From the Director’s Desk…

In the high-speed automobile-oriented society, informational and directional signs are necessary not only for public convenience but also for safety. A signage scheme for Kerala State has been prepared using extensive studies carried out by NATPAC. The overall purpose of implementing a signage program is to elevate the community’s marketability as a tourist destination and the products and services that make it unique. This issue of ‘Mobility’ focuses on the tourism signage scheme adopted in the State with their significance, positioning and the information provided.

1. Comprehensive Signage Scheme for Major Roads and Tourist Centres in Kerala State

Tourism signboards play a major role in promoting various tourist destinations and tourism products. In the absence of adequate and proper information about the tourist destinations, lot of inconvenience and transit delays are caused to the tourists for whom time is an important factor. Realizing that an exclusive and comprehensive road signage scheme for tourist destinations would go a long way in the promotion of tourism industry, NATPAC provided various services for effective implementation of the comprehensive tourism signage scheme in Kerala State under the sponsorship of Department of Tourism, Government of Kerala.

The Following Services were Provided by NATPAC.

i) Preparation of suitable design and specifications for the tourism sign boards;

ii) Preparation of tender documents for the fabrication, installation and maintenance of sign boards;

iii) Fixing of contractors for the signage scheme in consultation with Department of Tourism;

iv) Identification of tourist centres, in consultation with District Tourism Promotion Councils of all districts;

v) Identification of locations for installation of signboards and working out details of information to be provided on each board;

vi) Assessment of the total requirement of signboards of different categories to cover the entire State;

vii) Preparation of the cost estimate for the signage scheme;

viii) Supervision and quality control of installation of signboards.

1.1 Design of Sign Boards

**Single Information Sign Boards - Showing any Tourist Centre in One Line/ Two Lines**

These sign boards were placed on the approach roads to all major tourist centres at a gap of about 2-3 km. Each board contains the name of tourist centre, distance to the tourist centre, photo of the tourist centre and the direction of travel. Considering the length of the tourist centre name
and the size of sign board, two types of sign boards were proposed under this category, viz., (i) in one line or (ii) in two lines.

![Single line single information](image)

**Single Information Sign Boards - Showing Major Tourist Centres**

These sign boards were placed on the approach roads to all major tourist centres at a gap of about 2 to 3 km and contains the name of the tourist centre, distance to the tourist centre, photo of the tourist centre and the direction of travel.

![Two line/three line](image)

**Two Information Sign Boards - Two Line/Three Lines**

Two information sign boards were placed on all major Highways. These sign boards contain the names of two tourist centres, distance to the tourist centres, symbols depicting the nature of tourist spots and the direction of travel. Of the two information provided in the sign board, one is about the District Headquarters/ the nearest important town/ tourist centre. The second information is about the nearby tourist place. Sign boards are placed at a distance of 4 to 5 km from each other. Considering the length of the tourist centre name and the size of sign board, two types of sign boards were designed under this category, viz., in two lines and three lines.

**Three Information Sign Boards**

Three information sign boards were placed at important junctions on all major Highways from where roads to tourist centre deviates. These sign boards contain the names of three tourist centres, distance to the tourist centres, symbol depicting the nature of tourist spots and the direction of travel. Of the three information provided in the sign board, one information is about the District Headquarters/ the nearest important town / tourist centre. The second information is about the nearby tourist places and the third information is about the important tourist centre located far off.

**Welcome Sign Boards**

Welcome sign boards were installed at major tourist centre entry points and State entry points. These sign boards contain the message ‘Welcome’ along with a photo of the tourist centre and for State entry points, ‘Welcome To Kerala’ along with a symbol depicting the cultural/tourist importance of the State.

![Welcome sign board](image)

**Layout map of major tourist areas** were installed in all the major tourist centres. These maps are prepared using GIS showing transport networks, major utilities, tourist attractions etc. in the tourist area. **The layout map of all the districts** were installed in all the major tourist centres, railway stations, bus stations etc.
An open tendering process was adopted to fix the contractor for installing the sign boards in Kerala State.

1.2 Details of the Signage Scheme

Extensive primary surveys using GPS were carried out in all the districts in Kerala to locate the tourist centers, to measure the travel distance by road to these centres and also to identify the locations for installation of sign boards. Based on the same, signage scheme for Kerala State has been prepared.

Tourist Centres to be Covered and Identification of Locations for Installation of Sign Boards

The tourist centres to be covered under the signage scheme for all the 14 districts in Kerala State were identified based on discussion with the respective District Tourism Promotion Councils and site visits. The locations for installation of sign boards were identified by considering the following aspects.

i) Straight section without vertical and horizontal curves
ii) Clear background
iii) Non-parking areas including bus bays
iv) Valley side of hill roads
v) 50 to 150 meters before major deviation, depending on the hierarchy of road.
vi) Distance from carriageway and shoulder.

Assessing Quantum of Sign Boards

The following criteria were adopted with regard to spacing of sign boards and thus fixing the number of sign boards required under the three packages.

i) Spacing of sign boards in the case of National Highways – 4 kms
ii) Spacing of sign boards in the case of other roads – 4 to 8 kms

iii) For tourist centers of national and state level importance, the sign boards were installed on all major roads leading to the tourist centers from various district headquarters
iv) For tourist centers of local level importance sign boards were installed only on the approach roads leading to the tourist center.

Preparation of District Maps

Based on detailed analysis of survey data collected from the field using GPS, digitized road map of each district were prepared. The tourist centres covered in each district were located on these digitized road maps. Locations for installation of sign boards were also marked.

Map of Kasaragod District

Provision of Information on Sign Boards

After identifying the locations for sign boards, information to be provided on each board were assessed depending on the type of sign boards and location of sign board. The distance to the tourist center was calculated by the shortest distance through major roads. Direction of travel was represented by arrows of Left, Right and Straight.

Symbols representing various tourist centres were compiled from ‘Tourism Signs and Symbols – A status report and guidebook’, published by the World Tourism Organization.
During the site visit, photographs were taken by the study team. Photos were also compiled from Department of Tourism and various websites. Based on evaluation of the same, best photographs were chosen for each tourist centre.

Layout maps were prepared for all districts and major tourist areas which showed the transport network, tourist centres with symbols, write-ups on major tourist centres with photos and contact numbers of major utilities in the district.

1.3 Quantum of Sign Boards Proposed

The sign boards to be installed in the 14 districts were covered under three packages as given below:

Package-I: Thiruvananthapuram, Kollam, Pathanamthitta and Alappuzha

Package II: Kottayam, Idukki, Ernakulam, Thrissur and Palakkad

Package III – Malappuram, Kozhikode, Wayanad, Kannur and Kasargod

Implementation of signage scheme was carried out by NATPAC as part of the project. The overall quality control and supervision of installation of tourism sign boards in various districts in Kerala State were the major tasks under the implementation program. During the supervision, location aspects of sign boards, quality of materials used and adherence to stipulated standards and specifications were monitored by the Engineers of NATPAC. Specifications of MORTH were followed while installing the sign boards.

2. Panel Discussion on ‘Public Transport Policy’

NATPAC organised a Panel Discussion on “Public Transport Policy” with special focus on bus transportation on 7th August 2014 at Thiruvananthapuram. The purpose of the panel discussion was to evaluate the performance of Public Transportation System in the State to evolve an efficient, safe and sustainable transportation for the mobility of people. The programme was inaugurated by Shri. C.P. John, Member, State Planning Board.

The panel discussion was attended by DGP (Prisons), Kerala, representatives from Government Departments, officials from Kerala State Road Transport Corporation, State Planning Board, Kerala, Officers representing various user departments and Economists and Researchers.

Shri. T.P. Senkumar IPS, DGP (Prisons), Kerala delivering keynote speech in the panel discussion
Experts who participated in the panel discussion includes: Shri. B.V. Subramaniam, Cost Management Services, FCMA; Dr. Radhakrishna Pillai, Former Fellow, CDS; Shri. T. Gopinathan, General Secretary, AKBO Organisation; Shri. V. Jayakumar, Dy. Chief Accounts Officer, KSRTC; Shri. N. T. Nair, MD, Executive Knowledge Line; Smt. Sangeetha K.R, Asst. Director, State Planning Board; Shri. Shabeer Mohammed, World Bank Project Consultant; Shri. P. K. Stephen, Joint Transport Commissioner, Kerala MVD; Dr. Pandurangan, Scientist-G, JNTBGRI and Shri. E. K. Prakash, Special Secretary, Finance Department. Representatives of Private Bus Operators also participated.

Various issues related to the prospects and future scenario of KSRTC were discussed in detail. The Panel Discussion was intended to formulate a comprehensive action plan through open discussion, which would become a part of State Transport Policy. The public transport should get priority over personal modes of transport for which it should be competent with the mass transport systems in catering the needs of the commuters. Smt. B. G. Sreedevi suggested the need for development of an integrated multimodal transport system for efficient public transport system. Shri C. P. John emphasised that KSRTC being the State owned public bus transport in Kerala, private buses should play a complementary role to the overall transportation needs of the State. Delivering the keynote speech, Shri. T. P. Senkumar IPS, stressed the need for bus route rationalization based on socio-economic demand assessment to increase the revenue of KSRTC. Dr. Radhakrishna Pillai made a technical presentation on ‘Prospects & Future scenario of KSRTC’. He gave emphasis on the changes in current schedules and need to carry detailed financial and economic analysis prior to identification of routes.

The discussion yielded recommendations like advanced online booking, tourist packages for holiday travel and pilgrim packages, advanced management of operations, continuous performance monitoring and maintenance of vehicles with the help of latest technologies, a separate division for Sabarimala pilgrims to cater to the increased demand of tourists in pilgrim seasons. KSRTC should tap the tourist potentials of the State by introducing holiday packages and quality service. Need for pension repackaging, proper training, increase in wages and stoppage of the double duty system for KSRTC drivers were raised.

3. Training Programmes Conducted

a) In-House Training (International Road Assessment Programme)

i) Training on iRAP was given to Scientists and Technical Staff on 31st July 2014. The course includes practical exercises, discussions and exposure to the iRAP software. The Resource Persons were Mr. Luke Rogers, Senior Road Safety Expert, iRAP, Australia and Mr. Jigesh Bhavsar, Road Safety Engineer, iRAP – India Project.
4. Participation in Workshops, Seminars/Conferences and Other Training Programmes

<table>
<thead>
<tr>
<th>Name of Programme</th>
<th>Organised by</th>
<th>Date</th>
<th>Venue</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>IWT Summit</td>
<td>Institute of Town Planners (India)</td>
<td>29.08.2014</td>
<td>Bullroom Crowne Plaza, Kochi</td>
<td>B.G. Sreedevi</td>
</tr>
<tr>
<td>Urbanisation Policy for Kerala</td>
<td>Institute of Town Planners (India)</td>
<td>28.08.2014</td>
<td>Thiruvananthapuram</td>
<td>T. Elangoovvan</td>
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<tr>
<td>Stake Holders Meet on “Ambient noise level mapping of Thiruvananthapuram City”</td>
<td>Kerala State Pollution Control Board and Central Road Research Institute, New Delhi</td>
<td>18.08.2014</td>
<td>Thiruvananthapuram</td>
<td>B.G. Sreedevi and P. Kalaiarasan</td>
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</table>

5. Guidance to Students’ Project Work and Thesis

The list of guidance provided by the Scientific Divisions to students from various National Institutes and reputed Professional Colleges during this period is given below:

<table>
<thead>
<tr>
<th>Name of the Institution</th>
<th>Course</th>
<th>No. of Students</th>
<th>Topic</th>
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</thead>
<tbody>
<tr>
<td>Director’s Office</td>
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<tr>
<td>National Institute of Technology, Surathkal, Karnataka</td>
<td>M.Tech (Trptn.)</td>
<td>1</td>
<td>Study on the effect of Geometric Parameters on Road Safety – A case study on newly upgraded Highways in Kerala</td>
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<tr>
<td>National Institute of Technology, Kurukshetra</td>
<td>M.Tech (Trptn.)</td>
<td>1</td>
<td>Utilisation of Jarofix and other waste material for road construction</td>
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<tr>
<td>Cochin University of Science and Technology</td>
<td>M.Tech (Trptn.)</td>
<td>1</td>
<td>Study on the influence of subgrade soil on the strength of in-service flexible pavements</td>
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<tr>
<td>Traffic and Transportation Division</td>
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<tr>
<td>Rajiv Gandhi Institute of Technology, Kottayam</td>
<td>M.Tech (Trptn.)</td>
<td>1</td>
<td>Determination of congestion charges for car users in CBD area of Thiruvananthapuram City</td>
</tr>
<tr>
<td>National Institute of Technology, Surathkal, Karnataka</td>
<td>M.Tech (Trptn.)</td>
<td>1</td>
<td>Study on the effect of geometric parameters on road safety – A Case Study</td>
</tr>
<tr>
<td>National Institute of Technology, Surathkal, Karnataka</td>
<td>M.Tech (Trptn.)</td>
<td>1</td>
<td>Assessment of safety of roads in Kerala using iRAP Model</td>
</tr>
<tr>
<td>National Institute of Technology, Surathkal, Karnataka</td>
<td>M.Tech (Trptn.)</td>
<td>1</td>
<td>Influence of monorail on travel behaviour of users – A case study of Urban Travel Characteristics in cities of Kerala</td>
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<td>National Institute of Technology, Surathkal, Karnataka</td>
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<td>Effects of weather on traffic flow characteristics</td>
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<td>National Institute of Technology, Surathkal, Karnataka</td>
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<td>Mode choice behaviour of urban commuters due to LRT System – A case study of Thiruvananthapuram</td>
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<tr>
<td>College of Engineering, Thiruvananthapuram</td>
<td>M.Plan (Urban Design)</td>
<td>2</td>
<td>Planning of elevated walkway between KSRTC Central Station – East Fort in Thiruvananthapuram City</td>
</tr>
<tr>
<td>National Institute of Technology, Surathkal, Karnataka</td>
<td>M.Tech (Trptn.)</td>
<td>1</td>
<td>Parking demand management for Light Rail Transit Corridors in Thiruvananthapuram</td>
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<td>Water Transportation Division</td>
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<tr>
<td>St. Joseph’s College of Engineering &amp; Technology, Pala</td>
<td>B.Tech (Civil)</td>
<td>6</td>
<td>Environmental Impacts of air pollution in Thiruvananthapuram City Centre</td>
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<tr>
<td>College of Engineering, Thiruvananthapuram</td>
<td>M.Tech (Env.)</td>
<td>2</td>
<td>Life Cycle Assessment of Dairy Products, Milma Dairy Plant – A case study</td>
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<td>Extension Services Division</td>
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<tr>
<td>St. Joseph’s College of Engineering &amp; Technology, Pala</td>
<td>B.Tech (Civil)</td>
<td>4</td>
<td>Parking management system for MG road in Thiruvananthapuram city</td>
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<tr>
<td>National Institute of Technology, Tiruchirapally</td>
<td>M.Tech (Trptn.)</td>
<td>1</td>
<td>Analysis of pedestrian and bicycle movements in Kozhikode city</td>
</tr>
<tr>
<td>St. Joseph’s College of Engineering &amp; Technology, Pala</td>
<td>B.Tech (Civil)</td>
<td>4</td>
<td>Intermodal split of goods transportation in Kerala</td>
</tr>
</tbody>
</table>
6. PRESENTATION OF PAPERS IN SEMINARS/WORKSHOPS


B.G. Sreedevi, “Industrial Corridor for Kerala”. Live Telecast of the launch of the ‘Make in India’ campaign by Prime Minister of India, organised by CII at Hilton Garden Inn, Thiruvananthapuram, 25th September 2014.


PAPERS PUBLISHED IN REFERRED JOURNALS


7. INVITED TALKS/MEDIA INTERACTIONS

B.G. Sreedevi, Director

Media Interactions

1. ‘Railway Budget Discussion’. Amrita TV on 8th July 2014.
5. ‘Comprehensive Mobility Plan’. Manorama Channel on 30th September 2014.

T. Elangovan, Scientist-G

Invited Talk

8. Other NEWS

- NATPAC Staff Association (NASA) organised Onam celebration on 3rd September 2014 at K. Karunakaran Transpark. The celebration was inaugurated by Shri. Biju Prabhakar IAS, District Collector, Thiruvananthapuram. The enthusiasm showed by the staff in the Onam celebration was quite sportive.

- NATPAC took part in Onam pageantry organised by Tourism Department, Government of Kerala on 11th September 2014. The theme of the float was ‘Integrated Transport’.

9. Do You KNOW?

**Width of Roadways for Single Lane and Two Lane Roads in Mountainous and Steep Terrain**

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Road Classification</th>
<th>Roadway Width (metres)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>NH and SH</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Single lane</td>
<td>6.25</td>
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<tr>
<td>2.</td>
<td>Two lane</td>
<td>8.8</td>
</tr>
<tr>
<td>2</td>
<td>Major District Roads and other District Roads (Single lane)</td>
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<tr>
<td>3</td>
<td>Village Roads (Single lane)</td>
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</tbody>
</table>


**Width of Roadways for Single Lane and Two Lane Roads in Plain and Rolling Terrain**

<table>
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<th>Sl.No.</th>
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<td>1</td>
<td>NH and SH (Single or two lanes)</td>
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<td>2</td>
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<td>3</td>
<td>Other District Roads 1. Single lane</td>
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<tr>
<td>2.</td>
<td>Two lane</td>
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<tr>
<td>4</td>
<td>Village Roads (Single lane)</td>
<td>7.5</td>
</tr>
</tbody>
</table>


*The roadway widths given above are exclusive of parapets (usual width 0.6m) and side drains (usual width 0.6m)*