HIGHWAYS AND MINOR PORTS DEPARTMENT

DEMAND NO - 21

POLICY NOTE ON

ROADS, BRIDGES, MINOR PORTS AND SHIPPING

POLICY NOTE

2011 - 2012

Edappadi K. Palaniswami,
Minister for Highways and Minor Ports

GOVERNMENT OF TAMIL NADU

2011

HIGHWAYS AND MINOR PORTS

DEPARTMENT

DEMAND NO - 21

POLICY NOTE

2011-2012

HIGHWAYS AND MINOR PORTS DEPARTMENT

POLICY NOTE 2011-12

INDEX

HIGHWAYS AND MINOR PORTS DEPARTMENT

DEMAND NO - 21

POLICY NOTE ON

ROADS, BRIDGES, MINOR PORTS AND SHIPPING

2011 – 2012

INTRODUCTION

Tamil Nadu, traditionally has had a strong industrial base which contributes substantially to the industrial production of the country. Road and bridge infrastructure along with ports play a vital role in the development of key sectors of the economy like Industry, Technology, Agriculture etc.

Highways & Minor Ports Department administers the road infrastructure and minor ports in Tamil Nadu.

1.1 HISTORY OF THE DEPARTMENT

Government of Tamil Nadu has the unique distinction of creating a separate Highways Department as early as in 1946 exclusively to attend to Roads and Bridges in the State. It was a part of Public Works Department earlier but is now a separate and distinct department. A new post of Secretary to Government, Highways Department came into being in 1996.

The objectives of the department are to maintain and improve the roads under the control of the Government, and to provide all weather road connectivity to rural habitations. Tamil Nadu was the forerunner in bringing out standard specifications for the roads and bridges in the year 1954. The department is also in-charge of improvement and maintenance of National Highways in the State. Minor Ports were also later brought under the purview of this department. Subsequently, this department was renamed as '**HIGHWAYS & MINOR PORTS Department'**.

1.2 HIGHWAYS DEPARTMENT

Highways Department of Tamil Nadu aims to develop and maintain the Highway network in the State, ensure road safety and hassle free traffic.

Tamil Nadu is the eleventh largest state in the country with a total area of 1,30,058 Sq. Km. The density of the population in the State is 555 persons / Sq.Km. The vehicle population which was 27,325 in 1951 increased to 1,36,60,717 in 2011 registering an increase of 500 times. The density of road network in Tamil Nadu as on 2011 is 280 Km per lakh population and 156 Km per 100 Sq.Km area and it is well above the all India average of 103 Km. The road network increased by about 6.26 times (i.e) from 32,307 km to 2,02,296 km since 1951 to 2011. Out of this, 61674 Km of roads are maintained by Central and State Highways Department. (***)

Categories of roads and their length as on 01.04.11

Category of road	**Length (Km)**
National Highways (NH)	4,861
State Highways (SH)	10,561
Major District Roads (MDR)	11,315
Other District Roads (ODR)	34,937
Total	**61,674**

*** Source – Web site of Department of Statistics

Types of Bridges and their numbers

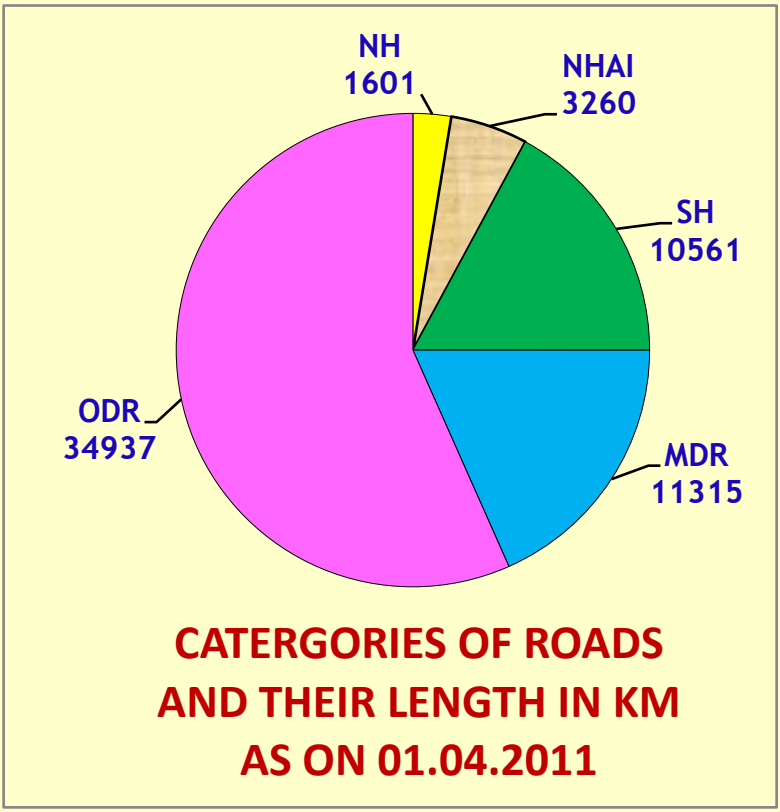
Types of Bridges	Nos.
Major Bridges	1,357
Minor Bridges	7,936
Culverts	1,08,915
Road Over Bridges at Railway level crossing (ROB)	190
Road Under Bridges at Railway level crossing (RUB)	59
Total	**1,18,457**

Apart from this, roads are also maintained by local bodies and other departments.

1.3 MINOR PORTS WING

The Minor Ports Department oversees the activities of Tamil Nadu Maritime Board and Poompuhar Shipping Corporation.

Along the 1076 km coastline of Tamil Nadu, there are 3 major ports at Chennai, Ennore and Tuticorin and 22 minor ports. The major ports developed under the Major Port Trust Act of 1963, are functioning under the control of Government of India and the minor ports developed based on Indian Ports Act of 1908 are functioning under the control of State Government.



CATERGORIES OF ROADS AND THEIR LENGTH IN KM AS ON 01.04.2011

Tamil Nadu Maritime Board performs the following functions:

- Management of Minor Ports.
- Creation of Minor Ports through Private participation.
- Conducting ship related training for youth to provide employment opportunities.

Poompuhar Shipping Corporation Limited transports the coal to the Thermal Power Plants of TANGEDCO by sea. The Corporation also operates tourist ferry service from Kanyakumari to Vivekananda Rock Memorial and Tiruvalluvar Statue.

The policies of the Government for the effective functioning of this Department are outlined in the chapters that follow.

HIGHWAYS DEPARTMENT

2. POLICY OUTLINE

Roads are essential for safe, economic and expeditious transport of passengers and goods. Development of road infrastructure is necessary to provide connectivity and to cater to the ever increasing traffic.

The vision of the Highways Department is to increase the capacity, connectivity, efficiency and safety of the Highways System so as to enable balanced socio-economic development of all sections of the people and all regions of the state.

2.1 ROADS MAINTAINED BY THE DEPARTMENT

The lane wise details of roads under the maintenance of this Department are given in **Table 2.1.**

2.1.1 NATIONAL HIGHWAYS

The National Highways are roads connecting different State capitals, Major Ports, large industrial areas and tourist centres. These roads have heavy traffic intensity.

The total length of National Highways in Tamil Nadu is 4861 Km of which 1601 Km are maintained by National Highways wing of the

State Government and 3260 Km are maintained by the National Highways Authority of India (NHAI).

2.1.2 STATE HIGHWAYS

The State Highways provide connectivity to district head quarters with National Highways and neighbouring states. These stretches have heavy traffic intensity next only to National Highways. The total length of State Highways in Tamil Nadu is 10561 Km.

2.1.3 MAJOR DISTRICT ROADS

The Major District Roads connect towns and municipal areas with district head quarters. 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 11,315 Km.

2.1.4 OTHER DISTRICT ROADS

The Other District Roads connect villages and marketing centres with Taluk headquarters and other important roads nearby. These roads are important as they provide mobility for transport of agricultural produce from villages to nearby marketing centres. These roads are the backbone of 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 in the category of ODR - Sugarcane roads.

There are 34,937 Km length of Other District Roads including Sugarcane roads.

As per the vision of the department steps taken to increase the capacity of the highway system, to ensure quality and improve efficiency and to enhance road safety are outlined below.

2.2 ROAD CAPACITY

Roads require to 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 as given below.

- **Providing additional connectivity and upgrading roads**

  Roads are being formed along new routes to connect important towns. Also, existing roads are upgraded based on traffic and need.

- **Widening of roads**

  National Highways roads 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.

Widening of all Intermediate lane State Highways to Double lane(7.0m width) and Widening of all Single lane Major District Roads (MDR) to Intermediate lane (5.50m width) have been proposed over a three year period to augment the traffic capacity of these roads.

- **Formation of Byepasses**

  To avoid traffic congestion in major cites and towns byepasses are being formed.

- **Construction of ROBs / RUBs**

  ROBs / RUBs are being constructed at level crossings to avoid the traffic congestion and accidents and also to allow free flow of traffic.

- **Construction of Bridges**

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

2.3 ROAD QUALITY AND EFFICIENCY

Efficiency and quality of the Highways system are of paramount importance. Steps are planned to provide efficient pavement catering to the demands of the traffic, smoother riding surface for greater riding comfort, requiring less maintenance and better durability.

Good riding conditions result in reduced journey time between the origin and destination. Less wear and tear of the automobile parts, less vehicular maintenance etc., due to the better road conditions ultimately result in greater economical benefits to the nation. The following steps are being taken to achieve the above.

2.3.1 ROAD USER SATISFACTION

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 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.

2.3.2 ROAD MANAGEMENT SYSTEM (RMS)

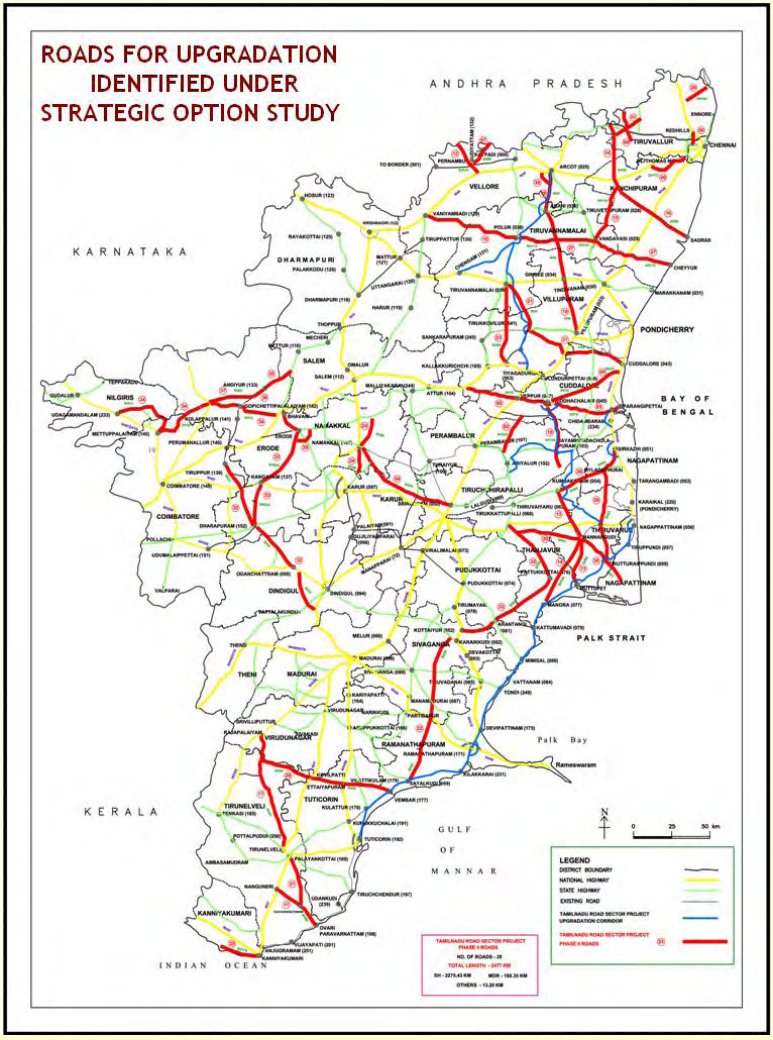
In order to keep abreast with the latest developments at the field level, the Department has established a Road Management System (RMS). The RMS is a computerised system to

manage the maintenance of road network more judiciously and efficiently. This application is a web enabled and hosted system. The RMS consists of a server which holds information collected using ROMDAS (Road Measurement and Data Acquisition System) about the total network of roads (21,876 km) comprising SH and MDRs in Tamilnadu. This data is used to analyze the action plan for the current year based on budget allocation and also for forthcoming years. The HDM4 software helps in analyzing and prioritizing the list of works which are to be taken up for improvements in the forthcoming years. Now, the data is being updated by the concerned divisions.

2.3.3 STRATEGIC OPTION STUDY (SOS)

In order to identify and prioritize the roads for improvements, the department has under taken a STRATEGIC OPTION STUDY under the aegis of TNRSP.

Based on this a shelf of projects has been identified for future implementation and a list of roads has been prepared which are to be taken up for improvements in the forthcoming years on priority basis. In the first phase, a total length of 2500 Km of State Highways and Major District Roads has been selected after STRATEGIC OPTION STUDY. Indian Institute of Technology (IIT) has been appointed as consultant to submit the feasibility report to improve the above roads and the study is in progress. Based on that report, action will be


ROADS FOR UPGRADATION
IDENTIFIED UNDER
STRATEGIC OPTION STUDY
ANDHRA PRADESH
KARNATAKA
KERALA
TAMILNADU
BAY OF BENGAL
PALK STRAIT
Palk Bay
GULF OF MANNAR
INDIAN OCEAN
Rameswaram
TIRUVALLUR
CHENNAI
KANCHIPURAM
VELLORE
TIRUVANNAMALAI
VILLUPURAM
PONDICHERRY
CUDDALORE
DHARMAPURI
SALEM
NAMAKKAL
ERODE
NILGIRIS
COIMBATORE
TIRUPPUR
KARUR
TIRUCHIRAPALLI
PERAMBALUR
NAGAPATTINAM
THANJAVUR
PUDUKKOTTAI
SIVAGANGA
RAMANATHAPURAM
MADURAI
THENI
DINDIGUL
VIRUDUNAGAR
TUTICORIN
TIRUNELVELI
KANNIYAKUMARI
LEGEND
DISTRICT BOUNDARY
NATIONAL HIGHWAY
STATE HIGHWAY
EXISTING ROAD
TAMILNADU ROAD SECTOR PROJECT UPGRADATION CORRIDOR
TAMILNADU ROAD SECTOR PROJECT PHASE II ROADS
TAMILNADU ROAD SECTOR PROJECT PHASE II ROADS
NO. OF ROADS - 29
TOTAL LENGTH - 2477 KM
SH - 2275.43 KM
MDR - 188.35 KM
OTHERS - 13.26 KM
N
0 25 50 km

taken to receive the aid from the World Bank and other External financial agencies to improve the roads at a cost of Rs. 5000 Crore. This method of selection of list of roads for upgradation shall be adopted henceforth.

2.3.4 COMPUTERISATION

To strengthen the present administrative set-up and to increase efficiency, action has been taken for computerization of all the wings / offices of the department. 1,779 computers have been provided to 751 offices right from Chief Engineer's office to section office of all wings of the department.

Highways Department is in the process of 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 department is being computerized and necessary hardware and software for this purpose are being installed. The software will be web enabled to the extent possible.

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

To automate the existing manual procedures in Highways Department through computers, 'Integrated Project, Human Resource & Finance Management System (P&FMS)' has been taken up. All the data related to important projects will be digitized and made available in the system in electronic format. Also establishment related particulars will be stored in the data base. This will ensure efficient and transparent functioning of the department.

2.3.4.2 Geographic Information Systems (GIS)

The Tamil Nadu Road Sector Project (TNRSP) has deployed consultancy services to customize, integrate and implement GIS Software for the Department. The envisioned system includes improvement of technical skill and management capabilities of the Department. The GIS based information system is being developed based on the latest map of Survey of India. The GIS will be integrated with other applications such as RMS, P&FMS.

2.3.5 QUALITY CONTROL

For improvement and maintenance of roads and bridges a lot of funds are spent through Highways Department. In order to ensure quality of these works, a 3 tier quality

control system is established under an exclusive wing.

2.3.6 IMPROVING DELIVERY SYSTEMS

2.3.6.1 Comprehensive Road and Traffic Planning

Highway development needs to take into account the needs of the future like Mass Rapid Transport as well as of different road users like pedestrians and two-wheelers. For this integrated and comprehensive planning is a prerequisite. This is especially true of urban and peri-urban areas which are fast developing and where seamless blending of various transport options is required. It is planned to focus on this aspect in all future programmes especially in Chennai and other major cities.

2.3.6.2 Public Private Partnerships

The Highways Department has usually restricted its activities to the available budget. Demands are many but only a few can be fulfilled every year. So infrastructure deficit continues and infrastructure development becomes a slow process. A paradigm shift is needed from this to an approach where needs of different users are considered and plans evolved in an integrated and holistic manner and then funding is tied up. This will ensure that infrastructure delivery is faster.

It is obvious that for this paradigm shift resources need to be available and PPP is one method through which resource mobilisation is possible as mentioned in the budget speech. The available resources can be leveraged through PPPs so that infrastructure development is faster.

2.3.6.3 Performance Based Maintenance Contract (PBMC)

As announced in the budget speech PBMC is one method of ensuring accountability in the maintenance of roads. This has already been tried in some stretches on a pilot basis. Based on this new schemes will be taken up.

2.3.6.4 Land Pooling

It has become increasingly difficult to compulsorily acquire land for widening roads as well as forming byepasses. Land owners are reluctant to part with their lands, which is leading to delays in project execution. To ensure that they are co-opted as partners in the development process, it is proposed to try out the land pooling system as announced in the budget speech. Through this scheme, land is pooled and road grids can be neatly formed. This has proved very successful in some parts of the world and other states in India.

2.3.7 INTERNATIONAL STANDARD ORGANIZATION 9001:2008 CERTIFICATION (ISO 9001:2008)

As a part of re-organization of administrative set-up, 5 offices have obtained I.S.O (International Standard Organization) 9001-2008 Certification. Proposal for obtaining I.S.O Certification for the Office of the Chief Engineer (H), Quality Assurance & Research, Chennai and Regional Labs at Tanjavur, Tirunelveli, Madurai, Coimbatore and Offices of the Superintending Engineer (H), Construction and Maintenance, Chennai, Madurai, Salem and Tirunelveli has been taken up.

2.4 ROAD SAFETY

In view of the increasing road traffic and congestion, safety of road users, especially pedestrians, cyclists and those travelling in smaller vehicles etc., has come to the notice of Government. During 2002 – 2003, the number of fatalities was 9935 and as of 2011, it is 14032. Number of vehicles during 2002 – 2003 was 56,58,097 and it has increased to 1,36,60,717 in 2011. Number of fatalities per 10,000 vehicles during 2002 – 2003 was 17.56 and through Road Safety measures it has been reduced to 10.27 at present.**

*** (Source – Transport Department and State Transport Planning Cell (STPC) websites)*

The department has identified several critical junctions as black spots. Geometrical improvements have been made to reduce the accidents and to provide safe and comfortable driving for the users. In addition to the above, the department has proposed construction of byepasses and flyovers at the intersection of NH and SH which are identified as critical junctions. Also, Road Safety Awareness programmes are being conducted. The World Bank Mission has appreciated the reduction in accidents as an impact of implementation of Road Safety Programme.

2.4.1 ROAD ACCIDENT DATA MANAGEMENT SYSTEM (RADMS)

Road Accident Data Management System (RADMS) is a web enabled GIS based software developed for Tamil Nadu. With the assistance of the World Bank, this system is being implemented through Tamil Nadu Road Sector project wing of the Highways Department in coordination with Police and Transport Departments.

The objective of the system is to collect accident data, analyze the cause of accidents and to improve road safety measures.

Accident Data is being collected by the three departments and uploaded in the system. This data is analyzed and interventions are implemented by the concerned department to improve Road Safety.

2.4.2 ROAD SAFETY AWARENESS

Road safety awareness programme is being implemented through the Institute of Road Transport. This includes formulation of detailed action plan, creating awareness among the drivers of three/four wheeler, school students and general public about the road safety measures, find ways and means to avert collision with vehicles parked on the road side.

2.5 ENVIRONMENT FRIENDLY MEASURES

Road infrastructure is planned in consonance with the environmental conditions of the local area. It is proposed to use sustainable technology utilizing alternate materials for road infrastructure, thereby conserving the Ecology. The following eco-friendly measures are being adopted:

2.5.1 PLANTATION

During the widening of roads cutting of trees located along the roads is inevitable. To compensate, for every tree cut several new saplings are planted. In addition to the above, a lot of avenue plantation is proposed in the land available within the office premises of the department. Taking an eco-friendly view and to reduce global warming, the department is implementing the plantation program along the boundary of the roads.

2.5.2 RAIN WATER HARVESTING

To replenish the ground water, rain water harvesting is being implemented in all bridges, roads and Government buildings with either open or closed drainage facilities based on the site conditions. It is important to note that proper drainage of storm water away from the road helps to maintain the durability of the roads.

2.6 COMMITEES FOR EFFECTIVE FUNCTIONING

For effective functioning of the department the following committees have been set up.

2.6.1 TECHNICAL AUDIT COMMITTEE

To ensure that the prescribed technical guidelines are properly followed in all the estimates of road and bridge works and to execute the works economically, a "Technical Audit Committee" comprising all the Chief Engineers of the Highways department has been constituted. It provides technical guidance for works costing more than Rs. 2 Crore and based on this guidance estimates are prepared and works executed.

2.6.2 COMMITTEE ON REVISED ADMINISTRATIVE SANCTION

Two Revised Administrative Sanction (RAS) committees have been constituted for

quick processing and early approval of RAS proposals for works involving change in design, price variation or additional items.

The first is the Technical committee on Revised Administrative Sanction comprising 3 retired Chief Engineers of the department scruitinises the deviations involved in the works requiring RAS and recommends the cases to the second committee which is the Revised Administrative Sanction (RAS) Committee. This committee comprises representatives of Government in Finance and Highways Department in addition to 3 Chief Engineers from Highways Department.

2.6.3 PURCHASE COMMITTEE

For purchase of equipment and software needed for Quality Assurance and Research wing and Planning, Design and Investigation wing a committee comprising 6 members has been constituted in this department.

TABLE 2.1

LANE WISE DETAILS

Sl. No.	Category of Road	Single lane	Intermediate lane	Double Lane	Multi lane	Total
1	National Highways (NH)					
	a)National Highway wing	13	62	1485	41	**1601**
	b)National Highway Authority of India	-	-	1157	2103	**3260**
	Sub Total	**13**	**62**	**2642**	**2144**	**4861**
2	State Highways (SH)	32	963	8709	857	**10561**
3	Major District Roads (MDR)	3702	4687	2819	107	**11315**
4	Other District Roads (ODR)	32059	2070	777	31	**34937**
	Total	**35806**	**7782**	**14947**	**3139**	**61674**

3. INSTITUTIONAL SETUP AND PROJECTS

3.1 WINGS OF THE DEPARTMENT

Highways Department functions under the overall coordination of the Director General. There is a wing for Planning, Design & Investigation, another for Quality Assurance and Research and there are six wings for execution of works as follows:

1. Construction & Maintenance wing – State fund works
2. National Highways wing - Central fund works
3. NABARD & Rural Roads wing – NABARD loan assistance works
4. Projects wing - Railways works programme (fund 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
2. Tamil Nadu Road Infrastructure Development Corporation.

The functions of all the wings are detailed as follows:

3.1.1 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.

Functions of the Director General:

- Overall Planning and Budgeting of Highways Department.
- Establishment and Personnel Administration matters in Highways Department.
- Coordination of Road Accident Data Management System (RADMS)
- Monitoring the Road Management system
- Any other work entrusted by the Government.

3.1.2 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.
- Formation of byepasses.
- Implementation of road Infrastructure schemes under Public Private Partnership.
- Maintenance of ODR - Sugarcane Roads.
- Construction of ROBs / RUBs.

3.1.3 NABARD & RURAL ROADS WING

- Execution of bridges and roads with loan assistance from NABARD.
- Construction of Road Over Bridges / Road under Bridges under Railway Works Programme.

3.1.4 PROJECTS WING

- Road Over and Under Bridges at Railway level crossings under Railway Works Programme.
- Major Bridge works with State funds and NABARD assistance.
- Radial Roads and Ring Roads.
- Formation of Sugarcane Roads with Sugar Cess fund.

3.1.5 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.

3.1.6 NATIONAL HIGHWAYS WING

- National Highways Plan works and maintenance of roads and bridges on National Highways with the funds of the Government of India.
- Revamped Central Road Fund scheme works.
- Inter State Connectivity Scheme works.
- Economic Importance scheme works.
- Western Ghats Development Programme works

3.1.7 TAMIL NADU ROAD SECTOR PROJECT WING

- Road upgradation works with the World Bank assistance.
- Enhanced road maintenance works.
- Undertaking studies for projects to be implemented through Public Private Partnership.
- Strengthening the organisational set-up of Highways Department.
- Establishment of Project & Financial Management system (P&FMS).
- Collection of data pertaining to network of roads in the State utilising Geographical Information System (GIS).

3.1.8 QUALITY ASSURANCE AND RESEARCH WING

- Research activities relating to roads and bridges.

- 3 tier Quality Assurance for all works implemented by this department.
- Road safety and traffic improvement works.

3.1.9 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.

3.1.10 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.

3.1.11 TAMIL NADU ROAD INFRASTRUCTURE DEVELOPMENT CORPORATION (TNRIDC)

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

3.2 ESTABLISHMENT

The Highways Department functions with a total of 1619 Engineers / Technical Staff and 5316 Subordinate Staff. Details of Posts are given below:

Chief Engineer	-	9
Superintending Engineer	-	28
Divisional Engineer	-	133
Assistant Divisional Engineer	-	477
Assistant Engineer / Junior Engineer	-	972
Technical Staff	-	776
Administrative Staff	-	4540
Road Inspectors	-	1801
Gang Mazdoors	-	14872

3.3 WORKS TAKEN UP BY THE DEPARTMENT

The wing wise works executed by this department at a cost of Rs. 5894 Crore are listed in **Table 3.1**

Details are as follows:

3.3.1 ROAD WIDENING

In view of the rising vehicular traffic, widening of the roads becomes essential. Widening of roads is taken up based on traffic

intensity and capacity of the road. Widening of 1154 Km roads at a cost of Rs. 954 Crore is in progress.

3.3.2 STRENGTHENING AND IMPROVEMENTS

The road stretches serving industrial areas are prone to heavy traffic and strengthening of the road pavement is necessary. In order to assess the extent of damage suffered by the pavement, BBD (Benkleman Beam Deflection) test is conducted. Using the traffic and deflection parameters, the total thickness of new layers required is determined and the strengthening of the pavement is carried out accordingly. Strengthening and improvement works of 1936 Km roads at a cost of Rs. 1515 Crore are in progress.

3.3.3 PERIODICAL RENEWAL AND SPECIAL REPAIRS

The roads in which wearing surface has deteriorated warrant periodical renewal. Periodical renewal of pavement is done in a cyclic manner, once in 5 years. Special Repairs are undertaken to rectify the damaged pavement. These works are being carried out using Non - Plan maintenance grant.

3.3.4 MAINTENANCE WORKS (PATCH WORK)

The road surface develops patches and potholes due to continuous flow of traffic. Rectifying the damaged road surface is essential. The repair is taken up immediately to maintain smooth flow of traffic.

Renewal and maintenance of roads & bridges are being carried out as per IRC norms.

3.3.5 BYEPASSES

Byepasses are essential to relieve traffic congestion in important towns and to reduce the travelling time of through-traffic. Hence, formation of byepasses / ring roads has acquired top priority. The Department takes up formation of byepasses in two phases (viz) land acquisition in the first phase and formation of road works in the second phase.

It has been planned to form 152 byepasses and execute them through various wings of the Department. Of these, 68 byepasses have been completed. The details of the balance 84 byepasses are given in **Table 3.2 – 3.4 and Table 8.3**

3.3.6 ROAD OVER BRIDGES (ROB) / ROAD UNDER BRIDGES (RUB)

Construction of Road Over / Road Under Bridges is undertaken in lieu of existing level

crossings on priority basis when Train Vehicle Units (TVU) exceed one lakh per day. The State Government and Ministry of Railways share the cost equally for construction of Road Over / Under Bridges including approach and service roads.

160 ROBs / RUBs have been taken up at a cost of Rs. 3356.72 Crore (**Table 3.5).** Out of these, 41 works have been completed at a cost of Rs. 567.98 Crore and 52 works are in progress at a cost of Rs. 1198.12 Crore.

3.3.7 GRADE SEPARATORS

Grade Separators are constructed at the junction of major intersections to ease the traffic at grade level. Eight grade separators sanctioned for Rs. 475.45 Crore **(Table 3.6)** are in progress.

3.3.8 RIVER BRIDGES

River bridges are constructed to connect the habitations which are separated by rivers or canals. 361 river bridges are in progress at a cost of Rs. 798 Crore.

3.3.9 LAND ACQUISITION

Land required for infrastructure projects of Highways Department are acquired under Tamil Nadu Highways Act, 2001. There are 201 road infrastructure projects comprising 62 Road works, 24 River Bridges, 94 Road Over Bridges / Road Under Bridges, 6 Grade Separators and

11 Byepasses involving land acquisition. For these works an extent of 634 Hectares of private land and 300 Hectares of Government land are required to be acquired or alienated from 451 villages.

Out of 634 Hectares of private land, 28 Hectares have been taken possession of and acquisition of the balance lands is at various stages.

3.4 SCHEMES BEING IMPLEMENTED

3.4.1 COMPREHENSIVE ROAD INFRASTRUCTURE DEVELOPMENT PROGRAMME (CRIDP)

The Comprehensive Road Infrastructure Development Programme (CRIDP) is being implemented as a part of Comprehensive Road Improvement Policy from the year 2005 - 06. Under this programme, infrastructure development like widening and improvement of roads, construction of bridges, culverts, formation of byepasses in a comprehensive manner are undertaken.

Under this scheme, 1002 road works and 225 bridge works at a cost of Rs. 1167.45 Crore are in progress.

GRADE SEPARATOR AT THE INTERSECTION OF NELSON MANICKAM ROAD AND ANNA NAGAR 3rd AVENUE ROAD

3.4.1.1 Improvement to Other District Roads Connecting Adi Dravidar Habitations - Special Component Plan

Under this scheme, improvement of Other District Roads connecting villages with more than 40% of Adi Dravidar population is taken up.

During the current year, under this scheme 139 roads and 22 bridges /culverts at a cost of Rs. 138.09 Crore are in progress.

3.4.2 NON - PLAN WORKS

Proper maintenance of road infrastructure is essential for easy movement of traffic. Timely and proper maintenance of roads reduces construction cost. Proper maintenance of bridges constructed at huge cost enhances the life span of these structures.

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

Renewal and maintenance of roads and bridges are carried out as per IRC norms under non-plan maintenance fund.

Under this scheme, during the current year, 1990 road maintenance works for Rs. 293.52 Crore are in progress. Further, new

works to a tune of Rs. 462.26 Crore will be taken up.

3.4.3 MAINTENANCE WORKS UNDER 13TH FINANCE COMMISSION GRANT - IN AID

For the current year, Rs. 285 Crore have been allotted for maintenance of roads based on the 13th Finance Commission's recommendations.

3.4.4 NABARD LOAN ASSISTANCE SCHEME

Through NABARD loan assistance, Government is implementing various schemes to improve, strengthen and widen the Other District Roads, Major District Roads and to construct bridges.

During this year, 56 road works and 161 river bridges at a cost of Rs. 462.70 Crore are in progress.

3.4.5 PART II SCHEME

The State Government allocates a sum of Rs. 10.00 Crore every year to this department for construction of bridges, buildings, traveller's bungalows, purchase of office equipment, laboratory equipment and software, conducting research etc. Infrastructure facilities are improved by utilizing this fund.

Under this scheme, 18 works at a cost of Rs. 16.91 Crore are in progress.

3.4.6 TSUNAMI REHABILITATION PROGRAMME

The main aim of this programme is to rehabilitate the roads and structures in Tsunami affected areas. Under this scheme, improvement of roads and construction of bridges in Coastal areas serving as escape route during any emergency are being taken up.

Under this scheme, 18 bridge works at a cost of Rs. 160.56 Crore are in progress.

3.4.7 REVAMPED CENTRAL ROAD FUND SCHEME

Government of India has formed the Revamped Central Road Fund Scheme during 2000 with the accruals from cess levied on the consumption of Diesel and Petrol and allocates fund for the development of State roads.

In this year, 29 road works and 7 bridge works at a cost of Rs. 232.46 Crore are in progress.

3.4.8 ROAD SAFETY WORKS

In order to prevent accidents, improvement to accident prone areas or black spots has been taken up. Road safety works like widening of narrow culverts, improvement to accident prone areas such as widening / reconstruction of narrow bridges, Junction improvements and construction of centre

median are being taken up using the funds provided by the Home Department.

Road safety works are in progress at 36 places to a tune of Rs. 19.37 Crore.

3.4.9 RAJIV GANDHI SALAI (IT EXPRESSWAY)

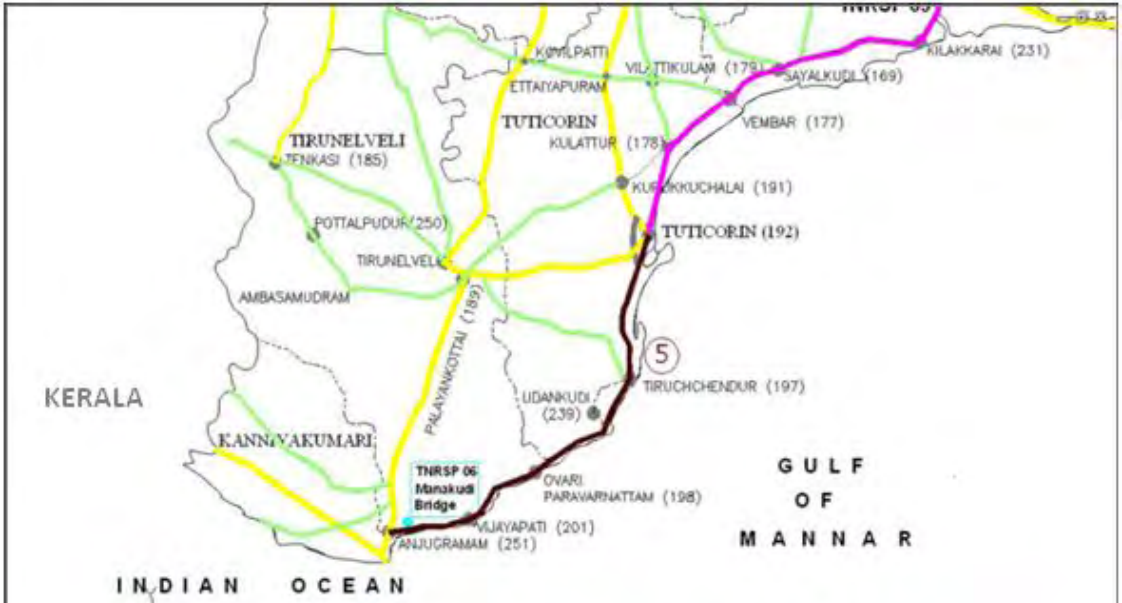
In the second phase of this road, the Government has proposed to widen to six lane, the 25 Km stretch from Siruseri to ECR at Mamallapuram.

3.4.10 CHENNAI OUTER RING ROAD

In order to reduce the vehicular congestion in Chennai City and to facilitate free flow of traffic around Chennai, Government have decided to construct an Outer Ring Road of six lane width for a length of 62 Km from Vandalur on NH-45 to Minjur on Thiruvotriyur Ponneri Pancheti (TPP) Road. This road cuts across NH-205 at Nemellichery & NH-5 at Padiayanallur. The works are being taken up in two phases and the first phase is in progress.

3.4.11 EAST COAST ROAD IMPROVEMENT

Taking into account the traffic and environmental feasibility widening and improvements to 765 Km of East Coast Road from Chennai to Kanyakumari is being implemented by various wings of the



IMPROVEMENTS TO TUTICORIN TO KANYAKUMARI (ANJUGRAMAM)
113 KM. - EXTENSION OF EAST COAST ROAD

HIGHWAYS AND MINOR PORTS DEPARTMENT

DEMAND NO - 21

POLICY NOTE ON

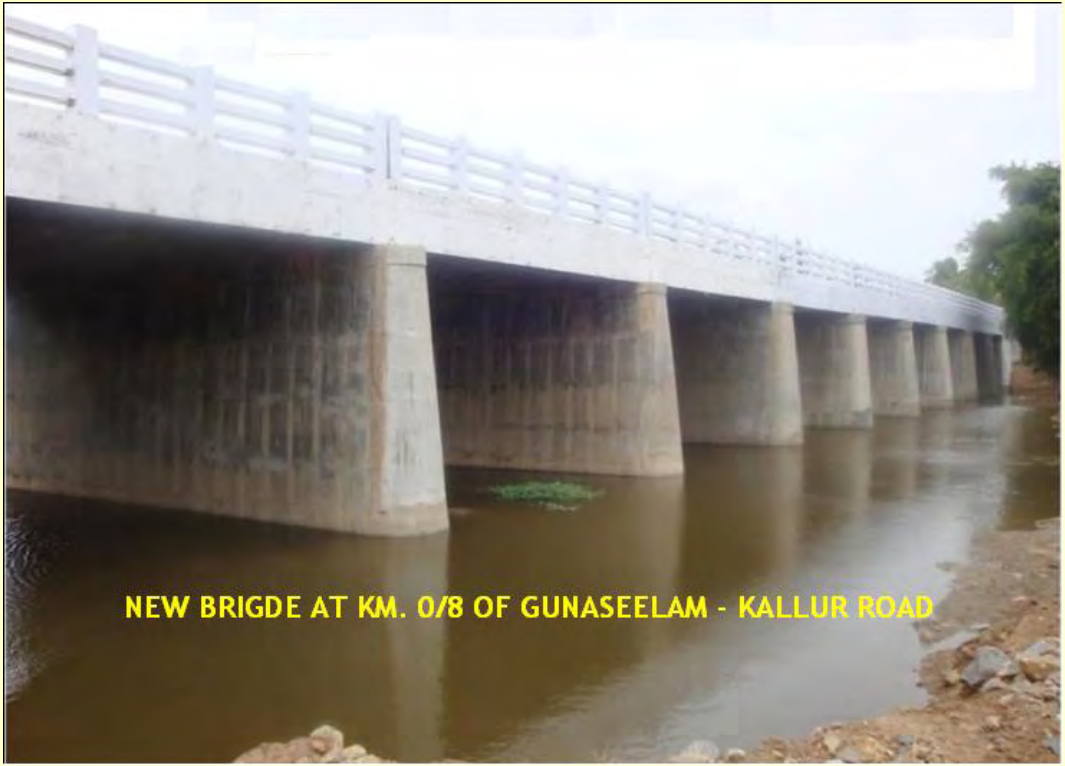
ROADS, BRIDGES, MINOR PORTS AND SHIPPING

2011 – 2012

INTRODUCTION

Tamil Nadu, traditionally has had a strong industrial base which contributes substantially to the industrial production of the country. Road and bridge infrastructure along with ports play a vital role in the development of key sectors of the economy like Industry, Technology, Agriculture etc.

Highways & Minor Ports Department administers the road infrastructure and minor ports in Tamil Nadu.


NEW BRIGDE AT KM. 0/8 OF GUNASEELAM - KALLUR ROAD

5.3 ROAD OVER BRIDGES / UNDER BRIDGES AT RAILWAY LEVEL CROSSINGS

18 ROBs and 8 RUBs at a cost of Rs. 517.82 Crore in lieu of existing level crossings have been taken up for execution.

Works in progress are given in **Table 5.2.**

TABLE 5.1

MAJOR BRIDGE WORKS UNDER CONSTRUCTION BY NABARD AND RURAL ROADS WING

Sl. No.	District/ Name of work	Cost (Rs. in Crore)
	Thiruvallur	
1	Construction of Bridge at km. 0/8 of Enampakkam - Tholavedu road across Arani river (Panchayat Union Road)	5.60
	Vellore	
2	Construction of Brdige at Km.14/0-4 of Ambur - Sathkar road (MDR)	6.00
	Krishnagiri	
3	Construction of Bridge in between KRP dam Approach road and Kalvehalli road across the river Thenpennaiyar (ODR)	5.17
	Thiruvannamalai	
4	Construction of New High level Bridge at km 2/8 of Kazhiyur - Athi road (ODR)	10.70
5	Construction of Bridge at km 0/6 of Brammadesam - Ocheri road. (Panchayat Union Road)	9.13
6	Construction of Bridge at Km 2/8-10 of road from Kannamangalam Arni road to Arni padavedu road (via) Kunnathur (ODR)	7.20

Sl. No.	District/ Name of work	Cost (Rs. in Crore)
	Villupuram	
7	Construction of Bridge at km.8/2 of Vanur-Kandamangalam road across Sankarabarani river (Panchayat Union Road)	11.83
8	Construction of High level Bridge across Koraiyur river at Km.3/6-9 of Kongarayanur - T.Edayar road (via) Paiyur and including improvements to the road Km.0/0-6/4. (Panchayat Union Road)	9.83
9	Construction of Bridge across Sankarabarani river at km 2/4 of Kuchipalayam road (Panchayat Union Road)	9.71
	Erode	
10	Construction of Bridge at Km 0/10 of Vairamangalam-Thalavaipettai road across river Bhavani including improvements to the road Km 0/0-1/4 (Panchayat Union Road)	5.34
	Dindigul	
11	Construction of New Bridge at Km 8/6 of Vathalagundu - Usilampatty road (MDR)	5.51

Sl. No.	District/ Name of work	Cost (Rs. in Crore)
	Nagappattinam	
12	Improvements to Perunthottam Nayakkarkuppam road Km 0/0-1/5 including construction of Bridge at Km 0/8 across selvanar river and minor Bridge at Km 1/2 across uppanar river	8.00
13	Improvements to Kumarakudi Veppancherry road km 0/0-1/6 including construction of Bridge at Km 0/6 across Ammanar river (Panchayat Union Road)	5.22
	Tiruvarur	
14	Construction of High level Bridge across vettar river at Km 0/10 of Odachery - Then Odachery road including improvements to the road Km 0/0-1/6 (Panchayat Union Road)	5.34
	Tuticorin	
15	Construction of New High level Bridge at Km. 0/2 of Srivaikundam Girder bridge road branching from Km. 30/2 of Tiruchendur - Palayamkottai - Ambai - Tenkasi - Cutralam - Senkottai road (SH 40).	17.16

Sl. No.	District/ Name of work	Cost (Rs. in Crore)
16	Construciton of New Bridge across Vaippar river at KM. 73/4-8 of Paruvakudi - Kovilpatti - Ettayapuram - Vilathikulam - Vembar road (SH-44)	12.23
	Tirunelveli	
17	Reconstruction of bridge across Cheranmahadevi River at Km. 3/0 - 3/4 of Cheranmahadevi River Bridge Road (ODR)	8.81
	Ariyalur	
18	Reconstruction of Bridge at km.8/8-10 of Ariyalur - Subbarayapuram road (ODR)	5.37
	Tiruppur	
19	Construction of Bridge at Km 0/2 of Peramium-Chellapillai-Goundampudur road across Amaravathi River including improvments to the road Km0/0-1/3 (ODR)	5.39

TABLE 5.2

LIST OF ONGOING ROBs/ RUBs

Sl. No.	District	LC No. & Location	A.S. Amount (Rs in Crore)
1	Coimbatore	9, Avarampalayam	20.50
2	Dindigul	29, Ottanchatram	19.65
3	Madurai	371,Tiruparangundram	24.53
4	Madurai	366, Palanganatham	30.00

6. PROJECTS

Construction of Road Over Bridges (ROB) / Road Under Bridges (RUB) under Railway Works Programme are being primarily carried out by 4 circles and 12 divisions under the control of one Chief Engineer.

Apart from this, major River Bridges are being constructed under NABARD and HUDCO loan assistance scheme. Formation of Erode Outer Ring Road and junction improvements at Erode Government Hospital junction under CRIDP scheme are being carried out. Utilising the cess fund collected from Sugar Mills by the Agriculture department, formation and improvement of roads leading to sugar mill through sugar cane fields are being taken up.

6.1 ROAD OVER BRIDGES / UNDER BRIDGES AT RAILWAY LEVEL CROSSINGS

113 ROBs / RUBs (**Table 6.1**) have been taken up at a cost of Rs. 2308.86 Crore and out of these, 40 works have been completed at a cost of Rs. 563.38 Crore and 45 works are in progress at a cost of Rs. 1051.56 Crore (**Table 6.2)**

A provision of Rs. 752.91 Crore has been made for this scheme in this year.

More works are being considered under Railway Works Programme for the year 2011 -12.

6.2 CONSTRUCTION OF BRIDGES WITH NABARD AND HUDCO LOAN ASSISTANCE

6.2.1 NABARD SCHEME

Under this scheme, construction of 59 river bridges and improvements to 417 Km of Sugar Cane roads at a cost of Rs. 204.73 Crore in Cauvery Delta and other areas have been taken up. Of these, 48 river bridges and 412 Km of road works have been completed.

The balance of 8 bridge works are in progress (**Table 6.3)** at a cost of Rs. 148.54 Crore.

A provision of Rs. 51.77 Crore has been made for this scheme in this year.

Out of 8 bridge works, 6 will be completed in this financial year and the remaining 2 works will be completed in the next financial year.

6.2.2 HUDCO LOAN ASSISTANCE

Sanction was accorded for construction of 61 bridges at a cost of Rs. 60 Crore with HUDCO financial assistance. This scheme was implemented with HUDCO funds till 2004 - 05 and thereafter works are being carried out from State Government funds.

Of these, 55 bridges have been completed at a cost of Rs. 48.91 Crore and 4 bridge works are in progress at a cost of Rs. 13.20 Crore (**Table 6.4**).

A provision of Rs. 5.01 Crore has been made for this scheme in this year. Out of 4 bridge works, 2 works will be completed in this year and the balance 2 works will be completed in the next year.

6.3 COMPREHENSIVE ROAD INFRASTRUCTURE DEVELOPMENT PROGRAMME (CRIDP)

6.3.1 ERODE OUTER RING ROAD

In order to ease traffic congestion in Erode town, sanction has been accorded for Rs. 22 Crore in first phase towards land acquisition for formation of Outer Ring Road from Kokkarayanpettai to Thindal for a length of 14.20 Km.

In this work, construction of High Level Bridge across Cauvery River from Kokkarayanpettai to Lakkapuram Km 0/0 – 2/2 (including approaches) has been taken up in the first phase at a cost of Rs. 14 Crore and the work is in progress.

The stretch from Km 2/2 to 7/450 has been taken up as the second phase at a cost of Rs. 12 Crore under CRIDP scheme and the land

acquisition for the work is nearing completion. The work will be commenced during this year.

6.3.2 ERODE GOVERNMENT HOSPITAL JUNCTION IMPROVEMENT

Administrative sanction has been accorded for the work of improvements to the junction at Km. 1/8 of Erode – Perundurai – Kankeyam road near Erode Government Hospital including land acquisition for Rs. 11 Crore and the work will be taken up for execution after completion of land acquisition.

6.4 SUGAR CANE ROAD DEVELOPMENT SCHEME

The cess fund collected from sugar mills is utilised for formation of roads from sugar cane growing areas to sugar mills.

The Government have accorded administrative sanction for 51 road works for 89.70 Km, at a cost of Rs. 21.78 Crore. Out of these, 28 works have been completed, 12 works are in progress and will be completed during this financial year.

A provision of Rs. 9.92 Crore has been made in this year.

TABLE 6.1

ROBs / RUBs SANCTIONED

Sl. No.	District	No. of ROBs / RUBs	Cost (Rs. in Crore)
1	Tiruvallur	10	200.70
2	Chennai	1	80.68
3	Kancheepuram	18	485.89
4	Vellore	17	259.20
5	Krishnagiri	2	35.02
6	Dharmapuri	2	20.10
7	Villupuram	3	66.40
8	Salem	4	62.19
9	Coimbatore	12	195.85
10	Dindigul	3	45.72
11	Karur	1	15.50
12	Trichy	13	327.91
13	Thanjavur	3	53.85
14	Cuddalore	6	121.76
15	Madurai	4	88.99
16	Tuticorin	4	66.35
17	Tirunelveli	2	50.01
18	Kanyakumari	1	21.40
19	Triuppur	7	111.34
	Total	**113**	**2308.86**

TABLE 6.2

ONGOING ROBs / RUBs

Sl. No	District	LC No. & Location	Cost (Rs. in Crore)
PROJECTS WING			
1	Thiruvallur	37, Elavur – Gummidipoondi	17.00
2	Thiruvallur	33, Gummidipoondi	39.00
3	Chennai	Vyasarpadi ROB	80.68
4	Kancheepuram	24, Jameen Pallavaram	14.00
5	Kancheepuram	34, Vandalur	23.67
6	Kancheepuram	30, Tambaram	78.84
7	Kancheepuram	69, Madhuranthagam	22.50
8	Kancheepuram	1, Chengelpet	34.58
9	Kancheepuram	37, Urappakkam	23.00
10	Kancheepuram	54, Chengelpet	27.90
11	Kancheepuram	40, Guduvanchery	31.94
12	Kancheepuram	36, Urappakkam	34.50
13	Kancheepuram	47, Singaperumal Koil	52.89
14	Vellore	40, Banavaram	11.00
15	Vellore	50, Tiruvalam-Sevur	12.26
16	Vellore	45A & 45B, Walajah	15.50
17	Vellore	88, Thamalerimuthur	12.00
18	Vellore	69, Uli	12.00
19	Vellore	63, Pasumathur	19.34
20	Dharmapuri	105, Bommidi	10.60
21	Villupuram	156, Ulundurpet	25.00
22	Villupuram	92, Govindasamy Arts College	16.90
23	Coimbatore	139, Somanur	11.25

Sl. No	District	LC No. & Location	Cost (Rs. in Crore)
24	Coimbatore	151, Sundarapuram	20.00
25	Coimbatore	143, Muthugoundenpudur	12.25
26	Coimbatore	21, Nanjudapuram	11.80
27	Coimbatore	118, Pollachi	11.45
28	Coimbatore	144, Irugur	21.10
29	Dindigual	5, Dindigul	16.54
30	Trichy	228, Lalkudi	20.50
31	Trichy	248, Trichy	26.00
32	Trichy	279, Manapparai	20.60
33	Trichy	325, Craw ford, Trichy	28.58
34	Thanjavur	303, Thanjavur	13.00
35	Thanjavur	309, Budalur	16.30
36	Cuddalore	181, Eraiyur (Pennadam)	23.00
37	Cuddalore	170, Virudhachalam Town	19.00
38	Cuddalore	168, Virudachalam (Vayalur)	24.00
39	Cuddalore	166A, Cuddalore Pachayakuppam	24.00
40	Madurai	370, Tiruparankundram	19.75
41	Tirunelveli	502, Tenkasi	24.50
42	Kanyakumari	32B, Eranial & Nagercoil	21.40
43	Tiruppur	130, Coolipalayam	17.00
44	Tiruppur	134, Vanchipalayam	17.00
45	Tiruppur	95, Udumalaipet	17.44
		TOTAL	**1051.56**

TABLE 6.3

RIVER BRIDGES TAKEN UP UNDER NABARD SCHEME

Sl. No	District /Name of Work	Cost (Rs. in Crore)
	Karur,Namakkal	
1	Construction of High Level Bridge across Cauvery river Connecting Mohanur (Namakkal Dist.) and Vangal (Karur Dist)	43.50
	Thanjavur, Perambalur	
2	Construction of High Level Bridge across Coleroon River connecting Neelathanallur (Thanjavur District) and Madhanathur (Perambalur District)	36.50
	Cuddalore, Nagapattinam	
3	Construction of High level bridge across Coleroon river in between Muttam village of Cuddalore District and Manalmedu village of Nagapattinam District.	48.85
	Thiruvarur	
4	Bridges across Vettar at Km 29/4-6 of Kumbakonam – Kodavasal- Koradacheri- Mavoor road.	3.08
5	Bridge across Koraiyar at Km 9/2 of Mannarkudi – Tiruvarur road.	1.85

NEW THREE LANE BRIDGE AT KM.6/6 OF PERIYAR E.V.R SALAI ADJOINING THE EXISTING BRIDGE AT AMINJIKARAI

Sl. No	District /Name of Work	Cost (Rs. in Crore)
6	Bridge across Sullanaru at Km 24/4 of Thittai – Dharasuram road. (Govindhakudi – Melattur Road at km 1/2)	1.61
7	Bridges across Vellayaru at Km 14/8 of Mannarkudi – Tiruvarur road.	1.50
	Ramnad	
8	Construction of High Level Bridge across Vaigai River at Km.201/2-6 of Thanjavur – Pattukottai – Aranthangi – Karaikudi – Kallal – Kalaiyarkovil – Maravamangalam – Elayankudi - Paramakudi – Muthukulathur – Sayalkudi road SH-29.	11.65

TABLE 6.4

BRIDGES TAKEN UP UNDER HUDCO SCHEME

Sl. No	District /Name of Work	Cost (Rs. in Crore)
	Thanjavur	
1	Bridge across Kudamurutti river in Manathidal – Valappakudi road (Panchayat road).	4.41
	Nagapattinam	
2	Bridge across Mudikondan river at Km 12/10 of SH 67 (Nagoor–Nannilam – Nachiarkoil road).	2.16
	Thiruvarur	
3	Bridge across Arasalar at Km 20/6 of SH 23 (Mayiladuthurai – Thiruthuraipoondi road)	4.30
	Thiruvarur	
4	Bridge across Mudikondan river at Km 26/10 of SH 23 (Mayiladuthurai – Thiruthuraipoondi road).	2.33

7. METRO WING

To improve the road and bridge infrastructure in Chennai Metropolitan area, Chennai Metropolitan Development Plan is being implemented since 2003-04 utilizing state funds. The 'Metro Wing' under a Chief Engineer is looking after execution of works in Chennai Metropolitan area with the assistance of one circle and four divisions.

Government have given approval for 239 improvement works at a cost of Rs. 975.51 Crore, which includes 473 Km of road works, 7 bridges, 5 Grade Separators, 1 ROB, improvements to pedestrian sub ways and centre medians etc.

So far, 468.70 Km of road works, improvements to pedestrian subways, and construction of foot path / centre median works have been completed at a cost of Rs. 569 Crore and the balance 4.3 Km of road work will be completed during this year.

For this year, a budgetary allocation of Rs. 344.18 Crore has been made**.**

Major works under implementation are detailed below.

7.1 GRADE SEPARATORS

In Chennai Metropolitan Area, 5 Grade Separators at a cost of Rs. 291.50 Crore are in progress. The details of these works are given in **Table 7.1.**

7.2 RIVER BRIDGES

In Chennai Metropolitan Area, 4 river bridges at a cost of Rs. 88.68 Crore are in progress. The details of these works are given in **Table 7.2.**

7.3 ROAD OVER BRIDGES / UNDER BRIDGES AT RAILWAY LEVEL CROSSINGS

Government have accorded administrative sanction for 6 ROBs / RUBs located in Chennai Metropolitan Area at a cost of Rs. 241 Crore. The details of these works are given in **Table 7.3**.

7.4 TAMILNADU URBAN DEVELOPMENT PROJECT–III

7.4.1 ROAD WORKS

TNUDP – III was conceived during the year 2005 and is being implemented with World Bank loan assistance. This project consists of urban water supply, sewerage works and traffic components. Under the traffic component, 5 road projects of 36 Km length at a cost of

HIGHLEVEL BRIDGE AT ENNORE CREEK CONNECTING ENNORE AND NORTH CHENNAI THERMAL POWER STATIONS

Rs. 145 Crore have been selected in and around Chennai city by the Highways Department. Two road works have been completed. The details of other three spill over works are given below:

1. Widening from intermediate lane to two lane and strengthening of Minjur Kattur Tirupalaivanam road, Km 0/0 -17/4 at a cost of Rs. 49.73 Crore in Thiruvallur District.
2. Widening and Strengthening of Taramani link road Km. 0/0 – 3/650 from two lane to six lane at a cost of Rs. 38.94 Crore in Chennai District.
3. Widening and Strengthening from single lane to two lane of Koladi road Km 0/0 -7/0 at a cost of Rs. 33.48 Crore in Tiruvallur District.

The above three works will be completed during this year.

7.4.2 FOOT OVER BRIDGES

Government have accorded sanction for the construction of Foot Over Bridges at the following seven locations at a total cost of Rs. 28 Crore.

1. GST road, near Chromepet G.H
2. GST Road, near MEPZ, Tambaram
3. Inner Ring Road, near SBOA School road Junction, Tirumangalam
4. EVR Salai near MOP Vaishnava College.

5. Velachery byepass, near Metro water filling station.
6. Taramani link road, near TCS.
7. Taramani link road, near Perungudi Junction.

DPR is under preparation for these 7 Foot over Bridges and the works will be taken up for execution during this year.

TABLE 7.1

GRADE SEPARATORS

Sl. No	District / Name of Work	Cost (Rs. In Crore)
	Thiruvallur	
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	
3.	Grade Separator at the intersection of Anna Nagar II Avenue and Mogappair road with Inner Ring road at Tirumangalam,	60.23
4.	Grade Separator at the intersection of N.S.K Salai (Arcot Road) with Inner Ring road at Vadapalani	30.00
5.	Grade Separator on E.V.R. Salai at the intersection of Nelson Manickam road and Anna Nagar 3rd Avenue road.	117.00

TABLE 7.2

RIVER BRIDGES

Sl. No	District / Name of Work	Cost (Rs. in Crore)
	Chennai	
1.	Highlevel Bridge across Cooum river adjacent to the existing bridge at Aminjikarai	6.90
2.	Additional 3 lane Highlevel Bridge across Adyar river, adjacent to the existing Thiru.Vi.Ka Bridge	13.08
	Thiruvallur	
3.	Highlevel Bridge across Cooum river at the road connecting GWT Road at Km 11/2 and Mogappair with Nerkundram	16.04
4.	Highlevel Bridge across Ennore Creek connecting Ennore Expressway Road with North Chennai Thermal Power station.	52.66

TABLE 7.3

ROAD OVER BRIDGES / ROAD UNDER BRIDGES AT RAILWAY LEVEL CROSSINGS

Sl. No	District / Name of Work	Cost (Rs. in Crore)
	Thiruvallur	
1.	LC No.3 – Construction of Road Over Bridge near Tiruvottiyur Mattusandhai.	47.00
2.	LC No.4 – Construction of Road Under Bridge near Tiruvottiyur Railway station.	28.00
3.	LC No.6 – Construction of Road Under Bridge near Tiruvottiyur Wimco Nagar Railway Station.	25.50
4.	LC No.5 – Construction of Road Over Bridge near Pattaravakkam.	35.00
5.	LC No.14 – Construction of Road Over Bridge near Veppampattu Railway Station.	29.50
	Kancheepuram	
6.	LC No.32 & 33 – Construction of Road Over Bridge near Perungalathur Railway Station.	76.00

8. NATIONAL HIGHWAYS

With funding from the Government of India, improvements and maintenance of roads and bridges along the National Highways are being carried out by 4 circles and 8 divisions under the supervision of a Chief Engineer. The following schemes are being executed by this wing.

8.1 NATIONAL HIGHWAYS WORKS

8.1.1 PLAN WORKS

In the current year, 24 road works to a length of 278.28 Km and 3 bridge works at a cost of Rs. 248.87 Crore are in progress.

8.1.2 NON – PLAN WORKS

Four road works to a length of 72.80 Km have been taken up at a cost of Rs. 24.33 Crore and will be completed in this year.

8.2 CENTRALLY SPONSORED SCHEMES

Government of India has created a Central Road Fund with accruals from 50% cess levied on the consumption of High Speed Diesel and 100% cess on Petrol for development of National Highways and other roads.

8.2.1 REVAMPED CENTRAL ROAD FUND SCHEME

During the year 2011-12, 29 road works totaling a length of 369.15 Km and 7 bridge works have been taken up at a cost of Rs. 232.46 Crore under this scheme funded by Government of India, and are in progress.

A budget provision of Rs. 128.30 Crore has been made for this year.

8.2.2 INTER STATE CONNECTIVITY SCHEME WORKS (100% CENTRAL ASSISTANCE)

For the current year, 27.6 Km of road works have been taken up at a cost of Rs. 12.09 Crore.

A budget provision of Rs. 10 Crore has been made under this scheme.

8.2.3 ECONOMIC IMPORTANCE SCHEME (50% CENTRAL ASSISTANCE AND 50% STATE FUND)

Under this scheme, the work of "Widening and Strengthening of road connecting Salem Cochin road (NH 47) at km 105/0 to Nagapattinam Gudalore Mysore road (NH 67) at Km 289/6 Via Perumanallur and Peruntholuvu" for a length of 30.40 Km has been taken up at a cost of Rs. 17.63 Crore and is in progress.

A budget provision of Rs. 31.80 Crore has been made for this year.

8.2.4 WESTERN GHATS DEVELOPMENT PROGRAMME

During the current year, two retaining wall works have been taken up as spill over at a cost of Rs. 26.54 Lakh, in Tirunelveli and Virudhunagar Districts and completed.

A budget provision of Rs. 1 Crore has been made under this scheme.

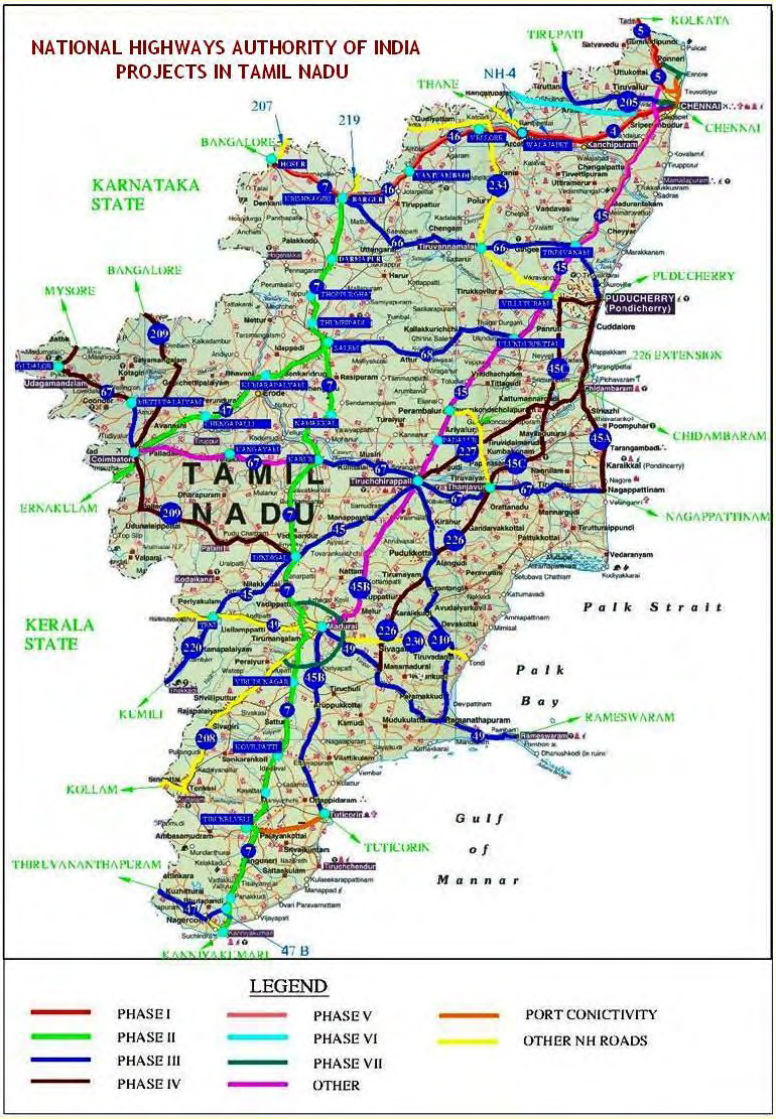
8.2.5 HILL AREA DEVELOPMENT PROGRAMME

In Nilgiris District, 3 Km length of road works and 4 retaining wall works have been taken up at a cost of Rs. 1.78 Crore and are in progress.

A budget provision of Rs. 2.41 Crore has been made for this year.

8.3 PROJECTS EXECUTED BY NATIONAL HIGHWAYS AUTHORITY OF INDIA (NHAI)

To improve, maintain and manage National Highways, the National Highways Authority of India (NHAI) was formed by Government of India through Indian National Highways Authority of India act 1988 presented in the Parliament and came into existence from


NATIONAL HIGHWAYS AUTHORITY OF INDIA
PROJECTS IN TAMIL NADU
KOLKATA
TIRUPATI
THANE
NH-4
CHENNAI
207
219
BANGALORE
KARNATAKA STATE
BANGALORE
MYSORE
PUDUCHERRY
PUDUCHERRY (Pondicherry)
226 EXTENSION
CHIDAMBARAM
NAGAPPATTINAM
TAMIL NADU
ERNAKULAM
KERALA STATE
Palk Strait
Palk Bay
KUMILI
RAMESWARAM
KOLLAM
Gulf of Mannar
TUTICORIN
THIRUVANANTHAPURAM
KANNIYAKUMARI
47 B
LEGEND
PHASE I
PHASE II
PHASE III
PHASE IV
PHASE V
PHASE VI
PHASE VII
OTHER
PORT CONICTIVITY
OTHER NH ROADS

February 1995. The NHAI is implementing National Highways Development Programmes 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, 45, 45B, 45C, 46, 47, 47B, 49, 66, 67, 68, 205, 209, 210, 226 & 227 in Tamil Nadu are improved by Government of India through NHAI in association with State Government.

State Government extends its cooperation and assistance to NHAI in preconstruction activities such as land acquisition and shifting of utilities based on state support agreement.

8.3.1 WORKS COMPLETED BY NHAI

At a cost of Rs. 11826 Crore, 1905 Km length of roads have been upgraded to four lane/ six lane.

8.3.2 WORKS UNDER EXECUTION BY NHAI

1108 Km road works costing Rs. 8626 Crore are under execution and 1961 km roads are to be taken up.

8.3.3 PORT CONNECTIVITY SCHEME

Cabinet Committee on Economic Affairs (CCEA) has 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 and are functioning to improve the roads connecting 3 major ports Chennai, Ennore and Tuticorin.

8.3.3.1 Chennai - Ennore - Manali Road Improvement Project (EMRIP)

Under the Port Connectivity Scheme, Government of Tamil Nadu, Chennai Port Trust, Ennore Port and National Highways Authority of India have jointly established SPV "Chennai Ennore Port Road Company Limited".

The State Highways stretches taken up for improvements under this Port Connectivity Scheme are given in **Table 8.1.**

The estimated cost of the project is Rs. 600 Crore. The cost shared by the share holders of the company are given in **Table 8.2.**

Groynes at 10 locations in the sea and seawall for a length of 500m along the sea coast at a cost of Rs. 24.58 Crore have been completed to prevent sea erosion. Widening to four lane and improvements in 4 roads and construction of protective works at 3 locations to prevent sea erosion have commenced.

This project is proposed to be completed in June 2013.

8.3.3.2 Thoothukudi Port Connectivity Scheme

Under this scheme, Thoothukudi Port Trust and National Highways Authority of India have jointly formed SPV "Thoothukudi Port Road Company Limited" to improve 47.20 Km length of road in NH-7A from Tirunelveli to Thoothukudi at a cost of Rs. 290 Crore and the work is in progress.

This project is proposed to be completed in April 2012.

8.3.4 BYEPASSES TAKEN UP AND EXECUTED BY NHAI

96 byepasses have been taken up by NHAI for execution. Out of this, 56 byepasses have been completed. 40 byepasses are under progress (**Table 8.3).**

8.3.5 LAND ACQUISITION

Tamil Nadu government plays a vital role in acquiring land for the completion of projects by National Highways Authority of India. For these projects, 5115 Hectares of land has been acquired out of 9252 Hectares required and the balance 4137 Hectares is being acquired.

TABLE 8.1

CHENNAI - ENNORE - MANALI ROAD IMPROVEMENT PROJECT (EMRIP)

Sl. No	Name of work	Length in Km
1	SH.56, Widening to four lane and Improvements to Tiruvotriyur – Ponneri - Pancheti Road	9.00
2	Strengthening and improvements to four lane with paved shoulders of Manali oil refinery. (MDR)	5.40
3	SH.1, Strengthening and improvements to Northern portion of inner ring road (Four lane)	8.10
4	SH.2, Widening to four lane with service road and improvements to Chennai – Ennore expressway	7.50
	Total	**30.00**

TABLE 8.2

COST SHARING DETAILS OF CHENNAI - ENNORE - MANALI ROAD IMPROVEMENT PROJECT (EMRIP)

Sl. No.	Contri-buted by	Contri-bution Amount	Loan	Total	Contribution made so far
		Rupees in Crore			
1	National Highways Authority of India	139.80	117.50	257.30	70.05
2	Chennai Port Trust	139.80	110.68	250.48	67.00
3	Government of Tamil Nadu	58.20	--	58.20	30 Crore worth land and 17 Crore for LA cost= 47
4	Ennore port	34.02	--	34.02	13.75
	Total	**371.82**	**228.18**	**600.00**	**197.80**

TABLE 8.3

LIST OF BYEPASSES EXECUTED BY NHAI UNDER PROGRESS

Sl. No.	Name of the Byepasses	NH No.	Length in Km.
1	Trichy	67	17.305
2	Kulithalai		10.000
3	Karur		14.800
4	Udaiyapatti	68	6.400
5	Vazhapadi		4.620
6	Narasingapuram-Athur		7.200
7	Kallakuruchi		5.100
8	Gudalur	220	4.190
9	Cumbum		7.620
10	Uthamapalayam		4.430
11	Chinnamannur		3.480
12	Seelayam Patti		2.100
13	Trichy Byepass (NH-7)	210	25.910
14	Kiranur		4.100
15	Pudukottai		10.400
16	Tirumayam		2.500
17	Karaikudi		19.670
18	Avinasi	47	7.850

Sl. No.	Name of the Byepasses	NH No.	Length in Km.
19	Perumanallur		4.740
20	K.G.Chavadi		3.220
21	Vathalakundu	45 Extn.	6.100
22	Devadanapatti		3.370
23	Periyakulam		11.040
24	Theni		12.550
25	Veerapandi		2.340
26	Tindivanam	66	4.670
27	Gingee		4.780
28	Kilpennathur		4.260
29	Tiruvannamalai		9.700
30	Chengam		5.750
31	Singarapettai		3.430
32	Uttangarai		4.430
33	Mathur		3.210
34	Laxmipuram	205	1.200
35	Arcotkuppam		1.700
36	Kanakammachatram		1.800
37	Tiruvallur		6.200
38	Thanneer Kulam		0.800
39	Thozur & Sevapet (combined)		3.300
40	Vepampattu		3.600

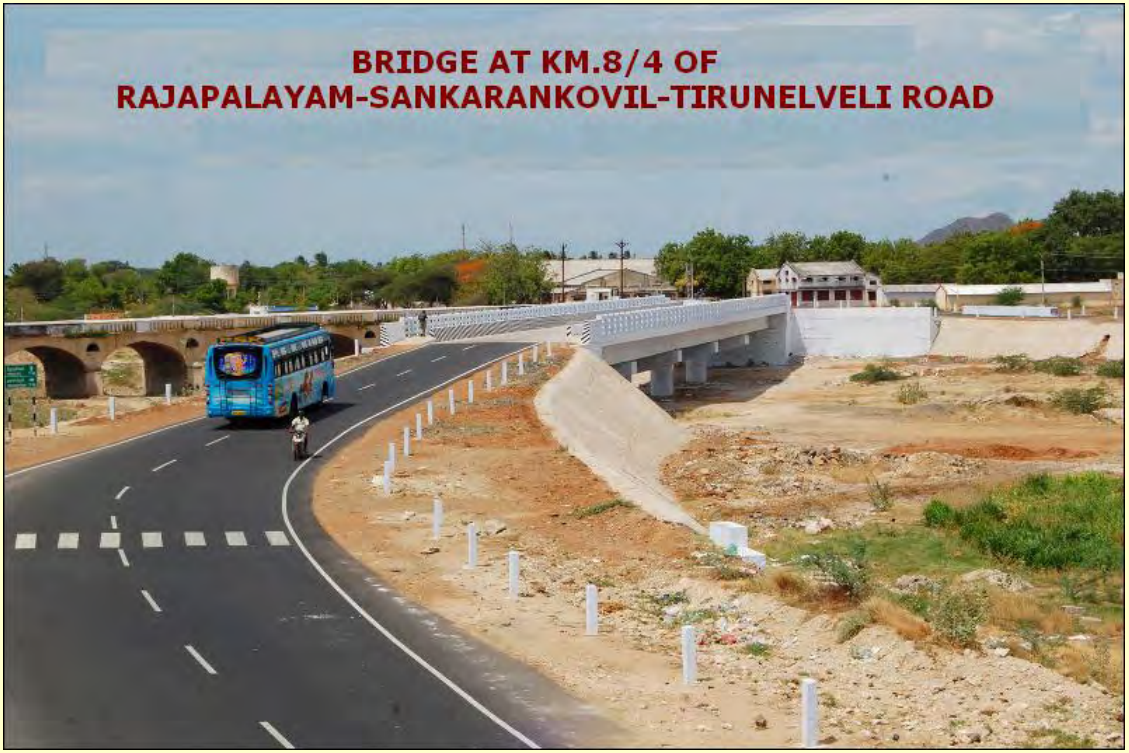
9. TAMIL NADU ROAD SECTOR PROJECT

Tamil Nadu Road Sector Project was formed to implement the schemes funded by the World Bank. Under this, 3 major schemes are implemented namely

1. Upgradation of Government Roads.
2. Enhanced Periodical Maintenance
3. Institutional Strengthening

The wing functions under the control of a Project Director. The Project Director is assisted by 1 Chief Engineer, 2 Superintending Engineers and 5 Divisional Engineers.

This project was launched at an estimated cost of Rs. 2160 Crore. The current revised estimate of the project cost is Rs. 2,442 Crore, in which the World Bank loan component is Rs. 1,906 Crore and the share of Government of Tamil Nadu is Rs. 536 Crore. The project completion period has been extended up to 31.03.2012. During the current year a budgetary allocation of Rs. 282 Crore has been provided.


BRIDGE AT KM.8/4 OF
RAJAPALAYAM-SANKARANKOVIL-TIRUNELVELI ROAD

9.1 UPGRADATION COMPONENT

Under this component, some of the stretches in National Highways and selected stretches of State Highways and Major District Roads along the Arcot – Tiruvarur and Nagapattinam – Tuticorin corridor to a length of 724 Km were taken up for upgradation in 6 packages with World Bank assistance. Out of this, 719 Km have been completed and the balance is under progress and will be completed during this year.

Details of works taken under Packages 1 to 5A are given in **Table 9.1 – Table 9.6.**

Byepasses

13 byepasses have been taken up and 10 works have been completed. 3 works are in progress and are expected to be completed during this year. The details are furnished in **Table 9.7.**

Railway Over Bridges

11 ROBs have been taken up in 13 byepasses, of which 9 ROBs have been completed. 2 ROBs at Ramanathapuram byepass and Kumbakonam byepass are being executed by Railways as deposit works.

Tsunami Rehabilitation Scheme

The construction of high level bridge connecting the Manakudi Villages in Kanyakumari District at a cost of

Rs. 21.29 Crore is in progress. This work will be completed in the current year.

9.2 ENHANCED PERIODICAL ROAD MAINTENANCE WORKS

Enhanced road maintenance works for a length of 1,033 Km in State Highways and Major District Roads (MDR) were taken up for execution in four phases at a cost of Rs. 430 Crore. Of these, 1009 Km of road works have been completed at a cost of Rs. 406 Crore. The remaining works will be completed this year.

9.2.1 PERFORMANCE BASED MAINTENANCE CONTRACT (PBMC)

It has been proposed to substitute the existing procedure of maintaining roads by a long term maintenance contract for maintenance of particular stretches of roads for a term of 5 years continuously with World Bank assistance. The World Bank has approved 296 Km of roads under PBMC on a pilot basis. This work has been entrusted at a contract value of Rs. 48.03 Crore and the works are in progress. This work is being supervised by an independent Supervisory Consultant. On successful implementation, this scheme will be extended to 724 Km of roads upgraded under TNRSP.

Sl. No.	District	Name of road	Total length in Km
1	Salem	Omalur – Mecheri Road (MDR)	14.60
2	Salem & Namakkal	Omalur – Sankagiri – Tiruchengode - Paramathy Road (SH.86)	81.00
3	Salem & Erode	Thoppur – Mettur – Bhavani – Erode Road (up to Bhavani) – (SH.20)	94.00
4	Salem, Dharmapuri, Krishnagiri & Vellore	Salem – Harur-Tirupathur – Vaniyambadi Road – (SH.18)	106.40
		Total	**296.00**

9.3 PUBLIC PRIVATE PARTNERSHIP (PPP) SCHEME

To carryout Techno Economic Feasibility Study under PPP scheme, Consultants were engaged and reports on Coimbatore western byepass and Outer Ring Road, Chennai were prepared. Based on this, the Government of Tamil Nadu is implementing the Coimbatore western byepass project through Construction and Maintenance wing and the Chennai Outer Ring Road with Tamil Nadu Road Development Company (TNRDC) as Managing Associate.

For preparing techno economical feasibility report to undertake four laning as well as improvement works in the following roads under the Public Private Partnership, consultancy service was engaged at a cost of Rs. 3.04 Crore. After approval of final report necessary proposals will be considered for implementation.

Sl. No.	Name of road	Total Length in Km
1	Mettur – Pazhanganathu – Oddanchatriram – Dharapuram – Kangeyam - Tirupur Road – (SH 37).	126.00
2	Erode – Dharapuram Road – (SH 83A)	78.00
3	Arcot byepass road.	3.60
4	Erode Outer Ring Road Phase II.	9.60
5	Chennai Outer Ring Road Phase II.	32.30
	Total	**249.50**

9.4 ROAD SAFETY AUDIT

Safety status in the upgraded roads from Nagapattinam to Tuticorin through TNRSP, for about 335 Km have been reviewed, to identify safety related problems, deficiencies and shortcomings and suggesting remedial measures. Further, the road safety audit is being conducted from Arcot to Tiruvarur, for a length

of 374 Km. On receipt of the report, safety measures suggested will be taken up for execution after obtaining approval from the World Bank.

TABLE 9.1

WORKS TAKEN UP UNDER PACKAGE– 01

The Road stretch under this package from Arcot in Vellore District to Thiruvarur, through Arni, Thiruvannamalai, Virudhachalam, Jayamkonadam and Kumbakonam for a length of 378 km has been taken up for upgradation and completed.

Sl. No	Name of Road	Length in Km
1	Arcot - Arni	24.620
2	Arni byepass	5.315
3	Arni - Polur	20.580
4	Polur - Tiruvannamalai	24.730
5	Polur Byepass	4.900
6	Polur - Chengam	45.192
7	Tiruvannamalai - Thirukkovilur	27.893
8	Tirukkovilur byepass	4.391
9	Tirukkovilur - Ulundurpet	27.050
10	Jayankondam - Kumbakonam	37.688
11	Vridhachalam - Jayankondam	33.650
12	Vridhachalam Byepass	9.153
13	Tiruvannamalai Byepass	10.900
14	Sirkazhi Byepass	8.760
15	Chidambaram byepass	16.226
16	Ariyalur byepass	7.552
17	Jayankondam - Ariyalur	35.819
18	Kumbakonam - Tiruvarur	32.944
	Total Length in Km	**377.363**
	Total Cost (Rs. in Crore)	**768.500**

TABLE 9.2

WORKS TAKEN UP UNDER PACKAGE – 02

The road stretch, from Nagapattinam to Kattumavadi (119 km) via Thiruthuraipoondi and Muthupettai, has been taken up for upgradation and completed except one High level bridge across Vettar and 0.5 Km length approach to that bridge of Nagapattinam byepass.

Sl. No	Name of Road	Length in Km
1	Manora to Kattumavadi	17.60
2	Muthupet to Manora and Muthupet Byepass	30.40
3	Tiruthuraipundi to Muthupet and Tiruthuraipundi Byepass	22.70
4	Nagapattinam to Tiruthuraipundi and Nagapattinam Byepass	46.70
	Total Length in Km	**117.40**
	Total Cost (Rs. In Crore)	**236.90**

TABLE 9.3

WORKS TAKEN UP UNDER PACKAGE – 03

The road stretch from Kattumavadi to Ramanathapuram (100 km) via Mimisal has been completed.

Sl. No	Name of Road	Length in Km
1	Tirupalakudi - Ramanathapuram	19.00
2	Tondi - Tirupalakudi	25.90
3	Mimisal - Tondi	23.50
4	Kattumavadi - Mimisal	31.50
	Total Length in Km	**99.90**
	Total Cost (Rs. In Crore)	**143.30**

TABLE 9.4

WORKS TAKEN UP UNDER PACKAGE – 04

The road stretch from Ramanathapuram to Tuticorin (115 km) via Keezhakarai and Sayalkudi has been taken up and completed.

Sl.No	Name of Road	Length in Km
1	Ramanathapuram to Edampadal	25.49
2	Sayalkudi to Kulathur	38.54
3	Kulathur to Tuticorin	21.45
4	Edampadal to Sayalkudi	29.19
	Total Length in km	**114.67**
	Total Cost (Rs. in Crore)	**132.90**

TABLE 9.5

WORKS TAKEN UP UNDER PACKAGE – 05

Providing byepass to Ramnathapuram town to a length of 10.4 km is takenup and completed. ROB in this stretch is executed by Railways as deposit work and is in progress.

Sl. No.	Name of Road	Length in km
1	Ramanathapuram byepass* *The ROB being executed by Railways	10.40
	Total Length in Km	**10.40**
	Total Cost (Rs. in Crore)	**32.99**

TABLE 9.6

WORKS TAKEN UP UNDER PACKAGE – 05A

Kumbakonam byepass extension for a length of 4.10 km is in progress. This work will be completed in the current year. ROB in this stretch is executed by Railways as deposit work and is in progress.

Sl. No	Name of Road	Length in km
1	Kumbakonam byepass extension* *The ROB being executed by Railways	4.10
	Total Length in km	**4.10**
	Total Cost (Rs. in Crore)	**24.56**

TABLE 9.7

DETAILS OF BYEPASSES AND ROBs

Sl No	District	Town	Length (Km)	ROB	Cost (Rs. In Crore)
I	**List of Completed Byepasses**				
1.	Thiruvannamalai	Arani	5.30	-	11.61
2.		Polur	4.90	1	10.72
3.		Thiruvannmalai	10.90	2	23.86
4	Villupuram	Thirukovilur	4.40	-	9.63
5.	Cuddalore	Vridhachalam	9.20	1	19.92
6		Chidambaram	16.90	-	37.00
7.	Nagapattinam	Sirkazhi	8.80	1	19.18
8.	Thiurvarur	Muthupettai	4.90	1	10.51
9.		Thiruthuraipoondi	3.70	1	6.80
10.	Ariyalur	Ariyalur	7.60	1	16.63
		Total	**76.6**	**8**	**165.86**
II	**List of Byepasses under Progress**				
11.	Thanjavur	Kumbakonam	4.10	1	24.56
12.	Nagapattinam	Nagapattinam	9.00	1	19.49
				(ROB Completed)	
13.	Ramanathapuram	Ramanathapuram	10.40	1	32.99
		Total	**23.50**		**79.34**

10. QUALITY ASSURANCE & RESEARCH WING

10.1 RESEARCH ACTIVITIES

The Highways Research station at Chennai was established in 1957. Now it has been renamed as 'Quality Assurance and Research wing'. It is undertaking research and testing in order to provide technical advice for works undertaken by the Highways department. The wing is functioning with one Joint Chief Engineer, 4 Deputy Chief Engineers (Research) and 8 Divisional Engineers (Quality control) under the control of the Chief Engineer.

Its main functions are listed below:

- Field Oriented Research.
- Imparting Technical Training.
- Conducting Quality Control Inspection.

10.2 QUALITY CONTROL MECHANISM

For improvement and maintenance of roads and bridges, a lot of funds are spent through Highways Department. To ensure quality of these works and for proper maintenance, this wing undertakes the required tests.

Quality of every work is being ensured in all respects, by conducting inspections and tests during the execution of work itself and taking corrective measures. Further quality control tests, Quality Control procedures and registers have been stipulated to enable monitoring of the quality of works. Currently this new quality control mechanism is in place.

10.3 LABORATORIES

In Quality Assurance and Research Wing, four laboratories at Chennai, each controlled by a Deputy Chief Engineer are functioning. In addition four regional laboratories are functioning at Thanjavur, Coimbatore, Madurai and Tirunelveli.

Further, steps are being taken to construct regional laboratories in the remaining circles.

10.3.1 LABORATORIES AT CHENNAI

10.3.1.1 Activities of Soil and Foundation Engineering Laboratory

- Designing Flexible and rigid pavements.
- Conducting all types of soil tests and recommending technical advice for designing suitable sub – base and base course.
- Undertaking Pile load tests to find the capacity of pile.

- Giving technical advice on use of new materials in road formation and bridge constructions.
- Conducting Sub Surface Soil Exploration to design suitable foundation of Bridges and design for soil stabilization.

10.3.1.2 Activities of Concrete and Structures Laboratory

- Providing Concrete mix design for bridge construction.
- Carrying out tests on cement, coarse aggregate and steel to assess their suitability.
- Taking up non – destructive tests on concrete members of the bridges.

10.3.1.3 Activities of Bitumen and Aggregate Laboratory

- Providing Mix design for all types of bituminous mixes like SDBC, DBM and BC.
- Undertaking various tests on bitumen and aggregate.
- Studying pavement performance by stimulating field conditions with the Accelerated Circular Test Track facility.

10.3.1.4 Functions of Traffic Laboratory

- Assessing surface roughness using Bump Integrator Equipment.

- Conducting Traffic volume survey and Axle load survey for the design of pavement thickness.
- Designing road junctions and suggesting technical advice for traffic improvements.
- Collecting road condition data for all roads using ROMDAS equipment.
- Conducting Accident prevention studies to prevent accidents.

10.3.2 FUNCTIONS OF REGIONAL LABORATORIES

- Conducting deflection test on pavements using BBD equipment and recommending suitable design for strengthening.
- Conducting CBR (California Bearing Ratio) tests on soils for existing roads /new formation works and render suitable technical advice for design of pavement.
- Conducting Quality control tests on road works while in progress.

10.3.3 PERFORMANCE AND ACHIEVEMENT

10.3.3.1 Research Activities

Studies are being conducted to find out the reasons for deterioration, even in properly maintained roads and suggest suitable remedial measures. For better utility value and optimal benefits, a Bridge data system is envisaged, to systematically collect, store and analyse the Bridge Information Data.

10.3.3.2 Field Oriented Research

It is proposed to take up following research schemes:

1. Ageing of Bitumen
2. Evaluating the Strength of Concrete using M.Sand (Crushed Stone) as Fine Aggregate
3. Establishing the Correlation between Compressive and Flexural strength of Concrete.
4. Carrying out a Comprehensive Study of Accidents and Pedestrian Vulnerability to Road Traffic Accidents (RTAs) within Chennai City
5. Carrying out Study on the changes in the characteristics of low strength soil on adding fly ash & copper slag at different soaking conditions.

During 2010-11 the detail of tests performed and mix designs suggested for road and bridge works earning a revenue of Rs 2.53 Crore are given in **Table 10.1**.

10.4 ROAD STRETCHES PRONE TO DAMAGES

The Government have decided to identify and improve roads prone to frequent failures due to poor sub soil, water logging, and large scale movement of heavy vehicles and action is being taken to improve these road stretches. Such bad stretches have been identified through

field officers. Field inspections, collection of soil samples and soil testing are being undertaken by Quality Assurance and Research wing. Recommendations have been given for remedial measures for complete re-building of these stretches to avoid further deterioration after considering the factors causing the damages.

During 2010-11, 84 California Bearing Ratio (CBR) tests and Benklemen Beam Deflection tests in 5 roads of 62.50 Km length have been conducted and pavement design suggested.

10.5 DATA BANK

A Data bank has been created for retrieving technical information on roads and bridges. All technical information required for implementation of plan schemes are being stored in this data bank. Information is being collected for the major bridges and minor bridges on all the roads.

Further, action plan is being initiated for assigning unique number for bridges. Through this, it is possible to retrieve the information about bridges immediately and identify the damaged bridges and repair the same.

The field data on road condition is being collected using ROMDAS equipment, an instrument exclusively meant for this purpose. So far, field data relating to 10,614 Km of State Highways and Major District Roads have been

collected. Collection of data for remaining roads is under progress.

10.6 TRAINING PROGRAMMES FOR ENGINEERS

Training is very much essential to improve technical knowledge base of the officers and staff and to hone technical skills. To overcome technical problems during execution, necessary field oriented training is being imparted to provide updates on the latest developments in fields related to investigation, design, construction and maintenance.

This wing provides induction training to the newly recruited Assistant Engineers on the overall functioning of the Department and on Quality Control mechanisms.

At present quality control training is being imparted by this wing to all Assistant Divisional Engineers, Assistant Engineers and Junior Engineers of this Department in the field of Soils, Bitumen, Concrete, Traffic and Computer. It is a continuous programme.

Further, the Engineers of the Quality Assurance and Research wing are also being trained by CRRI, (Central Road Research Institute), New Delhi, NITHE (National Institute for Training Highway Engineers), Noida, U.P, IIT (Indian Institute of Technology) and other such reputed Institutions.

TABLE 10.1

REVENUE FROM TESTS PERFORMED DURING 2010 -11

Sl. No.	Details/Numbers	Revenue in Rs.
1	Tests conducted related to the design of pavements for roads, pile load tests and other tests conducted – 89 numbers	23,76,500
2	Bituminous mix design proposed for roads – 295 numbers	28,90,533
3	Concrete mix design proposed for bridges – 532 numbers	67,69,524
4	Tests conducted related to design of pavements using Bump Integrator tests and other tests conducted – 18 numbers	2,02,779
5	Tests conducted by Four regional lab – 4504 numbers	1,30,71,123
	Total	**2,53,10,459**

11. PLANNING, DESIGNS AND INVESTIGATION WING

The Planning, Designs and Investigation wing comprises one Chief Engineer, one Joint Chief Engineer, 4 Divisional Engineers at the Chief Engineer's office at Chennai and 8 Investigation Divisions located at Chennai, Villupuram, Trichy, Madurai, Tirunelveli, Salem, Coimbatore and Tiruppur.

Field investigation, preparation of detailed design, drawings for bridge works and preparation of project estimates for road improvement projects implemented by various wings of Highways Department are being done by this wing.

11.1 INVESTIGATION ACTIVITIES

11.1.1 FIELD INVESTIGATION

- Detailed investigation to collect field particulars at the location of the bridge and the adjacent areas.
- Obtaining necessary particulars for the proposals regarding river crossing from Public Works Department and Railway crossings from the Ministry of Railways.

11.1.2 SUB-SOIL INVESTIGATION

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

11.1.3 PREPARATION OF REPORTS AND DRAWINGS

- Formulation of suitable proposals based on field and sub-soil investigations.
- Fixing of bed level, preparation of longitudinal and cross section drawings for the river and calculation of hydraulic particulars.
- Preparation of specification report and alignment drawings for the proposals and obtaining approval of the feasible proposals.
- Preparation of Drawings and details for the works of formation of new bye-passes and link roads.

11.2 DESIGN ACTIVITIES

- Preparing designs, drawings, estimates and technical guidelines for River Bridges, ROBs, RUBs and Grade separators.
- Scrutinizing and according approval for the alternate designs furnished by the contractors along with their bids.
- Proof checking the Detailed Project Reports prepared by consultants.

- Re-designing the foundation and other bridge components whenever the bearing capacity of the soil varies during execution.
- Giving recommendations to facilitate issue of permits by the Home Department to over-dimensional heavy motor vehicles for plying on Government roads, after scrutiny in accordance with the Rules of Central and State Governments.
- Scrutinizing and according approval for the structural designs of bridges constructed by other departments.
- Offering technical guidelines on the investigation and design of certain bridge projects received from the Government.

To speed up the field investigation and design of bridge structures, latest survey instruments, software (Total station, survey instruments, STAADPro V8i, LEAP Bridge Suite, Revit Structure, MIDAS Civil Advance Version) and large format printer are being used.

11.3 NEW PROPOSALS

Bridges

During this year, scrutiny of field particulars and preparation of designs for 75 bridge works costing Rs. 1480.60 Crore to be implemented by the Government and checking of the Detailed project Reports prepared by the consultants are proposed to be taken up.

Bye Passes

Field investigation is being undertaken for 15 Byepasses at Tenkasi, Sankarankoil, Ambasamudram, Mudukulathur, Namakkal, Tiruchengodu, Bhavani, Myladuthurai, Cuddalore, Tirupattur, Arcot, Thiruvannamalai, Thiruthani, Thiruvallur and Tiruvarur.

12. TAMILNADU ROAD DEVELOPMENT COMPANY

Tamil Nadu Road Development Company Limited (TNRDC) incorporated in May 1998, is a 50:50 Joint Initiative of Tamil Nadu Industrial Development Corporation Ltd (TIDCO) and a private sector partner. TNRDC was set up with the mandate of developing road sector initiatives by catalyzing private sector resources and investments under Public Private Partnership (PPP) framework. At present TIDCO and TIDEL Park Limited (TIDEL) are holding 50% each in share capital of TNRDC.

TNRDC has improved the East Coast Road and is maintaining a length of 113 Km starting from Akkarai to Pondicherry State border. IT Expressway (ITEL) is the subsidiary of TNRDC. It has improved Phase I of Rajiv Gandhi Salai (IT Corridor) and is maintaining it for a length of 20.10 Km. At present TNRDC is the Managing Associate for Phase I of Chennai Outer Ring Road Project.

The following projects are being implemented by this company.

12.1 RAJIV GANDHI SALAI (IT EXPRESSWAY)

Under Phase-I, the Rajiv Gandhi Salai (IT Corridor) was developed as a six lane road to international standards 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 widened to four lane. This road is being maintained as a Toll road by M/s IT Expressway Ltd., the Special Purpose Vehicle (SPV) of Tamil Nadu Road Development Company Ltd.

In the second phase, the Government have proposed to construct a six lane road for a length of 25 Km from Siruseri to East Coast Road near Mamallapuram, under a viable financial arrangement through Public Private Partnership. The rough cost estimate for the project is Rs. 550 Crore. The Government have sanctioned Rs. 70 Crore for land acquisition and the land acquisition works are in progress. The Government is considering to appoint Tamil Nadu Road Development Company Ltd., as the "Managing Associate" for the project.

12.2 CHENNAI OUTER RING ROAD

12.2.1 PHASE I

Work for a length of 30 Km from Vandalur in NH-45 to Nemellichery in NH-205 via Nazrathpet in NH-4 at a cost of Rs. 1,081.40 Crore has been taken up under Public Private Partnership on Design, Build, Finance, Operate and Transfer (DBFOT) basis.

The Government of Tamil Nadu has proposed to disburse a sum of Rs. 300 Crore as project support fund, during the construction period of 30 months, depending on the progress of the project. Further during the operation period of 17 ½ years, the concessionaire will be paid Semi Annual Annuity. The work has commenced and is programmed to be completed by November 2012.

12.2.2 PHASE II

Land acquisition works are in progress for construction of six lane road from Nemellichery to Minjur situated in Thiruvotriyur – Ponneri – Panchetty road for a length of 32 Km.

A Concept Report for this project with financial projection of Rs. 1075.81 Crore has been sent to Japan International Co-operation Agency (JICA) by Government of Tamil Nadu through the Department of Economic Affairs (Ministry of Finance), New Delhi for funding. After the preparation of the Detailed Project

Report and other relevant reports, the project will be finalized.

Once this new road is formed, the heavy vehicles and containers entering from different directions can reach Ennore and Chennai Ports and also other places easily without any loss of time.

Tamil Nadu Road Development Company is acting as the Managing Associate for the Project.

A provision of Rs. 100 Crore has been made for this project in 2011-12.

12.3 DEVELOPMENT OF EAST COAST ROAD

The East Cost Road runs from Chennai to Kanyakumari to a length of 765 Km. The 166 Km length of road from Chennai to Cuddalore was widened to two lane at a cost of Rs. 102 Crore with financial assistance of Asian Development Bank and is in use. In this, the road from Chennai to Akkarai in Kanchipuram District is being maintained through Highways Department. The road to a length of 113 Km starting from Akkarai to Pondicherry State border is being maintained as a toll road by the Tamil Nadu Road Development Company.

Taking into account the heavy traffic from Chennai to Pondicherry State border on the East

Coast Road and also the environmental and social impact and to avoid accidents, the Government of Tamil Nadu ordered Tamil Nadu Road Development Company Ltd. (TNRDC) to investigate the feasibility of four laning the East Coast Road from Akkarai to Pondicherry border. Accordingly, TNRDC has prepared and handed over the Feasibility report to the Government for its consideration.

Based on the traffic volume, the consultants have suggested to improve Phase I from Akkarai (Km 22/300) to Mamallapuram (Km 55/800) to four lane standards with centre median immediately and improvement of Phase II from Mamallapuram (Km 55/800) to Tamil Nadu state border (Km 135/500) to four lane.

In this connection, the Government have sanctioned Rs. 1.43 Crore for the preparation of Detailed Project Report for Phase I and Rs. 10 Crore towards the cost of Land Acquisition and the land acquisition works are in progress. The preparation of Detailed Project Report is in progress. Meanwhile, the Government is also considering the widening of Palar Bridge in ECR at an estimated cost of Rs. 134 Crore.

13. TAMIL NADU ROAD INFRASTRUCTURE DEVELOPMENT CORPORATION

TNRIDC was incorporated under Sec. 25 of the Companies Act, 1956 as a non-profit organization on 4.3.2005 to formulate, undertake, implement, improve, upgrade and maintain the road infrastructure.

Considering the speedy development of industries in and around Sriperumpudur in Kancheepuram District, it was decided to improve the road infrastructure facilities in Oragadam Industrial Park at an estimated cost of Rs. 300 Crore and the scheme is under implementation.

13.1 ORAGADAM INDUSTRIAL PARK INFRASTRUCTURE DEVELOPMENT SCHEME - PHASE I

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

a. Singaperumalkoil - Sriperumpudur Road (SH-57) (24.60 Km)

Widening the road from single lane to four lane with centre median

This work is split up into two packages as follows and is in progress:

From Singaperumalkoil to Oragadam	12.60 km
From Oragadam to Sriperumpudur (including formation of byepass to Ponthur village for a length of 2.39 km)	12.00 km
Total Length	**24.60 km**

b. Vandalur – Walajabad Road (SH-48) (33.4 KM)

Widening the road from two lane to four lane with Centre median.

This work is split up into two packages as follows and is in progress:

From Vandalur to Oragadam	16.60 km
From Oragadam to Walajabad	16.80 km
Total Length	**33.40 km**

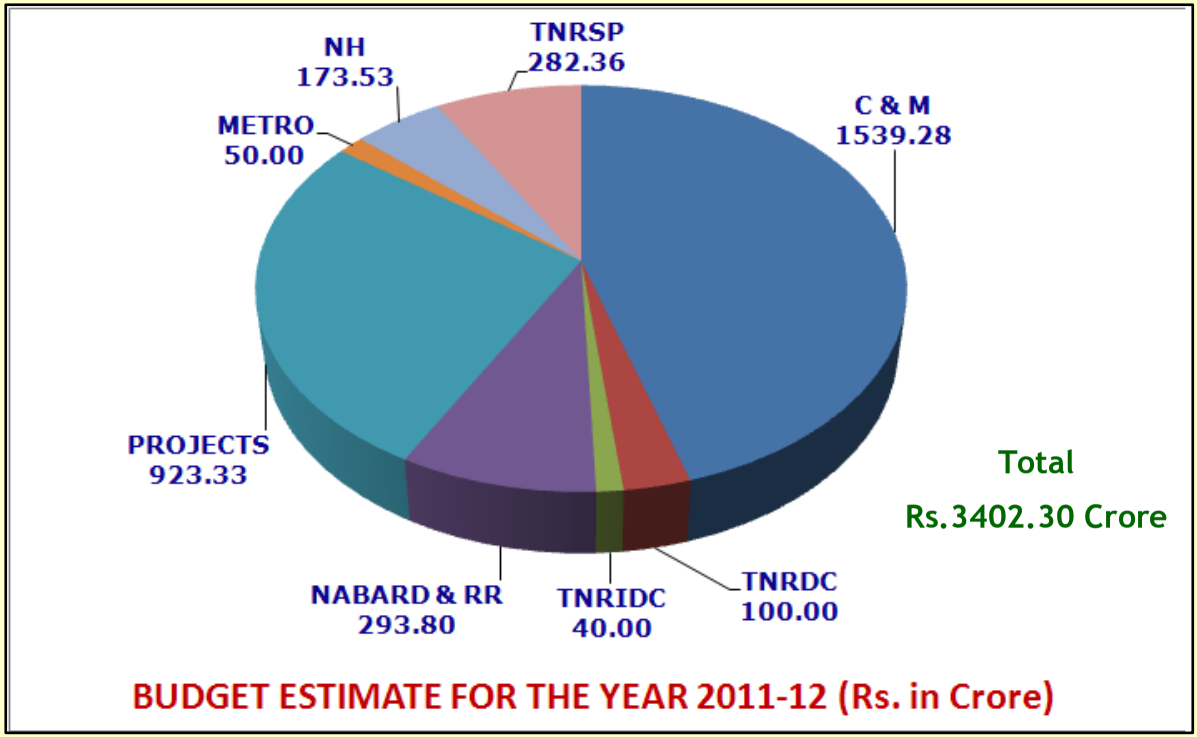
The road works in the first phase have been completed for a length of 36 Km. Out of 166 cross drainage works, 116 works have been completed. Also construction of a Grade Separator at Oragadam junction at a cost of Rs. 23 Crore is in progress.

The total expenditure incurred for this project is Rs. 280 Crore which includes the expenditure of Rs. 124 Crore for Land acquisition.

13.2 ORAGADAM INDUSTRIAL PARK INFRASTRUCTURE DEVELOPMENT SCHEME - PHASE II

The Government have accorded administrative sanction for Rs. 86.65 Crore for the work of "Widening four lane to six lane for the stretch from Oragadam to Sriperumbudur, Km 12/6 – 24/6 in Singaperumalkoil - Sriperumpudur road" and entrusted the work to TNRIDC for implementation. Accordingly, the DPR is under scrutiny and the tender will be invited shortly for this work.

Land acquisition process is expected to be completed in September 2011 and all the works in the first and second phase will be completed by 2012-13.


NH
173.53
TNRSP
282.36
METRO
50.00
C & M
1539.28
PROJECTS
923.33
NABARD & RR
293.80
TNRIDC
40.00
TNRDC
100.00
Total
Rs.3402.30 Crore
BUDGET ESTIMATE FOR THE YEAR 2011-12 (Rs. in Crore)

MINOR PORTS WING

14. TAMIL NADU MARITIME BOARD

The Tamil Nadu Port Department which was administering, controlling, regulating and managing the minor ports in Tamil Nadu was converted as Tamil Nadu Maritime Board under the Tamil Nadu Maritime Board Act, 1995 (Tamil Nadu Act 4/96) with effect from 18.03.1997. The Minister for Highways and Minor Ports, Government of Tamil Nadu is the ex-officio Chairman of the Board.

14.1 MINOR PORTS IN TAMIL NADU

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

Government Ports	Captive Ports	Ports under process yet to be notified
1. Cuddalore 2. Nagapattinam 3. Pamban 4. Rameswaram 5. Valinokkam 6. Kanyakumari 7. Colachel	1. Kattupalli 2. Ennore Minor Port 3. Mugaiyur Port 4. Thiruchopuram Port 5. Silambimangalam Shipyard Port 6. PY-03 Oil Field 7. Parangipettai 8. Kaveri Port 9. Vanagiri Port 10. Thirukkadaiyur 11. Thirukkuvalai 12. Punnakkayal 13. Udangudi 14. Manappad 15. Koodankulam	1. Cheyyur Port (Panaiyur) 2. Marakkanam 3. Chettinad Tharangambadi 4. Combined Port facility at Sirkazhi Taluk

All the minor ports in Tamil Nadu are anchorage ports without berthing facilities and hence cargo is transferred from the vessels to the shore and vice-versa through barges.

14.2 MINOR PORT DEVELOPMENT POLICY

Tamil Nadu Maritime Board is fully aware of the importance of industrialization for the economic development of the State. It encourages setting up of Captive Ports, Jetties and Moorings for the port based Oil Industries, Thermal Power Projects and also multi user ports on "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.

The main highlights of the Port Policy:

The vision of this Board is to promote cordial relationship between the Ports and Industries to ensure development of Ports and industrial growth. It also aims to accelerate the pace of economic growth of the state by developing a number of captive ports through Public Private Participation.

14.2.1 OBJECTIVES

- To facilitate establishment of Port based Thermal Power Plants by providing exclusive port facilities to Import Coal, Naphtha, Oil, 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, ship breaking and construction of floating crafts.

14.2.2 POLICY GUIDELINES

Private Participation

- With a view to create multi user facilities capable of handling all types of cargo like bulk, break bulk, containers, liquid bulk petroleum products, chemicals, the Government of Tamil Nadu have decided to develop all the Minor and intermediate ports in the state through Public Private Participation.

Captive Jetties

- In order to satisfy the requirements of industries for allocation of sites for construction of captive jetties for port based industries and create facilities, Government of Tamil Nadu have decided to allow private initiative to construct jetties. Private companies making substantial investment in coastal areas requiring port based facilities will be allotted sites for construction of jetties both captive and commercial.

MINOR PORTS IN TAMIL NADU

Cartographed by Vishnu Maps Publications. Ph: 044-24712939

GOVERNMENT PORTS

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

CAPTIVE PORTS (C.P)

1. KATTUPALLI
2. ENNORE MINOR PORT
3. MUGAIYUR
4. THIRUCHOPURAM
5. SILAMBIMANGALAM SHIPYARD
6. PARANGIPETTAI
7. PY-03 OILFIELD
8. KAVERI
9. VANAGIRI
10. TIRUKKADAIYUR
11. THIRUKKUVALAI
12. PUNNAKKAYAL
13. UDANGUDI
14. MANAPPAD
15. KOODANKULAM

PORT UNDER PROCESS (Yet to be declared)

1. CHEYYUR (Kanchipuram District)
2. MARAKKANAM (Viluppuram District)
3. COMBINED PORT FACILITY NEAR SIRKAZHI TALUK
4. CHETTINAD THARANGAMBADI

Approach

- Private participation in construction / development of ports/ jetties will be encouraged through a well set out transparent procedure and each proposal will be considered on its own merits. The thrust of the policy bundle will be to encourage effective private participation and to that extent the approach in finalizing the proposals could be flexible on a case to case basis.

Operational Strategy

- To maintain transparency and to invite competitive bids through Global Tenders.
- To promote the project on the principle of Build, Own, Operate and Transfer (BOOT)
- The period of BOOT will initially be for 30 years and may be extended up to 50 years.
- Will recover a reasonable amount on the cargo handled.

14.3 ACTIVITIES OF MINOR PORTS

In the Government ports, small ships call at Nagapattinam port for the export of Diesel and Naphtha and import of Edible Oil, Crude Oil and General cargo. Small ships are occasionally piloted through Pamban channel. Kanniyakumari and Rameswaram ports are used for Passenger Ferry Service. There is no activity in other ports.

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

Of the fifteen captive ports, five ports, viz., Ennore Minor Port (Thiruvallur), Thiruchopuram (Cuddalore), PY-03 Oil Field (Cuddalore), Thirukkadaiyur (Nagapattinam), Koodankulam (Tirunelveli) are presently operational. The remaining ten captive ports have not commenced operation.

COMMODITIES HANDLED IN MINOR PORTS

Government Ports

Sl. No.	Port	Loaded	Unloaded
1	Cuddalore	--	Vinyl Chloride Monomer
2	Nagapattinam	Diesel and Naphtha	Edible Oil, Crude oil and General cargo

Captive Ports

Sl. No.	Port	Loaded	Unloaded
1.	Ennore Minor Port	-	Liquid Ammonia
2	PY 03 Oil field	Crude oil	-
3	Thirukkadaiyur	-	Naphtha

14.4 PORT DEVELOPMENT WORKS

14.4.1 GOVERNMENT PORTS

1. Cuddalore Port

M/s. Chemplast Sanmar Limited, have developed Marine Terminal Facility (MTF), within Cuddalore port limits, and is handling Vinyl Chloride Monomer (VCM) required for the Poly Vinyl Chloride (PVC) factory, established at SIPCOT Complex.

M/s. Cuddalore Powergen Corporation Limited have proposed to set up a jetty at an approximate cost of Rs. 325 Crore for which the port limits of Cuddalore Port has been extended. The coastal land measuring 12.66 acres has been allotted on lease basis to the Company. Land acquisition from private/public is under progress by the company.

It was decided by this Board, to offer the existing Cuddalore Minor Port on the basis of

Develop, Operate, Maintain, Share and Transfer (DOMST) through Public Private Participation mode. The proposed investment is about Rs. 150 Crore over a five year period with the revenue to the Board based on the Minimum Guaranteed Annual Throughput. Accordingly, the bids received are under consideration of the Government.

2. Nagapattinam Port:

It was decided by this Board, to develop Nagapattinam minor port as an All weather, Deep water, Direct Berthing, Greenfield port on PPP mode at an approximate cost of Rs. 400 Crore. Expression of interest for development is proposed to be released soon.

3. Colachel Port

A Techno Economic Feasibility Report has been prepared for the development of this port which is under consideration of the Government.

14.4.2 CAPTIVE PORTS

1. Kattupalli Port

M/s. L & T Shipbuilding Limited have been granted an in-principle approval for setting up a shipyard cum minor port complex at Kattupalli, in Thiruvallur district, for which, the Government have extended the port limits of Kattupalli port. Coastal land within these port limits, has been allotted to the Company on lease basis.

Environmental clearance for this project has been issued by Ministry of Environment and Forests. A proposal requesting to declare Kattupalli as Sea Customs port has been sent to Government of India. North and South Breakwater construction, Ship lift and dredging works are in progress.

2. Mugaiyur Port

Based on the request of M/s. Marg Swarnabhoomi Port Private Limited to develop a captive Ship repair facility at an approximate cost of Rs. 500 Crore, this port was declared as a minor port. The company has been allotted coastal land within the port limits of this port on lease basis.

3. Thiruchopuram Port

This port was declared for the captive use of M/s. Nagarjuna Oil Corporation Ltd., for receiving 6.5 million tonnes per annum of crude oil and for shipping 2.8 Million tonnes per annum of refined petroleum products for their proposed oil refinery at Thiruchopuram. The Company has achieved financial closure for this project and commenced receiving of Plant and machinery cargo for this refinery.

The request of the Company to assign the development of their captive port to handle other commercial cargo in favour of one of their equity partners, viz., Cuddalore Port Company Private Limited, is under consideration of Government.

4. Silambimangalam Shipyard Port

The port limits of Silambimangalam Shipyard port have been notified by the Government for M/s. Goodearth Shipbuilding Private Limited for establishing a captive shipbuilding yard in Cuddalore district for building of ships. The Government of India has also notified this port under Sea Customs Act.

5. Parangipettai Port

Based on the request of M/s. IL&FS Limited to develop a captive port for handling coal required for their proposed 4000 MW Power Plant in Cuddalore district, this port has been notified. Coastal land within the port limits of this port has been allotted to the company on lease basis. Consent to establish the port and power plant from Tamil Nadu Pollution Control Board has been received and field works have started.

6. Kaveri Port

M/s. PEL Power Limited have proposed to develop a jetty for handling coal required for their 1320 MW Power Plant for which this port has been notified. Proposal to declare this port under Sea Customs Act is under consideration of Government of India.

7. Vanagiri Port

M/s. NSL Power Limited have proposed to develop a jetty for handling coal required for their 1500 MW Power Plant for which this port has been notified. Proposal for Customs Notification of this port is under consideration of the Government of India.

8. Thirukkuvalai Port

The limits of Thirukkuvalai port in Nagapattinam district have been declared for M/s. Tridem Port and Power Company Private Limited, to establish a port to handle coal required for their proposed 2000 MW Merchant Power Plant. The company is in the process of obtaining clearance from Ministry of Environment and Forests, New Delhi for the port project.

9. Udangudi Port

This port has been notified as a minor port for M/s. Udangudi Power Corporation Limited, Chennai for establishing an open sea jetty to receive coal for their 1600 MW Udangudi Super Critical Thermal Power Project. The company is in the process of obtaining environmental clearance from Ministry of Environment and Forests, New Delhi.

10. Manappad Port

The Government have declared Manappad in Thoothukudi district as a Minor Port for the captive use of M/s. Indian Gas Limited, for handling 2.5 Lakh Metric tonnes of LNG per annum required for the proposed 2000 MW Gas Turbine Power Project to be set up by M/s. Indian Power projects Limited. Coastal land within the port limits of this port has been allotted on lease basis for construction of marine facilities.

14.4.3 PORTS UNDER PROCESS TO BE DECLARED

1. Port at Panaiyur, Kanchipuram District

M/s. Coastal Tamil Nadu Power Limited have been granted an in-principle approval for developing a captive port at Panaiyur in Kancheepuram district for handling coal required for their proposed 4000 MW Ultra Mega Power Project. The company has applied for the clearance from the Ministry of Environment and Forests, New Delhi.

2. Marakkanam Port, Villupuram District

An in-principle approval has been granted to M/s. NTPC Limited for setting up of a captive port for handling coal required for their 4000 MW Super Thermal Power Project at Marakkanam in Villupuram district. The

company is in the process of preparing a Technical Feasibility Report.

3.Chettinad Tharangambadi Port, Nagapattinam District

M/s. Chettinad Power Corporation Limited have proposed to set up a 1200 MW Thermal Power Project at Tharangambadi Taluk in Nagapattinam district. To handle coal required for this power plant, an in-principle approval has been granted to set up a captive port and proposals for declaration of port limits is under consideration of the Government.

4. Port at Sirkazhi Taluk in Nagapattinam District

M/s. Empee Power and Infrastructure Private Limited and M/s. Sindya Power Generating Company Private Limited have proposed to develop a combined port facility in Sirkazhi Taluk to handle coal required for their power plants through an SPV company namely M/s. Sirkazhi Port Private Limited, for which, an in-principle approval has been granted. The company is in the process of obtaining clearance from Ministry of Environment and Forests., New Delhi.

14.5 TAMIL NADU MARITIME ACADEMY

The Tamil Nadu Maritime Academy at Thoothukudi is functioning under Tamil Nadu Maritime Board. The Academy has so far conducted 16 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'.

15. POOMPUHAR SHIPPING CORPORATION LIMITED

Poompuhar Shipping Corporation Limited (PSC) was established on 11.04.1974 under the Companies Act, 1956 with the objective of transporting the entire requirements of coal for the Thermal Power Stations of Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO).

15.1 SHIPS IN OPERATION

Poompuhar Shipping Corporation is operating three own specially designed shallow draft geared bulk carriers viz. M.V Tamil Anna, M.V Tamil Periyar and M.V Tamil Kamaraj acquired between August 1985 and January 1987. With these own ships, the coal is being transported to the Thermal Power Stations of TANGEDCO. Apart from this, based on the requirement, Ships are being chartered on contract basis from the private Shipping Companies. For the year 2010-11, PSC has chartered seven ships from private Companies.

15.2 PORTS HANDLING COAL

The coal required by Tamil Nadu Generation and Distribution Corporation Ltd (TANGEDCO) is transported through own and chartered ships from the load Ports at Haldia,

Paradip and Visakhapatinam and discharged at VOC Port, Tuticorin and Ennore ports.

15.3 COAL MOVEMENT FOR TANGEDCO

During 2010 – 11 this corporation has transported about 124.49 lakh MT coal to the Thermal Power Stations against 125.74 lakh MT Coal received at the load ports. During 2011-12, it is expected to move entire quantity of coal of about 150 lakh MT allotted by M/s. Coal India Limited to TANGEDCO for their existing Thermal Power Stations and the new units to be commissioned during 2011-12.

15.4 COAL MOVEMENT FOR NTECL

PSC is in the process of taking up the assignment of transporting coal for the upcoming power projects (3x500 MW) of NTPC Tamil Nadu Energy Co.Ltd. (NTECL), a joint venture company of TANGEDCO and NTPC Ltd. The new plants are expected to be commissioned between October 2011 and December 2012. The expected annual coal allotment by M/s. Coal India for the 3 units is around 65.00 lakh MT.

TOURIST FERRY AND CARGO SHIP OF POOMPUHAR SHIPPING CORPORATION

15.5 PHYSICAL AND FINANCIAL PERFORMANCE

The details of the quantity of coal moved, turnover and Profit of the Corporation for the last three years are given below**:**

Year	Quantity of coal received at load ports (in lakh MT)	Quantity moved (in Lakh MT)	Turnover (Rs in Crore)	Net Profit (Rs in Crore)
2008-2009	149.10	133.11	684.62	2.92
2009-2010	135.00	127.88	461.52	3.00
2010-2011	125.74	124.49	528.26 (estimated)	2.96 (estimated)

15.6 KANYAKUMARI FERRY SERVICE

This Corporation is also operating passenger ferry service from Kanyakumari to the Vivekananda Rock Memorial and Thiruvalluvar Statue. Presently, PSC is operating three ferries viz. M.L. Bhagirathi, M.L.Guhan and M.L.Pothigai for transporting tourists at Kanyakumari. As a replacement for M.L.Baghirathi, which is more than 35 years old, PSC has issued work order for design, construction and delivery of one ferry

with seating capacity of 150 passengers with design similar to M.L. Guhan and M.L.Pothigai for Rs. 1.08 Crore. This ferry will be inducted into operation by September / October 2011.

Physical and financial Performance of the Ferry service for the last three years are given below:

Year	No. of ferries	No. of passengers (in lakh)	Fare collection (Rs. in lakh)	Profit (Rs. in lakh)
2008-2009	3	18.48	359.73	75.75
2009-2010	3	19.23	377.83	35.75
2010-2011	3	19.15	373.35	10.00 (estimated)

Edappadi K. Palaniswami
Minister for Highways and Minor Ports