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Pradhan Mantri  
Gram Sadak Yojana

# International Conference on New Technologies and Innovations in Rural Roads

24-26 May 2022  
Pragati Maidan, New Delhi, India



### Organising Partners



Indian Roads Congress

## Vision

Pradhan Mantri Gram Sadak Yojana (PMGSY), i.e., Prime Minister's Rural Roads Scheme was initially launched in 2000 to connect rural habitations across the country. Later on, important Through Routes and Major Rural Links have also been co-opted under this scheme. The scheme has focused on evidence-based planning and selection of roads, quality of construction and emphasis on maintenance.

PMGSY has been a pioneer in the adoption of new and green technologies in construction of roads. New Technology Vision was launched in 2013. As a result of which, more than 1,00,000 km roads have been undertaken using new technologies.

Prior to this conference, a New Technology Vision 2022 is being launched, which aims to maximize the use of new and green technologies and use of sustainable and local materials in construction of rural roads and bridges. It envisions that adoption of these technologies will not only result in cost reduction but will also reduce carbon footprint, mining of natural resources and environmental degradation in construction of rural roads and bridges.



## Pradhan Mantri Gram Sadak Yojana

Pradhan Mantri Gram Sadak Yojana (PMGSY) was launched in the year 2000 to provide all-weather road connectivity to unconnected habitations of population size 500+ in plain areas and 250+ in hills and other difficult areas. In 2013, the Government widened the ambit of the programme and launched PMGSY-II to upgrade 50,000 km of the existing rural road network. In the year 2019, another intervention PMGSY-III was launched for the consolidation of 1,25,000 km Through Routes and Major Rural Links connecting habitations to important social and economic infrastructure. Additionally, 10,000 km road length has been sanctioned for inaccessible and backwards areas for their socio-economic development.



A total of 7,88,273 km road length has been sanctioned till March'2022 under the scheme since its inception with an outlay of ₹ 3,50,109 crore (US\$ 46 billion), out of which 7,04,738 km has already been completed with an investment of ₹2,75,895 crore (US\$ 36 billion). A total of 1,61,875 unconnected habitations have so far been provided with an all-weather road connectivity under PMGSY.

The scheme has emphasized on use of new and green technology in construction of rural roads. Technology Vision 2013 for PMGSY mandated construction of minimum 15% road length using new technology and locally available materials. The objective was to achieve economy and speed in construction of roads, reduce carbon emission and environment degradation, and provide sustainable roads with reduced maintenance cost.



More than 100,000 Km road length has been approved for construction using new and green technologies, against which more than 66,000 km has already been completed. During the last year alone, a total of 19,000 km road length was approved under new and green technologies, which is more than 40% of the total road length approved in the year. Major technologies being used are waste plastics, cold mix, stabilization using chemical or commercial stabilizers, cell-filled concrete, paneled cement concrete, etc. Recently, Full Depth Reclamation (FDR) is being adopted in a major way to achieve cost reduction and reduction in carbon footprint. PMGSY has focused on innovations in management of rural roads. A systematic approach is being adopted for prioritization of roads for construction as well as maintenance. Use of mobile application for quality related inspections and for registration of public grievances, electronic Maintenance of Rural Roads under PMGSY (eMARG) for maintenance monitoring, web based overall monitoring are some of the innovative practices adopted in PMGSY. Need-based research projects includes evaluation of roads constructed using new and green technologies are assigned to premier technical institutions.

With an objective to deliberate on ways to strengthen and adopt more such emerging technologies, new materials, and adoption of established technologies, though beneficial but yet not prevalent in the Indian context, an International Conference on 'New Technologies and Innovations in Rural Roads' along with technical exhibition is being organized from 24 to 26 May, 2022 at New Delhi, India. The conference is conducted through hybrid mode (both online and offline). This program will provide insight for innovations and use of new technologies, new materials and maintenance management of low volume roads. Deliberations would be useful to engineers, field implementers, construction agencies, academicians, administrators, consultants and other stakeholders engaged in the management of rural roads.



## Conference Theme

### 1. Resilient & Sustainable Rural Roads Infrastructure - Lowering the Carbon Footprint

- Covering all issues related to resource efficiency - new materials (marginal/innovative/alternate) and technologies - their pilot use, mainstreaming, challenges and promoting green growth
- Technologies and practices to enhance resilience of rural roads and bridges including disaster risk management across life-cycle management
- Challenges & solutions of design & construction of rural roads & bridges in hilly terrain/cyclone prone/snowbound areas including cost-effectiveness
- Design of sustainable Rural Roads (Low Volume Roads)
- Low cost surfacing for Rural Roads

### 2. Transforming Rural Economy through Access - Enhancing Integration & Inclusivity

- Enhancing efficiency by linking roads to agriculture, commerce and services
- Rural Transport Services
- Community participation in selection, route choice, quality monitoring of rural roads, formation of micro-enterprises, role of women, creation of jobs and alignment with rural employment programs

### 3. Management and Maintenance of Rural Roads – Effective Governance Framework

- Asset Management of Low Volume Rural Roads
- Innovations in Maintenance & Rehabilitation Strategies for Rural Roads
- Data Driven Planning & Implementation – Use of eMARG, GIS, OMMAS etc.
- International Best Practices in Management of Rural Roads
- Road ahead: facing the future including innovations in financing

#### Knowledge Partners

S.No	Institute	S.No	Institute
1	CSIR-Central Road Research Institute (CRRI)-New Delhi	6	Indian Institute of Technology (IIT) BHU- Varanasi
2	Indian Institute of Technology (IIT) Madras- Chennai	7	Indian Institute of Technology (IIT) Hyderabad
3	Indian Institute of Technology (IIT) Kharagpur	8	Indian Institute of Technology (IIT) Tirupati
4	Indian Institute of Technology (IIT) Bhubaneswar	9	Indian Institute of Technology (IIT) Warangal
5	Indian Institute of Technology (IIT) Roorkee	10	Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat



#### Technical Exhibition

The conference will provide a platform to showcase the latest technologies, new materials, equipment, road construction machinery, road safety materials, automatic traffic counters cum classifiers and quality control equipment related to rural road construction, maintenance and asset management.

#### Participants

Technical Institutions, Research Institutions, Government Officials, Road Construction Agencies, Consultants, Technology Experts, Equipment Manufacturers, etc.

#### Conference Fee

Registration fee payable by the participant for participation in person is INR ₹4000 + 18% GST (INR ₹4720). For registration kindly visit the website [www.pmgysy.nic.in](http://www.pmgysy.nic.in)

Virtual participation (online)- no fee required. Only registration through [www.pmgysy.nic.in](http://www.pmgysy.nic.in) is to be done by the participant, after validation from NRIDA/MoRD the conference link will be shared with the applicant.



## Payments

**Payment Details:** The payment can be made through RTGS / NEFT / Demand draft. For offline payments Demand Draft shall be drawn in favour of the "Secretary General, Indian Roads Congress" payable at New Delhi. The bank details for online payment is as follows:

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All registration payment details shall be sent to mail ID:  
[CONFERENCE.NRIDA@GMAIL.COM](mailto:CONFERENCE.NRIDA@GMAIL.COM)



## Schedule

**Conference Dates :** 24 - 26 May, 2022

**Venue :** Pragati Maidan, Hall No 2, New Delhi, India.

Day	Time	Topic
24 <sup>th</sup> May 2022 Tuesday	1000-1002	Inauguration of the conference by lighting of Lamp
	1002-1012	Welcome address by Dr. Ashish Kumar Goel, Additional Secretary (RD), MoRD and DG, NRIDA
	1012-1017	Address by Shri Sanjay Kumar Nirmal, Secretary General IRC & ADG Roads, MoRTH
	1017-1024	Address by Mr. Hartwig Schafer, Vice President, South Asia Region World Bank
	1024-1039	Key note address by Shri Nagendra Nath Sinha, Secretary, MoRD
	1039-1044	Address by Sadhvi Niranjan Jyoti, Union Minister of State for Rural Development, Consumer Affairs and Food & Public Distribution
	1044-1049	Address by Shri Faggan Singh Kulaste, Union Minister of State for Rural Development & Steel
	1049-1054	Release of New Technology Vision 2022, Technical Documents of the conference and other documents by Hon'ble Minister and all dignitaries on dais
	1054-1109	Address by Shri Giriraj Singh, Union Minister for Rural Development & Panchayati Raj
	1109-1112	Vote of Thanks by Dr. I. K. Pateriya, Director (P-III) & Chief Quality Coordinator, NRIDA
	1112-1200	Inauguration of Exhibition by Shri Giriraj Singh, Union Minister for Rural Development & Panchayati Raj
	1200-1230	High Tea

Session-I	Key Note Addresses	Speaker
1230-1250	<b>Key Note Lecture-1 - Pradhan Mantri Gram Sadak Yojana- Past, Present and Future</b>	Dr. Ashish Kumar Goel Additional Secretary, MoRD and DG, NRIDA, Gol
1250-1310	<b>Key Note Lecture - 2 - Use of Alternate Technologies and Materials in the Construction of Low Volume Rural Roads</b>	Dr. Philip Paige-Green, South Africa. (Through VC)
1310-1330	<b>Key Note Lecture 3 - Experience of Low Volume Rural Roads</b>	Mr. Guangzhe Chen, Global Director Transport, World Bank (Through VC)
1330-1350	<b>Key Note Lecture 4 - New Materials and Technologies for Rural Roads</b>	Dr. Sudhakar Reddy IIT Kharagpur
1350 -1445	Lunch	

Continued.....

Session-II		Full Depth Reclamation (FDR) and Stabilization Technology in Rural Roads	
24 <sup>th</sup> May 2022 Tuesday	1445-1505	<b>Technical Lecture 1</b> – Sustainable Stabilization methods in low volume roads	Dr. Anand J.Puppala, Texas A&M University <b>(Through VC)</b>
	1505-1525	<b>Technical Lecture 2</b> - Cement Treated Bases for Construction of Cost-Effective Rural Roads	Dr. Umesh Sahoo, IIT Bhubaneshwar
	1525-1545	<b>Technical Lecture 3</b> – Full Depth Reclamation Using Portland Cement	Shri Guru Vittal, Chief Scientist, CRRI
	1545-1605	<b>Technical Lecture 4</b> – – ERA of Adoption of New Technology: Full Depth Reclamation (FDR) in the State of Uttar Pradesh	Shri Manoj Kumar Singh Additional Chief Secretary, Rural Development Department, Uttar Pradesh.
	1605-1625	<b>Technical Lecture-5</b> Guidelines for using local materials for roadway base and subbase of Low Volume roads	Prof. Soheil Nazarian, University of Texas at El Paso <b>(Through VC)</b>
	1625-1645	Coffee/Tea	
Session-III		Presentations by Technology providers	
1645-1805			

Session-IV		New Technologies in Rural Roads	
25 <sup>th</sup> May 2022 Wednesday	1000-1020	<b>Technical Lecture 6</b> – Application of Cold Recycling for Rural Roads	Dr.Ambika Behl, Principal Scientist, CRRI, New Delhi
	1020-1040	<b>Technical Lecture 7</b> – Intelligent Compaction for Improved Performance of Rural Roads	Dr. Anjan Kumar, IIT Guwahati
	1040-1100	<b>Technical Lecture 8</b> – Design of short Panelled Concrete Pavements for Low Volume Roads	Dr. Amarnath Reddy, IIT Kharagpur
	1100-1120	<b>Technical Lecture 9</b> – Overview of Low Volume Roads in Europe	Dr. Breixo Gómez Meijide, Technical Director, EAPA <b>(Through VC)</b>
	1120-1140	<b>Technical Lecture 10</b> – Waste Plastic in Bituminous Mixes for Low Volume Roads – Indian Experience	Dr. Nikhil Saboo, IIT Roorkee
	1140-1200	<b>Technical Lecture 11</b> – New Technologies and Innovations in Rural Roads- India	Mr. Gordan Keller, Forest Services, USA <b>Through VC)</b>
	1200-1220	<b>Technical Lecture 12</b> – Experiences on use of Coir in Rural Roads	Dr. Sunitha, NIT Tiruchirappalli
	1220-1240	Coffee/Tea	
Session-V		Presentations by Technology Providers	
1240-1330			
1330-1440		Lunch	



Continued.....

Session-VI		Asset Management	
25 <sup>th</sup> May 2022 Wednesday	1440-1500	<b>Technical Lecture 13</b> - A Framework for Road Asset Management	Mr. Rob Geddes, Consultant CDSA, Africa <b>(Through VC)</b>
	1500-1520	<b>Technical Lecture-14</b> – Preventive maintenance and performance-based maintenance contracts for Asset Management of rural roads	Prof. A. Veeraragavan, IIT Madras
	1520-1540	<b>Technical Lecture-15</b> – International best practices in the provision of Low Volume roads	Shri. Mike Pinard, Infra Africa Consultant, South Africa
	1540-1600	<b>Technical Lecture-16</b> – Promoting Sustainable and climate resilience materials for rural roads – UK Case Studies	Dr. Iswandar Widiatmoko AECOM, UK <b>(Through VC)</b>
	1600-1620	<b>Technical Lecture-17</b> – Road Asset Management for Rural Roads	Mr. Ian Greenwood, New Zealand and Mr. Scott Bloxson, Senior Adviser, International Road Federation
	1620-1640	Coffee/Tea	

Session- VII		Innovations in Materials and Technologies	
25 <sup>th</sup> May 2022 Wednesday	1640-1700	<b>Technical Lecture-18</b> - Cement Grouted Bituminous Mix for longevity of flexible pavements	Dr Manoj Kumar Shukla, Principal Scientist, CRRI, New Delhi
	1700-1720	<b>Technical Lecture-19</b> – Innovations in Technologies, Materials and Designs for long lasting Low Volume roads	Dr Manik Burman Minnesota University <b>(Through VC)</b>
	1720-1740	<b>Technical Lecture-20</b> – Sustainable Practises of Cold Recycling of Roads leads to Sustainable Performance	Prof Kim J Jenkins, Stellenbosch University, South Africa. <b>(Through VC)</b>
	1740-1800	<b>Technical Lecture-21</b> -Pervious concrete pavement systems for Low Volume road applications	Dr. B. Krishna Prapoorna, IIT Tirupati
	1800-1840		Coffee/Tea



Session-VIII		Rural Transport Services	
26 <sup>th</sup> May 2022 THURSDAY	1000-1020	<b>Technical Lecture-22</b> Accessibility and Mobility in rural areas	Mr. Souleman Oussiman, Margo Briessinck, PIARC (Through VC)
	1020-1040	<b>Technical Lecture-23</b> Rural Transport Services	Mr. Paul Starkey, Transport Services Expert, UK
	1040-1100	<b>Technical Lecture-24</b> Livelihoods through road maintenance international experience (ILO)	Mr. Tomas Stenstrom Chief Technical Advisor, ILO
	1100-1120	<b>Technical Lecture 25 – Low-Cost Surfacing</b> with a focus on Chip Sealing	Dr Gerrie Van Zyl, Director, Mycube Asset Management Systems (Pty) Ltd, South Africa. (Through VC)
	1120-1140	<b>Technical Lecture 26 –Climate Resilience and Adaption</b> in Road Asset Management System	Mr. Nkululeko Leta, Associate Member, PIARC Technical Committee (World Road Organisation)
	1140-1200	Coffee/Tea	

Session-IX		Hill Roads, Climate Resilience and Bridges on Rural Roads	
26 <sup>th</sup> May 2022 THURSDAY	1200-1220	<b>Technical Lecture-27 - Effectiveness of Traffic Signs and Road Furniture on Compliance &amp; Road user Behaviour- A Rural Road Study</b>	Mr. Gaurang Joshi, SVNIT Surat
	1220-1240	<b>Technical Lecture-28</b> Technologies and Practices to enhance Resilience	Dr. Tran Thi Kim Dang, University of Transport and Communications, Vietnam
	1240-1300	<b>Technical Lecture – 29 - Modular Pre-Engineered Bridge Systems - For Permanent, Emergency, and Temporary Applications</b>	Shri. Alok Bhowmik, B&S Engineering Consultants Pvt Limited
	1300-1320	<b>Technical Lecture 30 – Challenges and solutions in Hill Road Construction: Indian Experiences</b>	Mr. Rajeev Chandra, Executive Engineer, BRO
	1320-1400	Lunch	



Session-X		Planning and GIS	
26 <sup>th</sup> May 2022 THURSDAY	1400-1420	<b>Technical Lecture 31– Hungarian experiences in innovative Low Volume road pavement structures</b>	Dr. Laszlo Gaspar, KTI - Road and Bridge Centre, Budapest, Hungary. (Through VC)
	1420-1440	<b>Technical Lecture-32 – Data-Driven Planning of Rural Roads: Algorithms, Geographic Information System (GIS) and Process Re-engineering in PMGSY-III</b>	Shri. Harsh Nisar, MoRD, New Delhi.
	1440-1500	<b>Technical Lecture-33- Performance Assessment of Rural roads in Maintenance: Development and Implementation of an objective evidence-based IT solution in PMGSY</b>	Shri. Pradeep Agarwal, Director (Projects-I), NRIDA, New Delhi
	1500-1520	<b>Technical Lecture-34 Linking Farms to Markets- Experience from Malawi</b>	Ms. Flora Hauya, Shri. Sharmey Banda Senior Engineer, Roads Authority, Malawi
	1520-1540	<b>Technical Lecture-35 Maintenance and Financing Practices</b>	Shri. Yetemgeta Asrat, Deputy Director General of Ethiopian Roads Administration
	1540-1600	Coffee/ Tea	

Panel Discussion & Valedictory Session			
26 <sup>th</sup> May 2022 THURSDAY	1600-1730	Panel Discussion – New Technologies and Innovations in Rural Roads- Way Forward	<b>Panelists:</b> 1. Mr. Nagendra Nath Sinha, Secretary, MoRD 2. Dr. Ashish Kumar Goel, Additional Secretary/ DG, NRIDA 3. Prof. A. Veeraragavan, IIT, Madras 4. Dr. Praveen Kumar, IIT, Roorkee 5. Representatives from States 6. Representatives from World Bank



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