



# TRG Newsletter

A Ternary Newsletter of Transportation Research Group of India  
( TRG)

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# A Ternary Newsletter of Transportation Research Group of India (TRG)

## Message from Patron TRG

Prof. Kumares C. Sinha, Edgar B. and Hedwig M. Olson Distinguished Professor of Civil Engineering



I am pleased to know that the Transportation Research Group (TRG) of India is starting a periodic newsletter to keep its members and friends abreast of emerging developments in the transportation sector in India and research activities in Indian universities and other organizations.

I would like to report about a recent event that may be of interest to the readers of this newsletter. In early February this year, a 3-day workshop was organized by the World Bank and the Indian Planning Commission to disseminate the issue papers prepared for the High Level Committee on Transportation Development Policy for India. The Committee, chaired by Dr. Rakesh Mohan, is looking into strategic actions in all aspects of integrated transportation development in India. Over the past year, a group of issue papers were prepared on highways, urban transportation, rail, port and air transportation. This effort was supported by the World Bank and for each mode a set of topics relevant to the Indian context was identified and papers were prepared and reviewed by Indian and international experts. The workshop in February brought together a group of invited practitioners from India and abroad to discuss the salient features of the topical themes and to suggest a set of possible directions for the Committee to consider.

I had the privilege to prepare most of the highway related issue papers, in cooperation with Clell Harral of HWTSK, Inc. Clell was the Highways Advisor for the World Bank before he retired and formed his consulting firm. The highway issue papers included the following: cost-effective highway design standards, traffic based benchmarks for arterial upgrading decisions, regulatory and institutional mechanisms for seamless interstate movement of commercial highway vehicles, intelligent transportation systems, policies to encourage the use of energy efficient vehicles on roads, and direct charging for road use. In addition, there were two other papers on the use of private-public partnerships and the use of asset management. The primary purpose of the papers was to document the international experience and best practices and to identify possible areas of applications in the Indian context.

The workshop was attended mostly by government officials and some university researchers, private consultants and contractors, and special interest groups. The last session was attended by Montek Singh Ahluwalia, Deputy Chairman of the Planning Commission. He was very interested to hear from the international practitioners about their experience with various issues.

I was impressed by the receptiveness of the members of the Committee to consider new ideas and innovations being pursued in other countries. However, my feeling is that the universities, particularly the transportation researchers in India, are not well involved in the debate and deliberations concerning the directions the country should take for sustainable transportation development. I believe there should be an effective mechanism for universities to be fully engaged in this endeavor. The resources offered by the research universities and institutes, should be harnessed not only for the development of the infrastructure and related facilities, but primarily to create the human capital necessary to operate and maintain the infrastructure in the future.

## Message from President, TRG

Dear Transportation Professionals,



I am pleased to release the 1st issue of "TRG Newsletter", a ternary newsletter of Transportation Research Group of India (TRG). Through newsletter and various other activities including journal, magazine, and conference of TRG, the society wishes to promote transport research and capacity building in India. I am thankful to my learned colleagues from TRG, Dr. Rajat Rastogi and Dr. S. Velmurugan for shouldering the responsibility of TRG Newsletter.

Dr. Ashish Verma  
IISc Bangalore

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# A Ternary Newsletter of Transportation Research Group of India (TRG)

## Events of TRG

### 1. 1st Conference of Transportation Research Group of India (CTRG-2011), 7th to 10th Dec. 2011, Bangalore, India

Transportation Research Group of India (TRG), held its first conference during 7th to 10th Dec. 2011 in the Garden City of Bangalore, which is also well known as the Silicon Valley of the Southeast Asia. The seed for creating such an organization and starting its conference was planted in 2008 during the 1st Indo-United States Symposium on Mass Transit and Travel Behaviour Research (MTTBR-08) held during 12th to 15th Feb. 2008 at the Indian Institute of Technology in Guwahati in the state of Assam, India. This seed germinated in to TRG and its first flower is the 1st conference and close to 300 delegates witnessed this historic moment.

Trigger for the idea to create TRG was the desire of the transportation community in India to assist the government on transportation policies and investments by providing research based inputs. Getting transportation research needs to focus on challenging and highly complex problems and issues in India, a developing country, needed a domestic organization because it requires approaches that are somewhat different from those in the developed countries. For example, when the Highway Advisory Committee (the seed that grew in to the Transportation Research Board) was created under the National Academy of Sciences of the United States of America in the 1920s, the goal was to get the automobiles out of mud. India's current transportation related problems are far different and they include in addition to providing all weather accessible roads throughout the country to how to manage growing mixed traffic on its urban roads, how to improve the safety of the traveling public on all types of roads, and how to instill a sense of discipline regarding safe traffic rules in the minds of the travelers, to name a few. These problems are common among the developing countries and an organization such as TRG could provide service to them including India.

1st CTRG is a very modest beginning and through this regular peer-reviewed conference and various other activities including starting the journal, magazine, and news letter of TRG, the society wishes to promote transport research and capacity building in India and to also create a platform to bridge the gap between researchers on one side and industry and government on the other side, so that results of transportation related research pays off by benefiting the society and nation at large. TRG in the long run would like to assume a role similar to what the esteemed body like Transportation Research Board (TRB) has achieved in the United States and to eventually become advisor to the nation in every aspect and domain of transportation.

The 1st CTRG received 310 abstracts. Based on rigorous double blind peer-reviews 140 papers from more than 13 countries that included India, United States, Germany, United Kingdom, Japan, China, Australia, Philippines, Israel, Greece, Canada, Brazil, and Netherlands, were recommended for presentation and inclusion in proceedings. The quality of the conference program was further enhanced by the distinguished keynote speakers, Kumares Sinha, Lalita Sen, Imad Al-Qadi, Serji Amirkhanian, and Srinivas Peeta from the United States; Rosario Macario from Portugal; Yoshitsugu Hayashi from Japan; and B. B. Pandey, S. Gangopadhyay, and P. K. Sikdar from India, who are well known for their work in their respective areas of expertise. With this, the conference has set the standard of quality very high, probably the best so far in India for a transportation research conference, and TRG will only strive to make it higher in the future. The conference also received the technical and administrative support of internationally acclaimed organizations like the Transportation Research Board (TRB), Transportation and Development Institute (T&DI) of the American Society of Civil Engineers (ASCE), and Association of Transportation Professionals of Indian Origin (ATPIO). There was also active support for CTRG from Ministry of Road Transport and Highways, Govt. of India, and from Task Force for Quality Assurance in Public Constructions, Govt. of Karnataka.

The conference offered tutorials (on Activity based travel demand modeling, Road Safety Audit, and Intelligent Transport Systems), technical field trips (to Bangalore Metropolitan Transport Corporation, Traffic Management Centre of Traffic Police, Karnataka State Road Transport Corporation, National Aerospace Laboratories), and sessions and workshops related to planning, urban transit, traffic operations and management, safety, sustainability, freight transport and logistics, materials, and pavements.

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Figure: Technical tour during CTRG-2011 to Traffic Management Centre (TMC), Bangalore

Transportation Research Board had organized the following three special sessions based on peer-reviewed papers:

- Properties of Asphalt Mixtures and Binders for Improved Performance
- Sustainable Materials and Technologies for Pavements, and
- Mechanistic Concepts for Pavement Design and Evaluation

Also, ATPIO had organized the following two special sessions

- Pragmatic Issues in Transportation Engineering in India
- Solutions/Alternatives for Congestion Relief, Road Infrastructure Financing and Safety

Besides the above, two more special sessions were organized on the theme "Transport Research and Beyond", with speakers from mainly industries like, IBM, 3M, HCL, TCS, Capita Symonds and from

government organizations like, MOUD, NRRDA, to bring their perspective on research, technology development, and capacity building issues.

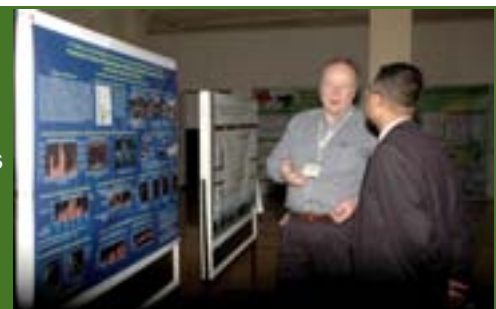
At the conclusion of the 1st Conference, the TRG Board members decided to hold the 2nd conference in December of 2013 in north India. More information about the 1st conference or TRG can be seen at: [http://www.trgindia.org/trg\\_conference\\_2011/index.html](http://www.trgindia.org/trg_conference_2011/index.html)



Figures:  
Professional  
Interaction  
During Breaks



Figure:  
Technical Sessions  
during CTRG-2011



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Figure: Keynote Sessions during 1st CTRG



Figure: Workshops during 1st CTRG-2011

## 2. Seminar on “Planning for Pedestrian Mobility and Safety” 24th March 2012, Dept. of Civil Engg., IISc Bangalore

A seminar on “Planning for Pedestrian Mobility and Safety” was organized by Dept. of Civil Engg., IISc Bangalore, in association with Transportation Research Group of India (TRG), on 24th March 2012 in the Golden Jubilee Seminar Hall of Dept. of Civil Engg. The seminar was attended by students and faculty members of IISc, as well as officials from organizations like, BBMP. The following were the speakers and the title of their talk:-



Figure: Speakers of the Seminar on  
“Planning for Pedestrian Mobility and Safety”

1	Pedestrian Mobility and Safety: Issues and Design Improvements	Dr. Rajat Rastogi	Asst. Prof., Department of Civil Engineering, IIT Roorkee
2	Evaluation of Facilities for Non Motorized Traffic and Pedestrains during Road Safety Audit Process	Dr. S. Velmurugan	Scientist E-II, Central Road Research Institute (C.R.R.I.), New Delhi
3	Accessibility Problems of Pedestrians: Case Studies	Dr. Neelima Chakroborty	Scientist E-II, Central Road Research Institute (C.R.R.I.), New Delhi
4	Integrating Street Vendors in Pedestrian Facility Using Pedestrian Micro Simulation	Dr. Ashish Verma	Asst. Prof., Department of Civil Engineering, IISc Bangalore

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## 3. Invited Presentation at ATPIO Annual Meet on “Role of Transportation Research Group of India (TRG) in Promoting Transportation Research in India” 22nd Jan. 2012, Washington DC

Dr. S. Velmurugan, Executive Secretary, TRG and Scientists, CRRI, gave an invited presentation on “Role of Transportation Research Group of India (TRG) in promoting Transportation Research in India” at ATPIO Annual Meeting & Reception held on January 22nd, 2012 at Marriott Wardman Park, Nathan Hale Room, Washington DC, during the TRB meeting week. The activities of TRG were well appreciated by the members present in the meeting.

### Conference, Seminar, Course Announcements

International Road Federation (IRF) Indian Chapter in Association with Australian Road Research Board (ARRB) and Central Road Research Institute (CRRI) will organize the next set of two certification courses for “Road safety Auditors” in April 2012. The dates are April 16-20, 2012 and April 23-27, 2012. Interested persons can contact Secretary IRF (India Chapter), at [india@irfnet.org](mailto:india@irfnet.org).

Civil Engineering Department at Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat, Gujarat will be organizing a national conference and workshop on 'Recent Advances in Traffic Engineering' (RATE12) on June 7-9, 2012. For details contact Convenor RATE12 through email [rate@svnit.ac.in](mailto:rate@svnit.ac.in).

International Road Federation (IRF) Indian Chapter will organize 7th IRF Regional Conference titled 'Road Safety in Urban and Rural Roads' on November 1-2, 2012 at Indian Habitat Centre, New Delhi, India. For details contact [india@irfnet.org](mailto:india@irfnet.org) or visit [www.indiairf.com](http://www.indiairf.com).

### Participation in Transportation Activities

Dr. Rajat Rastogi, Assistant Professor in Department of Civil Engineering at Indian Institute of Technology Roorkee delivered an invited lecture in National Symposium on 'Designing Roads for Disabled pedestrians in India' organized by The Society for Disability and Rehabilitation Studies (SDRS), New Delhi on March 1-4, 2012.

Dr. Rajat Rastogi, Assistant Professor in Department of Civil Engineering at Indian Institute of Technology Roorkee delivered an invited lecture in half-day workshop on 'Planning for Pedestrian Mobility and Safety' held in Department of Civil Engineering at IISc Bangalore on March 24, 2012.

Dr. Velmurugan, S., Senior Scientist, CRRI delivered an invited lecture in half-day workshop on 'Planning for Pedestrian Mobility and Safety' held in Department of Civil Engineering at IISc Bangalore on March 24, 2012.

### Research Projects Completed

**Title:** A multi-objective transit trip itinerary planning system using GIS for Bangalore city

**Date of Completion:** January 2012

**Funding Agency:** Centre for infrastructure, Sustainable Transportation and Urban Planning, Indian Institute of Science, Bangalore

**Project brief:** This report presents development of a multi objective transit trip planner system for multi-modal public transport of Bangalore city by integrating GIS processing, network analysis, user interfacing and database management. The trip planner uses a generalized cost (GC) approach which is especially important in the Indian scenario, where the various modes of transport are not harmonized and transfers between modes may take a long time. The proposed planner gives users trip options based on either the minimum time or a generalized cost. The planner also gives information on trip duration, fare, number of transfers and the generalized cost of the travel.

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## Research Projects Ongoing

### Research Activity in Institutions

#### **Ongoing PhD Thesis**

“Activity based travel demand model for a City of Developing Country” at Department of Civil Engineering, Indian Institute of Science, Bangalore.

“Developing Sustainable Transport Model to Assess Urban Transportation Policies and Projects” at Department of Civil Engineering, Indian Institute of Science, Bangalore.

“Non Motorized Traffic planning for Indian cities of various sizes and structure” at Department of Civil Engineering, Indian Institute of Science, Bangalore.

“Intercity bus passenger transport demand modelling & operational planning” at Department of Civil Engineering, Indian Institute of Science, Bangalore.

“Management of traffic after a disaster like earthquakes” at Department of Civil Engineering, Indian Institute of Science, Bangalore.

“Behavioural Modeling of Leisure Travel” in Department of Civil Engineering at IIT Roorkee.,

#### **Ongoing M. Tech Thesis**

“Assessment of environmental impacts of high speed rails (HSR) for policy level decisions” at Department of Civil Engineering, Indian Institute of Science, Bangalore.

“Traffic signal optimization considering stochastic variability of Indian mixed traffic conditions” at Department of Civil Engineering, Indian Institute of Science, Bangalore.

“Pavement performance study for four lane highways” in Department of Civil Engineering at IIT Roorkee.

“Self consolidating concrete containing Wollastonite micro-fiber for repair of PQC” in Department of Civil Engineering at IIT Roorkee.

“Modelling of crashes for four lane national highway” in Department of Civil Engineering at IIT Roorkee.

“Calibration of HDM-IV for urban road network” in Department of Civil Engineering at IIT Roorkee.

“Influence of moisture states of recycled aggregates for use in PQC” in Department of Civil Engineering at IIT Roorkee.

“Design of noise barrier for four lane national highway” in Department of Civil Engineering at IIT Roorkee.

“Pedestrian flows on stairs” in Department of Civil Engineering at IIT Roorkee.

“Effect of side friction on capacity of urban roads” in Department of Civil Engineering at IIT Roorkee.

“A policy sensitive model of modes chosen in campus areas” in Department of Civil Engineering at IIT Roorkee.

“A rheological study on modified binders” in Department of Civil Engineering at IIT Roorkee.

“Abrasion resistance of concrete containing wollastonite micro-fiber for pavement” in Department of Civil Engineering at IIT Roorkee.

“Accident information system for a stretch of national highway” in Department of Civil Engineering at IIT Roorkee.

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“Comparative study on organic and inorganic waste material reinforcement in non-bituminous layers” in Department of Civil Engineering at IIT Roorkee.

“Combined logit model of destination and mode choice for leisure travel” in Department of Civil Engineering at IIT Roorkee.

“Moisture damage study in close graded and open graded bituminous mixes” in Department of Civil Engineering at IIT Roorkee.

“Development of pavement management system for urban arterial network” in Department of Civil Engineering at IIT Roorkee.

“Rheology of bitumen with different warm mix additives” in Department of Civil Engineering at IIT Roorkee.

“Effect of aggregate gradation on durability and performance of bituminous mixes” in Department of Civil Engineering at IIT Roorkee.

## TRG Executive Board Members

Sl.No	Name	Designation	Affiliation
1	Dr. Ashish Verma	President	IISc Bangalore
2	Prof. Animesh Das	Vice- President	IIT Kanpur
3	Dr. S.Velmurugan	Executive Secretary	Central Road Research Institute
4	Dr. Rajat Rastogi	Treasurer	IIT Roorkee
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