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SMART ROAD TRANSPORT TECHNOLOGY TO URBAN CITY

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Abstract

The basic needs of human being are not only food, textile and residency nowadays it also the transport. Eventhough humans use air, water, land for their transport, road transport is significant to any rural and urban human. People started the transportation for their lifestyle development. Nowadays the transport seems to be a dangerous one because of various criteria. This paper talks about the road transport authorites, bscenario of road transport in the state tamilnadu and intelligent transport system in the city Chennai. By this literature review we can focus on enhancements in road transport of any urban city.

Keywords: Road Transport, Authorities, Accident Scenario, Transport Safety Measures.

Authorities of Road Transport

From the data 2001 to 2017 taken from statistical unit of transport commissioner's office that reveals the growth of vehicular population in tamil nadu, the measures taken by the state government and safeguard actions in accidents, the impacts driven from the safety measures.[1] The institutional arrangements contains the operations from sectors of state road safety council headed by transport minister, state lead agency in transport office, district road safety committees, nodal officers for monitoring traffic and road safety works, trauma care centres.[2] The enforcement work is implemented by streamlining the reporting system of road accidents, actions on over speeding, over loading, using mobile phones ,drunken driving, disobeying traffic



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rules . The state level control room monitors the operations of highways patrolling vehicles. Road safety corners created in two wheeler showrooms for imparting road safety awareness

Tamil Nadu Road Transport Scenario

Road transport functions as an economic backbone in our country. The highways and port departments concentrate on various road infrastructure projects to enhance capacity, connectivity, efficiency and safety of the highways sectors. Road transport is the one which connects all other modes of transport. Tamil nadu has 3 major ports,18 minor ports and 7 airports across the state providing good connectivity. The maintenance works done by this department are, widening roads to cater the traffic needs, improvements on the existing road surface based on roughness index, deflection.[4]

Following are the norms given by the Indian Road Congress (IRC):

Special repairs, periodical renewal, other maintenance and route works from the government allocated funds

The role of Highways research station involves the activities of innovative research studies that leads to optimal traffic improvements, using advanced data collection equipments for collecting data , training to various personnels like engineers of the department and other government departments and also students in technical institutions, 3 tier quality assurance system,sharing of recent information with research wings of CRRI,IIT,NIT and Anna University. Without Information technology's participation we cannot achieve our goals in the highways . The IT cell of Highways department works on related software systems, operationalizing the software and hardware. We have the major applications of Road maintenance and management system (RMMS),geographical information system(GIS),Integrated project, HR & Finance Management System. The web based Internet project monitoring tool "Tamil Nadu Highways Project Monitoring System (TNPMS)" was implemented. It collects the data and status reports from the all wings for monitoring.

Intelligent Transport Systems in Chennai City



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As the capital of state Chennai faces huge range of traffic flow and traffic related issues too . The current traffic condition of the city urges to develop the policies and implementation schedule for ITS development. ITS, this term refers to Intelligent Transport System which involves various intelligent technologies in road transport. This is also a part of Artificial Intelligent. The implementation can be done in terms.

In Short Term 2017 – 2021 (1-5 years)

To use existing ITS more effectively

To introduce ITS which can be implemented in short period

To start operation of the introduced ITS

To start preparation of development of ITS which require longer period for implementation

In Mid Term 2022 – 2026 (6-10 years) □ To expand and upgrade ITS which are developed in short term as Necessary □ To start operation of ITS which started preparation in short term due to necessity of longer period for implementation.

In Long Term 2027 – (After 10 years) □ To upgrade functions and introduce new system, adopting new Technologies.

ITS components include Chennai Traffic Information Centre, Traffic Control Centre for Chennai Peripheral Ring Road, and Command Control Centre for City Bus. Chennai unified metropolitan transport authority deals with decision making on urban issues and coordination amongst the agencies involved in transport sector.[6]

ITS manipulates all the agencies involved in the transport for sustainable operation and maintenance, planning and upgrading, involvement and coordination of them. under the framework of chennai unified metropolitan transport authority individual new agencies will work. involved agencies will exchange the data with in their relation. all data centres will work under the tamil nadu state data centre. thus a central admin will govern the overall maintenance.



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The traffic information system will function on observing traffic condition by getting quantitative traffic data, providing dynamic traffic information to road users, planning and evaluation from cumulated traffic data. It has the subsystems of probe system which collects vehicle location information when it is present in road. Using GPS (Global Positioning System) the vehicles can be identified to other vehicles and to the data center. These probe data is analysed to generate travel time and travel speed on road network of digital road map. The road users can get the information and also the data center can plan and evaluate traffic conditions. Automatic traffic counter-cum-classifier system helps to measure traffic volume by vehicle size cross sections. These data makes benefits of planning to road construction, road widening. [7]

Smart Transport Aspects

Research issues address to achieve the smart transportation system to manage the road traffic effectively we need to concentrate on the following aspects

- Understanding the effect of traffic demand measures such as parking fees, toll fees, congestion charging, etc.
- Impact of share auto concepts and car pooling in traffic flow.
- Developing the strategies for traffic after the disaster scenario.
- Faulty intersections, narrow roads, sharp curves, poor upkeep of vehicles.
- Plying of vehicles in conflicting junctions.
- Increase of road accidents.
- The streets which are generally designed for slow and fast movement are interchangeably used.
- Issues in non-motorized transport
- Need and role of nmt in the urban mobility.
- Improve the change in policy and planning guidelines for nmt.
- Development of access to the pedestrianization, pedestrian zones, etc.
- Provide standards for the development of pedestrian facilities for the same.



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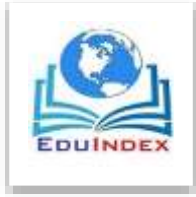
- Develop the geometric design for nmt to provide the connectivity and safe travel across the city.
- Identification of barriers that affects the nmt and remove it.
- Understanding the potential of traffic claiming in the pedestrian safety.

Mitigations in Road Accidents

Road accidents are one of the man made disaster which affects the life of people not only those who are violating traffic rules but also the innocents. Even though various current technologies like GPS, CCTV cameras in transport help to reduce the road accidents the goal of 100% accident free travelling has not attained. From the National Crime Records Bureau analysis the accident death count in tamilnadu was 16,517 in 2017 out of 1,47,913 across the country. The number of deaths fell to 12,213 in following year that leads to the drop of 24.39%. It is known from the Adviser, Tamilnadu accident & emergency care initiative(TAEI) that the decrease in accident deaths become possible by the cooperation of various departments of police, health, transport and highways. In future also it is possible to ensure the road safety by the merged implementation of these departments as the key players and with the public support. Public needs to attain the knowledge and understanding of road safety importance.[9] It can be implemented by the following ways

- Strictness in providing licence to the vehicles
- Renewal of the licence in yearly once manner
- Conducting awareness classes, health checkups before each renewal
- Fund contribution to accident affected families
- The awareness programs teaches the causes and avoidance of accidents
- People getting certificates after passing exam in each renewal time
- Making understand to people about latest trends in road transport
- Importantly people should feel responsible & dutiful in transport

Road Safety Measures



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Government involves in various activities that ensure maximum road safety by education, information, communication and enforcement measures. Road safety policies help to stop and reduce the number of accidents by applying comprehensive measures.[10] The road safety commissionerate advises the given important activities to be followed

- Implementing road safety policies in state level
- Observing the functionalities of District Road safety councils
- By taking the data about road accidents, making the case studies to obtain the causes of the accidents and taking remedial measures to avoid the accidents
- Applying for financial assistance under road safety fund by recommending specific schemes to the districts
- Taking steps for post accident remedial measures and relief operations to assist the victims in timely manner
- With the involvement of tamilnadu pollution control board, police and other agencies controlling the vehicular pollution.

The district road safety council involves in the works of road safety, road safety plans, monitoring accident prone spots/stretches, maintenance of roads, training of drivers, accident analysis, traffic planning, highway patrol, passengers amenities in the districts. The road safety policy ensures road safety measures in the major areas of preventive measures, surveillance and detection and enforcement measures. In addition to these first week of January in every year is celebrated as Road safety week throughout the state to create more awareness among school, college students, drivers and all other general road users.

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