged through a bidding process and they have submitted the bid document containing Technical and Financial Eligibility Criteria of the bidders, financial selection criteria and model concession Agreement that would be entered into with the successful bidder. The updated draft Techno-Economic Feasibility Report is under the consideration of the Government for obtaining approval from TNIDB.

15.9. REVENUE OF THE BOARD FOR 2013-14

The Government of Tamil Nadu brought out a new Minor Ports Development Policy defining the licensing process for Captive and Commercial Ports and also enabling the Captive ports to handle other Commercial cargo to facilitate optimum usage of port facilities.

In the year 2013-14, about 8,66,333 M.Ts. of cargo and 3127 containers were handled through the 22 Minor Ports and the Board earned about Rs.19.37 Crore towards the Port and Cargo dues.

From the above, Rs.4.84 Crore is collected by Tamil Nadu Maritime Board through land lease rent.

15.10. VISION OF MARITIME BOARD

The Government of Tamil Nadu, in its "VISION 2023" document, has targeted attracting private investment to the tune of about Rs.15,000 Crore in the port sector alone.

Keeping the above target in mind, this Board aims to attract about Rs.5000 Crore investment in the next five years and another Rs.10,000 Crore in the subsequent five years.

This will increase the cargo throughput through the non-major ports to about 50 Million

Metric Tonnes in the first five years and to take it to about 150 MMT in the subsequent five years.

To achieve this target, the Tamil Nadu Maritime Board will invite proposals and promote non-major ports through private investment or on Public Private Participation (PPP) mode.

15.11. TAMIL NADU MARITIME ACADEMY

The Tamil Nadu Maritime Academy at Thoothukudi is functioning under Tamil Nadu Maritime Board. The Academy has so far conducted 21 batches of pre-sea (GP) rating courses. It is conducting General Purpose Crew training Course of 6 months duration with 40 trainees per batch. The Academy is also conducting five STCW-95 courses namely, 'Personal Survival Techniques', 'Elementary First Aid', 'Personal Safety and Social Responsibility', 'Oil Tanker Familiarization' and 'Fire Prevention and Fire Fighting'. The 22nd batch of GP rating course has commenced from January 2014.

16.POOMPUHAR SHIPPING CORPORATION LIMITED

16.1. INTRODUCTION

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

16.2. ADMINISTRATION

The Corporation is headed by the Chairman. The Managing Director is the chief executive. The affairs of the Corporation are managed by the Board of Directors consisting of officers nominated by the Government of Tamil Nadu. The day to day activities are executed by various departments like technical, operation, finance and personnel & administration headed by qualified persons in the respective fields. The human resources of the Corporation is 120 personnel ashore, apart from the floating staff of 140 personnel for operation of three own vessels.

16.3. ACTIVITIES

The core activities of the Corporation are transportation of thermal coal along the east coast of India and transportation of passengers from the shore of Kanyakumari to Vivekananda Rock Memorial and Ayyan Thiruvalluvar statue.

16.4. TRANSPORTATION OF COAL

16.4.1. Transportation of coal for TANGEDCO

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

16.4.2. Transportation of coal for NTECL

The Corporation is also transporting coal through chartered vessels for M/s. NTPC Tamil Nadu Energy Company Ltd., (NTECL), a joint venture Company of TANGEDCO and NTPC, from the load ports of Paradip and Gangavaram to

Ennore for their 3 x 500 MW thermal power stations at Vallur, North Chennai, as per the Memorandum of Understanding.

16.4.3. Discharge operation and workshop at Tuticorin

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

16.4.4. Ferry Service at Kanyakumari

Besides transporting coal to TANGEDCO and NTECL, this Corporation is also operating passenger ferry service from the shore of Kanyakumari to the Vivekananda Rock Memorial and Ayyan Thiruvalluvar statue. For transporting the passengers, three ferries namely M.L.Guhan, M.L.Pothigai and M.L.Vivekananda with a seating capacity of 150 passengers each are being used.

16.5. PRICING POLICY

As the Corporation was formed with a main objective of providing the service of transportation of coal to TANGEDCO, the Corporation operates its own vessels on "Cost

plus Return on Equity of 12%" and chartered vessels on "No Profit and No Loss" basis.

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

16.6. PERFORMANCE

16.6.1. Coal transportation:

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

The physical and overall financial performances of the Corporation during the last three financial years are as follows:

Table 16.1: Physical and Overall Financial Performance of Poompuhar Shipping Corporation Limited

Year	Quantity of coal received at load ports	Quantity of coal moved	Turnover	Profit
	(In lakh MT)		(Rs.in Crore)	
2011-12	126.04	126.60	492.63	1.51
2012-13	131.53	127.60	544.90	5.17
2013-14	147.24	150.10	752.40	7.29*

*Note: 2013-14 figures are estimates.

16.6.2. Passenger transportation:

As a result of revision of tariff by the Government of Tamil Nadu w.e.f. 10.07.2012, the ferry service has earned a profit of Rs.166.19 lakhs during 2012-13.

The physical and financial performances of Kanyakumari ferry service during the last three financial years are as follows:

Table 16.2: Physical and Financial Performances of Kanyakumari Ferry Service

Year	No.of passengers Transported (in lakhs)	Fare collection (Rs.in Lakhs)	Profit/Loss (Rs.in Lakhs)
2011-12	20.26	395.84	(-) 46.65
2012-13	20.59	632.01	166.19
2013-14	18.70	816.13	236.35*

*Note: 2013-14 figures are estimates.

16.7. PLANS FOR 2014-15:

16.7.1. Coal transportation

The Corporation proposes to transport the total estimated coal allotment of 194.04 lakh MT and 36.40 lakh MT by Indian coal companies to TANGEDCO and NTECL respectively through its own and chartered vessels.

17.CONCLUSION

The Government of Tamil Nadu has given much emphasis to the development of road infrastructure over the past few years.

The Comprehensive road infrastructure development programme introduced by the **Hon'ble Chief Minister** in the year 2004-2005 has paved way for the substantial growth of road network in the state. The Comprehensive road infrastructure development programme ensured provision of good quality roads, connectivity to the villages. Major shift to scientific approach has resulted in the enviable safe road network in the state. The Government of Tamil Nadu has given top priority to safety of the road users considering the ever-increasing growth of vehicles.

Highways and Minor Ports Department is one of the first departments that has started implementing the goals of the **Hon'ble Chief Minister's** Vision 2023. Some of the projects identified under Vision 2023 are in various stages of implementation. Work on Chennai Outer Ring Road Phase I has been substantially completed and Outer Ring Road Phase II has already commenced. The Detailed

Project Reports for Project Corridors in the second phase of the Tamil Nadu Road Sector Project (TNRSP) funded by World Bank and Chennai Peripheral Road are under preparation.

Infrastructure works in the Chennai Metro Region costing about Rs.2000 Crore are prioritized for JICA funding which include Grade Separators, Foot Over Bridge, River Bridge and Skywalk.

Under the inspirational leadership of the **Hon'ble Chief Minister** of Tamil Nadu various measures have been under taken to ensure the quality of the road infrastructure and the integrating of various IT solutions has helped in capacity augmentation, transparent functioning and effective planning by the Department.

While a considerable amount of success has been achieved in the past three years, the department is conscious of the challenges ahead. Provision of world class connectivity and upgradation of the delivery of services associated with a firm and unwavering commitment to the creation of core infrastructure remain our constant endeavour.

The department is taking continuous and constant efforts for provision of quality road infrastructure under the inspiring leadership of our **Hon'ble Chief Minister** thus striving to improve the quality of life of every citizen residing in the State.

Edappadi K. Palaniswami

Minister for Highways and Minor Ports