

# Bio-Data of Dr. A. Mohan Rao



1. Name : **Dr. A. Mohan Rao**

2. Designation : **Principal Scientist**

**Traffic Engineering and Safety Division**

**Central Road Research Institute**

**New Delhi**

[amrao\\_crri@yahoo.co.in](mailto:amrao_crri@yahoo.co.in) & [amrao.crri@nic.in](mailto:amrao.crri@nic.in)

3. Areas of Interest :

**Traffic Engineering, Transport Planning and Traffic Safety, Public Transport Planning**

4. Educational Qualification – starting from the highest degree

Degree	University/Institution	Year	Division	Specialization
PhD.	IIT Delhi	2013	Title “Traffic Congestion and its Mitigation Measures on Urban Arterials”	
M. Tech	REC, WARANGAL	1998	First class with distinction	Transportation Engineering
B. E	Osmania College of Engineering, OSMANIA University	1996	First class with distinction	Civil Engineering

5. Professional Experience - in reverse chronological order

From	To	Employer	Positions held
Aug 2012	Till date	Central Road Research Institute, New Delhi	Principal Scientist
Aug 2008	Aug 2012	Central Road Research Institute, New Delhi	Senior Scientist
Aug. 2003	Aug 2008	Central Road Research Institute, New Delhi	Scientist C
Aug. 1999	Aug. 2003	Central Road Research Institute, New Delhi	Scientist B

		Delhi	
March 1998.	Aug. 1999	Lea Associates South Asia Pvt. Ltd., New Delhi	Junior Highway Engineer

6. Membership to Professional Bodies

- **Indian Roads Congress –Member**
- **Institute of Urban Transport - Life Member**

7. Achievements

a. Honours and Awards

**Worked as Group Leader for Rural Road Planning and management Group (2005 - 2006).**

**(a) Research Projects**

1. Preparation of Master Plan for 19 Districts of Andhra Pradesh (CNP-762)
2. Project Preparation of Rural Roads for Jarkhand (CNP-965)
3. Project Preparation of Rural Roads for Bihar (CNP-966)
4. Economic Analysis of Rural roads Component under ADP project Rajasthan (CNP-936)
5. Urban Road Traffic and Air Quality ( Delhi & Hyderabad City) CNP-1050
6. Maintenance & Rehabilitation of Highway Project, NCT Delhi (CNP-1114)
7. Management Information System for Highways using GIS (OLP-5101)
8. Customized GIS Software for Rural Road Network Planning (OLP-5102)
9. Model Master Plan for Nagaon, Assam,( OLP-5103)
10. Development of Road Information System for Goa State
11. *Base Transport Network Map Data on GIS for Use in Development of Disaster Mitigation and Management Plan for Delhi (DST)*
12. *Network Project National Data Centre for Managing Data for Planning, Design and Management of Roads (COR13B1)*
13. *Development of new generation of mode choice models using Artificial Neural Network (ANN) method (COR13 C4)*

14. *Feasibility Study for the Construction of Elevated Road on New Rohtak Road (From Rani Jhansi Road to Zakhira Flyover), New Delhi* CNP-1303
15. *Traffic Count Survey for Uttar Pradesh State's Core Road Network* CNP-1321
16. Development of A Critical Infrastructure Information System in GIS Environment for Maintenance of Bridges on National & State Highways (for validation, focus on District Ghaziabad, (UP) (DST Project SSP-4456)
17. Base line road/traffic data collection for upgradation/rehabilitation of identified Uttar Pradesh State roads under phase II, CNP-1330
18. Traffic and Transportation Studies for Surat submitted to Municipal Corporation Surat
19. Feasibility study on Possibility for Installation of Weigh- in- Motion (WIM) System at Various Entry Points of Delhi has been completed (OLP-0463).
20. Environmental Impact Assessment Study for Preparation of Detailed Project Report for Proposed Metro Phase III
21. Application of Geographical Information System (GIS) in Traffic Congestion Management ( In-house R&D project) (OLP 464)
22. Consultancy Services for conducting the Road Safety Audit for PPP Projects on DBFO Basis (CNP 1715)
23. Development of Indian Highway Capacity Manual (Indo - HCM) (ESC 0304): Urban Roadway Capacity Estimation for Arterials / Sub- Arterials / Collectors
24. Consultancy Services for conducting the Road Safety Audit for PPP Projects on DBFO Basis (CNP 1715)
25. Road Safety Audit and Suggesting Improvement on Central Verge of Noida - Greater Noida Expressway (Ch.0/000 Km to 20/000 Km) (CNP 1885)
26. Development and Application of Technologies for Sustainable Transportation (SUSTRANS) (ESC 0106)
  - ✓ *WP1:Quality Enhancement of Public Transportation System (Task Leader)*
  - ✓ *WP-3:Advanced Public Transport Information Systems using ITS Technologies*

- ✓ *WP-9: Innovative Technologies for Utilization of Waste and Marginal Materials in Road Construction*

27. *Road Safety Audit for the Project titled, "Assurance of Quality construction for the Elevated Road Corridor on the Outer Ring Road from Madhuban Chowk to Mukarba Chowk*
28. *Augmentation of existing facility on Pune - Shirur Road (SH 60) from Km 10/600 to Km 64/000 on DBFOT Basis (CNP 1940)*
29. *Augmentation of existing facility on Mumbra Bypass in Thane District (CNP 1945)*
30. *Technical Feasibility Study of the proposed U - Turn Provision on the Delhi – Noida – Delhi Flyway at the Delhi Border merging with Inner Ring Road (CNP-2017)*
31. *Training Programme on "Road Safety Audit" conducted by CSIR-CRRI ( 27.01.2015 to 28.01.2015), Lucknow (CNP-2060)*
32. *International Course on Dissemination of HDM-4 for IRAQ*
33. *Field Evaluation of Retro Reflective Sign Boards in NDMC area (CNP1982)*
34. *Evaluation of Retro Reflective Sheets of one colour of Type IX (CNP-1971)*
35. *Evaluation of Retro Reflective Sheets of one colour of one Type (CNP-2016)*
36. *Training Programme on "Road Safety Audit AECOM Engineers" conducted by CSIR-CRRI, CRRI (CNP-2064)*
37. *Consulting Services for Developing Thematic GIS database for Integrating Road Management System of RCD, Government of Bihar (CNP-2067)*

## **(b) Research Publications**

### **Publications in Journals / Book Chapters**

1. Mohan Rao, B.K. Durai, P.K. Jain and Prof. P.K. Sikdar "Planning and Management of Rural Roads how GIS can help" Indian Infrastructure Volume 6. No. 9, April 2004

2. Kirti Bhandari, Ravi Sekhar.Ch, A.Mohan Rao and S.Gangopadhyay  
“Application of Artificial Neural Network for CNG exhaust emission modeling”  
Journal of Scientific & Industrial Research. Vol. 65, December 2006 pp 100-107.
3. Dr.K.R.Kalaga and A.Mohan Rao “Application of GPS for Traffic Studies”  
Paper published in Indian Urban Transport Journal, Vol8, and No.1 Dec 2009.
4. Dr.K.R.Kalaga and A.Mohan Rao “Application of GPS for Traffic Studies”  
Indian Urban Transport Journal, Vol8, and No.1 Dec 2009.
5. A. Mohan Rao & Dr. Kalaga Systematic Identification of Bottlenecks on  
Urban Arterials: A Case Study 2011 IUT India Vol. 10 August pp86-98
6. Ms. Kamini Gupta & A.Mohan Rao “PPP Pariyojana ka Vitya Vislation ( BOT Pariyojana ) 2012 SadakdarpanIndia Vol. 8 pp75-82
7. A. Mohan Rao , Dr. P.K. Kanchan& Dr. Durai Modelling Passenger Mode  
Choice Behaviour for Medium Cities in India 2011 IUT India Vol. 10  
August pp86-98
8. A. Mohan Rao & Dr. Durai GIS Application in Traffic Congestion Management  
Proc. of Int. Conf. on Recent Trends in Transportation, Environmental and  
Civil Engineering 2011, © 2011 ACEE, 14- 15 Sep 2011DOI:  
02.TECE.2011.01.4
9. A. Mohan Rao & Dr. Kalaga Measuring Urban Traffic Congestion - A Review  
2012 IJTTE Europe Vol 2-4 pp. 286-305.
10. Amudapuram Mohan Rao, Dr. S. Velmurugan and Arpita Chakraborty  
“GIS for Traffic Congestion Management” , June 2014 Geospatial  
World India Volume 04, Issue 11, ISSN 2277-3134

11. Amudapuram Mohan Rao and K. Ramachandra Rao Free speed modeling for urban arterials - a case study on Delhi Journal of Periodica Polytechnica Transportation Engineering, DOI No. 10.3311//pptr.7599 Period. Polytech. Transp. Eng., Vol. 43, No. 3 (2015)
12. A. Mohan Rao & Dr. Kalaga Microscopic simulation to evaluate the traffic congestion mitigation strategies on urban arterials European Transport \ Trasporti Europei,(2015) Issue 58, ISSN 1825-3997
13. A. Mohan Rao & Dr. Durai Monogram Travel Mode Choice Modeling Using Artificial Neural Networks (ANN) 2012 LAP LAMBERT Academic Publishing GmbH & Co. KG, Germany Germany ISBN (978-3-659-14494-3)
14. Mohan Rao "District Level location planning for Educational facilities based on rural accessibility approach" in text book Geo-spatial Technologies for development planning published by Allied Publishers

### **Publications in Refereed International / National Conferences**

1. A. Mohan Rao, B.Kanagadurai and P.K. Kanchan "GIS Based District Rural Road Plan and Core Network - A Case Study of Ranchi District" National Conference on Rural Roads Organized by NRRDA, 22-24 May 2007, Vigyan Bhawan, New Delhi.
2. A.Mohan Rao, Dr.B.K.Durai and Dr.P.K.Kanchan "Planning of educational facilities in rural areas using accessibility approach – A case study with GIS applications", Map India 2008, 06-08 February 2008 New Delhi.
3. A Mohan Rao, P.K. Jain and B. K. Durai, "GIS based Highway Information System-A case study" National Seminar on "Road Transportation in India- Emerging Trends and Technologies, ROTRAN 2002, IIT Kharagpur, September 12-13, 2002.
4. B.S. Rao, A. Mohan Rao and P.K. Nanada "Highway maintenance through contract management" Seminar on financial management and institutional reforms in highway sector at New Delhi, 18th 19th November 2002.

5. Ravindra Kumar, P.K. Jain, B.K. Durai and A. Mohan Rao "Rehabilitation and Resettlement in highway projects" 51 National country and town planning congress, 25-27 December 2002
6. B. Kanaga Durai, A. Mohan Rao, P. K. Jain and P.K. Sikdar, "Geographical Information System For Planning And Management of Rural Roads, Map India 2004, 28-30 January, 2004
7. P. K. Jain, Neelam Jain, A. M. Rao, Arpana and P. K. Nanda, "Core Network Planning – A Case Study", National Seminar on Integrated Development of Rural and Arterial Road Network for Socio-Economic Growth", IRC, 15-16 December, 2003.
8. A. Mohan Rao, P. K. Jain, Neelam Jain and P. K. Nanda, "Software Development for Database Preparation for Rural Roads – A Case Study, National Seminar on Integrated Development of Rural and Arterial Road Network for Socio-Economic Growth", IRC, 15-16 December, 2003.
9. A.Mohan Rao, Ch.Ravi Sekhar B.K.Durai and P.K.Jain "Knowledge Based Modeling of Traffic Forecasting with Neural Networks for Highway Corridors" WCTR, Istanbul, Turkey.
10. Gupta kamini, Rao A.M., Kumar Ravinder and Durai B.K. "Socio Economic Impact of Rural Transport Development -A Case Study" WCTR, Istanbul, Turkey.
11. A.Mohan Rao, Kumar Ravinder, P.K. Jain and Durai B.K "District Level location Planning for Educational Facility based Rural accessibility approach "Proceeding of "NRDMS Workshop" Trichurapalli, 29-30 July, 2005
12. P. K. SIKDAR, P. K. JAIN, B. K. DURAI, A. Mohan Rao "GIS Based Planning And Implementation of Rural Roads Programme In India" Proceeding of "Computers for Urban Planning and Management" (CUPUM), UCL, London, July, 2005
13. S.S.Naidu, A.Mohan Rao, B.K.Durai and Sitaramnajaneyulu, "Integration of HDM-4 and GIS for Pavement Maintenance Management System (PMMS) – A Case Study" published in Conference proceedings of "Advanced Road Transport (ART 2005)" NIT, Rourkela, 12th to 13th Feb 2005.
14. A. Mohan Rao, B.Kanagadurai and P.K. Kanchan "GIS Based District Rural Road Plan and Core Network - A Case Study of Ranchi District" National Conference on Rural Roads Organized by NRRDA, 22-24 May 2007, Vigyan Bhawan, New Delhi.
15. A.Mohan Rao, Dr.B.K.Durai and Dr.P.K.Kanchan "Planning of educational facilities in rural areas using accessibility approach – A case study with GIS applications", Map India 2008, 06-08 February 2008 New Delhi.

16. A.Mohan Rao, Dr.P.K.Kanchan "Travel mode choice modeling using Artificial Neural Networks (ANN)", International Conference on Transportation planning and implementation methodologies for developing countries, 3-6 December 2008, IIT Mumbai.
17. A. Mohan. Rao\* and P.K. Kanchan\*\* "Rural Infrastructure Planning with Emphasis on Educational Facilities by Rural Accessibility Approach" National Conference on New Technologies for rural development having potential of commercialization (NTRRDPC-2009) Bhopal, 29-05-2009
18. Dr.Ch.Ravi Sekhar, Dr. B.K Durai, A.Mohan Rao and K.Sitaramanjaneyulu "Toll System Design based on Travel Time Reliability for High Speed Corridors" , Paper Published PPP seminar, organised by IRC at Indian Habitate Center New Delhi, 28th &29th Aug 2009
19. Kamini Gupta and A. Mohan Rao "Financial Analysis of the PPP Projects- Review of Concepts" Paper published in PPP seminar, organised by IRC at Indian Habitate Center New Delhi, 28th &29th Aug 2009.
20. A.Mohan Rao and B.K Durai "Application of GIS for Road Safety Projects" Conference on National Road Development Strategies and Road Safety on Improved Highways, School of Planning and Architecture Conference Proceeding PP-55-65 , 14-19 March 2011, New Delhi.
21. A.Mohan Rao GIS based Road Information, data collection and analysis 25-26 march 2011 Training Workshop on Road Safety Audit IICT, Hyderabad Conference Presentations CRR
22. A.Mohan Rao ,Dr. B. K. Durai and Kamini Gupta GPS Based Road Data Collection Technologies 2011 International Conference on Geospatial World Forum Hyderabad organized by GIS Development
23. Meena ,A Mohan Rao and Dr.B K Durai "Application of GIS/Remote sensing for Urban Land use and Land cover identification- A case study", 10th august 2011 Remote Sensing GIS for Environmental Management (RSGIS-EM 2010) Jamia Millia Islamia University, New Delhi Conference Proceeding PP-26-38,
24. A.Mohan Rao and Dr. B.K. Durai Design of Intelligent Transport System and Application of GIS in Transport Planning (**Awarded for Best Presentation**) 2011 National Conference on Trends and Recent Advances in Civil Engineering Amity School of Engineering & Technology, NOIDA, New Delhi Conference Proceeding PP-72-80 Amity University
25. A. Mohan Rao, Achutha.S, Dr. B.K. Durai and Dr. A.U. Ravishankar Assessment of Road Compaction impact on Life Cycle Cost of Road Projects



Using HDM-4 December 7 to 10, 2011 1st Conference of Transportation Research Group of India (CTRG) IISC Bangalore CD Ram IISC Bangalore

26. A.Mohan Rao, Dr.K.RamachandraRao Application of VISSIM for Measurement of Traffic Features at Urban Traffic Bottlenecks: A case study of Delh 9th & 10th February, 2012 1st Indian PTV Vision User Group Meeting New Delhi
27. A.Mohan Rao, Dr.K.RamachandraRao Microscopic simulation to evaluate the traffic congestion mitigation strategies for urban arterials 15 to 18 July 2013, 13th World Conference on Transport Research (WCTR) Rio de Janeiro, RJ - Brazil
28. A.Mohan Rao, Dr.K.RamachandraRao Microscopic simulation to evaluate the traffic congestion mitigation strategies for urban arterials 15 to 18 July 2013
29. Amudapuram Mohan Rao, Arpita Chakraborty and Dr. S. Velmurugan Application of GIS for Identification and Impact Evaluation of Road Side Friction Points on Urban Traffic Speeds Indian 05-07 February 2014 Geo Spatial Forum 2014, Hyderabad GIS Development
30. Umesh Shroff , A. Mohan Rao, S. Velmurugan Characterization of Heterogeneity for varying widths of Urban roads in India 27 to 29 March 2014 Transportation Young Researchers Symposium (TYRES 2014) Warangal NIT Warangal
31. Umesh Shroff , A. Mohan Rao, S. Velmurugan Estimation of Four Land urban Arterial capacity May 12-13, 2014; Colloquium on Transportation Systems Engineering And Management Calicut, NIT Calicut
32. A. Mohan Rao<sup>1</sup>, and S.Velmurugan<sup>2</sup> Economic and Financial Feasibility Study for Capacity Augmentation of Pune - Shirur (SH-60) 2014 TPMD C 2014 IIT Mumbai Conference Proceeding, Mumbai
33. A. Mohan Rao & Dr. Kalaga Microscopic Simulation through VISSIM for Traffic Congestion Mitigation on Urban Arterials 2014, 7th November 2014, 3rd Indian PTV User Group Meeting, New Delhi Conference Proceeding of PTV
34. D.M.V Praneeth, A. Pradeep Ram, A. Mohan Rao, S. Velmurugan Study the influence of traffic platoon on urban arterial capacity - A Case Study Delhi RATE 2015 organized by SVNIT, Surat
35. Dave Darshan Dilip, A. Mohan Rao, S. Velmurugan, Manish P. Jain Rakesh Verma Estimation of Dynamic Passenger Car Units for Vehicles Plying on Urban Roads RATE 2015 organized by SVNIT, Surat

36. Rahul Raoniar, Amudapuram Mohan Rao, S. Velmurugan Performance Analysis of Sub Urban Rail System in Delhi - A Case Study CTRG 2015 organized by CTRG at Kolkata
37. Pradeep, Amudapuram Mohan Rao, S. Velmurugan Study of Platoon Characteristics on Urban Arterials - A Case Study Delhi CTRG 2015 organized by CTRG at Kolkata
38. Amudapuram Mohan Rao, S. Velmurugan and Laxmi Evaluation of influence of roadside friction points on urban roadway capacity - a case study Delhi WCTR 2016, China WCTR 2016

### Academic Affiliations

- Working as Faculty Member for PGRP programme conducted by Central Road Research Institute
  - ✓ Geospatial Techniques for Infrastructure
  - ✓ Economic Evaluation of Highway Projects
  - ✓ Transportation Engineering and Road Safety
- Worked as visiting faculty for the courses application of GIS in transport planning and Evaluation of Highway Projects using HDM 4 , School of Planning and Architecture (SPA), New Delhi.
- Worked as visiting faculty for the course-----
- Dissertations Supervised
 

Post-Graduate	:	15 Completed
Graduate	:	5 Completed

### Highway Development Model (HDM) Desemination in South Asia

- Working as faculty member from 2000 to till date for the training programme International Course on "Dessemination of HDM 4 for south Asia"
- Faculty member for Training course titled "HDM 4 for the engineers of the Roads and Building department , Govt. of Gujarat 11-9-2006 to 18-9-2006 at Gandhinagar
- Faculty member for Training course titled "A short Customized Training Programme on HDM-4 for the PWD Engineers of Govt. of Karnataka from 21-09-2007 to 29-09-2007 at Bangalore

### Course coordinator/Faculty Member for Training Programmes

- Training programme on “GIS Applications in Road and Transport Projects”
- Training programme on “Contract Management of Highway Projects”
- Training programme on “Techno-Economic Evaluation for Highway Projects”

### Important Lectures delivered at various Training Programmes

- Presentation made on “ GIS database requirements for Development of GIS based National Highway Information System” for Senior Engineers for Road Development Authority Srilanka
- Invited lecturer on Mechanism of Surveys and Preparation of DPR and Bid Documents for Auditors of NHAI projects at Delhi, on 2-26-2003
- Lectures delivered on “Demonstration of digital map preparation and analysis” and “Map Info” in Training programme on “Planning, Design, Construction and Maintenance of Rural Roads for Engineers of RES, Lucknow”, May 5-9, 2003
- Presentation to Dr. Raguvamsha Prasad Honorable Minister for Rural Development Govt. of India on “Core network Preparation of Rural Roads for Jharkhand” (Jojanabhavan 26-7-2005) at Jojanabhavan
- Presentation to Dr. B.N. Puri Advisor Transport Planning, Planning Commission, for formulation of project GIS based National Highway Information System (6-7-2005) at Planning Commission
- Presentation to BRO officials on “Development of GIS Based Road Information System for Border Roads” on 08-03-2007, New Delhi
- Presentation Development of GIS Based Road Information System for UP Road Network at Lucknow UP, 27th Nov. 2006.
- Presentation to IRC council on topic “GIS-based Highway Information System in India” 13<sup>th</sup> December 2008, 69<sup>th</sup> Annual Session of IRC at Kolkata (West Bengal)