

DRAFT TRANSPORT POLICY FOR KERALA

Submitted to
Transport Department
Government of Kerala

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1. BACKGROUND

1.1. Transport plays an important role in the economic development of any region. Economic growth that result in higher incomes and a rising living standards are expected to create greater demands for travel for both work and non-work/leisure purposes. This is turn can create congestion and reliability problems on the transport network, increasing costs on business and damaging quality of life. As road transport provides door-to-door connection and flexible movement of goods and passengers, its patronage by people are on the rise day by day. The quality of life now greatly depends on the quality of roads.



1.2. The quality of transport system in Kerala needs much improvement. Although road transport dominates the transportation scenario in the state, people depend on railways for long haul transport needs. The service levels in train journeys are far from satisfactory. Reservation of seats and berths are not available on demand and one has to book tickets more than one month in advance. The public transport system is unreliable, costly and remains very rudimentary.

1.3. The motor vehicle population in Kerala, which was around 2 lakhs in 1980, has almost doubled every 5 to 6 years. There are about 60 lakh registered motor vehicles in the state of which 25,000 are stage carriages (bus services). 63 percent of the vehicles are Two wheelers. Around 5 lakh vehicles are now added on the state roads every year. A major chunk of this vehicle stock is found in urban region causing traffic congestion.

1.4. There are about 1.6 lakh kilometers of roads in the state of which only 20 percent are motorable. The rest are mostly narrow or single lane pathways intended for residential or street connectivity. 80 percent of motorable traffic uses the arterial and sub-arterial roads consisting of National Highways, State Highways and Major District Roads which are under the supervision of Public Works Department. The maintenance and upkeep of these highways are far from satisfactory and devoid of any scientific pavement or bridge management system.

1.5. Although the state has high potential in coastal and inland water transport, exploitation of such facilities still remains tardy. There is no proper coordination among service providers of different transport modes.

1.6. The cities and towns in the state are constraint by narrow roads and bridges and poor pavement and drainage conditions. Adequate footpaths, cycle tracks, pedestrian and vehicle crossing facilities, service roads etc. are absent in city roads. Traffic congestion, long queues at junctions, crowding in buses, dust and smoke, accidents, fuel wastage etc. are the common scene on our urban roads. The available road capacity is further limited by preponderance of parking of vehicles and also due to encroachment for other informal activities mostly by poor (hawkers, vendors, petty shops, work shops etc.) for eking out their livelihood.

1.7. Highways/city roads are becoming a “death trap” for hapless pedestrians and area residents. Kerala stands third in road accident risk index and on an average around 11 people are crushed under the wheels on our roads everyday and over 100 people are disabled for life. 40 percent of accident victims are from the vulnerable groups consisting of pedestrians, students, and cyclists. There is no road culture and traffic rule obedience among road users.

1.8. Transport contributes a major share of carbon emissions and thereby a challenge to climate change. The substantial strengths of the railways and inland water transport in minimizing such emissions per passenger/tonnes kilometer traffic performed including their cost efficiency for long distance and freight journeys have not been exploited fully.

1.9. The land acquisition has been a crucial problem for transport development in Kerala due to high density of population and peculiar distribution of habitation and other activities on road frontages. The ribbon development along side the roads make it difficult to widen the roads to the required standards. Stiff resistance is encountered at the time of acquisition of land even for marginal widening of roads or improvement of junctions. Many of such schemes devised in the past had to be either delayed, postponed or abandoned resulting in cost over runs.



1.10 It is now the time to envisage advance and long-term action plan for identifying priority transport development schemes and projects, and to ensure adequate right of way (ROW) and financial resources for timely implementing these projects. An integrated, well coordinated and balanced package of multi-modal investment plan need to be evolved at regional level, and in cities and towns to increase connectivity, capacity, convenience and reliability of public transport, by a mix of modes, at the same time encouraging walk and cycle trips which are environmentally less damaging

1.11 Faced with serious fiscal crisis State Government is not able to allocate adequate resources for transport development in the state. Against the present difficulties the Government is committed to evolve a long term transport policy conducive to advance overall economic growth and meet the mobility requirements of its people.

1.12 The objective of the transport policy is to evolve a conducive transport regime for Kerala state geared to meet requirements of faster mobility, safety, access to social and economic services and minimizing the impact of negative externalities. The Government will take further firm steps to strengthen and implement the policies effectively.

2. VISION

2.1. The vision of the Government in Transport sector is for *‘Shaping a modern, efficient, economical and safe transportation system, connecting various growth regions in the state, to meet the faster mobility needs of all Keralites by 2025’*

3. MISSION

3.1. The Government will endeavor for taking concerted, continuous and long term efforts for *‘achieving safe, economical and fast transport system for moving people and goods in the state by integrating different modes of transport according to their economic advantages with respect to cost, speed, low carbon emission and travel comforts’*.

3.2. These above mission will be achieved by improving connectivity to upcoming growth regions in the state through inter-modal transport planning, and proper implementation of projects and schemes worked out based on the proposed characteristics of inter-state, inter-district and intra-city transport demand of people and goods in the state and their ideal modal share. The trend of urbanization, land use changes, the growth plans of different sectors of the economy, the inherent strength and weaknesses of different modes and transportation system with special reference to their sustainability, efficiency, employment generation, productivity, resource and social cost etc. will be taken into account for intermodal planning.

4. TRANSPORT POLICY STATEMENT

4.1. The present transportation system in the state was evolved by piece-meal process, which remains under connected and uncoordinated. It is characterized by high operating cost, inefficiency and high accident risk.

4.2. The situation is likely to worsen in future due to increase in population, urbanization and demand for personalized transport resulting from economic growth and higher income. The daily transport demand is expected to grow from present 135 lakh trips to over 180 lakh passenger trips by 2025.

4.3. Kerala will continue to remain as a consumer market for all kind of goods. The existing transport system will not be able to cater to this much demand and hence the inter-modal goods transport system, mass transit system, urban transport infrastructure, traffic management and associated amenities must be improved substantively.

4.4. The overall objective of the Transport Policy is to evolve schemes to meet, in a phased manner, the requirements of faster mobility, safety, access to social and economic services and minimizing the impact of negative externalities.

4.5. The strategy for achieving the above objective would be to promote quality infrastructure support for improving the connectivity and transportation of humans and goods to sustain high growth rate of GDP, to develop integrated and multimodal transport system with emphasis on mass rapid transport such as railways and metros at regional/city level, to promote public transport and requisite quality of service to discourage personalized transport, to promote quality and productivity of goods transportation and infrastructure, to ensure availability of adequate trained manpower, promote road safety, traffic management and post - accident trauma care, to promote sustainable road transport with special emphasis on energy efficiency, environmental conservation and least negative social impact, to promote increasing use of modern technology and research in road transport development; and to strengthen the database collection and management system to assist in continued policy and performance evaluation.

The sub-sector wise broad policy objectives and strategies to meet the desired objectives are described as under:-

4.6 Public Transport

A. Objectives

- To revamp public transportation system to increase its share from existing 33% of total passenger traffic to 80 % in 2025
- Reduce dependency on personal transport and increase share of railways in inter-state and inter-city transport and that of buses in intra-state and intra-city transport.

B. Strategies

4.6.1 Inter-city transport

4.6.1.1. The government will encourage rail based public transport system for inter-city travel which is cost effective and environment friendly. In order to strike the appropriate modal balance between public transport and personalized transport, public transport system that is used by common mass will get maximum attention of the Government.

4.6.1.2. Encouragement will be given for investment in rail-based metro or mono rail systems in congested inter-city routes and introduce High-speed intercity passenger rail service and sub-urban rail system on main line routes.

4.6.1.3 Even after construction of rail based Mass Rapid Transit system, the bus transport system will continue to play the role of main mass transport system provider for inter-city routes covering eastern regions and rural areas in the state. Government will ensure availability of buses on all inter-city and rural routes at convenient schedules to the public.

4.6.1.4 The Government will encourage public sector bus transport service provider ie. KSRTC with more autonomy to enhance efficiency in operation, strengthen the middle level management system, passenger information system, rationalization of routes and initiating other innovative operational methods to improve its financial viability.

4.6.1.5 The operational structure of KSRTC and that of the private stage carriages will be further streamlined to attract commuters towards public transport. The Government will encourage introduction of new generation cleaner energy buses to reduce pollution level. The share of KSRTC buses in the total stage carriage services will be increased from present 27 percent to 50 percent by 2025.

4.6.1.6 Public transport will get preferential treatment in the tax structure as compared to personalized transport.

4.6.2 Urban Transport

4.6.2.1 Sixty percent of the vehicles registered and 45 percent of the road accidents in the state are in urban areas. It is expected that about 55 percent of Keralites will live in urban centres by 2025. Due to inferior public transport services and lack of reliability and connectivity, the personalized transport demand is ever increasing in urban areas.

4.6.2.2 The narrow urban arterial and sub-arterial roads are flooded with all type of vehicles ranging from buses, trucks, two-wheelers, cars and cycles. The buses on these roads are forced to crawl behind autorikshaws, cycles or any other slow vehicles due to absence of adequate right of way. This is affecting the economic performance of the intra-city bus transport and the commuters gradually loose confidence in the public transport system and choose alternative costly and unhealthy modes such as parallel services, autos, two wheeler etc. This was the major reason for sudden buoyant demand for two wheelers among the middle class people of Kerala during last few decades.



4.6.2.3 Government will take steps to discourage such tendency among people to adapt to personal vehicles and instead encourage mass transport facilities in urban areas.

4.6.2.4 Construction of mass transport system consisting of Metro, Commuter rail (Light Rail/Mono Rail), trams, sky bus, electric trolley buses etc. will get

priority in congested city routes. Even if the projects do not turn out financial viability in the short run, the government will provide annuity to bridge the short term gaps in revenue.

4.6.2.5 Even after providing mass transport services such as metro or mono rail, the demand for personal transport will be very high in urban regions. The urban transport infrastructure will be planned to meet the long term projected demand of the



commuters and other sections of the society.

4.6.2.6 Advance action will be taken to widen the existing arterial and sub-arterial roads to 4/6 lane standards with provision for pedestrian walking and crossing facilities, cycle tracks and off street parking.

4.6.2.7 The existing road intersections will be redesigned to enable them to cater to the projected demand. Grade separated fly overs/under passes will be constructed at all major road intersections which carry more than 8000 vehicles per hour.

4.6.2.8 A network of ring and radial roads, bypasses, link roads, fly-overs, multi level off-street parking facilities, pedestrian crossing facilities etc. will be constructed in cities and towns to relieve traffic congestion around Central Business District (CBD) areas.



4.7 Intermediate Public Transport

4.7.1 Intermediate Public Transport (IPT) modes such as Taxis, Auto rickshaws, mini-bus/tempo services etc. will continue to play an important role even in future as feeder services to the main mass transport system and providing accessible movement in pre-designated areas. Their operation will be strengthened by proper regulation and discipline.

4.7.2 The Government will encourage introduction of specially designed IPT vehicles such as 4 wheeler Autorikshaw for improving road safety.

4.7.3 The Government will encourage shared taxis, motor cycle taxis, and other non-motorized vehicles to be used as IPT fleet at selected feeder locations.

4.8 Parking

4.8.1 Roadside on street parking takes away much precious road space meant for traffic. Such parking also contributes to accidents and blocking of pedestrian walkways.

4.8.2 Building permits will be issued only after ensuring adequate in-house parking space for parking of the expected number of vehicles of the inhabitants, employees and visitors.

4.8.3 For existing buildings and commercial complexes built without providing adequate parking space, such parking facilities will be built off-street by the local bodies at suitable locations and costs recovered from the building owners.

4.8.4 Open and multi-storied parking facilities will be constructed by the government at important transport terminals, market centre's, and multi-modal logistic centre's to promote inter-modal transportation.

4.9 Rural Transport

4.9.1 The settlement pattern in Kerala is such that the whole state looks like a greater urban continuum with roads connecting to even hilly areas. However the quality of these roads, both structural and lateral capacity wise, are far from satisfactory which prevent introduction of buses in these routes. 95 percent of the local roads under Panchayats do not have even single lane width to allow for bus services.

A. Objectives

- To ensure easy access and reliable public transport to all classes of rural society
- To improve standards of rural roads connecting two or more Panchayats to allow bus services

B. Strategies

4.9.2 The policy of the Government is to connect all villages/Panchayats and settlements inhabited by more than 500 people with bus services. The roads in these areas will be widened to minimum 8 meter standard for extending the bus services.

4.9.3 The hitherto unconnected villages and settlements in the eastern hilly regions will be connected under the proposed Hill Highway development scheme. Coastal Highway and other District roads will be developed to connect hitherto unconnected rural areas and they will be provided with the much need public transport services.



- 4.9.4 Low sized and low capacity mini buses will be introduced in rural low density routes where road width is not sufficient for plying of large or medium size buses. Intermediate Public Transport services such as 4 wheeled Cabs/Tempos/Vans/Mini Bus (with 5-15 passenger capacity) will be encouraged to serve in identified rural routes as feeder services to the main arterial routes by issuing special permits.
- 4.9.5 The fare rate will be determined separately for such mini-bus services in rural areas depending on their financial viability. Govt. will consider giving tax concessions to such vehicles to improve their operational efficiency.
- 4.9.6 The Government will encourage battery operated/solar powered low capacity vehicles in rural areas by offering special incentives.

4.10 Goods Transport

4.10.1 Kerala being a consumer state, depend on other states for almost all commodities of daily consumption. The demand for construction activities from real estate and other sectors of the economy is also buoyant resulting in higher goods transportation. There is a need to plan for inter-modal infrastructure for goods transportation by creating multi-modal transshipment terminals at selected goods terminals.

A. Objectives

- To ensure high quality goods transport service to the consumers through intermodal freight transportation and strengthen its infrastructure development
- Provide barrier free movement of long haul goods vehicles entering the state

B. Strategy

- 4.10.2 Goods transport by road/rail/coastal transport system will be modernized to facilitate their intermodal integration. Multi-Axle Trucks and container transport will be encouraged by creating necessary infrastructure, terminal facilities and wayside amenities for these vehicles and for their parking and servicing.
- 4.10.3 Speed Governors and Intelligent Transport System will be adopted for smooth goods movement by road
- 4.10.4 Introduction of Green channel will be considered for avoiding unnecessary detentions and harassments of vehicles at check posts. All check posts will modernize with intelligent vehicle inspecting system to reduce detention period of vehicles for checking.

4.11 Motor Vehicles

4.11.1 The car and Two wheeler population is showing the trend of buoyant growth in recent decades. Measures need to be taken to discourage use of personalized vehicles both from the angle of road safety, fuel economy and clean environmental standards.

A. Objectives

- To arrest the trend for sharp rise in private vehicle ownership in the state and improve driving skills and vehicle fitness to improve road safety.
- To encourage cleaner eco - friendly and energy efficient vehicles and phase out old vehicles that pollute the environment.
- To make issuance of driving license and vehicle inspection strict and IT based so as to reduce scope for subjectivity and extraneous considerations.

B. Strategies



4.11.2 The Motor Vehicle department will be restructured to make it more as a Transport Regulator than mere revenue collection and license issuing agent.

4.11.3 Model driver training institutions will be established in different districts with requisite infrastructure support.

4.11.4 Government will strengthen introducing modern web-based database of the vehicles and adopting e-payment scheme for payment of taxes and modern methods of vehicle tracking and monitoring system such as Electronic Road Pricing (ERP) system at all congested and accident prone locations.

4.11.5 Government will set up exclusive wing for road safety enforcement which will work on automated system. Existing other enforcement agencies will also be equally equipped. Emphasis of enforcement will be to smoothen the traffic flow and reduce road accidents.

4.12 Manpower

4.12.1 Although there are about 11 million registered drivers in the State, there is a dearth of skilled drivers to drive heavy vehicles including passenger buses and goods vehicles. Most of the heavy vehicle drivers are very young and do not have adequate training in handling these vehicles. Likewise there is also great demand for expertise in managing various transport related activities including travel and tour operations and managing traffic. There is a need to ensure continuous availability of trained and skilled manpower in transport sector.

A. Objectives

- To ensure availability of adequate trained manpower to manage and operate different transport operations and to control of traffic congestion in cities, highways etc.

B. Strategies

- 4.12.2 Government will encourage setting up of Drivers and Mechanics training centers (both in private and public) in each district and provide advanced driving simulators and test-track facilities to impart innovative driver training and driving behavior for enhancing road safety.
- 4.12.3 Refresher training will be made compulsory for those drivers committing road accidents by storing electronic data of drivers including their health status such as blood group, blood pressure, eye sight etc.
- 4.12.4 Government will look into the welfare aspects of unorganized drivers including fixation of fair and minimum wages to reduce drop outs from profession
- 4.12.5 Government will encourage creating a reserve of traffic wardens after giving necessary training to students, youths and other volunteers/social activists to regulate traffic at congested junctions during peak periods on voluntary/part time basis.
- 4.12.6 Government will give incentives to drivers who show accident free defensive driving habits.

4.13 Road Safety

- 4.13.1 Due to friction and conflicts inflicted by the criss-crossing of vehicles such as cycles, pedestrians, slow mode etc., not only the level of service of the roads deteriorated sharply but also resulted in higher accident casualties. Accidents become a common scene on Kerala roads and major brunt of these accidents are born by cyclists, pedestrians, and two wheelers.



- 4.13.2 Kerala stands at third highest road accident risk among Indian states. Average around 150 people are getting injured and hospitalized in road accidents daily. While on an average 11 people are killed daily, over 50 persons are grievously injured. 40 percent of those killed are from vulnerable road users including pedestrians and cyclists. 40 percent of two wheelers are also getting involved in road accidents.
- 4.13.3 Road accident rate and fatalities are increasing in the state without any abatement. There is an urgent need to control road accidents and gradually bring it down to zero level.

A. Objectives

- To arrest road accidents and fatalities at 2000 level immediately
- To take measures to reduce road accident fatalities to zero level by 2025

B. Strategies

- 4.13.4 The Government will enhance the powers and functions of Kerala Road Safety Authority with regulatory, advisory, capacity building and research functions to provide an institutional framework for a coordinated approach to prevent road accidents
- 4.13.5 Government will establish necessary infrastructure to carry out routine accident investigations and conduct safety audit of highways and intersections to identify stretches/spots having defective road geometrics and lack of road safety devices
- 4.13.6 Strict enforcement will be done against all traffic violations using IT based intelligent transport devices such as with speed radar/cameras, GPS etc. and enhance penalty clauses and amount.
- 4.13.7 Inspection & Certification (I&C) of transport vehicles will be made compulsory every year covering both safety & emission norms and link registration/insurance of vehicles with I&C

- 4.13.8 Government will encourage private sector participation in rescue, evacuation and trauma care of accident victims for effective delivery of emergency relief services. Establishing post - accident trauma care facilities desirably at every 5 to 10 km. radius of occurrence of accidents on National and state Highways will be encouraged.
- 4.13.9 Government will encourage NGOs and other expert agencies in spreading road safety messages and conduct road safety awareness campaigns to educate public on safe road user behavior.

4.14 Fare Structuring

- 4.14.1 Independent semi judicial body will be set up to closely monitor direct and indirect costing of transport industry as a whole and create a mechanism whereby fares and freight rates are restructured periodically to ensure the viability of the industry and safeguard the interest of the general public as well.

5 INTER-MODAL TRANSPORT COORDINATION

5.1 Inter-modal connectivity

5.1.1 Planning of integrated Multi-modal Transport System has been in vogue in the country for the last several years and nothing has been able to achieve this objective in an appreciable manner. Coastal shipping and Inland Water Transport have not been able to realize their full potential of growth though they are more energy efficient, environmentally cleaner and economical.

- 5.1.2 The policy of the Government would be to provide inter-modal connectivity to all growth centers and developing regions in the state. At present the Western Central Kerala region has the benefit of road, rail, Inland and Port connectivity. The eastern growth regions such as Wayad, Munnar, Kumili (Thekkadi), Sabarimala, Thenmala, etc. do not have multi-modal connectivity. These regions at present depend on only roads for connectivity which is very slow, risky and rudimentary. The Government will encourage setting up of rail and air connectivity to these regions both in public and private sectors.



5.2 In order to promote inter-modal coordination for safe, efficient, customer friendly and faster movement of goods, there is need to standardize a common carrier or transfer method (Roll on-roll off) which can be transshipped by road, rail, and barges and ships. Necessary multi modal logistic parks and Inland Container Depots (ICDs) need to be established to transfer carriers from the main mode to feeder modes having best location advantages.

5.3 The Railways have to increasingly focus on creation of rail hubs with sufficient warehousing facilities and accelerate the programme of containerization not only to promote intermodal transport but also for increasing its market share and catering to high value traffic.

5.4 Facilities like Roll on – Roll off enables loading of a truck directly on a flat thereby avoiding movement of long haul traffic in hilly and difficult terrain through road transport. Multi-axle vehicles need to be encouraged for such roll on-roll off movement.

5.5 Railways

5.5.1 The present rail transport system in the state is weak and exhausted the installed capacity and there is already excess demand resulting in long queues and associated discomfort in travel. The average speed of Express trains running in the state is below 60 kms. Railway should device plans to introduce Mainline Electrical Multiple Units (MEMU), between major inter-city routes with latest electronic passenger information system and engines on both sides so as to enable it to start like bus.

5.5.2. High Speed North-South Rail Corridor (HSNSRC)

5.5.2.1 There are proven technologies developed in the world, whereby the trains can operate at the speed of 150 to 200 km. per hour. If such high speed technology and tracks are introduced in the state, the spatial separation of Kerala and the north-south divide can be reduced and the travel time brought down from the present 15 hours to 4 hours. The State Government will provide all necessary support for the new high speed corridor including provision of required land free of cost.

5.5.2.2 Advance actions and necessary surveys should be initiated by the railways for finalizing the alignment for the new facility so that the necessary land can be frozen from alternative developments which demand is pressing in the state. If advance actions are not taken at this time there will not be any land available to lay such tracks in future and such tracks have to be laid on elevated corridor at cost 100 times more than the present cost.



5.5.3 Dedicated Rail Freight Corridor

5.5.3.1 The Union Government has already plans for developing Dedicated Rail Freight Corridor and alignment have been finalized for the Golden Quadrilateral routes connecting Delhi, Mumbai, Kolkata, and Chennai. The line should be further extended to Southern regions and up to Kochi.

5.5.4 Multi-modal logistic parks

5.5.4.1 There is also a need for constructing multi-modal logistic parks at selected locations in the state on north-south and east-west directions which will act as new industrial and commercial growth centres and for facilitating goods transportation to and fro these industrial zones and elsewhere. These centres will be served by all modes and there will be integrated movement of goods by different modes.

5.5.5 Investment of above proportions in railways and associated facilities is expected to create or save thousands of jobs over time in areas like track-laying, manufacturing, planning and engineering, and rail maintenance and operations. The move will help to establish rail manufacturers, both domestic and foreign, in the State to develop next generation high-speed rail lines – a bold vision to reinvigorate the state’s manufacturing base, and to reduce our dependence on fossil fuels and help create livable communities and change our society for the better.

5.6 Air transportation

5.6.1 There are three airports already operating flight services in the state. About 27 airlines are operating flights through these airports. Over 8 lakh domestic passengers and 50 lakh international passengers are using these airport facilities in the state every year.

5.6.2 About a lakh tonnes of export and import cargo are also handled by these airports every year.

5.6.3 A new airport is coming up in Kannur which is fully owned by the state as in the case CIAL. The airport will give much awaited boost to the economic development of North Malabar region.



5.6.4 The government policy in aviation sector would be to promote easier and faster air transport facility for the business, tourist and emergency traffic by constructing medium sized airports in all 14 districts and helipads in Municipal towns and major tourist locations in the state. This will encourage inter-city air taxi services both in public and private sector using smaller aircrafts and helicopters for faster connectivity especially to the eastern hill locked regions for emergency needs as well as commerce and tourism.

5.7 Coastal Shipping

- 5.7.1 Transportation by coastal shipping is the cheapest mode especially for bulk commodities and for those long haulage traffic. Kerala has advantage of 585 km. coast line through which bulk cargos can be transported if multi-modal transshipment logistics can be built up at intermittent points along the coastline. However the development in port sector in the state has been stymied by the constraints of port and logistic capacity, custom procedure and labour problems.
- 5.7.2 Kerala has one major port at Kochi and 17 non-major ports. Kochi port handles around 12 million import cargo and 3 million export cargo average per annum.
- 5.7.3 The Vallarpadam container terminal at Kochi has been commissioned recently. A second major port is planned at Vizhinjam by the state government which will be a deep water international container transshipment terminal. This terminal would be able to cater to container vessels upto 8000 TEUs in the initial phase and upto 12000 TEUs in the final phase.
- 5.7.4 Government has already announced port policy in which private sector will be encouraged to participate port construction in the state.

5.8 Inland waterways

- 5.8.1 Inland water transport, once dominant in the state, was relegated to the background with the advent of faster motor transport. The IWT system is still working efficiently in the backwaters of central and south Kerala. It is most fuel efficient and environment friendly transport mode. This mode is now mostly used for ferry and tourist transport.
- 5.8.2 There are about 1687 km. of IWT route network in the state consisting of the National Waterway No. 3 from Kollam to Kottapuram which is maintained by Inland Waterways Authority of India, and other feeder canals maintained by the State Irrigation department.
- 5.8.3 Most of the feeder canals and waterways suffer from navigational hazards like shallow water and narrow width of channel during dry weather, siltation, bank erosion, absence of infrastructural facilities like terminals and inadequacy of navigational aids.
- 5.8.4 The State Water Transport Department with head quarters in Alappuzha is providing the much need connectivity to the populace of water logged areas of Kuttanad with over 50 boats.
- 5.8.5 Kerala Shipping and Inland Navigation Corporation is also engaged in IWT freight and passenger transport with 12 barges, 11 boats and 2 Jankars. Over 5 lakh tonnes of cargo (mainly imported cargo for the use of Kochi- Alway industrial belt) was transported to the hinterland during 2008-09.
- 5.8.6 Government will promote goods and tourist traffic through inland navigation by linking the inland feeder canals in Central Kerala with the National Waterway No. III.

5.9 Roads



A
SCENE OF
KERALA
ROADS 57

NARROW ROAD WIDTH-HIGH
TRAFFIC VOLUME



5.9.1 Kerala has a vast network of over 1.62 lakh kilometers of roads but only 1524 Kms. come under National Highway and 24024 km come under Public Works Department which includes 4650 Km. of State Highways and 19374 Km. of Major District Roads. Even large portions of NH 17 and the State Highways have only single or intermediate lane width.

5.9.2 Kerala has been neglected in the recent central highway development projects such as the Golden quadrilateral project, port connectivity projects and the East-West, North-South corridors which is covering around 14162 Km.

A. Objectives

- To build world class highways and intra-city and inter-city road network with all modern facilities to provide faster connectivity to growth and activity centres in the state.
- To ensure proper upkeep of precious road asset and reduce accident risk

5.9.3 Strategies

5.9.3.1 Lack of adequate right of way is the major reason for the tardy development of roads in the State. The Government will initiate advance and long-term master plan and action plans for identifying the road network system development at regional level and acquire the required right of way in different areas after considering all aspects of existing and proposed land uses in these regions.

5.9.3.2 To ensure availability of adequate right of way for future road development, the Government will freeze construction activities along the proposed road alignment selected for improvement at the existing level. Necessary legal framework will be effected for this purpose immediately.

5.9.3.3 The Government will take steps for construction of North –South Expressway, on elevated corridors if sufficient land is not available. The Expressway will have six/eight lane carriage way with limited access to local traffic by constructing fly over/under passes, clover leaf interchanges, bypasses and elevated lanes at locations passing through cities and towns.

- 5.9.3.4 The government will also consider construction of Hill highway and Coastal Highway with four/six lane standards connecting them with all district head quarters. Construction of Two lane roads connecting all Block and District Panchayats, markets, and growth centre's/markets will also get priority.
- 5.9.3.5 Urban arterial roads will be widened to four/six lane divided carriageway with provision for wide median, cycle track, footpath and green cover. Sub arterial road will have minimum 2-lane carriageway and local roads will have minimum intermediate lane carriageway.
- 5.9.3.6 The Government will participate in the central road construction programmes under CRF, PMGSY, JNNRUM, NRLEG, Economic and Interstate connectivity schemes etc. in a big way without causing delay in project implementation.

5.9.3.7 Road maintenance

- 5.9.3.7.1 A rupee spent on maintenance saves two to three rupees in vehicle operating cost besides providing a very cost effective option to improving traffic flow. If timely maintenance is not carried out, the asset will deteriorate over the period and render service less. The Government will give top priority to maintain the precious road assets.
- 5.9.3.7.2 Government will introduce Pavement Management System (PMS) and Bridge Management System (BMS), mechanization in maintenance, maintenance by contract and corridor management approach for maintenance of arterial and sub-arterial roads under Public Works Department.
- 5.9.3.7.3 Government will encourage construction of rigid pavement on areas prone to flood and high traffic intensity so as to minimize recurring maintenance cost and obstruction to traffic movement while repairs;
- 5.9.3.7.4 To allow local authorities and Industrial houses to 'adopt' the regional/local roads and own responsibility for maintaining it, up to a reasonable standard. Government will encourage transferring the responsibility of maintenance of local roads with the people who live on the street or other registered agencies who have interests to put up hoardings/advertisement etc.

6. GENERAL

6.1. Research and Development

- 6.1.1 Adequate data bank need to be created for proper analysis and designing of facilities on long term basis. The question of inter-modal transport planning and provision of multi-

modal transport terminals require projection of demand and application of latest state of art technology. The benefits of IT and GIS should be applied in transport for providing better service to the consumers.

6.1.2 NATPAC, an institute under Kerala State Council for Science, Technology and Environment, has been engaged in research and development studies in the field of transportation covering all modes. It has all necessary testing and laboratory facilities for highway designing. It has plans to establish full fledged test tracks and other training aids for imparting training to all categories of drivers in defensive driving. Government will encourage and strengthen the R&D efforts of NATPAC in the field of traffic and Transportation and Road Safety. Government will also strengthen such efforts taken by other agencies in the state to plan and design transport facilities on a scientific basis. Research studies on future fuel alternatives, vehicle safety, transport planning and management in cities and towns, creation of data bank etc. will be given priority.

6.1.3 Fuel economy



6.1.3.1 Government will encourage R&D efforts to find out ways and means for reducing the dependency on fossil fuel for transport.

6.1.4 Technology

6.1.4.1 The government will encourage harnessing latest IT and GIS based technology in traffic management, traffic enforcement and road safety.

6.1.5 Land Use Plan

6.1.4.1 The government will encourage Land use studies in various growth zones and to prepare road network plans in different regions in the state.



6.1.6 Transport waste Management

6.1.6.1 Suitable plans/techniques will be evolved for transport waste management including recycling of tyres, tubes, spare parts, oil, workshop wastes etc. Vehicles involved in accident cases kept at various police stations as evidences will be disposed of within the stipulated period by public auction.

6.1.7 Legal provisions

6.1.7.1 To implement the new policy directions contained in the policy, Government will enact necessary amendments in the existing legal provisions.

6.1.8 Resource mobilization

6.1.8.1 Government will encourage private investment in developing transport infrastructure in the state. Government will ensure availability of land and guaranteed minimum returns to the Special Purpose Vehicles constituted for the purpose by way of capital grant and annuities to bridge the short falls in the revenue.

6.1.8.2 The Government will provide adequate budgetary support by earmarking 80 percent of all revenues earned from transport sector for development of transport infrastructure specified in this policy. The existing tax and subsidy policy will be restructured with a view to enhance revenue on the one hand and encourage public transport.