

ANNUAL REPORT

2024-25

Researching Roads | Building a Better Tomorrow



COMPREHENSIVE MOBILITY PLANS

DATA-DRIVEN PLANNING FOR
SUSTAINABLE URBAN FUTURE



PEOPLE FIRST
MOBILITY



INTEGRATED
TRANSPORT



DATA-DRIVEN
DECISIONS



SUSTAINABLE
GROWTH



SAFER
CITIES



TOWARDS SMARTER, SAFER & SUSTAINABLE CITIES

RESEARCH • INNOVATION • IMPACT

Annual Report

2024-25



सीएसआईआर –केंद्रीय सड़क अनुसंधान संस्थान,नई दिल्ली (भारत)

CSIR-Central Road Research Institute, New Delhi (India)

सीएसआईआर-केंद्रीय सड़क अनुसंधान संस्थान, नई दिल्ली

गुणवत्ता नीति

सीएसआईआर-केंद्रीय सड़क अनुसंधान संस्थान (सीआरआरआई) सड़क और सड़क परिवहन तथा सेतु एवं संरचना के क्षेत्र में व्यावसायिक उत्कृष्टता के लिए प्रयत्नशील है।

संस्थान निम्नलिखित के लिए प्रतिबद्ध है;

- क. औद्योगिक के साथ-साथ सामाजिक अनुसंधान एवं विकास कार्यक्रमों, परामर्श सेवाओं एवं मानव संसाधन विकास कार्यक्रमों व व्यवसाय की विश्वस्तरीय तकनीकी आवश्यकताओं को पूरा करने के लिए
- ख. संस्थान की गुणवत्ता प्रबंधन प्रणाली में निरंतर सुधार
- ग. ग्राहक संतुष्टि, और
- घ. सभी अनुप्रयोज्य आवश्यकताओं का अनुपालन करने के लिए।

मनोरंजन परिड़ा

प्रो. मनोरंजन परिड़ा

निदेशक

सीएसआईआर-सीआरआरआई

CSIR - Central Road Research Institute, New Delhi

QUALITY POLICY

The CSIR - Central Road Research Institute (CRRI) endeavours towards Professional Excellence in the area of Roads and Road Transportation including Bridges and Structures.

The Institute is committed to;

- a. Accomplish Industrial as well as Societal Research and Development Programmes, Consultancy Services, HRD Programmes meeting technical needs of the profession globally
- b. Continual improvement of Quality Management System of the Institute
- c. Customer satisfaction, and
- d. Comply with all applicable requirements.


Prof. Manoranjan Parida

Director
CSIR-CRRI

Mandate

The scientific & technical objectives of CSIR-CRRI are:

- To develop specifications and manuals for construction of low cost roads for different regions of country.
- To carry out applied research for investigation, construction and maintenance of different type of roads and runway including studies on related materials such as aggregates, bitumen, cement, etc. with a view to effecting economy and achieving greater serviceability.
- To develop appropriate tools, machinery, equipment and instruments for adapting technologies as related to highway engineering and relevant to the country for indigenous use.
- To carry out research and development activities in all aspects of roads under varying climatic and traffic conditions.
- To carry out research and development in all aspects of road traffic and transportation engineering, including study of accidents, development of road safety measures, psychology of road users and transportation economics in relation to different forms of transport.
- To render technical advice and consultancy services to various organisations in roads and related fields to avoid import of foreign expertise.
- To train engineers through refresher courses, workshops and training programmes for wider application of indigenously developed technologies.
- To create and establish all the needed infrastructure, both equipment and expertise, in the various facets of highway and transportation engineering for investigation, planning, design, construction and maintenance as well as to achieve judicious solutions for special problems.
- To collaborate with other institutions for R&D studies concerning roads, road transportation and related practices particularly on regional problems.
- Publication of scientific and technical findings in journals, symposia, conferences, etc. devoted to research and development in related areas of highway engineering.
- Generation of intellectual property and its commercialization through technology transfer.

CSIR-CRRI ORGANISATIONAL STRUCTURE (as on 30.03.2025)

R&D Divisions

Geotechnical Engineering (GE)

Dr. Kanwar Singh, Head

Flexible Pavements (FP)

Sh. Satish Pandey, Head

Rigid Pavements (RP)

Dr. Rakesh Kumar, Head

Pavement Evaluation (PE)

Dr. Pradeep Kumar, Head

Traffic Engineering & Safety (TES)

Dr. S. Velmurugan, Head

Transportation Planning & Environment (TPE)

Dr. Nasim Akhtar, Head

Bridge Engineering and Structures (BES)

Dr. Rajeev Goel, Head

R&D Management Divisions

Information, Liaison and Training (ILT)

Dr. K. Ravinder, Head

Planning, Monitoring & Evaluation (PME)

Dr. Niraj Sharma, Head

Computer Centre and Networking (CCN)

Dr. Ch. Ravi Sekhar, Head

Knowledge Resource Centre (KRC)

Dr. Rina Singh, Head

Engineering Services Division (ESD)

Dr. A. Mohan Rao, Head

Horticulture

Sh. A.K. Jain, Head

Mechanical and Transport (MAT)

Sh. Ashok Kumar Arora, Coordinator

Quality Management Division (QMD)

Ms. Lalita Jangpangi, Head

Maharani Bagh Staff Quarters (MBSQ)

Sh. A.K. Sagar, Head

Administration

Ms. Beena Anupa Sequeira, Sr. Controller of Administration

Sh. Santosh Kumar, Administrative Officer

Sh. Rejimon M.J., Controller of Finance & Account

Sh. Prasenjeet Mitra, Stores & Purchase Officer

Sh. Anil Kumar Upadhyay, Section Officer

Sh. Manoj Swaroop Shukla, Section Officer

Ms. Nidhi Gupta, Section Officer

Sh. Anil Kumar, Section Officer

Sh. Sanjeev Kumar Yadav, Section Officer

Sh. Sanjay Roy, Section Officer

Sh. Sanjay Choudhary, Hindi Officer, Rajbhasha

Sh. Jitender K. Yadav, Manager, Guest House

Ms. Kamlesh Kumari, In-charge, Canteen

Research Council

Prof. Manoranjan Parida
Director

Management Council

भारतीय मानक ब्यूरो

IS / ISO 9001



मानक: पथप्रदर्शकः
BUREAU OF INDIAN STANDARDS



QMS

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From the Director's Desk

It is my pleasure to present the Annual Report of CSIR-CRRI for the last fiscal year 2024-2025. During the period, the Institute focused on capacity building and development of human resources in the area of road & transport sectors to undertake and execute roads, bridges and runway projects through technical and consultancy services to various user organizations in India and abroad.

During the last fiscal year, our scientists published 65 papers in renowned journals and 80 papers in conference proceedings and 27 articles in Books and Magazines apart from filing various patents. During this period, four patents were filed and three were granted while two technologies were transferred to the Industries. Besides these, 7 agreements and 21 MoUs were signed for executing the various projects of national importance.

Despite a sharp fall in revenues in the first quarter, progressively strengthening demand for our services helped us stage a swift recovery during the rest of the year, helping clock full year External Cash Flow of ₹33.8 crore in FY 2024-2025.

Scientists of the Institute received many National and International recognitions, served as expert members on important National level committees and contributed in the preparation of Standards/ Codes of Practices/ Manuals/ Guidelines/ Specifications for Indian Roads Congress (IRC) / Bureau of Indian Standards (BIS) / Ministry of Road Transport and Highways (MoRTH), Govt. of India.

CSIR-CRRI hosted a number of events during this period. These include a series of Lectures / Conferences / Seminars / Workshops on various topics related to Roads, Bridges and Road Transportation. Also, the Audits of CSIR-CRRI as per IS/ISO 9001: 2015 requirements were conducted by the auditors of the Certification Agency i.e. Bureau of Indian Standards. The auditors were satisfied with the current system / procedure followed in CSIR-CRRI, which is a testimony to the quality standard maintained by the Institute.

Skill development of human resources by imparting training to the engineers of the user agencies / organizations is an integral part of the research and development programme of our Institute. Past fiscal year has again touched great heights for Vision Forward and the people we serve. CSIR-CRRI conducted seven regular, five customized training programs and two specialized 15-day certification courses in the areas of Road Safety Audit. Customized training programs were organized for the engineers of National Highways & Infrastructure Development Corporation Limited; National Rural Infrastructure Development Agency, Govt. of India and Border Roads Organisation, Govt. of India. These regular and customized training programs including the certification courses were attended by 663 participants from various parts of India.

We undertook significant international engagement and worked closely with international organisations. It is my pleasure to share that many distinguished Scientists / Academicians both from India and abroad visited our Institute, delivered lectures, and held discussions with Scientists of the Institute during the year.

CSIR-CRRI also organized various interactive workshops / outreach programs as part of the JIGYASA programme and Atal Tinkering Lab (ATL) scheme under Atal Innovation Mission (AIM) of Govt. of India, for the students of Kendriya Vidyalayas (KVs) and other schools & colleges in India. In the last fiscal year, 2123 students along with their teachers from various KVs and other schools & colleges enthusiastically participated in these interactive workshops, lecture series and /or the quiz competitions.

Students of B. Tech / M. Tech from various Engineering colleges, NITs and IITs have a dream to work for their dissertation in CSIR-CRRI. During the period, 38 students were working for doctoral degree; 54 students completed their M. Tech dissertation / internship and 155 B. Tech students completed their internship / dissertation.

During the period, nine staff members transferred from CRRI and nine staff members joined the Institute from other laboratories while twelve staff members retired from CRRI.

I express my gratitude towards the Ministry of Science and Technology, CSIR Headquarter and our Research & Management Councils for the wholehearted support received from them. I extend my gratitude to our external experts who guided in our pursuit for excellence.

As I look ahead, I am more optimistic than ever of the enormous opportunity ahead of us. I would like to place on record here an appreciation for the contribution made by CSIR-CRRI staff members at all levels and students. Our consistent growth was made possible by their hard work, solidarity, cooperation and support.

Prof. (Dr.) Manoranjan Parida
Director, CSIR-CRRI

Advisory Council (Research Council and Management Council)

Research Council

The Research Council of the Institute (as on 31.03.2025) is as follows.

Chairman

Prof. Mahesh Tandon

Tandon Consultants Pvt. Ltd.
17, Link Road, Jangpura Extension, New Delhi-110014
Email: tandon@tcpl.com

Member

Prof. K. Sudhakar Reddy

Professor of Civil Engineering,
Indian Institute of Technology (IIT),
Kharagpur - 721302
Email: ksreddy@civil.iitkgp.ac.in

Shri A. Anbarasu

Principal Secretary,
Public Works Department (PWD)
Govt. of Delhi
12th Floor, MSO Building,
I.P. Estate, New Delhi – 110002
Email: pspwd@nic.in, Lk-advisor@gov.in

Prof. Lelitha Devi Vanajakshi

Dept. of Civil Engineering
Indian Institute of Technology, Madras
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Email: lelitha@iitm.ac.in

Prof. R. Pradeep Kumar

Director,
CSIR - Central Building Research Institute
Roorkee-247 667
E-mail: director@cbri.res.in

Ms. Minimol Korula

Head, Strategic Projects,
M/s Maccaferri Environmental Solutions Pvt.
Ltd.,
D40, Midc Ranangaon, Tal-Shirur Dist.,
Pune-412220
Email: minikorulla@maccaferri-india.com

Shri Dharmanand Sarangi

Additional Director General (R), MORTH,
Transport Bhawan, Parliament Street,
New Delhi – 110001.
Email: d.sarangi@nic.in

Prof. Manoranjan Parida

Director
CSIR - CRRI, New Delhi-110025
E-mail: director.crri@nic.in

Shri Mayank Mathur

Chief Scientist,
CSIR - Central Planning Directorate (CPD)
Council of Scientific and Industrial Research,
2, Rafi Marg, New Delhi-110001
Email: mm@csir.res.in

RC Secretary: Dr S. Velmurugan

Chief Scientist & Head, TES Division
CSIR - CRRI, New Delhi-110025
E-mail: vms.crri@nic.in

Management Council

Management Council of the Institute (as on 31.03.2025) is as follows.

Chairman

Director,
CSIR-Central Road Research Institute, New Delhi, 110025

Member

Dr. Venu Gopal Achanta

Director,
CSIR- National Physical Laboratory, New Delhi, 110012

Dr. Pradeep Kumar

Chief Scientist,
CSIR-Central Road Research Institute, New Delhi, 110025

Dr. Ambika Behl

Senior Principal Scientist,
CSIR-Central Road Research Institute, New Delhi, 110025

Ms. G.S. Parvathi

Principal Scientist,
CSIR-Central Road Research Institute, New Delhi, 110025

Ms. Mariya Dayana P.J.

Scientist,
CSIR-Central Road Research Institute, New Delhi, 110025

Dr. Pardeep Kumar

Principal Technical Officer (3),
CSIR-Central Road Research Institute, New Delhi, 110025

Dr.P.S. Prasad

Chief Scientist
CSIR-Central Road Research Institute, New Delhi, 110025

CoFA / F&AO

CSIR-Central Road Research Institute, New Delhi, 110025

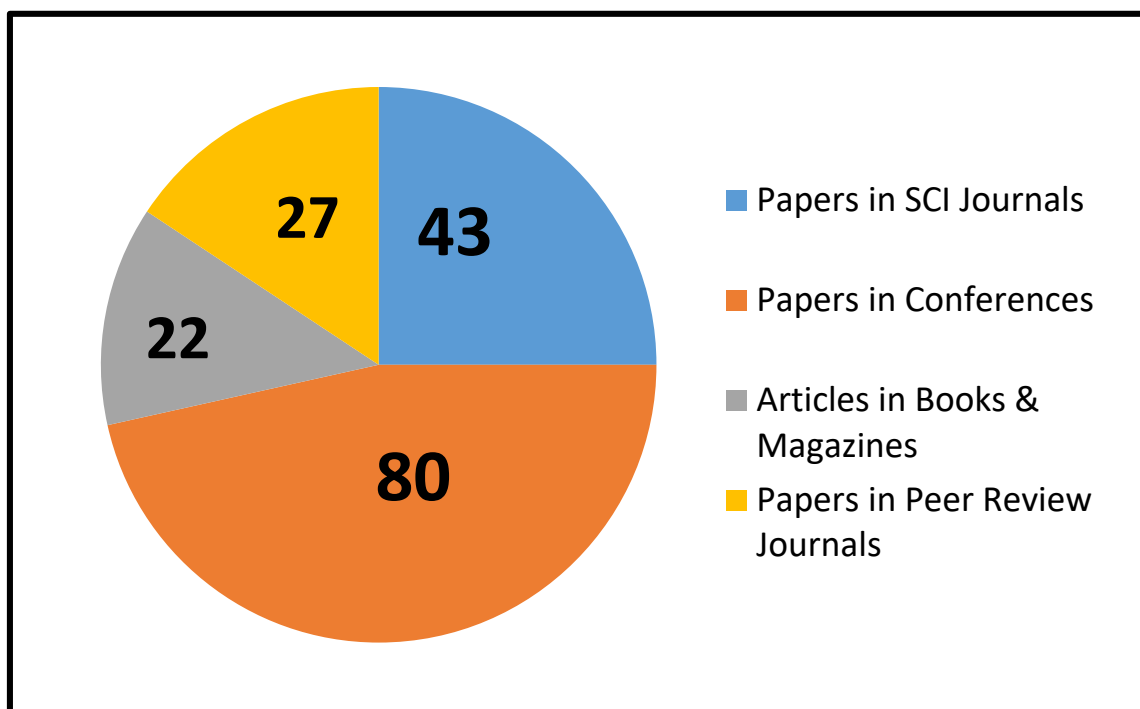
Member-Secretary

CoA / AO

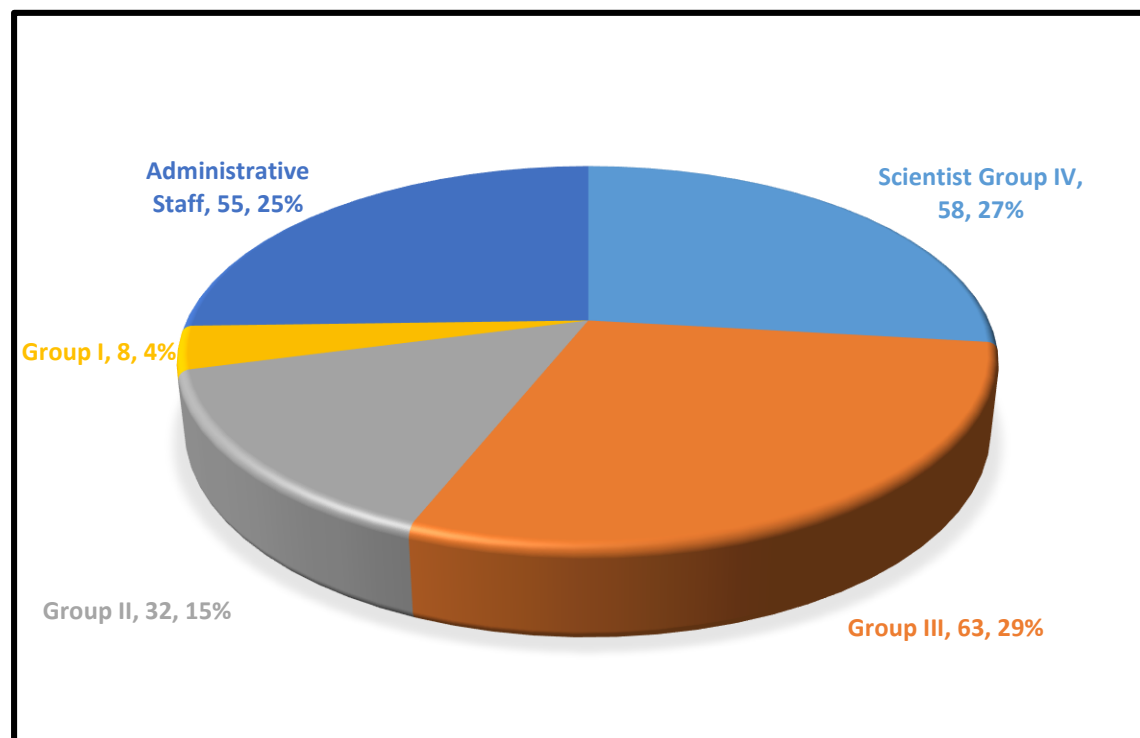
CSIR-Central Road Research Institute, New Delhi, 110025

Performance Indicators

Papers Published in 2024-2025

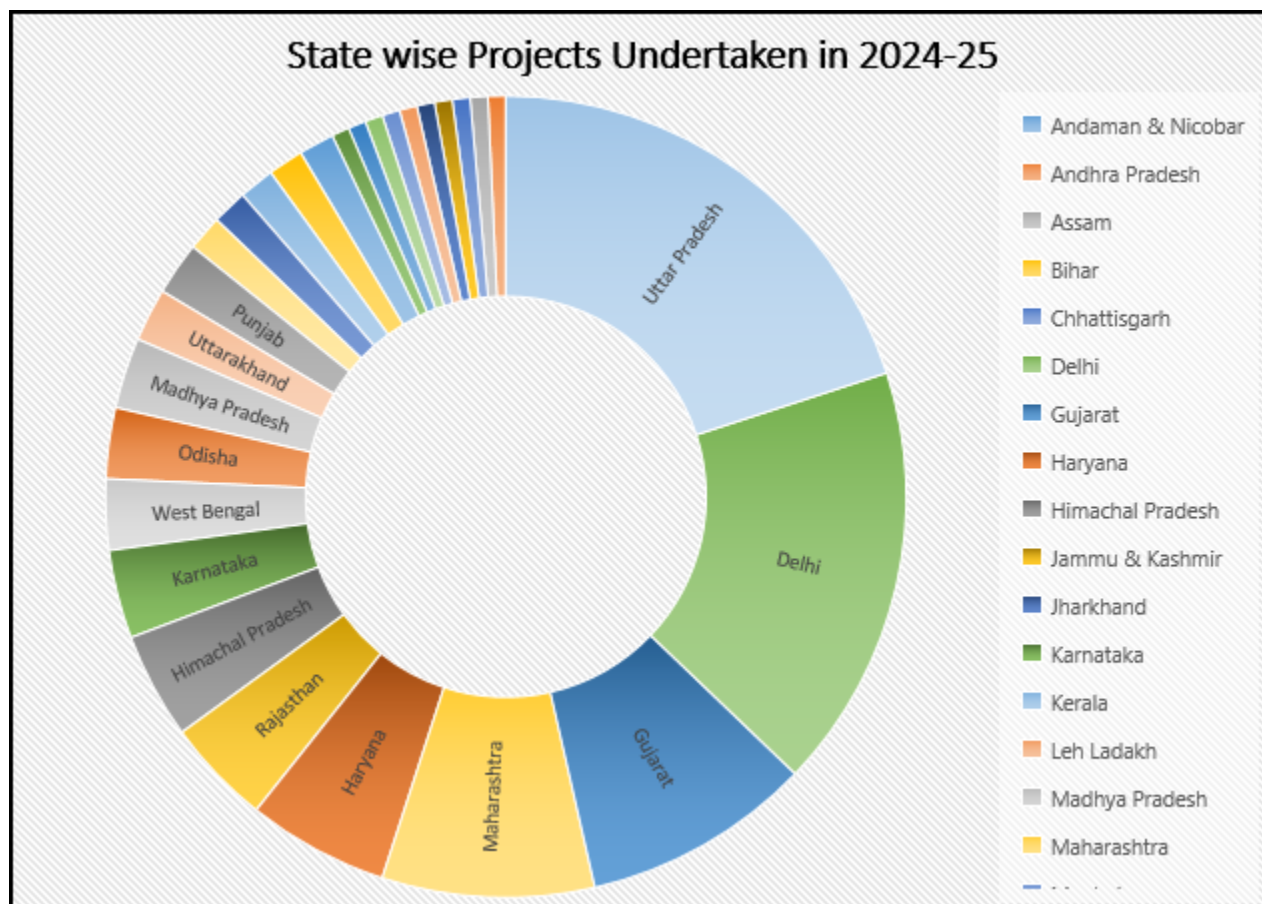
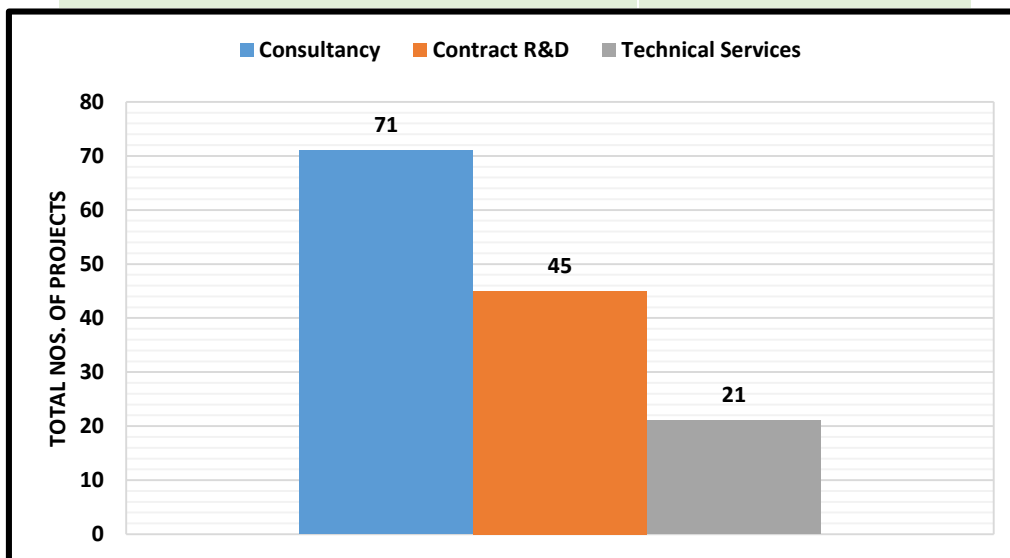


Staff Strength in 2024-2025

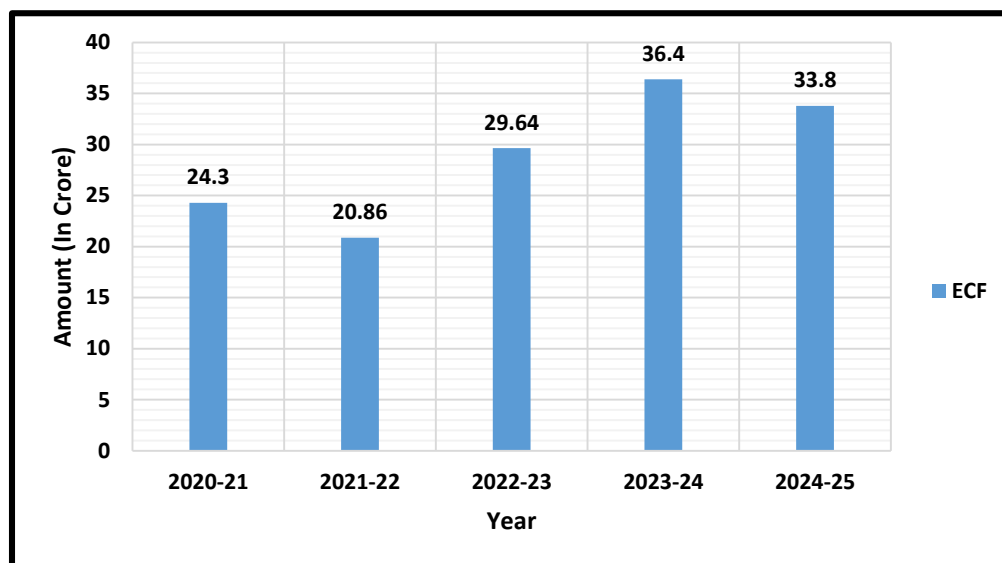


Projects Undertaken in 2024-2025

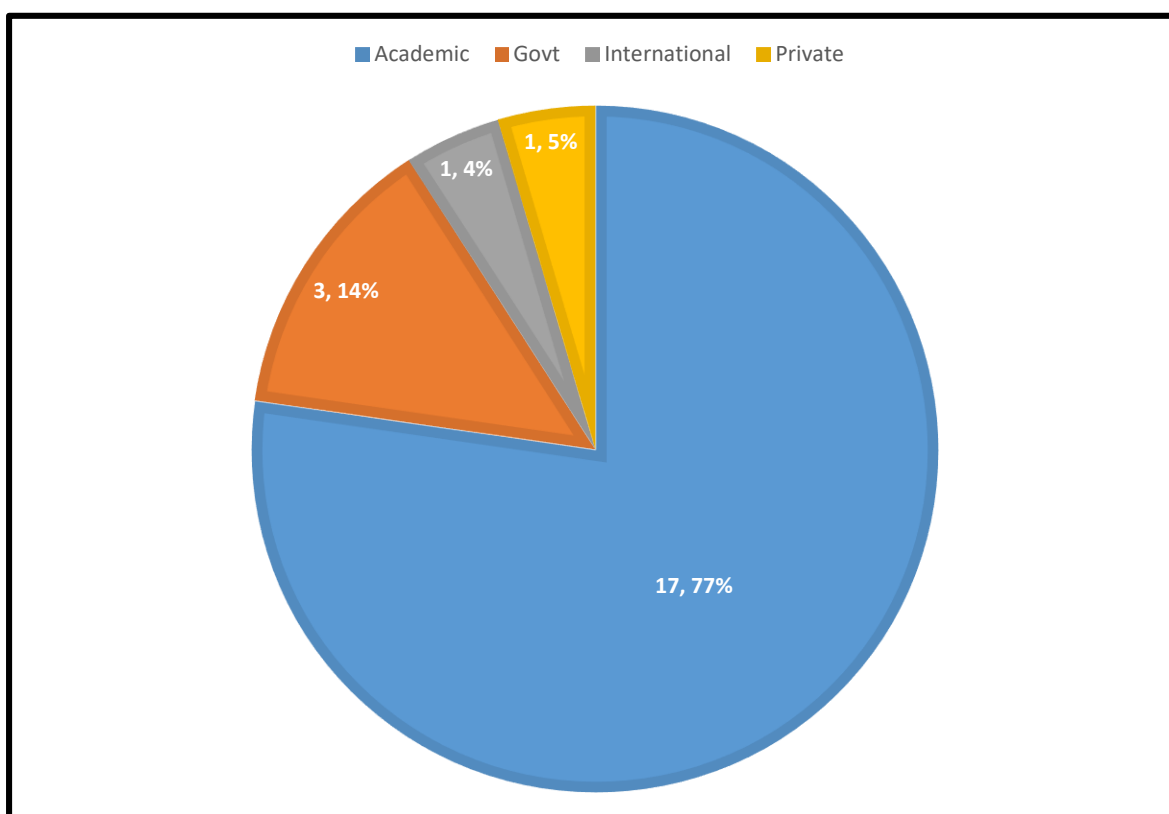
Project type	No. of projects (2024-25)
CSIR funded/ Inhouse R&D	9
Contract R&D Projects	44
Consultancy	71
Technical Services	21



External Cash Flow (Rs. in Crore) in 2024-2025



MoUs signed in 2024-2025



Research & Development Divisions

- ❑ **Bridge Engineering and Structures**
- ❑ **Flexible Pavement**
- ❑ **Geotechnical Engineering**
- ❑ **Pavement Evaluation**
- ❑ **Rigid Pavement**
- ❑ **Transportation Planning and Environment**
- ❑ **Traffic Engineering and Safety**

Bridge Engineering & Structures

RESEARCH PROJECTS

Development of customized Remotely Piloted Aerial Vehicle (RPAV) for smart application in the field of remote inspection and monitoring of bridges.

Funding Agency: CSIR-CRRI

Duration of the project: From April 2018 to March 2025

Broad Objectives: To develop a customized RPAV for smart application in the field of remote inspection and monitoring of bridges

This project presents the comprehensive research, development, and validation of a Remotely Piloted Aerial Vehicle Bridge Monitoring System (RPAV-BMS), an innovative solution for smart and contactless bridge inspection developed by the Bridge Engineering and Structures Division of CSIR-CRRI. The project was undertaken in response to critical challenges in conventional bridge inspection methodologies, including difficult accessibility, safety risks, and reliance on bulky non-destructive testing (NDT) equipment.

The work was carried out in three distinct phases. In Phase I and II, high-resolution images were captured using drones and processed via photogrammetric software to generate 3D reality models of bridge structures. These models enabled accurate dimensional analysis, with measurement accuracy ranging from 91% to 99% compared to physical ground-truth data. Customization of the drone platform and optimization of flight paths, camera angles (90°, 60°, 45°), and overlapping parameters enabled generation of reliable geo-tagged orthophotos and 3D models. In Phase III, a novel piezo-based device named Vibro-Integrity Sensing Device (VInSD) as shown in Figure 1 was developed as a multi-functional replacement for conventional NDT equipment. The device could capture natural frequency, time-of-flight (Δt), ultrasonic wave velocity, and estimate compressive strength of concrete with high fidelity. Laboratory calibrations showed that VInSD could match the natural frequency values determined by conventional accelerometers with a deviation of less than 3%, and the ultrasonic wave velocities with an average deviation of 5.22%. The device was further integrated into a drone-mounted platform, the VAIU (VInSD Aerial Inspection Unit) as shown in Figure 2 and field-tested on multiple bridge sites. Laboratory and field validation showed that VAIU could estimate compressive strength of M50 concrete with an error of only 8.31%, measure crack depth with an accuracy of 94%, outperforming traditional UPV devices, and predict ultrasonic wave velocity with a deviation of 5.22% from standard measurements. It also delivered repeatable Δt (time-of-flight) values with an RMS deviation of 11.6 and 1.0 for *no-fly* and *Flying* condition, respectively. Field demonstrations on bridges in Ghaziabad and along the Dwarka Expressway confirmed the system's effectiveness in flying and no-fly conditions, including on difficult-to-access areas like undersides of girders and piers.

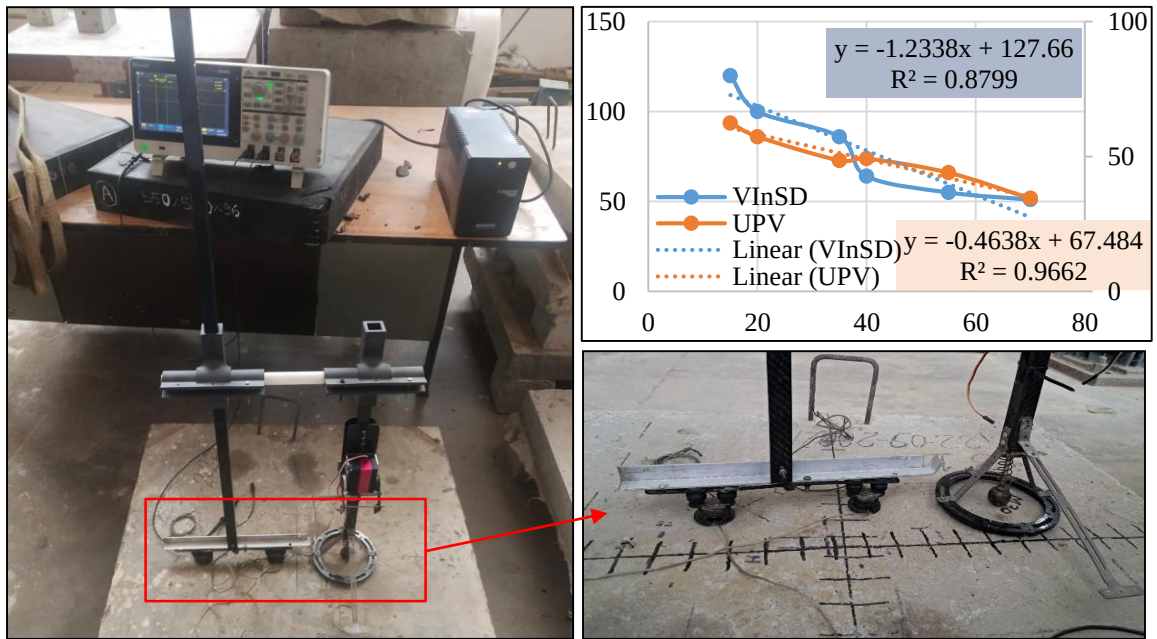


Figure 1: Vibro-Integrity Sensing Device (VInSD) and its results

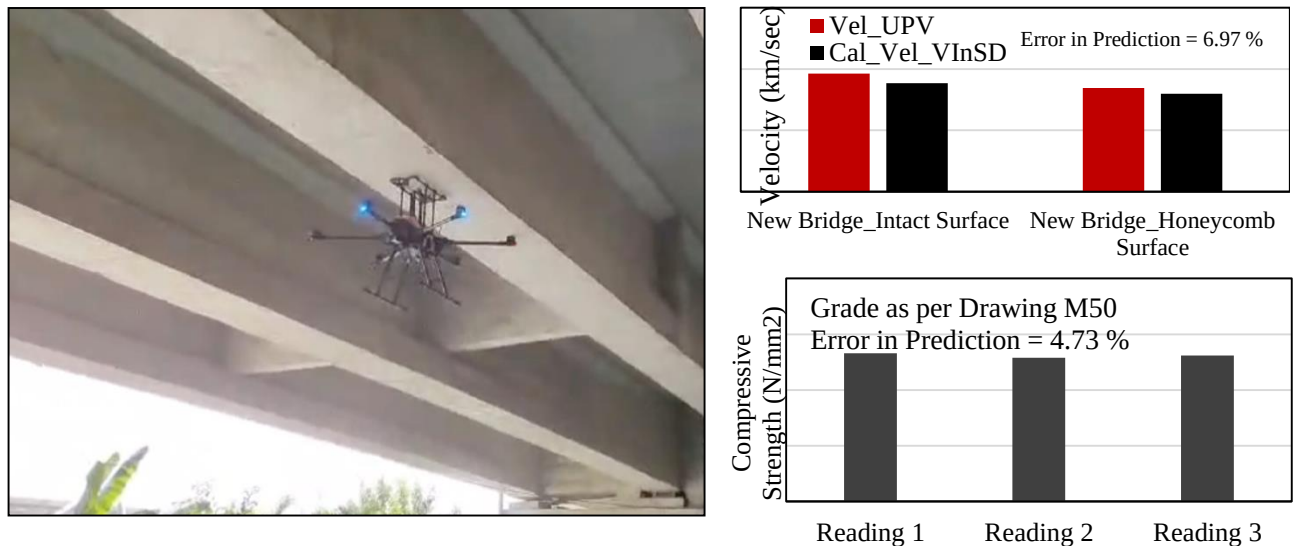


Figure 2: Bridge monitoring using RPAV and results

Creation of National Test Facility for Bridge Expansion Joint at CSIR-CRRI

Funding Agency: Ministry of Road Transport and Highway (MoRTH)

Broad Objectives: CSIR-Central Road Research Institute (CRRI), New Delhi is creating a Test Facility at its premises for Testing and Evaluation of Bridge Expansion Joints for which the following tests are to be conducted in accordance with IRC:SP:69-2011.

Since the knowledgebase within our Country pertaining to the Type, Configuration and Specifications of Equipment for the Testing of Bridge Expansion Joint Assemblies and their Components was limited, a High Powered Advisory Committee was constituted by CRRI to identify various Test Equipment, their Specifications, and Procurement to assist CRRI for the Creation of Comprehensive Testing Facilities (including Fatigue Testing Facilities) for Bridge Expansion Joints Assemblies and their Components. The requirement of guidance of the above Advisory Committee is also mentioned in the TOR of Ministry's.

The work for Creation of the National Test Facility is divided into (i) Mechanical System Package-1 (ii) Hydraulic and Electrical System Package-2 and (iii) Instrumentation and Control System Package-3. Evaluation of bridge expansion joints involves a series of laboratory tests conducted in accordance with IRC: SP:69-2011 to assess their performance, durability, and serviceability under simulated conditions. The testing program includes the Opening Movement Vibration (OMV) Test and Seal Push-out (SPO) Test to evaluate joint behavior under dynamic movement and sealing efficiency; the Cyclic Motion Test, Debris Expelling Test, and Pull-out Test to examine the joint's ability to withstand repeated movements, resist clogging, and maintain anchorage; and the Fatigue Test to determine long-term performance under repeated loading. All tests are carried out at ambient temperature to replicate field conditions. To facilitate these evaluations, three specialized test rigs are fabricated: Test Rig-1 for OMV and SPO tests, Test Rig-2 for Cyclic Motion, Debris Expelling, and Pull-out tests, and Test Rig-3 for conducting the Fatigue Test.

Overview of the Testing Facility:

Fabrication of the three Test Rigs under Package-1 (Mechanical System) and Package - 2 (Hydraulic and Electrical System) has been completed and supplied to CSIR-CRRI and Installation has been completed. During commissioning of Package-2, several challenges such as leakage of Oil, Bursting of Tee of Main Pump delivery pipeline, improper functioning of Manifolds, bending of lead screws, non-functioning of Hydraulic Motors, etc. took place which have been resolved. Commissioning work is under progress. All the BOQ items of Instrumentation and Control System Package-3 items have been supplied by the vendor and mounting of control panels and installation of Sensors will be completed soon.



Figure 3: View of Installed three rigs of the Test facility at CRRI



Figure 4: Demonstration of Working of Test Rig-1 to MoRTH Officials on Jan 25, 2025

Research Scheme to study the corrosion of various reinforcement bar materials /structural steel including anti-Corrosion Coatings , concrete treatment with surface coating under different environment exposures conditions.

Funding Agency: Ministry of Road Transport and Highway (MoRTH)

Duration of the project: From September 2018 to September 2024

Broad Objectives: To assess the relative performance of various reinforcement bar materials /structural steel including anti-Corrosion Coatings , concrete treatment with surface coating under different environment exposures conditions vis-à-vis the conventional TMT reinforced bars.

In this project, corrosion behavior of concrete specimen embedded with different types of reinforcing steel and / or surface coated concrete specimen namely, Galvanized Reinforcing Steel (Galvanizing), Zinc-Aluminum coated steel bars, Fusion Bonded Epoxy Coated Reinforcement (FBE/CR), Cement Polymer Composite Coated (CPCC) Steel, TMT steel bars, Corrosion Resistant Steel (CRS), Stainless Steel (SS), Silane coated concrete with TMT reinforcement, Crystalline compound coated concrete with TMT reinforcement subjected to accelerated exposure conditions (i) marine (saline) (ii) atmospheric (carbonation), (iii) polluted industrial environment (sulphuric acid and hydrochloric acid) is assessed. The corrosion susceptibility of steel bars exposed to the above environmental conditions and, that of structural steel specimen exposed to chloride environment and humidity conditions is also evaluated. Stainless steel bars exhibited the highest tensile strength and elongation (~40%). Zn-Al and HDG bars showed no deterioration, while TMT bars developed blisters. FBEC bars lost coating adhesion on bending, unlike Zn-Al and HDG. CRS bars rusted under atmospheric exposure. Zn-Al, CRS, and FBEC bars showed lower bond strength, whereas HDG and stainless-steel bars were comparable to TMT. Concrete weight loss was higher in HCl than H₂SO₄. CRS and TMT bars showed higher corrosion in salt spray tests, and coated bars cracked during bending. Coated specimens also reduced water absorption in M35 and M40 concrete.

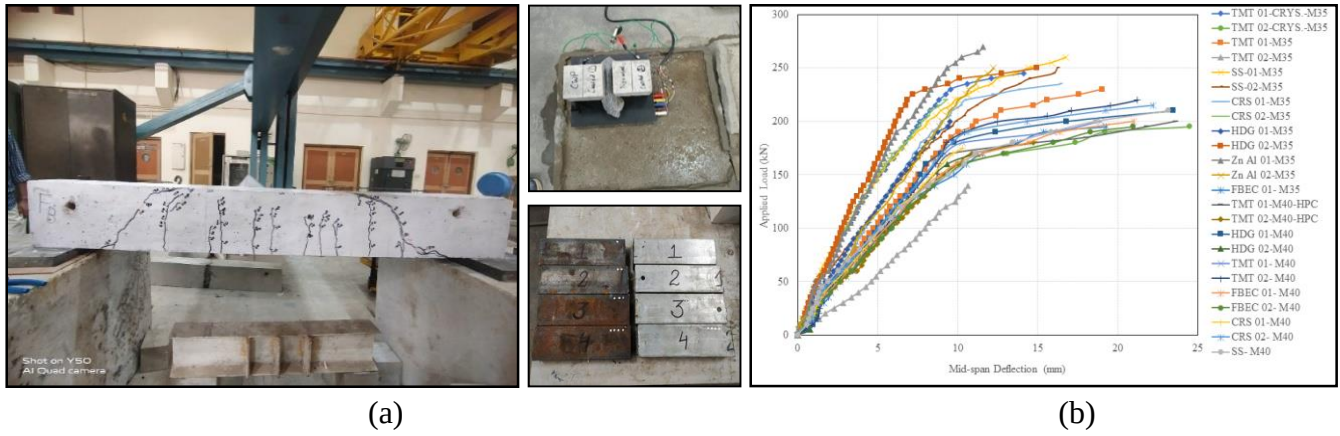


Figure 5: Representative (a) test set up and (b) results

Study of Nature of Ground Waves and protection of important structures against Vibration

Funding Agency: CSIR-CRRI

Duration of the project: From November 2021 to October 2024

Broad Objectives: To solve the road/runway construction problem of problematic areas subjected to dynamic loads and to compare the flow of surface waves on the open ground and through the piles placed in a row (holography) before an important structure to be isolated against the vibration.

Funding Agency: CSIR-CRRI

Duration of the project: From November 2021 to October 2024

Broad Objectives: To solve the road/runway construction problem of problematic areas subjected to dynamic loads

Vibrations caused by non-seismic factors as high-speed rails, highway traffic, construction activities, etc. are unsafe for human life and structures around. Vibrations which are generated by these sources can cause occupant discomfort, structural and non-structural damages to adjacent buildings, malfunction of ultra-sensitive medical equipment, etc. Vibration screeners in form of open or in-filled trench wave barriers are used to reduce the effects of vibrations. A full-scale experimental study was carried out to investigate the protective effectiveness of open and in-filled trench wave barriers with in-filled material as Crumbed rubber, Rice husk and Saw dust which helps in scattering the steady state vibration induced by machine foundations, etc. In order to simulate the machine foundations vibration, an electro-mechanical oscillator was used. The wave barriers protective effectiveness was evaluated based on the achieved reduction in soil particle amplitude through a parametric study by changing the exciting frequency and the location of the source of vibration. The effectiveness of using open or in-filled trench as a reduction measure has been demonstrated through a site measurement study depending on the obtained results. Time dependent displacement values are reduced for both cases of active and passive isolations. In this case wave absorption plays very important role. Using open or in-filled trench barriers can reduce the vibrations of a structure and the resulting internal forces significantly. The use of an open trench is more effective than using an in-filled trench but its practical application is limited to relatively shallow depths. On the other hand, using softer backfill material increases the effectiveness of in-filled trench and allows for larger trench depth with no supporting measures of the vertical walls of the trench. Based on the experimental

investigation, the average protective effectiveness (EffA) of the open trench and three types of in-filled trench wave barriers. The results for Protective Efficiency of Barriers (%age) as below:

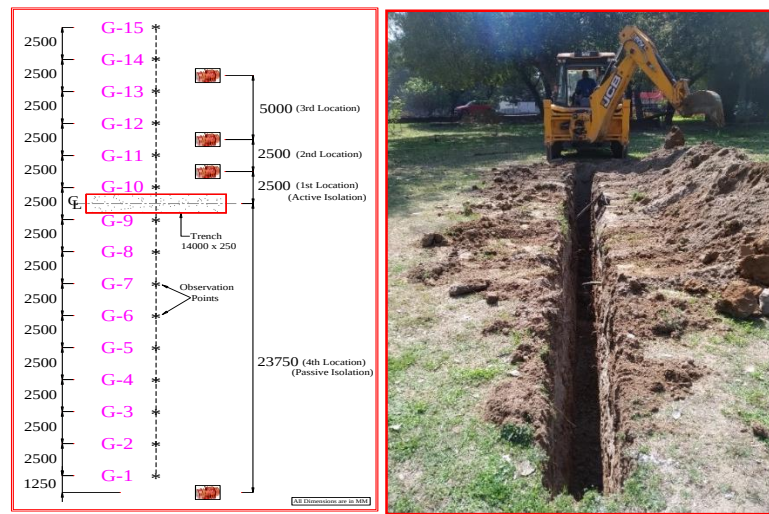


Figure 6: Layout for experimental work & formation of Trench

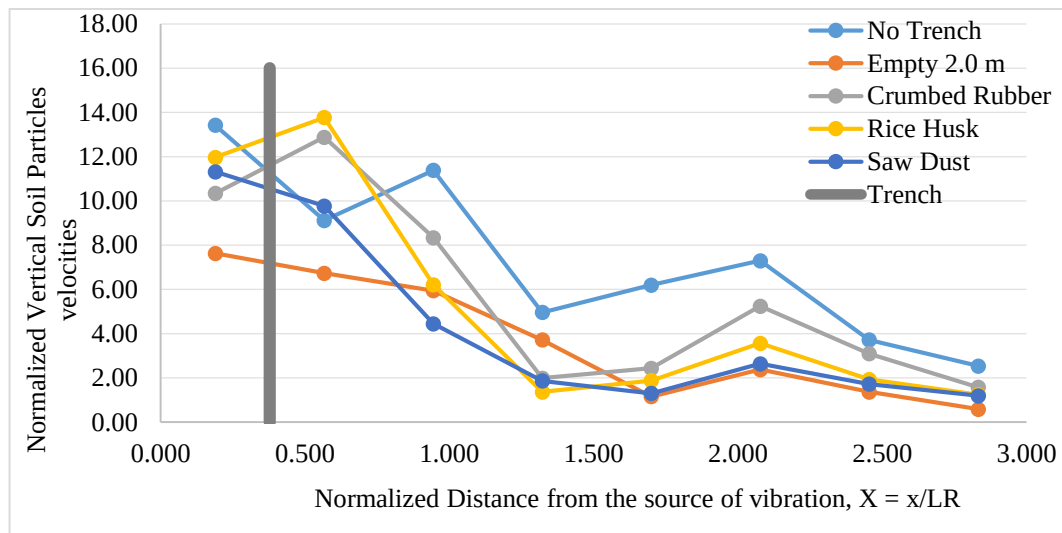


Figure 7: Normalized ground motion (G10 to G3) due to exciting frequency $f = 30\text{Hz}$ when source of vibration at 2.5 m

Structural Audit of Interchanges, Minor Bridges and Underpasses at Different Location of Yamuna Expressway (From Greater Noida to Agra, 165 Km approx.) in Uttar Pradesh.

Funding Agency: M/s JAYPEE Infratech Limited,

Duration of the project: From October 2024 to October 2026

Broad Objectives: To perform the Structural Audit of Yamuna Expressway consisting of total 195 structures including 6 numbers of Interchanges, 41 number of Minor Bridges (MNB), 70 number of Vehicular Underpasses (VUP) and 78 numbers of Cattle Track/ Pedestrian Underpasses (PUP) in Uttar Pradesh

The visual inspection of the different structures was done by several means including MBIU, drone, manlifter/hydra ladders as shown in Figure 8. The inspection identified a wide range of structural deficiencies across bridge components such as Cracks, leaching, honeycombing, spalling of concrete and exposed reinforcement has been seen. In some of the bearings there are missing and damaged bolts, temporary locks, improper alignment, initiation of rusting, debris accumulation and temporary supports also. Leakage through expansion joints and drainage spouts has been observed at several locations on the structures. Cracks, damaged edges and improper gaps between Restrainers and Girders observed. Vegetation growth also has been observed at the several locations on pier heads and abutment heads, retaining walls, wing walls etc.

The recommendations for bearings, expansion joints, drainage spouts, railings and stone pitching is provided in this report. The repair/ strengthening measures for the structural components including deck slabs, piers, abutments, girders, diaphragm, and others shall be submitted in the final report after corroborating the Non-Destructive test and core results of the structures

The inspection identified a wide range of structural deficiencies across bridge components such as Cracks, leaching, honeycombing, spalling of concrete and exposed reinforcement has been seen. In some of the bearings there are missing and damaged bolts, temporary locks, improper alignment, initiation of rusting, debris accumulation and temporary supports also. Leakage through expansion joints and drainage spouts has been observed at several locations on the structures. Cracks, damaged edges and improper gaps between Restrainers and Girders observed. Vegetation growth also has been observed at the several locations on pier heads and abutment heads, retaining walls, wing walls etc.



Figure 8: Different structures of Yamuna Expressway and the means of their visual inspection

Flexible Pavement

RESEARCH PROJECTS

Development of High Strength and Fast Curing Cementitious Stabilized Base Layer

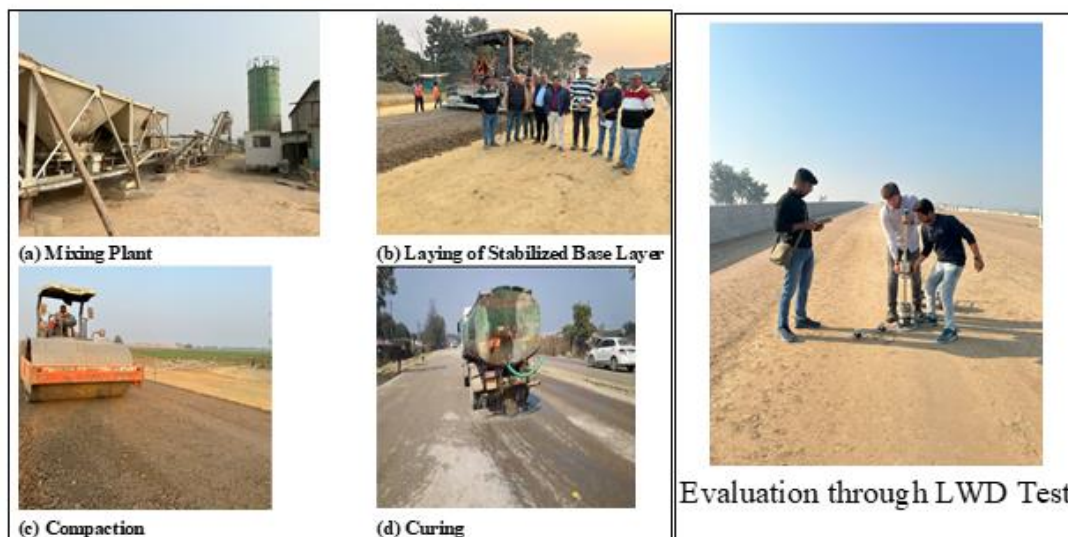
Funding Agency: National Highways Authority of India

Duration of the project: From 2021 to 2026

Broad Objectives: To develop Guidelines for High Strength fast curing Stabilised layer for Flexible Pavements and modification on IRC SP 89 Part II.

This Project has been sponsored by National Highways Authority of India. Under this project the second trial section between km. 21+760 to km. 22+100 was laid in Dec 2024 on Gorakhpur Sonauli National Highway 29E Uttar Pradesh. A 340-meter-long trial stretch using stabilized Sub Base of 200 mm thick and stabilized Base layer of 100 mm thick were constructed using high strength and fast curing cementitious material BSS-101 developed through a collaborative Research project between the CSIR-CRRI and Somani Ecobuild Products LLP. The dosages of stabilizer were kept at 2% and 4% respectively. A mix in plant approach was employed to create a uniform mix for the laying on a under constructed national highway. Over the course of the project, many tests were performed to ensure the quality of the material to be used in construction of the stabilized sub - base layer. The design grade was chosen based on the specified boundaries of MoRTH, Grading - IV from table 400-1 and for the stabilized base layer table 400-4 was chosen as suggested in IRC-SP 89 Part II.

The UCS of the stabilized mix was performed after providing 3 and 7 days of curing via wet gunny bags to assess the stabilizer's high early strength. The target strength of stabilized Sub Base and stabilized Base layer was achieved in just 3 days of curing as 3.05 MPa and 7.57 MPa respectively which shows the effectiveness of BSS-101 stabilizer. Further, the strength of stabilized Sub Base and stabilized Base layer achieved after 7 days of curing was 4.2 MPa and 10.2 MPa respectively. This trial section's performance is being monitored to determine if the stabilizer was effective in stabilizing the sub base and base layers.



Development of Customized Steel Slag Valorization Technology for LD/BOF steel slag for ARJAS Steel Private Limited, Tadipatri Plant, Andhra Pradesh for the conversion of BOF steel slag as Road Making Aggregates

Funding Agency: Sponsored Research Project by ARJAS STEEL,

Duration of the project: July 2023 to December 2025

Broad Objective: Conversion of BOF steel slag as processed steel slag aggregates for road construction

Steel Slag is a solid waste, generated during steel making process during conversion of hot metal as carbon steel in steel furnace. Arjas steel is operating a major integrated steel plant at Tadipatri, Andhra Pradesh and generating around 90000 tons of BOF steel slag annually as solid waste. M/S Arjas Steel has sponsored a major research project to CSIR-CRRI for conversion of BOF steel slag as processed steel slag aggregates for road construction. CSIR-CRRI team visited the ARJAS steel plant at Tadipatri, Andhra Pradesh to develop customized steel slag valorisation process to convert RAW BOF steel slag as Processed BOF steel slag aggregates for road construction. Customized slag pit cooling process was established at ARJAS steel Tadipatri plant with Metal recovery and crushing plant facility to develop processed steel slag aggregates of different sizes. Processed steel slag aggregates were carried out at CSIR-CRRI to assess the mechanical and physical properties to facilitate its utilization as substitute of natural aggregates in bituminous pavement. Processed steel slag aggregate are found suitable for utilization in subgrade, GSB, WMM DBM and BC.



Development of Customized slag cooling process and processed BOF steel slag aggregates at ARJAS steel plant

Development of Ready to use Pothole Repair Mix Using Iron and Steel Slag Aggregates

Funding Agency: Sponsored Research Project by Ramuka Global Services, LLP, Gujarat

Broad Objective: Development of cold patching mix using metallurgical waste i.e iron and steel slag

Potential utilization of processed iron and steel slag aggregates as substitute of natural aggregates were developed as ready to use pothole repair mix. Detailed mix recipe along with customized binder is developed by optimizing the ingredients to develop a highly rut resistance, water repellent pothole repair mix. Developed mix were evaluated on various performance parameters such as Marshall Stability, Indirect Tensile Strength, Rut Resistance, Retained Marshall Stability, Stripping resistance etc. to carry out its comparative performance assessment with conventional natural aggregates based pothole repairing mix. After detailed mechanical characterization field performance assessment was carried out in south delhi by filling/repairing couple of water-logged potholes without dewatering on NH-2 and near

Indraprastha Apollo. After detailed laboratory and field performance assessment it is found that the iron and steel slag aggregate based instant pothole repair mix is performing better than the conventional mix and providing a long term durable road surface. CSIR-CRRI and RAMUKA global services applied for JOINT IPR of the product emanated through the research and technology is transferred by CSIR-CRRI to RGS for commercial manufacturing and implementation.



Development of Customized slag cooling process and processed BOF steel slag aggregates at ARJAS steel plant

Use of CGBM as surface course on specified section (2 Km.) as trial section of 4 lining of Jorabat Shillong Expressway Limited. SSP-4749

Funding Agency: Jorabat Shillong Expressway Limited (a subsidiary of Sekura Roads Private Limited) a project of National Highways Authority of India

Duration of the project: From 2023 to 2026

Broad Objectives: Laying of CGBM as Trial sections on NH and performance observation

Implementation of Cement Grouted Bituminous Mix (CGBM) as a wearing course has been undertaken to enhance the performance and longevity of flexible pavements on National Highways in India. The technology addresses key distresses such as rutting, moisture damage, and deformation under heavy traffic. CGBM comprises an open-graded bituminous layer (25–30% air voids, ~3% binder) filled with a high-strength polymer-modified cement grout, forming a composite structure that combines flexibility with rigidity. This results in improved load-bearing capacity, rut resistance, durability, and skid resistance. Field trials were conducted under CSIR-CRRI guidance in collaboration with NHA and industry partners. A 1.6 km stretch on NH-44 (Udhampur Bypass, 2023) and two sections (400 m and 500 m) on NH-6 (Jorabat–Shillong, 2024) were successfully implemented to address severe rutting. The trial sections are performing well, demonstrating enhanced structural performance and durability. Performance monitoring is ongoing.

Construction and Evaluation of CGBM section on Guwahati–Shillong, NH 6



Laying of Porous Bit. Layer May 2024



Inspection of CGBM section in July 2024



Inspection of CGBM section in July 2024

Construction and Evaluation of CGBM Layer on Jammu- Udhampur section (NH 44)



Surface Cleaning /Brooming



Tack coat Application



Laying of Porous Bit Mix



Compaction of Porous layer



Grouting on Porous Bit. Layer



Curing of CGBM layer



Cold application of Engineering muck in road construction

Funding Agency: MoEF&CC (NMHS Sponsored)

Duration of the project: From August 2023 to August 2026

Broad Objectives: (a) To develop methodology for use of “Muck” as construction material;

(b) To familiarize concept of engineering muck utilisation through laying actual trial section; and to frame specifications and guidelines for usability of engineering muck in road construction for granular stabilization layer and bituminous wearing course

A laboratory study was conducted to evaluate the suitability of Tunnel Muck Aggregate (TM) as a replacement for Natural Aggregate (NA) in cold bituminous mixes. Mechanical, physical, and volumetric properties were assessed through standard tests, confirming compliance with required specifications after optimization of emulsion content. Based on laboratory validation, a field demonstration was carried out at Istingira, Lahaul & Spiti, Himachal Pradesh, in collaboration with Project DEEPAK, BRO, using a Mobile Cold Mixer cum Paver. In-situ performance was evaluated through LWD testing. Additionally, a structured stakeholder survey was conducted to assess the social sustainability of tunnel muck utilization.



View of laid section using Tunnel Muck at Istingira, Lahaul & Spiti, Himachal Pradesh

Development of Performance Grade (PG) bituminous binder classification system for India

Funding Agency: MoRTH

Duration of the project: From October 2023 to October 2026

Broad Objectives: (a) Development of a database of air temperature and pavement temperature across the country (through limited field instrumentation, and predictive algorithms),
(b) Development of a database of properties of various bitumen (capturing time, spatial, and chemical variation) over the range of testing conditions as per current VG and PG schemes.

Currently, in India, asphalt binder is specified as viscosity grade (VG). In this scheme, a range of tests is carried out to measure its properties. Finally, asphalt binder is graded primarily based on the viscosity measured at a temperature of 60°C. This is based on the premise of equivalencies between average maximum summer temperature and testing temperature. Variability in actual pavement temperature is influenced by factors such as location, environment, and weather conditions. To address this issue of satisfactory performance of pavement (under extreme temperature; at a particular location), it is required to provide the framework to transition from Viscosity Grading (VG) to Performance Grading (PG) specifications for bitumen. The research project will be carried out jointly by CSIR-CRRI and IIT Delhi. As part of the project, comprehensive field instrumentation has been successfully installed at four representative climatic locations in India: Jaisalmer, Leh, Delhi, and Trivandrum. These sites were selected to capture a wide spectrum of extreme environmental conditions, including hot arid, cold desert, composite, and hot humid climates.

The instrumentation system (Figure) includes a climate monitoring (weather) station for measuring solar radiation, wind speed and direction, air temperature, humidity, and rainfall intensity. In addition, in-depth pavement temperature sensors (minimum four sensors up to 150 mm depth) have been installed within the bituminous layer. A subsurface moisture sensor has also been placed below 500 mm depth in the soil/subgrade. All sensors are connected to a data acquisition and cloud-based transfer system for continuous monitoring and remote data access. In future, 6 more location, instrumentations will be done and model will be developed as per data collected.

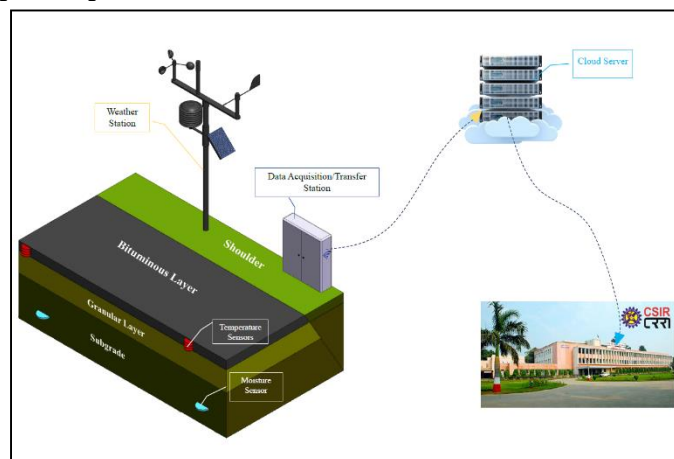


Figure: Instrumentation plan for the project

Development of Bio-binder for construction of Flexible Pavements

Funding Agency: CSIR (FTT Project)- Collaborative Project: CSIR-CRRI and CSIR-IIP

Duration of the project: From September 2022 to September 2024

Broad Objective: Development of Bio-binder for construction of Flexible Pavements

Post-harvest crop residues and forestry wastes constitute an abundant and underutilized source of lignocellulosic biomass. This biomass provides a sustainable and environmentally responsible alternative to crude-derived fractions and can significantly supplement fossil-based resources. Considering the environmental challenges associated with petroleum-derived binders and the growing demand for sustainable infrastructure, the present study focuses on the utilization of bio-oils in the production of bituminous binders. The incorporation of bio-binders in flexible pavements

is gaining rapid momentum within the asphalt community as a viable strategy to partially substitute petroleum-based materials. In addition to serving as a bitumen replacement, bio-binders can enhance performance characteristics under severe climatic and loading conditions. Detailed rheological, chemical, and ageing studies were conducted in the laboratory to evaluate short-term and long-term ageing behaviour, ensuring that the bio-modified binder maintains stability, stiffness balance, and resistance to oxidative ageing. CSIR-Indian Institute of Petroleum and CSIR-Central Road Research Institute have jointly developed a process for producing bio-bitumen from agricultural residues, particularly rice straw (parali). The developed bio-bitumen has been evaluated for its rheological and performance properties and compared with conventional fossil-based binders used in flexible pavements. The results demonstrate that replacing 25–30% of the petroleum-based binder with bio-oil yields performance comparable to conventional bitumen, making it suitable for bituminous road construction. A field trial section has also been successfully laid on NH-40 (Jorabat–Shillong stretch) to evaluate the in-service performance of the developed bio-bitumen under actual traffic and environmental conditions. Furthermore, a patent application has been submitted for the developed bio-bitumen production process.



Field trial section: NH-40 (Jorabat–Shillong stretch)

Development of Fatigue Performance Model for the Full Depth Recycling Pavement Layer.

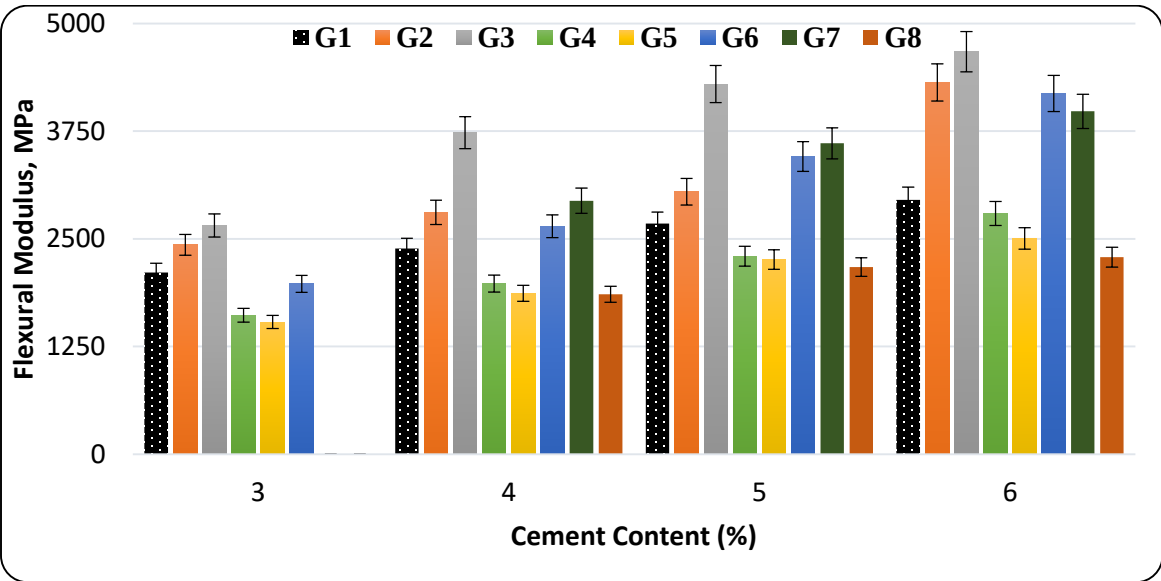
Funding Agency: CSIR (FBR Project)

Duration of the project: From April 2024 to March 2026

Broad Objective: The broad objective of the study is to develop a fatigue performance model for the FDR layer.

The present project aims to develop a mechanistic fatigue performance model for Full Depth Reclamation (FDR) pavement layers by integrating laboratory investigations with long-term field performance data. The study involves the collection of representative FDR materials from selected pavement sites, followed by detailed laboratory characterization including unconfined compressive strength, flexural strength, stiffness, and beam fatigue testing using the four-point bending method. Fatigue life and degradation characteristics are being evaluated under controlled loading conditions. In parallel, field performance monitoring is being carried out to capture distress development, surface deflection, drainage conditions, and overall structural response under traffic loading. The combined laboratory and field datasets will be analyzed using regression and statistical approaches to establish correlations between material properties, loading conditions, and fatigue performance, leading to the development of a predictive fatigue model for FDR layers. So far, materials have been collected from multiple locations, mix designs have been completed for selected combinations, and procurement of the beam fatigue jig and required accessories has been initiated. The expected outcome of the project is a robust fatigue performance model that accounts for recycled material characteristics and environmental influences, thereby improving the mechanistic understanding and design reliability of FDR pavements under cyclic loading conditions.

In the plot, values were presented for eight selected gradations, denoted as G1 to G8.



Flexural Modulus with cement content after 28 days curing

Development of Performance Prediction Models for Geosynthetic-Reinforced Pavements

Funding Agency: Ministry of Textiles, NTTM

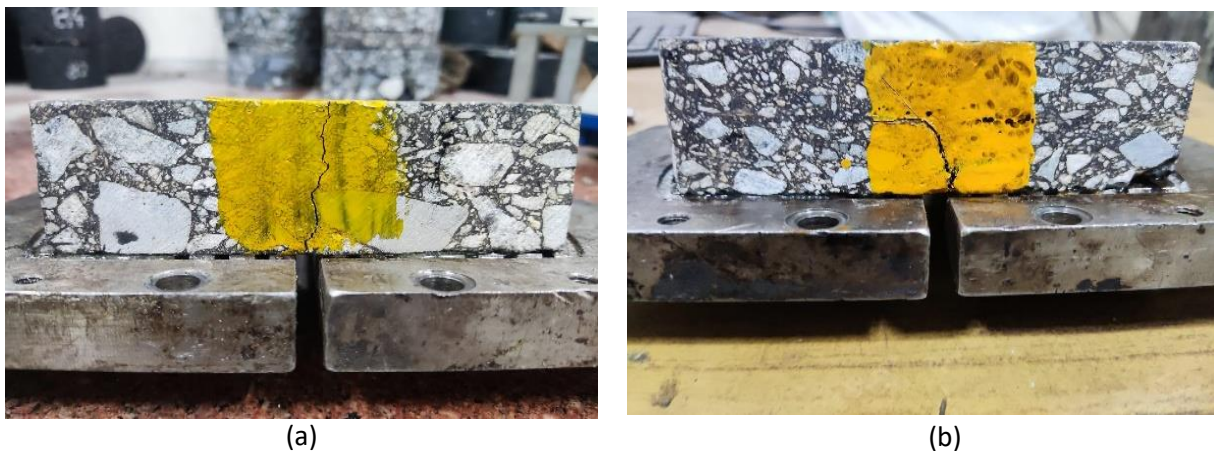
Duration of the project: From January 2025 to January 2028

Broad Objective: The overall objective of this proposal is to enhance the performance and service life of asphalt pavements by developing a comprehensive permanent deformation performance model and incorporating the structural benefits of geosynthetic reinforcement.

The research study focuses on evaluating two different types of pavement reinforcement methods: Granular Material Reinforcement and Asphalt Concrete Reinforcement.

Granular Material Reinforcement: The study methodology is divided into two phases. In the initial phase, collections of base, subbase, and subgrade materials will be conducted, followed by an evaluation of their properties. A systematic approach will be adopted to understand the behavior of base/subbase reinforced flexible pavements over a wide range of subgrade conditions using geogrids of various strengths and Geocell with various cell heights. The large-scale test samples will be constructed with different reinforcement conditions, including unreinforced, geocell, Geogrid, and double geogrid. The tests will be carried out to determine the performance of various reinforcements, evaluating parameters such as permanent deformation (PD), resilient deformation (RD), rut depth reduction (RDR), traffic improvement factor (TIF), as well as reduction in vertical stresses transmitted to the subgrade and reduction in base layer thickness.

Asphalt Concrete Reinforcement: The research work involves a comprehensive set of laboratory investigations, including the examination of various asphalt mixes with different binder grades, incorporating modified binders, and utilizing different glass grids. These investigations will encompass critical tests such as assessments of crack initiation and propagation using the Texas Overlay Tester and Cracking Tolerance tests. Additionally, the study will include the construction of test tracks to assess the performance of glass grid reinforced asphalt layers. Furthermore, field evaluations will be conducted to develop modification factors for fatigue performance equations based on observations and data collected in actual field conditions.



Comparison of Crack Propagation in (a) Control and (b) Reinforced Sample

Implementation of Warm Mix Asphalt Technology to Construct Roads in Colder /High Altitude Regions

Funding Agency: NHIDCL

Duration of the project: From April 2023 to March 2026

Broad Objective: (a) To develop the mix design for warm mix asphalt in the laboratory and evaluation for performance characteristics.

(b) To construct test section by using warm mix asphalt in colder/high altitude region.

(c) To evaluate the short-term and long-term performance of warm mix asphalt on the test section. And Life cycle assessment

The present project aims to implement the warm mix technology and which reduce the bituminous production temperature minimum by 30 °C of hot mix asphalt with similar or better performance. This is achieved by using chemical additives that improve the workability of bitumen at reduced temperatures. Lower production temperatures lead to reduced fuel consumption by 20-30 percent, and decreased greenhouse gas emissions by 30-50 percent, less aging of binder during mixing, and improved working conditions due to reduced fumes. WMA also allows better compaction, extended paving seasons, making it an energy-efficient and environmentally sustainable alternative to traditional HMA without compromising pavement performance. It was implemented in NH-244, Kishtwar, in the Union Territory of Jammu & Kashmir.



Implementation of Porous Asphalt Technology to construct asphalt roads in heavy rainfall / hilly regions.

Funding Agency: NHIDCL

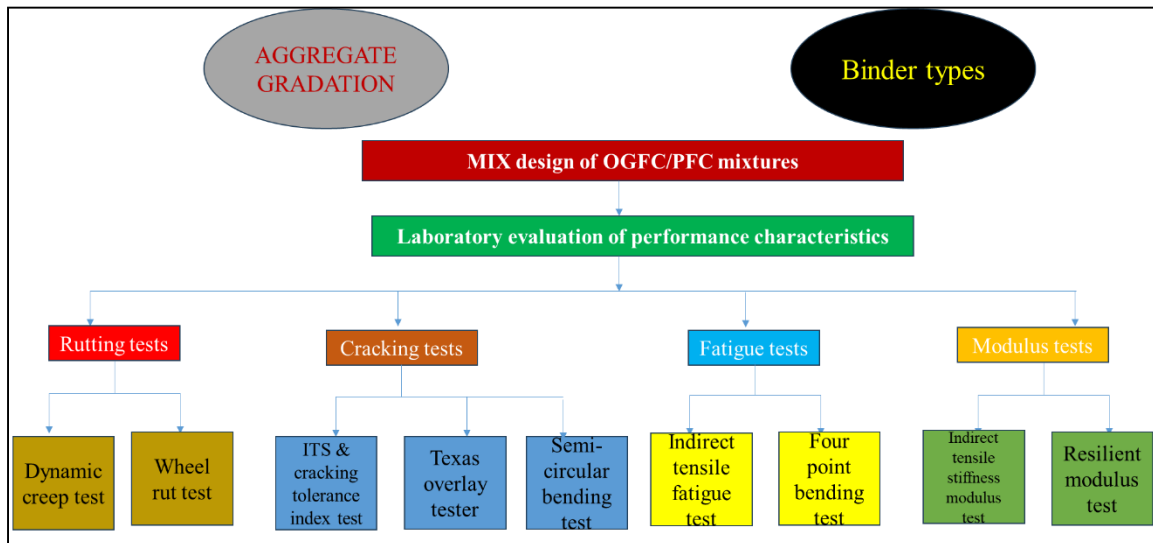
Duration of the project: From April 2023 to March 2026

Broad Objective: (a) To finalize the mix design using local aggregate for the Porous Friction course based on the mix design conducted in the laboratory.

(b) To provide technical guidance/ advice to construct a test section by using the Porous Friction course by NHIDCL.

(c) To evaluate the short-term and long-term performance of the Porous Friction course on the test section and develop the performance model.

The project aims was to develop a performance-based mix design approach for asphalt pavements instead of relying solely on the conventional method, enabling pavement structures that can better withstand diverse climatic and traffic conditions across different geographic regions of India. The system focuses on three key components: (i) selection of asphalt binder based on performance response to maximum and minimum temperatures as well as aging characteristics, (ii) adoption of an advanced mix design system with analytical and performance tests to develop prediction models, and (iii) comprehensive pavement performance evaluation. As per flow diagram the laboratory mix design and performance test has been conducted.



Feasibility of Using Reclaimed Asphalt Pavement (RAP) Material in High Performance (HiPER) Bituminous Mixes for Sustainable Road Construction

Funding Agency: CSIR

Duration of the project: From April 2024 to March 2026

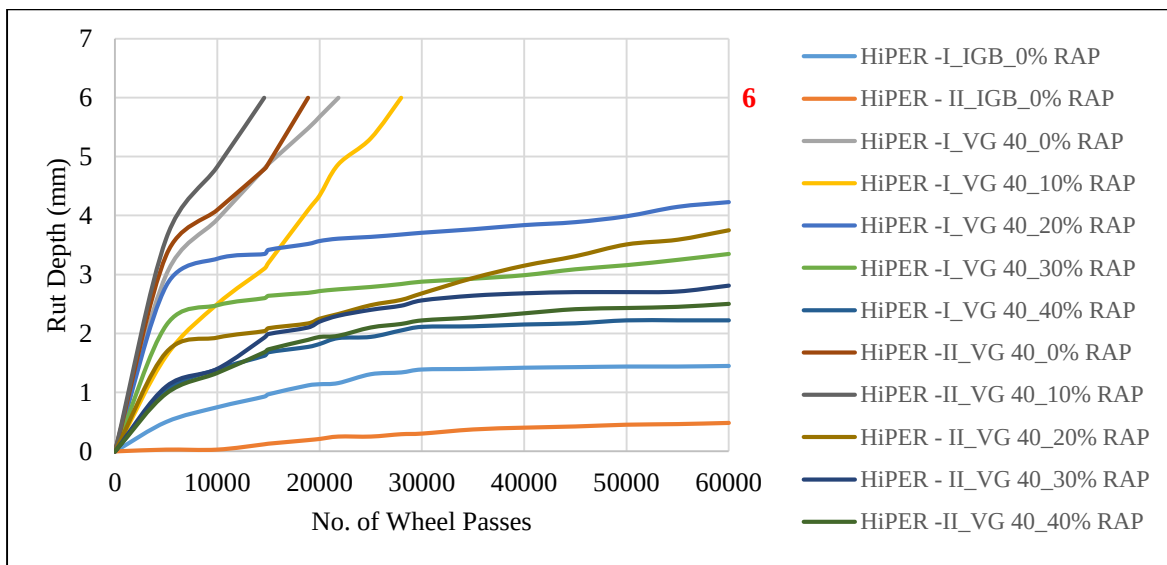
Broad Objectives: To evaluate the feasibility of using reclaimed asphalt pavement (RAP) material in High performance (HiPER) Bituminous mixes for Sustainable Road Construction.

The specific tasks to achieve this goal are:

- To develop a high-performance binder (HiPB) in the laboratory
- To evaluate the performance of conventional HiPER bituminous mixes in the laboratory.
- To determine the job mix formula of HiPER bituminous mixes with various RAP percentages.
- To characterize the mechanical/performance behavior of the bituminous mixes in the laboratory.
- To perform a cost analysis of HiPER mixtures with RAP

This study explores the feasibility of using RAP material in high-performance mixes (HiPER) for sustainable road construction. Recycled binder was blended at various dosages with virgin Viscosity

Grade (VG 40) binder to meet the physical property requirements of high-performance binders suitable for recycled HiPER mixes. A control HiPER mix was prepared using an industry produced hard grade bitumen (IGB) and used as a reference for evaluating the performance of mixes containing RAP. Mechanical properties such as resilient modulus and indirect tensile strength (ITS) were assessed to evaluate the stiffness and strength of the mixes. Performance parameters, including rutting resistance, cracking resistance, fatigue cracking, and moisture susceptibility, were evaluated using the wheel tracking test, Cracking Tolerance Index (CTIndex), and Tensile Strength Ratio (TSR), respectively. The results indicate that increasing RAP content enhances resilient modulus and significantly improves rutting resistance. HiPER mixes with up to 40% RAP content using VG 40 binder achieved rut depths well below the allowable limit, indicating strong rutting resistance. From a cracking resistance perspective, up to 30% RAP can be effectively incorporated in HiPER mixes. All HiPER mixes met the minimum TSR requirement of 80%, indicating acceptable moisture resistance. Based on the laboratory performance studies, around 30% RAP with VG 40 binder can be affectively used to produce HiPER mixes.



Wheel tracking test results for all mixes

Development of Cement-Asphalt Mortar for Application as a Damping Material

Funding Agency: CSIR-CRRI

Duration of the project: From March 2022 to February 2025

Broad Objectives: To develop cement-asphalt (CA) mortar (based on available chemicals, cement, and emulsion) for the application as a damping material which is suitable for Indian environmental conditions.

This research was carried to develop a damping material named as Cement Asphalt Mortar (CAM). To carry out this research, various combinations of Asphalt-cement (A/c), Sand-cement (S/c) and Water-cement (W/c) had been evaluated to check the suitability of the mix based on the performance parameters, flow time and air content. Further, based on the optimized mix combinations, mechanical and rheological properties of the mix were evaluated. Mechanical properties of the CAM material are evaluated through the Compressive strength test. Similarly, rheological properties like storage modulus (E'), loss modulus (E'') and damping factor(δ) are evaluated through the DMA.

	
(a) Digi-mortar Mix	(b) Fresh CAM Paste
	
(c) Casting of Fresh CAM Paste	
	
(d) Polythene Wrapped to Fresh CAM Paste	
	
(e) Demould CAM Samples	

Proposal for Modernization and Infrastructure Upgradation of R&D Facilities in Flexible Pavement Division

Funding Agency: CSIR-CRRI

Duration of the project: From February 2022 to January 2026

Broad Objectives: (a) To upgrade/modernize the R&D infrastructure facilities through procurement of equipment/software in flexible pavement division

(b) Operation, upkeep, and maintenance of various equipment available in flexible pavement division.

The division is involved in R&D studies and technical projects related to pavement design, investigation of pavement failures, evaluation of pavement materials, development of processes and technologies for new paving materials, construction and performance evaluation of pavements with new technologies, and characterisation of special and unmodified bitumen. To strengthen the capabilities in FPD to undertake contemporary, complex and large R&D challenging and fraternity supporting projects, it is imperative to upgrade and modernise the R&D facilities and testing materials. Photos of few procured equipment is shown below.

	
Rice Apparatus	Large Size Oven
	
Compression Testing Machine	Marshall Compactor



Humidity Chamber

Geotechnical Engineering

RESEARCH PROJECTS

A five-day training program on "The Application of Geo-synthetics in Road Infrastructure Projects" Jointly Organized by NTTM, under Ministry of Textiles and CSIR- Central Road Research Institute (CSIR-CRRI).

Funding Agency: Ministry of Textiles, Government of India

Duration of the project: From 28th January to 30th June 2025

Broad Objective: To provide a holistic learning experience, incorporating both theoretical knowledge and practical applications of geo-synthetics in road infrastructure projects.

The five-day course commenced with the aim of covering topics such as reinforced soil structures, pavement stabilization, drainage solutions, and the practical applications of geosynthetics in road infrastructure projects for the targeted students. The program featured technical sessions, hands-on training, and expert discussions led by leading scientists and industry professionals. Additionally, doubt-clearing sessions with students and assessment evaluations in the subject were well organized, successfully achieving the mandate of the General Guidelines for Skill Development and training of candidates in technical textiles.

Total 120 numbers were trained by this SDP, in 2 batch parallel session, of 60 students per batch.



Group Photos with all trainee students in the Inaugural Function
(SRKR Engineering College, Bhimavaram)

Evaluation of LCR/MIF Value (PP3030 Extruded geogrid and PET6060 Knitted geogrid)

Funding Agency: M/s TechFab India Industries Ltd.

Duration of the project: July 2023 to December 2024

Broad Objectives: Evaluation of LCR/MIF Value of PP3030 Extruded geogrid and PET6060 Knitted geogrid.

Dynamic loading tests are carried out on unreinforced and reinforced sections with PP3030 extruded geogrid and PET6060 knitted geogrid, used in the base layer overlying granular subbase and subgrade conditions; the LCR/MIF values are evaluated.

Failure Analysis and Design of Remediation Works for Rehabilitation of Retaining Wall, CRPF Campus, Srinagar

Funding Agency: Central Public Works Department (CPWD)

Duration of the project: From April 2024 to June 2025

Broad Objectives: Forensic geotechnical investigation of retaining wall failure and providing suitable remedial measure design for the retaining walls around CRPF Campus, Humhama, Srinagar, Jammu & Kashmir.

The retaining wall constructed in the CRPF campus, which was termed as AB section with 7m – 8m height, underwent cracks and sinking of approximately 1m along the slope on 10/01/2024. The sinking further increased to 1.5 m on the next day, with major cracks along the retaining wall. When the CRRI team visited the site, a sinking of more than 3.5 m was observed along this section (Fig. 1). After failure, there was a stream of subsurface water observed behind and at the base of the retaining wall. During the visit, the team observed settlement, tilting, cracks in the retaining wall, and slope failure conditions endangering the inhabitants on the downhill side.



Figure 1: Images of the failed retaining wall along the AB section



Figure 2: Failed retaining wall at the KL section

Furthermore, the team proceeded to inspect the retaining wall that had been built along the KL section on the western side of the CRPF campus (Fig. 2). The CPWD officials had requested that the stability of the retaining wall be assessed at this particular section. However, cracks started developing along the KL section two months later. This was accompanied by the sinking of the retaining wall backfill up to 1.5m and upheaval 20-25m away from the wall downhill.

The borehole investigation performed before failure indicates that the soil at both locations contains a majority of fine particles and highly compressible clay with high plasticity. The SPT N-value ranges from 30 to 45. The post-failure borehole investigation report displayed a variation of SPT N value from 11 to 40 for the AB section and 9 to 17 for the KL section. The variation in SPT observation compared to the initial investigation is due to the variation in the moisture content of the soil due to seasonal differences. The laboratory testing of soil samples collected from AB and KL sections indicated high silt content of medium and high plasticity. The backfill soils in section AB are classified as CI, while in section KL, it is classified as CH and MH. The stability analysis indicates that the retaining wall is marginally safe in dry conditions and displays failure in wet conditions. The failure of the retaining wall is primarily due to the development of pore water pressure behind the wall due to seepage from the soak pits, leading to slope and base slip failure. Remedial measures in the form of a pile-supported reinforced earth (RE) wall with Basal Reinforcement are proposed to replace the damaged RCC retaining wall at the KL and AB sections. In addition, both surface and subsurface drainage measures are recommended to channel the flow of water. Remedial measures in the form of ground anchors and micropile base anchorage are proposed to strengthen the undamaged retaining wall sections with sloping terrain at the toes and horizontal terrain at the toe, respectively.

Failure Cyclic interfacial response of geosynthetic reinforcements with marginal/Industrial waste materials for highway applications

Funding Agency: CSIR- (RDSF)

Duration of the project: From April 2024 to March 2026

Broad Objectives: (a) To investigate the response of UCM material at defined cyclic stress ratio & loading cycles under elemental scale.

(b) To evaluate the interface strength between geosynthetic reinforcement and UCM

The project includes a comprehensive evaluation of the cyclic and interfacial performance of unconventional materials (UCM) derived from marginal and industrial waste sources for sustainable highway applications. Element-level cyclic triaxial tests were conducted to assess the deformation characteristics, stiffness evolution, and failure response of UCM under defined cyclic stress ratios and prescribed loading cycles simulating traffic-induced stresses. In addition, large-scale model testing through scaled plate load tests was performed to evaluate the performance of pavement sections constructed with UCM, both with and without geosynthetic reinforcement.

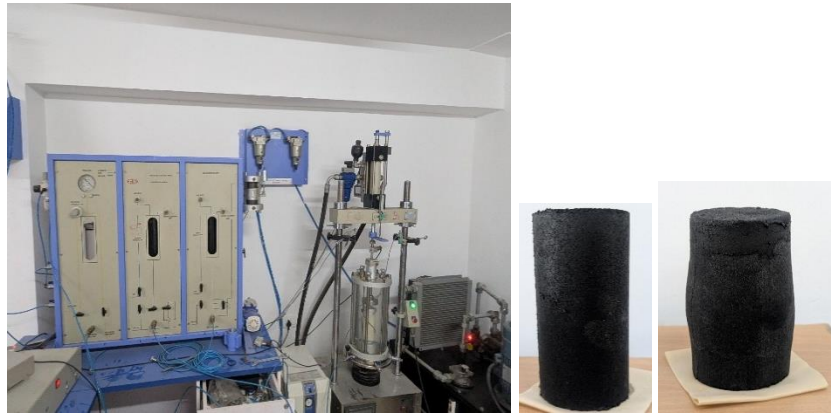


Figure 3: Cyclic test on waste foundry sand



Figure 4: Cyclic plate load test on reinforced and unreinforced model pavement layers

The results demonstrated that geosynthetic-reinforced sections exhibited significantly improved performance under cyclic loading conditions. Reinforced systems showed reduced permanent deformation, enhanced load-carrying capacity, improved resilient response, and delayed failure compared to unreinforced sections. The interface interaction between geosynthetics and UCM contributed to improved confinement and stress distribution, thereby enhancing the overall structural stability of the pavement layer. The findings provide strong experimental evidence supporting the use of geosynthetic reinforcement in conjunction with marginal and industrial waste materials for sustainable and performance-based pavement design under repeated traffic loading.

Pavement Evaluation

RESEARCH PROJECTS

Development of GPR based technique for evaluation of flexible pavements

Funding Agency: CSIR-CRRI

Duration of the project: From 2022 to 2025

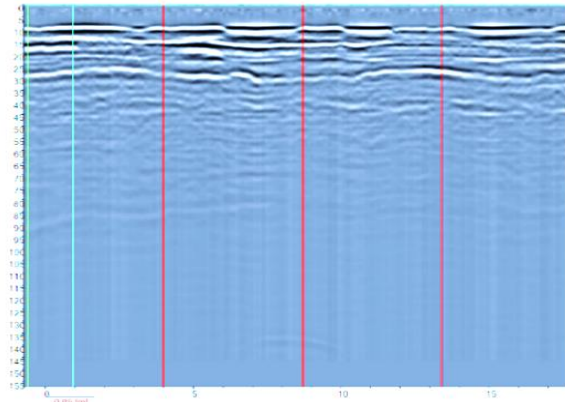
Broad Objectives: (a) To evaluate the efficacy of air-coupled ground-penetrating radar in determining the thickness of flexible pavement crust layers.

(b) To assess the capability of GPR in accurately measuring the thickness of thin bituminous overlay layers.

The study investigated the use of air-coupled 900 MHz GPR to assess the thickness of flexible pavement layers. The research evaluates the viability and effectiveness of GPR technology for pavement analysis on twenty roads managed by the New Delhi Municipal Corporation (NDMC). Data collection was executed using K2 fastwave software in distance mode, followed by detailed post-processing with IGS Geo radar GERD HD software. The results obtained from GPR were validated against traditional core cutting methods, showing promising accuracy. Using GPR system mounted, the study evaluated performance across low, medium, and high-speed surveys, with error rates of 3.880%, 4.091%, and 6.547% respectively. Regression modeling significantly improved accuracy, reducing errors further, with a unified model achieving the lowest error at 2.491%. The research highlighted the importance of post-processing and demonstrated the effectiveness of air-coupled GPR as a non-destructive method for assessing bituminous pavement layers. The findings support enhanced decision-making and efficiency in transportation infrastructure management.



(a) GPR system at CSIR-CRRI



(b) GPR scan of pavement crust

A Framework for Life Cycle Assessment of Hot and Cold Recycling technology

Funding Agency: CSIR

Duration of the project: From 2024 to 2026

Broad Objectives: (a) To develop a framework for the Life Cycle Assessment of various pavement rehabilitation techniques viz. Conventional Hot Mix construction, Hot Mix Recycling in the bituminous course and Cold Mix Recycling in the base course

(b) To provide decision tools to pavement authorities on the choice of alternate pavement rehabilitation techniques

In the current work, the Life Cycle assessment (LCA) will be carried out considering the activities involved in construction/rehabilitation, starting from the procurement of virgin materials, procurement of bitumen from the refinery and aggregates from a quarry to the end of their life cycles at the design period. The HMA construction will be used as a reference so that the environmental impacts of using the Cold Central Plant Recycling (CCPR) technology can be benchmarked. The proposed study intends to consider three case studies of pavement construction which differ in terms of the material and construction technology, namely, conventional Hot Mix Asphalt (HMA) construction, HMA binder course incorporating RAP and CCPR layer as a base course. The first phase, Life Cycle Inventory (LCI) deals with the input data related to the different activities during the production and maintenance phases such as the flow of raw materials, fossil fuel, and water consumption. The LCI is followed by Life Cycle Impact Analysis (LCIA). In LCIA, the potential impact from each inventory emission is modeled quantitatively following the relevant environmental mechanism using a characterization model. Different characterization factors are used to convert the flows of specific components (for instance emissions such as CO₂, CO, and CH₄) into category indicators such as warming (GWP), stratospheric ozone depletion (ODP), etc.

Performance Evaluation of the PMGSY Roads Constructed Using Full Depth Reclamation (FDR) Technology

Funding Agency: National Rural Infrastructure Development Agency (NRIDA)

Duration of the project: From 2024 to 2026

Broad Objectives: (a) To assess the field performance of rural roads constructed using Full Depth Reclamation (FDR) under PMGSY in different climatic regions.

(b) To evaluate the long-term structural and functional performance of FDR roads using non-destructive testing and pavement condition indicators.

The project Performance Evaluation of PMGSY Roads Constructed Using Full Depth Reclamation (FDR) with Cement and Additive, focuses on assessing the field performance of roads built using FDR technology with various chemical stabilizers. The evaluation involves conducting visual distress surveys, core sampling, Dynamic Cone Penetrometer (DCP) tests, and Falling Weight Deflectometer (FWD) testing to assess structural performance, strength, and durability. The findings highlight the effectiveness of FDR technology in improving road performance, demonstrating its potential to enhance the longevity of rural roads. The project contributes to the wider adoption of FDR technology under the PMGSY New Technology initiative, promoting cost-effective and sustainable rural road rehabilitation. The aim is to improve infrastructure quality in rural areas through a more efficient and environmentally friendly approach.

	
FDR Layer Core Cutting	FWD Survey

Condition Assessment Using Modern Data Collection Techniques and Preparation of Annual Maintenance Plan Using HDM-4 of Odisha PWD Roads

Funding Agency: Works Department, Government of Odisha

Duration of the project: From 2023 to 2025

Broad Objectives: (a) Road Inventory and Pavement Condition Survey of 22866 Lane Kms of road network in the state of Odisha (State Highways-28%, Major District Roads-12% and Other District Roads-60%) using Modern Data Collection Techniques

(b) Development of Annual Road Maintenance Plan using HDM-4

Works Department, Government of Odisha is taking a giant leap in road infrastructure management by developing a comprehensive maintenance plan using advanced technologies. With technical support from the CSIR-Central Road Research Institute (CSIR-CRRI), the project integrates the existing Wes-GIS-based Odisha Road Asset Management System (ORAMS) with the Highway Development and Management Tool (HDM-4). The scope includes updating ORAMS with the latest road condition data and utilizing HDM-4's robust analytical capabilities to devise cost-effective, sustainable maintenance strategies. The plan encompasses assessing road conditions, prioritizing repairs, and optimizing resource allocation across the state.



Network Survey Vehicle Survey



Falling Weight Deflectometer Survey

Annual Road Maintenance Plan for 12 Circles (222866 lane kms of road network) has been successfully developed using HDM-4.

Performance Evaluation of Epoxy Asphalt Overlay on PQC at Mumbai-Pune expressway (chainage from km 34+500 to km 38+390)

Funding Agency: M/s Structural Specialities & Projects (I) Pvt. Ltd.

Duration of the project: From 2024 to 2027

Broad Objectives: (a) The project aims to evaluate the performance of Epoxy Asphalt Overlay on distressed rigid pavements under real-world expressway conditions.

The selected road section for the study is a heavily trafficked section of the Mumbai-Pune Expressway, which represents one of India's most vital high-speed transport corridors. The epoxy asphalt binder used is a two-component system consisting of Part A and Part B (mixed in 20:80 ratio by weight). For field application, it is blended with VG-40 bitumen in 70:30 ratio (VG-40: Epoxy Binder) to create a modified binder suitable for bituminous mixes. Under this study, CSIR-CRRI is conducting comprehensive laboratory testing and field evaluations to assess the suitability of epoxy asphalt for highway rehabilitation.

The scope of field and laboratory investigations are given below:

- Performance observations (5 times) including zero performance observation of the epoxy asphalt overlay on rigid pavement and evaluation of the epoxy asphalt mix properties at CSIR-CRRI Laboratory.



CONSULTANCY PROJECTS

Failure investigation of Bhopal – Biaora Section of NH-12 from Mubarakhpur to Bioaora Package-II (Km324.000 to Km 423.000) in the state of Madhya Pradesh and its Remedial Measures.

Funding Agency: NHA, PIU – Bhopal

Duration of the project: From 2024 to 2025

Broad Objectives: (a) To find out the root cause of defect (flexible and rigid pavement) and remedial measure for that.

(b) To improve structural strength and riding quality of the study stretch

The assessment of pavement condition involved a comprehensive visual distress survey and technical evaluation along a 100 km, four-lane divided carriageway of flexible and rigid pavement. Conducted by CSIR-CRRI officials, the survey included visual inspections to identify surface distresses and select representative test pit locations. Bituminous core samples were extracted from both carriageways and analyzed in the laboratory for thickness and density, while field density tests were conducted on the subgrade. Roughness measurements were performed using Roughometer-III to determine the International Roughness Index (IRI), and structural assessments were carried out using the Falling Weight Deflectometer (FWD). The data collected—including surface distress, core evaluations, subgrade properties, and roughness—was analyzed to determine pavement condition, identify causes of distress, and recommend appropriate maintenance and rehabilitation strategies.



Typical view of testing under progress on the project road.

Evaluation of NDMC Roads for Suggesting Recommendations for Suitable M & R Measures under the Jurisdiction of Connaught Place, R-I, R-II, R-IV and R-V Divisions

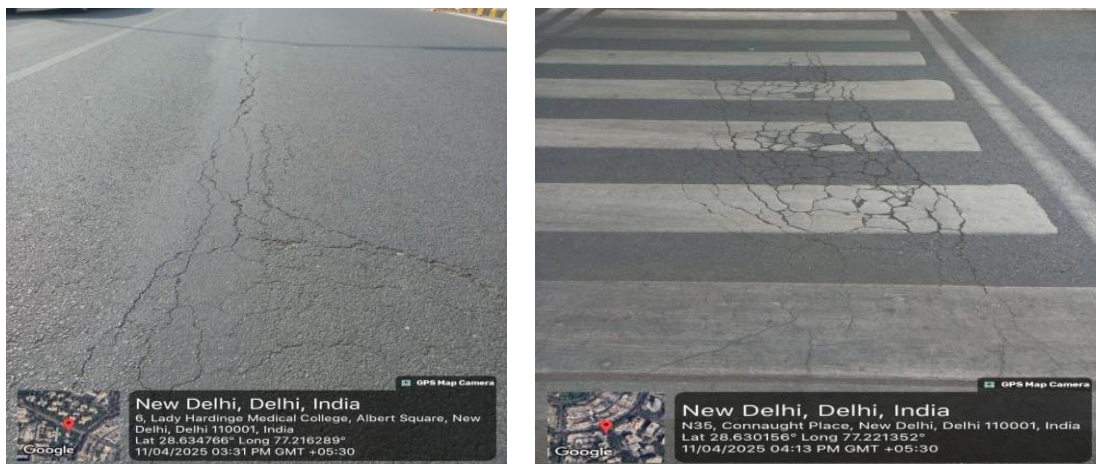
Funding Agency: New Delhi Municipal Corporation

Duration of the project: From 2025 to 2026

Broad Objective: (a) The main objective of the project is to determine the possibility of lowering down the existing level of carriageway of project roads by cold milling process and to recommend suitable overlay thickness.

This study focuses on assessing the condition of 79 selected roads under the jurisdiction of the Connaught Place, R-I, R-II, R-IV, and R-V Divisions in Delhi. In light of continuous overlays raising carriageway levels and affecting drainage systems, the CSIR-Central Road Research Institute (CRRRI) was engaged by NDMC to explore the potential for reducing pavement levels through milling and to recommend appropriate strengthening measures. Field evaluations were conducted between February and March 2025 and included visual condition surveys, roughness measurements (using Roughometer-III), and core extraction to examine internal cracking.

The study aimed to determine the existing surface conditions, calculate Pavement Condition Index (PCI) values using IRC guidelines, and identify suitable overlay and milling strategies. Based on a comprehensive assessment, roads were categorized into different maintenance needs such as routine, preventive, periodic, and minor rehabilitation. The final recommendations include detailed M&R treatments such as overlay thickness, milling depth, and materials (e.g., SMA, DBM, BC), tailored to improve riding quality, ensure structural integrity, and maintain uniformity across NDMC's high-profile road network.



Typical View of Distresses on Two Project Roads

Rigid Pavement

RESEARCH PROJECTS

Assessing the Feasibility of Geo-Composites as a Sustainable Replacement for Conventional GSB in Rigid Pavement Structure

Funding Agency: TechFab (India) Industries Limited

Duration of the project: From December 2024 to June 2027

Broad Objectives: (a) To investigate the properties of materials (aggregates, geo-composites and soil) for their suitability for road/pavement construction.

(b) To build model pavements with and without geo-composites and to evaluate its performance under loading.

The relentless pace of infrastructural development has created a significant demand for construction materials all over the world. The use of geocomposites, which combine a geogrid and a geotextile, can be an effective solution as they offer both reinforcement and separation/filtration functionalities. Incorporating geocomposites reduces capping layer thickness by 25% and overall granular cover by 20%. The geocomposite stabilized sections had a superior performance than the unstabilized sections, showing a decrease in superficial rutting and vertical stress at the subgrade. Field performance of geocomposite embedded pavement sections revealed that geocomposites found to be efficient to drain the water rapidly. Past studies demonstrated the benefits of using geocomposites in bituminous pavement applications. However, little documentation is available on the utilization of drainage geo-composite in the rigid pavement. Thus, there is a need to study the behaviour of rigid pavement separately.

Assessing the suitability of RAP (Reclaimed Asphalt Pavement) as coarse aggregate with Nanomaterial as a construction material in concrete road construction

Funding Agency: CSIR

Duration of the project: From April 2024 to March 2026

Broad Objectives: (a) To assess the feasibility of RAP as coarse aggregates with carbon nanotubes (CNTs) in concrete road construction and to predict the optimum usage.

(b) To investigate and compare the influence of RAP as coarse aggregates with carbon nanotubes (CNTs) on concrete's fresh and hardened properties with conventional concrete.

This investigation deals with the use of reclaimed asphalt pavement (RAP) aggregates in cement concrete, particularly for the construction of road pavements. Concrete mixtures consume large amounts of natural aggregates, accounting for more than 70% of their total volume. In recent years, the demand for quality natural aggregates has increased rapidly, which led to the consideration of using RAP aggregates in structural concrete as well as road applications. Therefore, there exists a need to look into alternatives that will provide suitable aggregate for concrete construction.

Also, modern concrete pavement requires structural components with higher mechanical strength and greater durability. A solution is the addition of nanomaterials to cement-based materials, which can enhance their mechanical properties. such nanomaterials include carbon nanotubes (CNTs). Optimal dosages of this material can improve the compressive, tensile and flexural strength of cement-based materials and their water absorption and workability. The use of this nanomaterial can enhance the performance and life cycle of concrete pavements. Adding CNTs to bitumen increases its strength and elastic properties. When combined with cement, The addition of carbon nanotubes contributes to changing the microstructure of cement composites, which enhances their mechanical and functional properties. As the CNTs have good interlocking properties with both cement and bitumen, thus the utilization of this material along with RAP will improve the properties of concrete.



Figure 1: Ingredients of Concrete used and prepared Specimens

CONSULTANCY PROJECTS

Evaluation of damaged Rigid Pavement and remedial measure for the rehabilitation and upgradation of four/six-laning of Puintola to Tangi section (Pkg-II) of NH 5 (New NH-16) only rigid pavement section about 29 km in the state of Odisha

Sponsoring Agency: NHAI, Berhampur (Odisha)

Project Duration: From March 2024 to December 2024

Broad Objective: To evaluate damaged rigid pavement and provide the remedial measures for the rehabilitation and upgradation of four /six-laning of the Puintola to Tangi section (Pkg-II) of NH-5 (New NH-16), the only rigid pavement section in the state of Odisha.

Puintola to Tangi section (Pkg-II) of NH 5 (New NH-16) is a 4-lane National Highway in the state of Odisha. It has 2 carriageways consisting of 2 lanes with tied shoulders. Different kinds of concrete pavement distresses were observed with different levels of severity. The major pavement distresses included Longitudinal Crack/cracks spanning to several panels, Lane to Lane Separation, Transverse Crack/cracks, Corner Break, Slab panels having distress probably due to ASR or AAR, Surface Scaling, Lane-to-lane Fault at some stretches, Shrinkage cracks, Multiple cracks and Improper joint sealant. CRRI team inspected the damaged rigid pavement sections of NH-16 in the state of Odisha, took concrete cores to know the in-situ pavement depth, concrete strength, crack depth etc. Additionally, the MIT scanner

survey was carried out to check the placement and alignment of dowel and Tie bars on transverse and longitudinal joints. The probable causes of lane-to-lane separation was also surveyed by MIT data.



Fig. 2: Single longitudinal crack of 90 mm & MIT scan test under process

Based on the nature of the distresses, such as continuous longitudinal crack/cracks, transverse crack/cracks at mid and near joints, lane-to-lane separation, depth of in-situ slab, disintegration of concrete, lane-to-lane fault, longitudinal crack with fault, etc., it appears that most of the distresses are related to the construction deficiencies. Remedial measures involved major reconstruction of the concrete pavement slab, not only from the PQC slab but also from the bottom layers of the pavement at a few stretches.

Evaluation of the suitability of Palpa cement for cement concrete road construction

Sponsoring Agency: Palpa Cement Industries Ltd.

Project Duration: From March 2024 to October 2024

Broad Objective: The primary objective was to determine the suitability of Palpa cement for cement concrete road construction by evaluating its mechanical properties and performance in various concrete mixes.

The investigation involved testing the fresh and mechanical properties of concrete, including compressive strength, flexural strength, drying shrinkage, and abrasion resistance. The tests were conducted on concrete specimens prepared using OPC and PPC provided by Palpa Cement Industries. Standard testing methods as per Indian Standards (IS) and American Standards (ASTM) were employed.

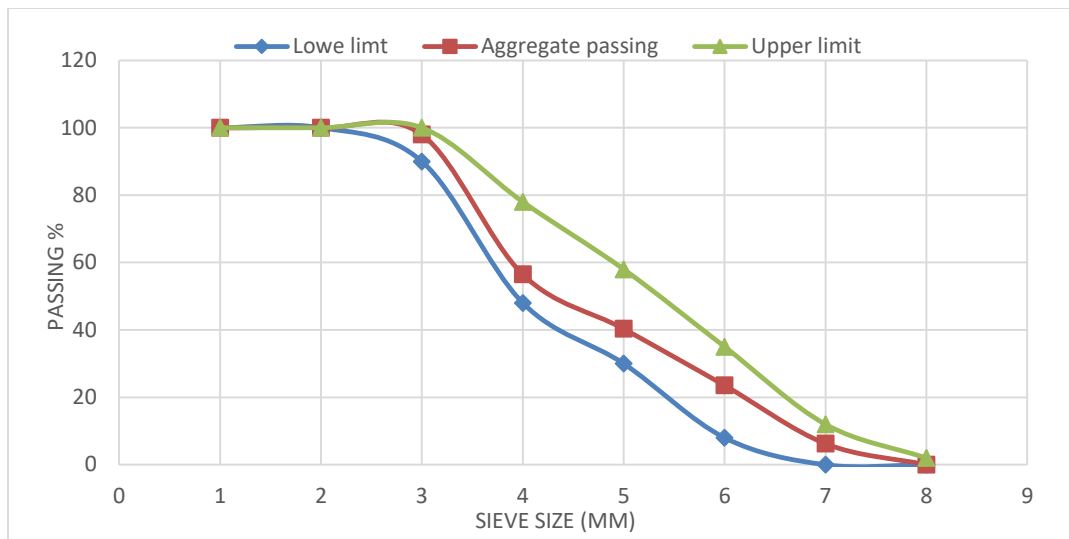


Figure 3: All-in-aggregate combined gradation



Figure 4: Prepared cube specimens

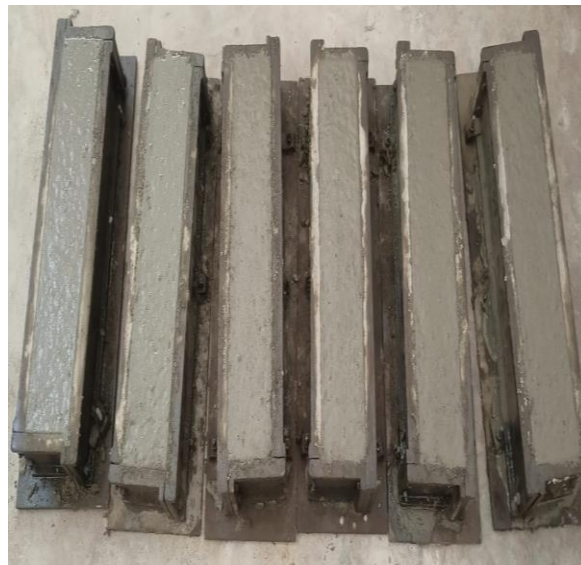


Figure 5: Prepared beam specimens

Based on data obtained from the cement test and twenty-eight days compressive strength and flexural strength tests of standard specimens for PQC (M40), it is recommended that the Palpa cement (OPC 43, OPC 53 & PPC) can be used for the manufacturing of PQC & DLC for cement concrete road construction.

Technical Analysis of distress observed on Rigid Portion of the Runway & Allied Assets (Dispersal and Links) at Air Force Station Hasimara (WB)

Sponsoring Agency: Military Engineering Services, Air Force Station Hasimara (WB)

Duration of the project: From August 2024 to January 2025

Broad Objectives: (a) Site visit of the runway of the Air Force station. Collecting the information of existing distresses, crust thickness details, materials used and existing drainage conditions of the roads.

(b) Fieldwork, Laboratory testing, and analysis of the causes of the appearance of the distresses.

(c) Suggestion for the repair/rehabilitation/reconstruction

Based on the analysis of the nature of pavement distresses, pattern of cracking, and test results, it seems that the slab thickness and quality meet the requirements of the design provided. The appearance of crack patterns similar to the patterns of cracks due to ASR reaction in the pavement, depth of cracks below the slab's top surface, excessive contraction/closure of expansion joint width, movement of slabs, protrusion of sealant, reoccurrence of the expansion joint closure/contraction etc., indicates a possibility for ASR in concrete which is a long term phenomenon. Further, the severity of the problems ranges between the low to medium category with the remote possibility of FOD in the near future. The rectification methodologies adopted at the airport by MES shall be continued and records shall be maintained to see the reduction in closure width of expansion joints, protrusion of sealant and its frequency etc.

It is recommended that MES (AF) should avoid using a single specification for concrete constituents across the whole country. Depending upon the climatic conditions such as rainfall, relative humidity, and temperature besides availability of aggregates etc., a rigorous testing of cement, aggregates, and superplasticizers shall be conducted so that any corrective technology or technique would be employed at the beginning of the project. Further, the specifications for the coastal areas, high-rainfall areas such as North-East and snow-bound areas such as Leh-Laddakh should be separate.



Slab showing Alligator pavement Slab at Runway

Fig. 6:
A
typical
view of



Longitudinal Cracks on

Fig.7: A typical view of the

Cracking on the Runway



Fig. 8: Prepared Concrete Core Specimens for Strength Testing

Quality Assessment of test tracks for Automotive and Weapon System testing Centre at Combat Vehicle Research Development Establishment(CVRDE), DRDO, Chennai

Funding Agency: Defence Research & Development Organization

Duration of the project: From December 2023 to April 2025

Broad Objective: To provide expert advice for quality assessment and mid-course correction of the test track for the automotive and weapon system testing centre at the Combat Vehicle Research and Development Establishment (CVRDE), DRDO, Chennai. In order to achieve the above objective, the relevant data, i.e., the pavement design, SFRC mix design and stabilization report provided by the client, were studied. The scope of work is as follows:

- Site visits during the construction of the test track facility
- To assess the quality of the work and mid-course correction based on the field study

DRDO has undertaken the project of test tracks for Armoured Fighting Vehicles and specialized tracked vehicles. The facility created is one of a kind in the country, having a world-class testing facility. To maintain the set parameters by ensuring superior quality of work for the proposed facility to serve the nation in terms of the development of combat Vehicles DRDO approached CSIR-CRRI for evaluating the quality of concrete pavement test tracks at the site and to suggest any mid –course correction to adopted for the successful culmination and commissioning of the facility. The quality assessment of the concrete pavement test track for DRDO involves a systematic evaluation of materials, construction practices, and performance indicators to ensure it meets the high standards required for defence applications. Based on the site visit and test performed at the site, recommendations were given for the improvement of the test track facility and mid-course correction .



Fig 9. A view of the test track



10: Testing of Battle Tank in Progress



Fig 11. Determination of crust composition of pavement



Fig 12. Extract concrete core from the test tracks

Expert advice on Repair and strengthening of concrete roads in township area, office building area and Hydro power project site area at NTPC Koldam , Bilaspur ,H.P

Funding Agency: NTPC Koldam, HP

Duration of the project: From April 2024 to March 2025

Broad Objectives: The objective of the study was to provide expert advice for the repair and strengthening of concrete roads in the township area, office building area, and hydropower project site area of NTPC Koldam

Deputy General Manager(FES), NTPC, Koldam approached CSIR-Central Road Research Institute (CSIR-CRRI), New Delhi to take up the work for providing expert advice for repair and strengthening of concrete road at NTPC Koldam township area, administration building area and Hydro Power plant area and to suggest suitable recommendations for repair and strengthening of the existing distressed concrete roads. it was stated that the RCC road was constructed in year 2005 -2007 and has deteriorated in the township area and power plant area. In order to tackle the problem of distressed concrete road and for the safe and comfortable ride of the users, a need was felt to investigate the cause of damage in detail and suggest suitable remedial measures

Based on the field investigations carried out i.e Visual inspection of the existing distressed concrete pavement test pit for determining the crust thickness of the existing pavement, Traffic data and Concrete

core, a suitable concrete overlay recommendations for the strengthening of the township area, office building area and Hydro power project site area at NTPC Koldam ,Bilaspur was suggested to the client



Fig 13: Severely deteriorated spalled transverse joint



Fig 14: A typical ravelled surface repaired with cement mortar

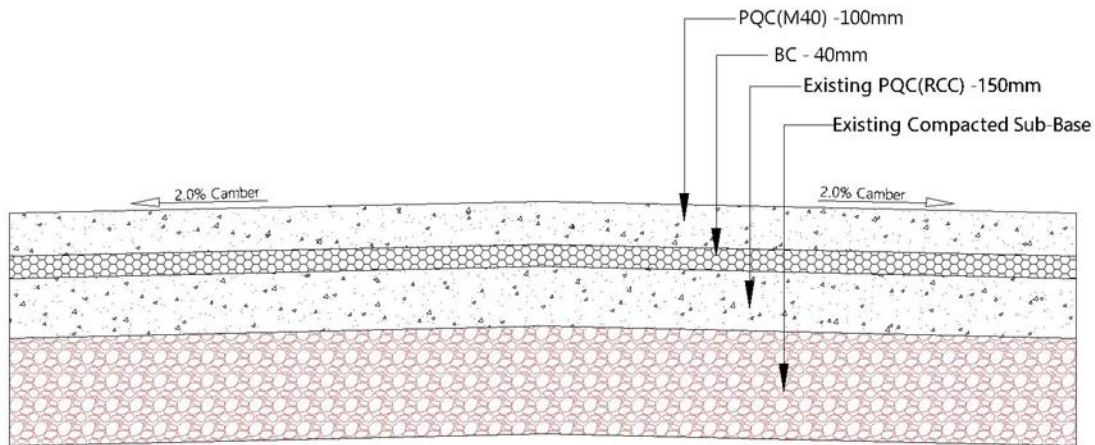


Figure 15: Cross-Section of concrete Overlay

Transportation Planning and Environment

RESEARCH PROJECTS

MiTraNS Software - Microscopic Traffic Network Simulation Model for Mixed Traffic Conditions

Funding Agency: CSIR-CRRI

Duration of the project: From May 2024 to Oct 2025

Broad Objective: To develop sophisticated microscopic traffic network simulation (MiTraNS) software tool for the urban road network which can estimate vehicular movements in mixed traffic conditions and evaluate wide range of transport policies.

As the existing microscopic traffic simulation models developed worldwide are suitable to homogeneous traffic with well followed lane discipline, these are not suitable especially in Indian heterogeneous traffic conditions. In addition, realistic vehicular movement behavior cannot be estimated and the level of accuracy achieved is not more than 60-70%, further lot of time for calibration and validation would be consumed.

In light of the foregoing, there is a high need to develop sophisticated microscopic traffic network simulation software tool for the urban road network which can estimate vehicular movements in mixed traffic conditions and evaluate wide range of transport policies. The software for Indian traffic circumstances should take into account of mixed traffic situations, variable driver behaviour, and lack of lane discipline. The software need to perform traffic simulation considering these conditions supported with a visual display system. A beta version of MiTraNS software has already been developed as part of FTT project would be considered as starting point. However, the fine tuning of traffic models need to be carried out and subsequently Software Packaging and Technology Transfer to appropriate agencies who can do marketing and commercialization of software to different stake holders is aimed in this project.

Figure 1: Opening Menu of MiTraNS Software

Figure 2: Animation of Vehicles on Link and Intersection in MiTraNS Software

Development of Indian Trip Generation Manual

Funding Agency: CSIR

Duration of the project: 2022-2024

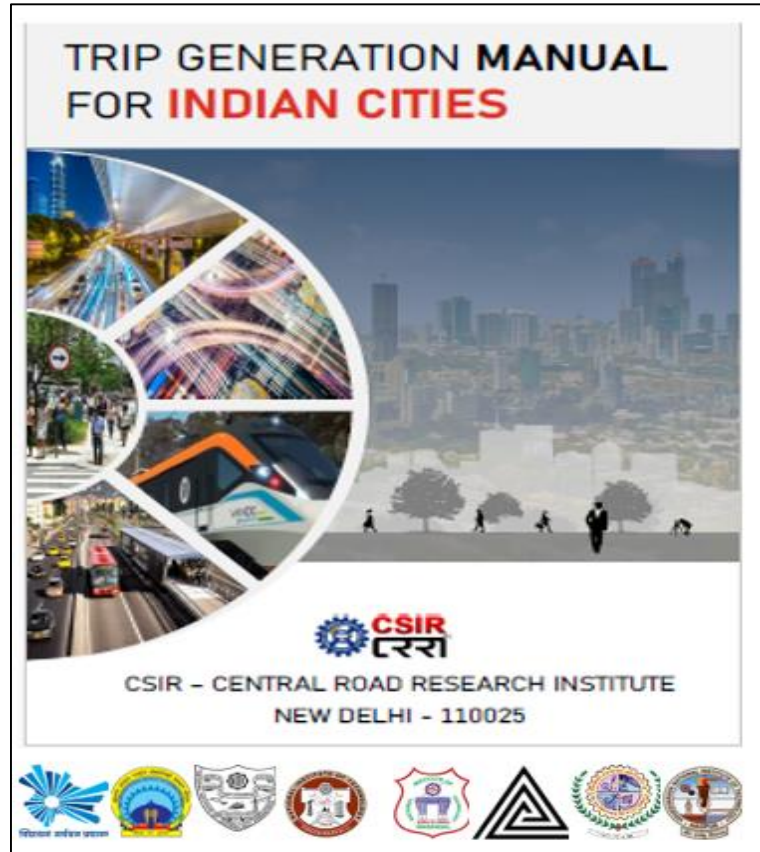
Broad Objectives: To develop trip rates for different land uses across different Indian cities

The Indian Trip Generation Manual, with its focus on human interview surveys and its comprehensive scope, serves as a fundamental resource in shaping evidence-based transportation and urban planning strategies. By quantifying trip generation patterns across diverse land use categories in various Indian cities, the manual empowers planners to make informed decisions. These decisions pave the way for the development of efficient, sustainable, and people-centric urban environments that meet the evolving needs of India's dynamic cities.

The inclusion of specialized chapters on trip rates for non-household land uses, private modes, public modes, and non-motorized modes of travel in the Indian Trip Generation Manual underscores its commitment to holistic urban planning. By supplying nuanced data, precise analysis, and actionable

insights, the manual empowers transportation planners to create urban environments that are efficient, sustainable, and centered around the needs of the people they serve across India.

The incorporation of freight trip generation rates and metrics within the Indian Trip Generation Manual signifies a notable advancement in urban planning practices. By acknowledging the distinct requirements of freight movement and providing specialized data, the manual empowers planners to make well-informed decisions that optimize urban logistics, reduce congestion, and foster sustainable economic growth within India's cities.



Indian Trip Generation Manual

Development of Software for Optimal Location of EV charging “EV-Charge software”

Funding Agency: CSIR under FTT

Duration of the project: 2022-2024

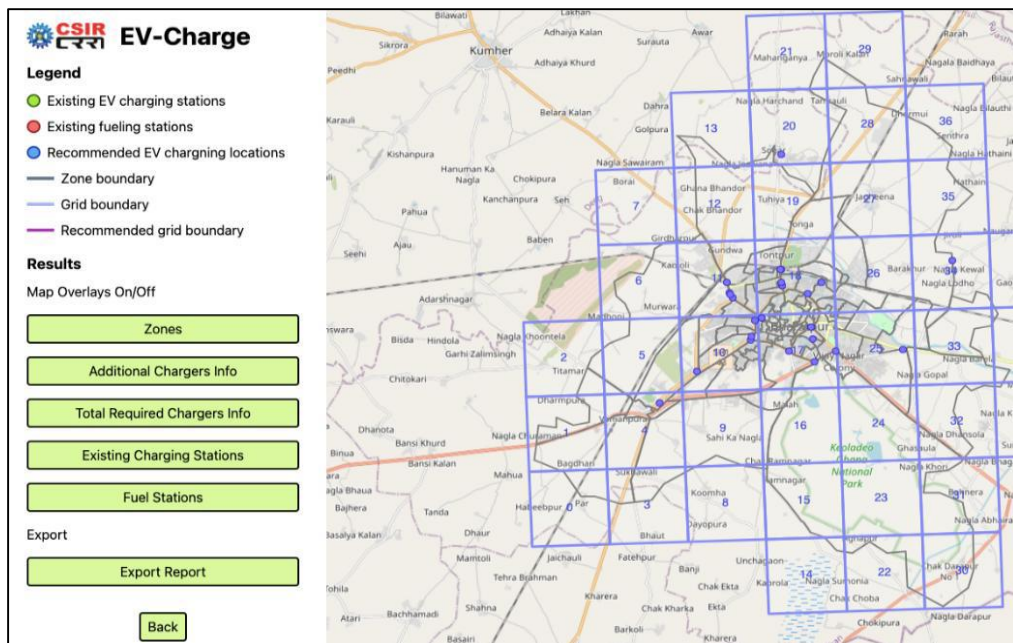
Broad Objectives: Development of Software for Optimal Location of EV charging “EV-Charge software”

EV-Charge is a decision-support software developed by CSIR–Central Road Research Institute (CSIR-CRRI) to support the strategic planning and deployment of electric vehicle (EV) charging infrastructure. With the rapid growth of EV adoption and the increasing need for well-planned charging networks, EV-Charge has been designed to assist urban planners, policymakers, and private stakeholders in making informed, data-driven decisions. The software is built on a Geographic Information System (GIS) platform, enabling spatial analysis and visualization of multiple datasets relevant to EV infrastructure planning. It integrates diverse data inputs, including existing charging stations, fuel stations, traffic flow

patterns, vehicle segment distribution, and energy grid capacity. By combining these datasets, EV-Charge helps identify optimal locations for new charging stations, ensuring efficient utilization of resources and improved accessibility for users.

One of the key features of EV-Charge is its ability to perform grid-based spatial analysis. The study area is divided into smaller zones or grids, allowing for detailed, localized assessment of demand and infrastructure gaps. This approach enables users to evaluate zone-wise requirements for EV charging, taking into account variations in traffic density, vehicle ownership patterns, and land use characteristics. The software also provides interactive mapping tools that allow users to visualize and overlay different infrastructure layers, such as existing fuel stations, charging stations, and road networks, facilitating a comprehensive understanding of current conditions. In addition to site identification, EV-Charge includes analytical tools for estimating the number and type of charging stations required in different zones. These estimates are based on demand projections, vehicle mix, and usage patterns, helping stakeholders plan scalable and future-ready charging networks. The software also supports report generation and data visualization, enabling users to present findings in a clear and structured manner for decision-making, policy formulation, and stakeholder engagement.

Another important aspect of EV-Charge is its flexibility and adaptability. The platform can be customized for different cities and regions by incorporating local datasets and planning parameters. This makes it particularly useful for urban areas with diverse mobility patterns and infrastructure constraints. Furthermore, the software aligns with broader goals of sustainable mobility by supporting the transition to cleaner transportation systems and reducing dependence on fossil fuels.



Snapshot of the EV-Charge Software

Development of Automatic Vehicle Classification & Counting (AVCC) software

Funding Agency: CSIR-CRRI

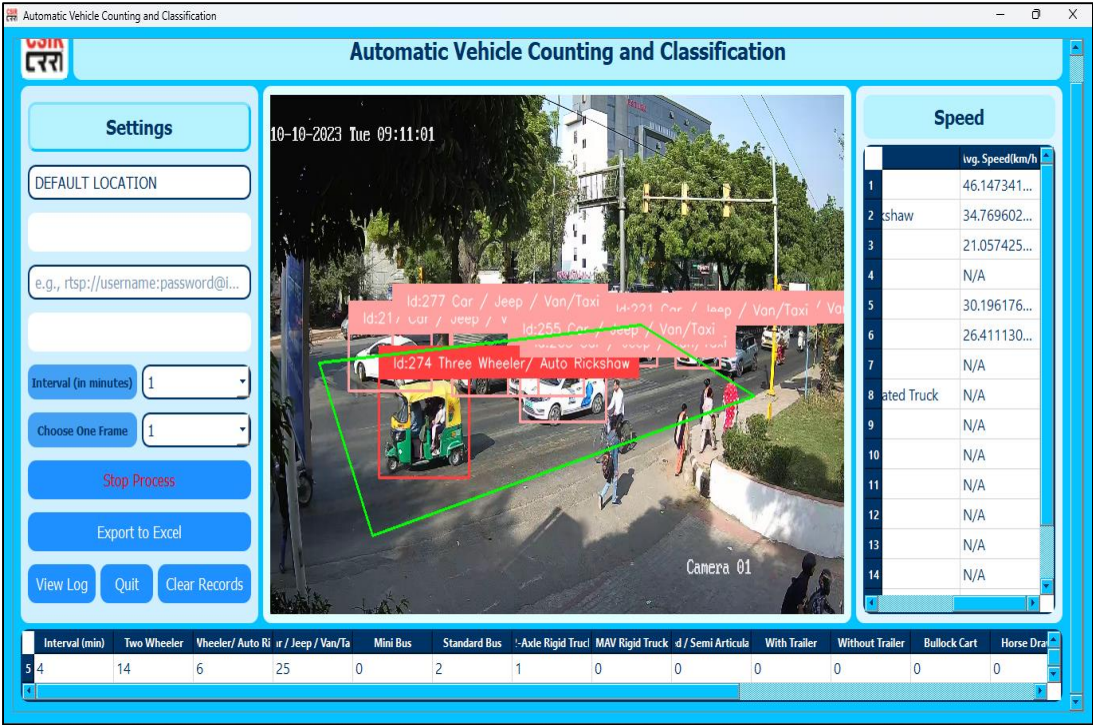
Duration of the project: 2022-2024

Broad Objectives: Development of Software for Optimal Location of EV charging “EV-Charge software”

The **Automatic Vehicle Classification & Counting (AVCC)** software is an advanced Intelligent Transportation System (ITS) solution developed at CSIR-CRRI for real-time traffic monitoring under Indian mixed traffic conditions. Powered by YOLOv8-based deep learning, the system enables automated detection, tracking, classification, and counting of vehicles with high accuracy and minimal human intervention. It is specifically designed to address the complexity of heterogeneous traffic environments in India, where motorized and non-motorized vehicles operate simultaneously under dense and often unstructured conditions. The AVCC system leverages state-of-the-art object detection capabilities of YOLOv8 to accurately identify vehicles even in congested scenarios with occlusion and low headway. It integrates multi-object tracking algorithms such as DeepSORT to ensure continuous tracking of vehicles across video frames, enabling precise counting and trajectory analysis. The software supports comprehensive vehicle classification, covering approximately 13 categories, including cars, buses, trucks, two-wheelers, cycles, rickshaws, and carts. In addition to classification and counting, the system provides reliable speed estimation using multiple approaches, including instantaneous speed, time-based analysis, and pixel-to-distance conversion techniques.

The architecture of AVCC comprises a Python-based backend processing engine, supported by a user-friendly desktop or web-based dashboard for visualization and control. It can process live feeds from CCTV or IP cameras using RTSP streaming, making it suitable for both urban and highway applications. The system generates a range of outputs, including traffic volume reports, classified vehicle counts, speed analysis, and real-time as well as historical data visualizations. Its customizable interface allows adaptation to specific user requirements and deployment contexts.

A key strength of AVCC lies in its ability to handle Indian mixed traffic effectively, including both motorized and non-motorized vehicles, which is rarely addressed by conventional systems. Compared to traditional image processing approaches, it offers significantly improved accuracy, scalability, and automation. The software has wide-ranging applications in smart city initiatives, traffic planning, infrastructure development, enforcement, and research. Overall, AVCC represents a robust and scalable solution for modern traffic monitoring, providing actionable insights to support data-driven transportation planning and policy decisions.



Snapshot of the AVCC Software



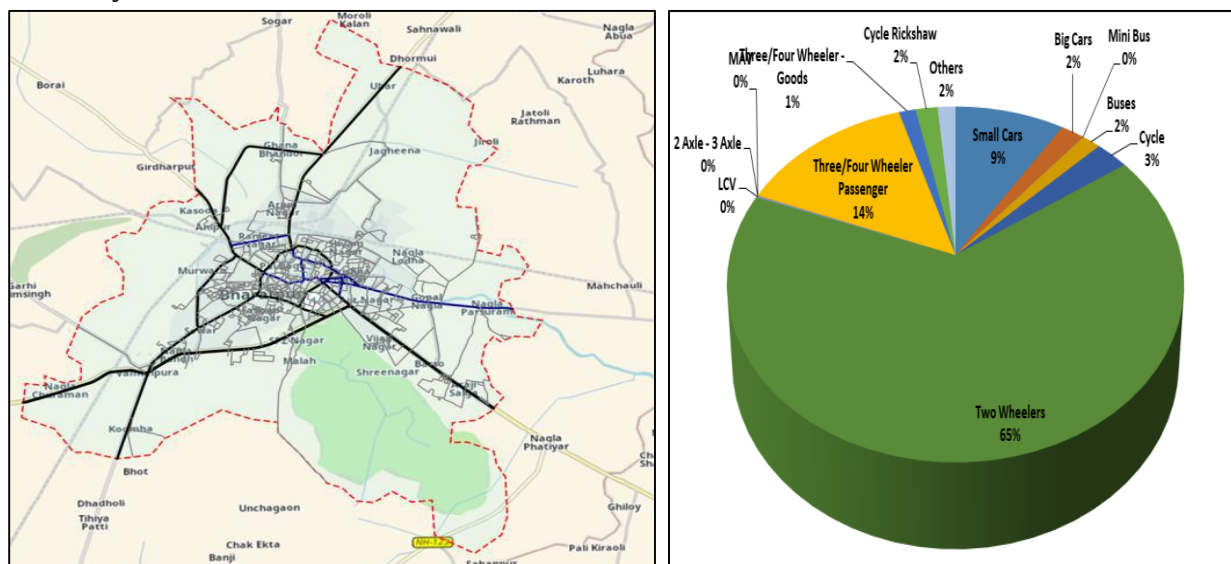
Glimpses of Stakeholders Workshop: Workshop on Automatic Vehicle Counting and Classification (AVCC) Systems

Comprehensive Mobility Plan (CMP) for Bharatpur, Rajasthan

A Comprehensive Mobility Plan (CMP) for Bharatpur, Rajasthan was prepared to develop a long-term, strategic framework for a sustainable, efficient, and inclusive urban transport system. The study established the background, objectives, and scope, followed by a detailed assessment of the existing transport system, including road network characteristics, traffic conditions, and infrastructure availability. Extensive primary and secondary data were collected to capture traffic volumes, travel patterns, speed and delay characteristics, and traffic growth trends, forming a robust basis for analysis. Passenger travel behaviour was analysed through household and outer cordon surveys, while public transport systems and user characteristics were assessed in detail. Pedestrian movement patterns and existing pedestrian facilities were evaluated to understand non-motorized transport conditions. Parking characteristics, including demand and supply at key locations, were examined to identify gaps. Freight movement patterns and associated operational challenges within the city were also analysed. Road safety was assessed through the analysis of accident data over a five-year period, identifying critical locations and trends. Based on the collected data, travel demand models for both private and public transport were developed and validated. These models were used to forecast future travel demand and develop horizon year scenarios for the study area.

Further, corridor-level and network-level improvements were formulated, including signal optimization, geometric design enhancements at intersections, and proposed road widening measures. Optimal numbers and locations of EV charging stations were also recommended in the study. Overall, the CMP study provided a comprehensive understanding of Bharatpur's transport system and generated data-driven

recommendations aimed at improving mobility, enhancing road safety, optimizing infrastructure utilization, and supporting sustainable urban development, considering future travel demand up to the horizon year 2044.

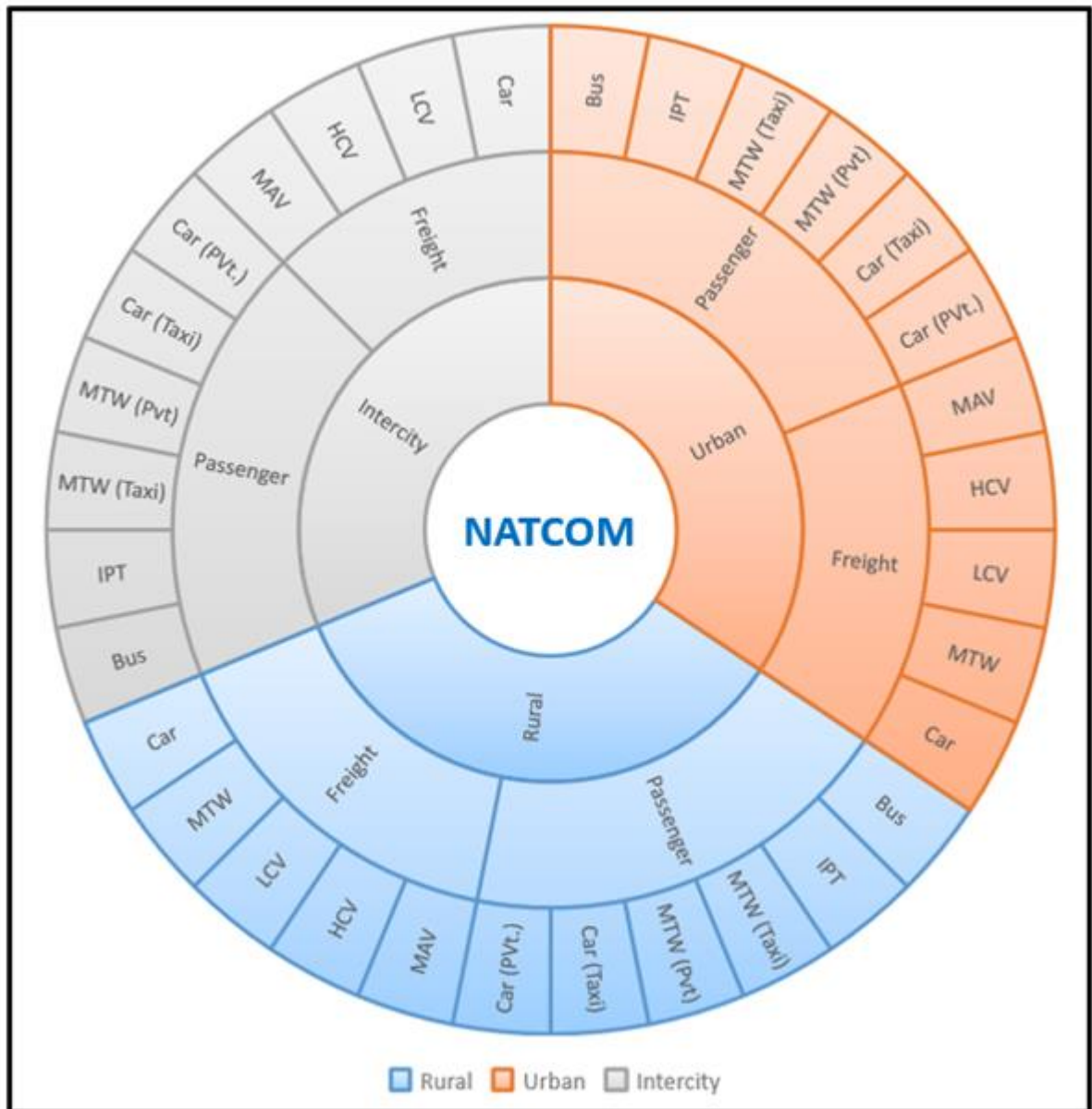


The Study area and Traffic characteristics observed from the analysis

National Greenhouse Gases Inventory for Road Transport Sector-(BTR1 & BUR4) Fourth National Communication

The Ministry of Environment, Forest and Climate Change (MoEFCC) is the nodal agency for national reporting obligations under the United Nations Framework Convention on Climate Change (UNFCCC) and the Enhanced Transparency Framework (ETF) under the Paris Agreement. The National Inventory of GHG emission is a key chapter of the Fourth Biennial Update Report (BUR-4), initial Biennial Transparency Report (BTR-1) and the Fourth National Communication (4NC). CSIR-Central Road Research Institute (CRRI), New Delhi has been associated with MoEFCC in the preparation of India's National Communication and BURs. For the Biennial Transparency Report (BTR) under national communications, CSIR-Central Road Research Institute (CRRI), through its NATCOM initiatives, collaborates closely with Indian Institute of Petroleum (IIP) to develop robust national-level estimates of Vehicle Kilometres Travelled (VKT), fuel consumption, and associated emissions. This collaboration integrates expertise in transport planning, traffic data analytics, and fuel characterization to generate scientifically reliable and policy-relevant outputs. CRRI primarily contributes by developing methodologies for VKT estimation across different vehicle categories using traffic surveys, secondary datasets, and modelling approaches. These estimates are spatially and temporally disaggregated to capture variations across urban, rural, and highway networks. IIP complements this by providing fuel consumption characteristics, emission factors, and technology-specific parameters aligned with Indian fuel standards and vehicular technologies.

Together, the institutions apply internationally accepted frameworks, such as COPERT and IPCC guidelines, while adapting them to Indian conditions. This ensures that emission inventories reflect real-world driving patterns, fleet composition, and fuel usage. The integrated approach enhances the accuracy of greenhouse gas (GHG) and pollutant emission estimates reported in BTR submissions.



Assessment and Evaluation of Implementation Methodology of Intelligent Traffic Management Systems (ITMS) for Delhi

Funding Agency: Centre for Development of Advanced Computing (C-DAC), Thiruvananthapuram

Duration of the project: From Sep 2022 to Oct 2024

Broad Objectives: To review and suggest improvements on the methodology for traffic study, analysis and microsimulation and to prepare reports (including benchmarking of KPIs for corridor performance) by CDAC.

(b) Recommendations on Safety Awareness Programmes to be conducted by Delhi Police after implementation of ITMS

The scope of the study focused on the city of **Delhi**, with an emphasis on providing technical guidance, critical evaluation, and validation of analyses and reports submitted by **CDAC** to the **Delhi Traffic Police (DTP)** for the implementation of Intelligent Traffic Management Systems (ITMS). The work involved a comprehensive review of traffic data collation and analysis undertaken for the design of adaptive traffic control systems, pedestrian signal systems, and priority-enabled vehicle operations. A reconnaissance assessment was carried out for the selection of 42 corridors and over 300 critical intersections, categorized based on low, medium, and high traffic volumes. The study reviewed and validated the traffic survey methodology, including survey formats, parameters, sampling approaches, and data collection techniques. Key traffic surveys examined included Classified Traffic Volume Counts, pedestrian volume counts, speed and delay studies (including spot speed surveys), and queue length surveys. The analysis outputs were verified against key performance indicators such as journey speed, delay, queue lengths at intersections, and pedestrian waiting times at intersections and mid-block crossings.

At the corridor and network levels, detailed evaluations of traffic analysis and simulation reports were undertaken. Recommendations were provided for the identified corridors and intersections, including guidance on optimal locations for permanent traffic counting sensors. Simulation-based assessments comparing ‘before’ and ‘after’ ITMS scenarios were reviewed to evaluate performance improvements across key indicators. The study also included a review of intersection and corridor drawings prepared for ITMS implementation, covering approximately 1200 signalized and 600 blinker locations. The readiness of these designs and proposed geometric improvements were critically assessed. Additionally, black spot rectification proposals were reviewed, and recommendations were provided to enhance road safety interventions. Further, the study examined existing road safety awareness levels among users and proposed strategies for effective awareness programs to be implemented by Delhi Police post-ITMS deployment. Overall, the work ensured a robust, data-driven foundation for improving traffic management, safety, and system efficiency in Delhi.

Assessing the spatial disparity between transport social needs and public transport provision

Funding Agency: CSIR-CRRI

Duration of the Project: From May 2024 to May 2026

Broad Objectives: (a) To assess the transport social needs through index for transport social needs for two cities

(b) To assess the index of public transport provision for the chosen cities

(c) To evaluate disparity between transport needs and provision within each of the city

The project data collection for the city of Indore was initiated and collected. The data collection for another city needs to be initiated. The analysis for the same is being carried out. Had presented the proposal to the divisional scientists on October 2023 and to the in-house selection committee at CRRI held on 8 th April 2024. Had initiated the survey process through purchase procedure and had prepared the survey proforma. Had started the household survey, boarding alighting survey as well as passenger opinion survey for the city of Indore. The surveys for the city of Indore have been completed and the analysis has been started. Had collected secondary data from various agencies such as AiCTSL Indore and CEO Smart City, Indore.

Preparation of Integrated Transport Network Development plan (ITNDP)

Funding Agency: Meghalaya Infrastructure Development Finance Corporation (GSPCB)

Duration of the Project: From October 2020 to May 2025

Broad Objective: To develop an Integrated Transport Network Development Plan (ITNDP) for the entire State by identifying the transport network required to achieve the State's vision and the demands for sectors, including tourism, agriculture, industries, and mining as transport connectivity of all the habitations

The Integrated Transport Network Development Plan (ITNDP) Phase 3 for Meghalaya, commissioned by the Meghalaya Infrastructure Development Finance Corporation (MIDFC) and prepared by CSIR-Central Road Research Institute (CSIR-CRRI), presents a comprehensive strategy to enhance the state's transportation infrastructure. This phase focuses on strengthening connectivity by proposing the construction of 1,067 new roads, covering a total length of approximately 3,840.88 km, particularly targeting remote and underserved regions. The plan builds upon earlier phases and emphasizes last-mile connectivity, ensuring integration with existing road networks such as PMGSY, rural roads, ODR, MDR, SH, and NH.

The methodology adopted includes base map preparation, transport demand assessment, road inventory and condition surveys, origin-destination (OD) surveys, and evaluation of network adequacy. Based on these analyses, a prioritized network development plan and financial strategy were prepared. The prioritization of road improvements was undertaken at the block level using cost-effectiveness criteria, ensuring efficient allocation of resources over a 20-year implementation horizon. Key recommendations include the development of new road connections to link approximately 1,894 unconnected villages, along with systematic road improvement and maintenance strategies to address deficiencies such as poor surface conditions and inadequate connectivity. The plan also incorporates bridge construction and maintenance as critical components of infrastructure development. The total estimated cost for Phase 3 is ₹11,247.6 crore, including ₹6,223.15 crore for road improvements, ₹3,149.83 crore for bridges, and ₹1,874.60 crore for maintenance, with an annual investment requirement of approximately ₹563 crore.

The plan emphasizes sustainable and climate-resilient infrastructure, along with the integration of multimodal transport systems, including roads, railways, and ropeways. Upon implementation, ITNDP Phase 3 is expected to significantly improve accessibility, support economic growth in tourism, agriculture, and industry, and enhance the overall quality of life in Meghalaya by enabling efficient movement of people and goods across the state.

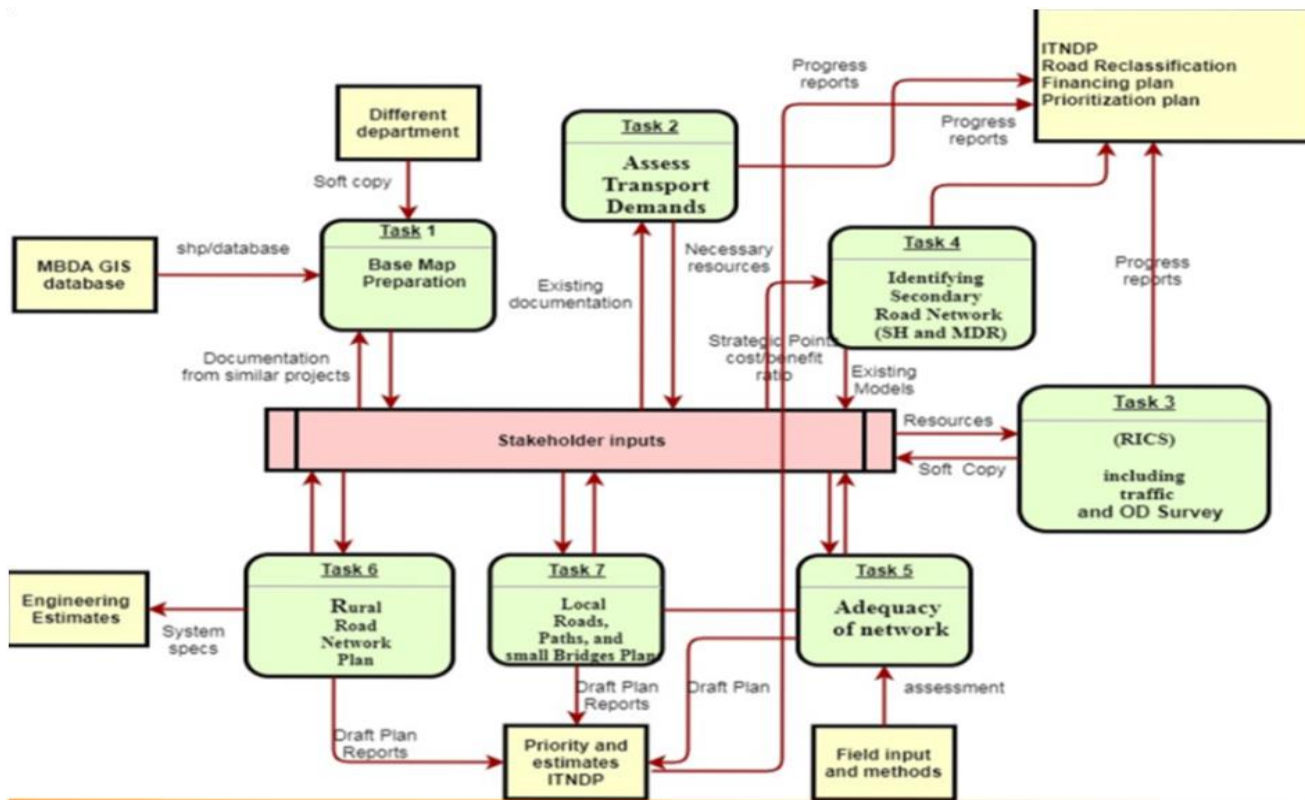


Figure 1: Scope of the work and flow diagram of a methodology

Reclassification Proposed for VR from Track

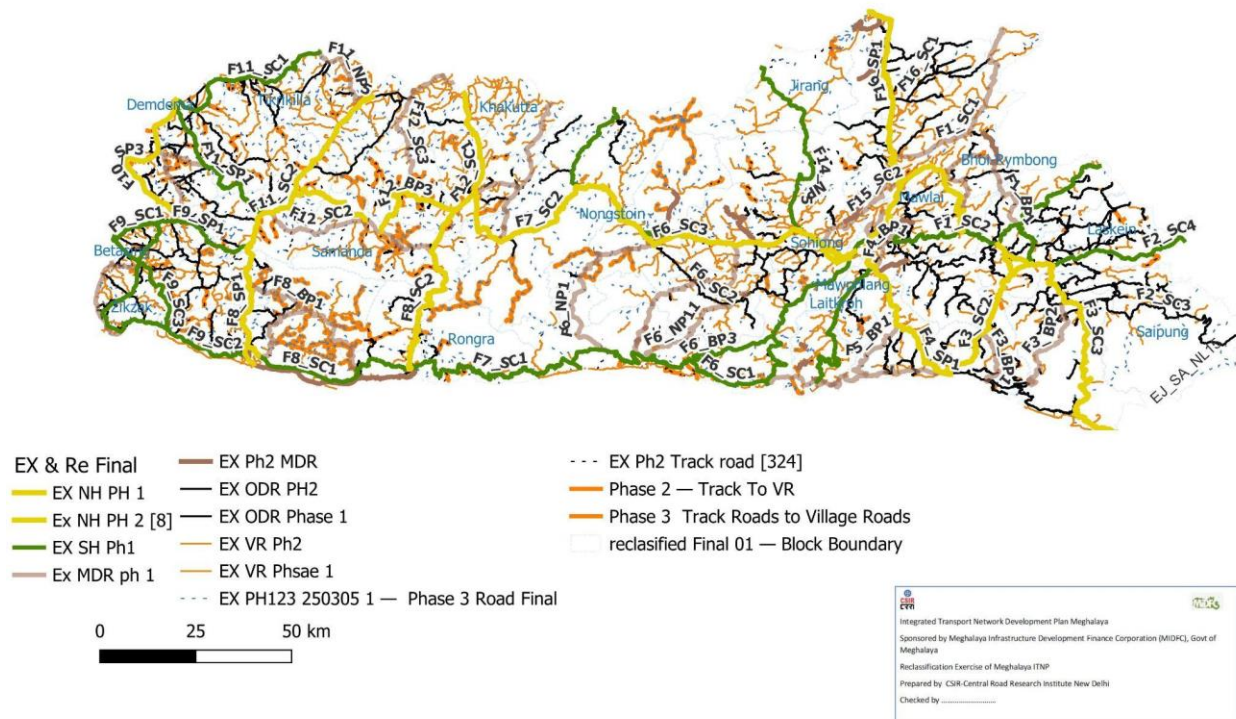


Figure 2: Typical Reclassification exercise done in ITNDP study for Rural Road

Noise Mapping, Identification of Hot Spots and Mitigation Plan for Control of Noise Pollution for Goa State

Funding Agency: Goa State Pollution Control Board (GSPCB)

Duration of the Project: October 2023 – March 2025

Broad Objectives: (a) To conduct detailed noise mapping across various regions of Goa to assess spatial and temporal variations in noise levels and identify critical high-noise zones.

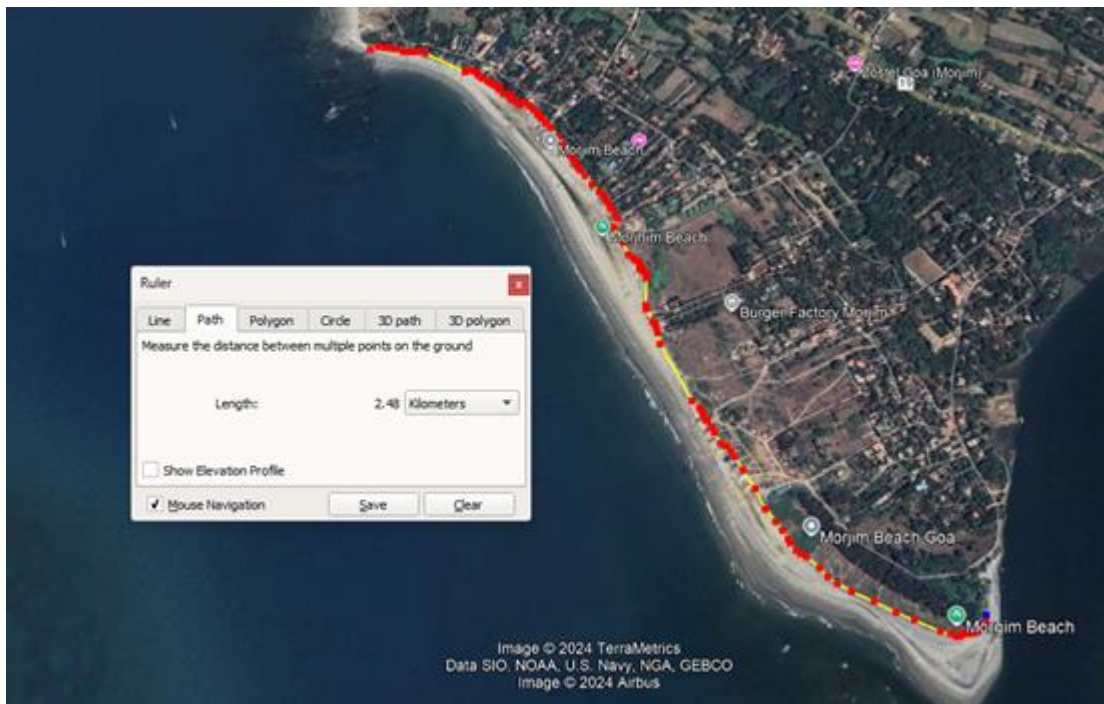
(b) To identify noise pollution hotspots through analysis of mapping data, traffic patterns, and urban activities that contribute significantly to elevated noise levels.

(c) To develop a comprehensive mitigation plan with feasible control measures and policy recommendations aimed at reducing noise pollution and improving public health and environmental quality in Goa.

Out of all the beaches, only nine have been identified where sound check stations are present, and the music levels are notably high. In these areas, the installation of transparent noise barriers has been recommended to mitigate sound disturbances. The proposed locations for these noise barriers are marked on the maps (one is shown for reference below). (Total length of the noise barriers proposed is approx. 5 kms out of 105 kms coastal area beaches 4.7 % of the total length.)

The study methodology comprised a series of comprehensive field surveys and analyses to address the study objectives related to traffic performance, environmental impacts, and land use interactions. Classified Traffic Volume (CTV) surveys were conducted at 34 identified intersections over a continuous 24-hour period on typical working days. These surveys captured hourly traffic volumes, peak hour conditions, and turning movement patterns. In addition, signal phasing and timing information was recorded to support signal synchronization and intersection improvement strategies. The data also provided inputs for assessing the need for geometric improvements or grade-separated facilities. Speed and Delay surveys were carried out along approximately 100 km of major corridors to evaluate traffic flow quality for both public and private transport. Journey speed and running speed were analyzed to understand congestion levels and operational efficiency, where higher ratios indicated smoother flow conditions. Noise monitoring surveys formed a critical component of the study, with measurements conducted at 34 intersections over 24 hours and at over 100 locations across different land use zones of residential, commercial, industrial, and recreational at multiple time intervals. Additional monitoring was undertaken in sensitive areas such as beaches, forests, and industrial zones to capture spatial and temporal variations in noise levels. A detailed land use survey was also undertaken using field observations, existing records, and questionnaire-based interactions with residents. This helped in understanding land use patterns and their influence on traffic and environmental conditions.

Based on the analysis, targeted recommendations were developed. These included avoiding unnecessary noise barriers in areas with natural buffers, implementing automatic noise control mechanisms at tourist locations, and adopting vibration-reducing materials for equipment. For industrial areas, measures such as acoustic enclosures, noise barriers, and mandatory use of protective equipment were recommended to mitigate noise pollution.



Noise Mapping In Night At Bolshe Circle 2023



Noise Mapping In Night At Bolshe Circle 2045

Development of Innovative Materials for Emission Absorbing Pavement System (CSIR -FIRST Project)

Funding Agency: CSIR

Duration of the project: From July 2024 to July 2026

Broad Objectives: (a) Development of Photocatalytic pollution absorbing material for flexible pavement using bitumen emulsion.

(b) Measure Photocatalytic efficiency of pollution absorbing material to develop a new concept of photocatalytic flexible pavement for absorption of vehicular emitted pollution

The state of the Art of this project is complete and will be communicated in a high impact factor SCI journal

CONSULTANCY PROJECTS

Road Safety Assessment of 6668 Kms of State Highways and Major District Roads in the State of Odisha (2023-2028)

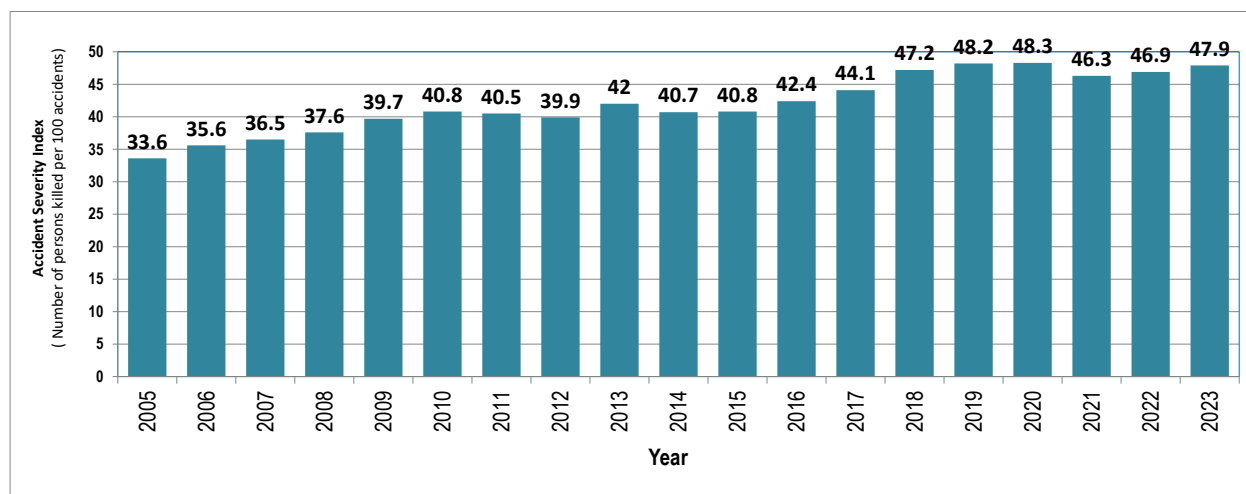
Funding Agency: Odisha Works Department, Government of Odisha

Duration of the Project: March 2023 – March 2028

- Broad Objectives:
- (a) Conduct of Road Safety Audit on 6668.104 Kms (About 4124 Kms of State Highways and about 2631 Kms of Major District Roads (MDR))
 - (b) Review Road Safety Audit of 49 Vulnerable Stretches (@ 49 Identified Black Spots)
 - (c) Safety Evaluation of the present level of road safety (2500Kms)
 - (d) Customized Capacity Building Skill Development Programs

The state of Odisha is ranked the 13th highest amongst all the 29 states in India in terms of total number of road crashes numbering 13th Rank – Accidents : 11,992 (2.459%) as per the 2023 data published by the Ministry of Road Transport and Highway (*MoRT&H*) Similarly, the state also occupied 13th position in terms of number of road crash victims / fatalities in the country contributing for about 13th Rank, fatalities : 5,739 (3.3%).

In terms of Accident Severity Index (i.e. Road Crash deaths per 100 Road crashes) as well, Odisha fares quite poorly accounting for about 47 deaths per 100 road crashes that occur in the state despite the fact that the road length is not very high as compared to the top ranked states in terms of road crashes. Also, it is evident from that the road crash severity index i.e. accident severity index has registered marginal increase as compared to the year 2022. If such an increasing trend persists, then it will be a major cause of concern for the stakeholders and general road users alike.



Road Crash Severities during the year 2005 -2023

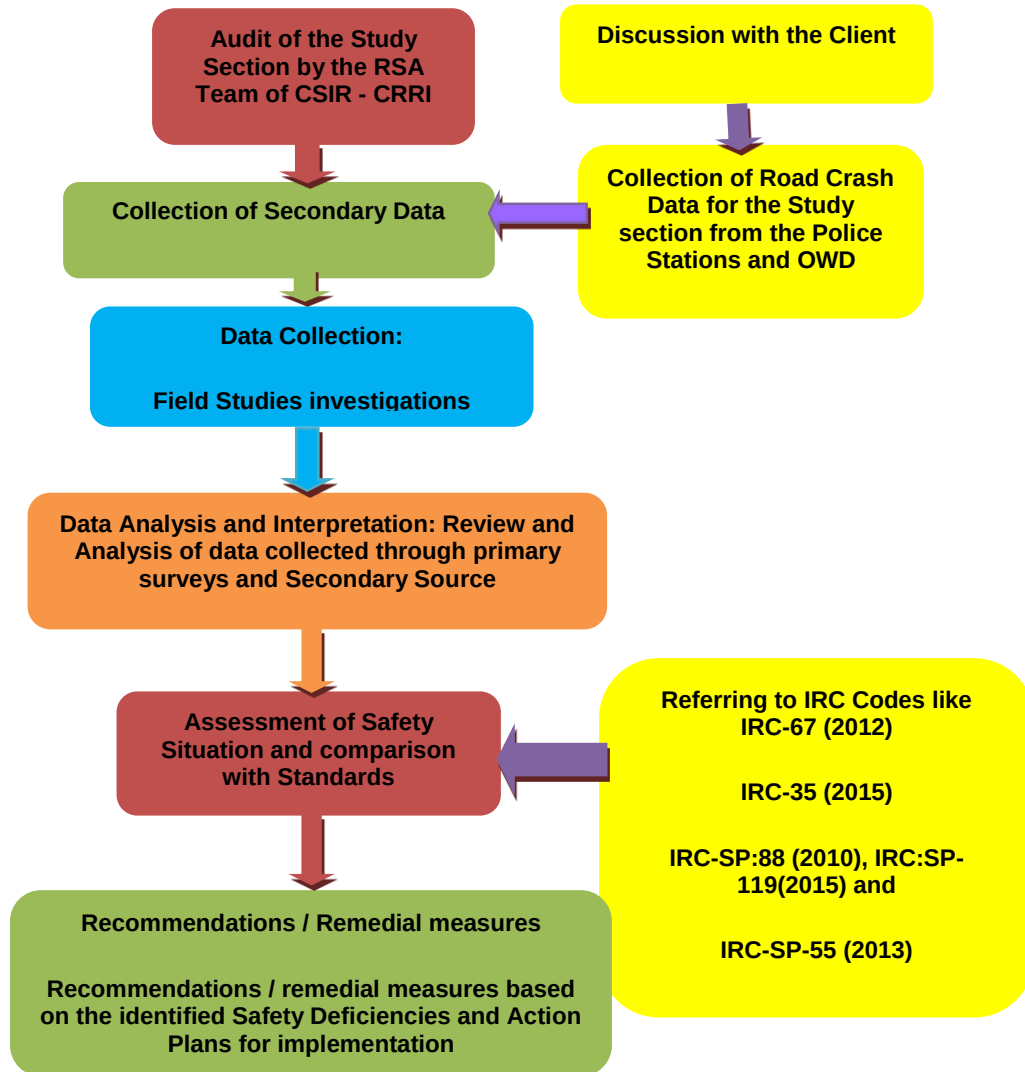
Methodology Followed:

To carry out the safety audit of the existing project Corridor, the methodology adopted to conduct RSA is presented below highlighting the sequence of steps:

- a) Alignment details
- b) Cross-sections details
- c) Shoulders, footpaths details
- d) Side slopes, drainage facilities
- e) Road markings
- f) Road signs
- g) Junction layout
- h) Bridges / CD works
- i) Roadside furniture
- j) Roadside hazards etc.

k) Facilities for Non-Motorized Transport (NMT) and Pedestrians wherever applicable
By correlating the above data with the crash data from the FIR data which is to be supplied by OWD, the necessary safety features have been recommended for each candidate road section aimed at enhancing the safety of all types of road users.

Progress : As of now 4867 kms audited, Two Skill Development programs were conducted, 250 Kms of Compliance field Road Safety Audit was completed.



Study Methodology for RSA

Traffic Engineering and Safety

RESEARCH PROJECTS

Investigation of Strategic Placement of Wireless Power Transfer (SWPT) Systems for Battery Electric Buses (BEB) on selected corridors

Funding Agency: CRR, New Delhi

Duration of the project: From February 2024 to March 2026

Broad Objectives: (a) To allocate optimal wireless charging facilities (stationary and semi-dynamic) required for electrified transit buses at selective corridors in Delhi.

(b) To investigate the economic feasibility of wireless charging systems for electrified bus transit system.

Wireless charging offers the potential to charge battery electric bus (BEB) at regular stops without requiring extensive dwell times or infrastructure alterations, thereby integrating seamlessly into urban environments. However, optimizing such systems requires considering numerous factors, including battery capacity, initial state of charge (SOC), and the operational constraints of bus routes. Irrespective of recent development in terms of attempts made on Strategic Placement of Wireless Power Transfer (SWPT) placements for BEB corridors elsewhere, several pertinent questions need to be answered in Indian context which encompass the following:

- How can charging pad placement be optimized to minimize costs while meeting the energy demands of buses?
- What is the impact of initial SOC on the feasibility and cost of the wireless charging system?
- How do single-trip and multiple-trip scenarios influence the design and efficiency of the charging infrastructure?

The major contribution in this study encompasses employing a mixed-integer linear (*MILP*) approach to determine the optimal placement of wireless charging pads at bus stops across multiple bus routes (*refer Figure 1*). The findings are expected to help the in making decision-making for public transit authorities, supporting the adoption of sustainable and efficient EV systems.

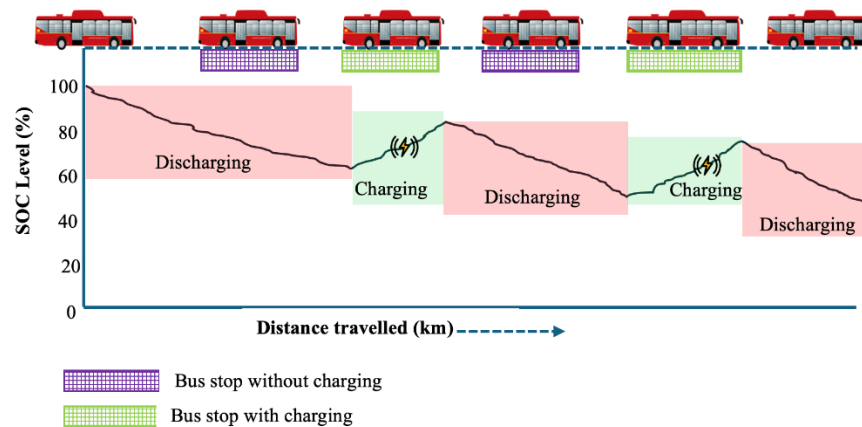
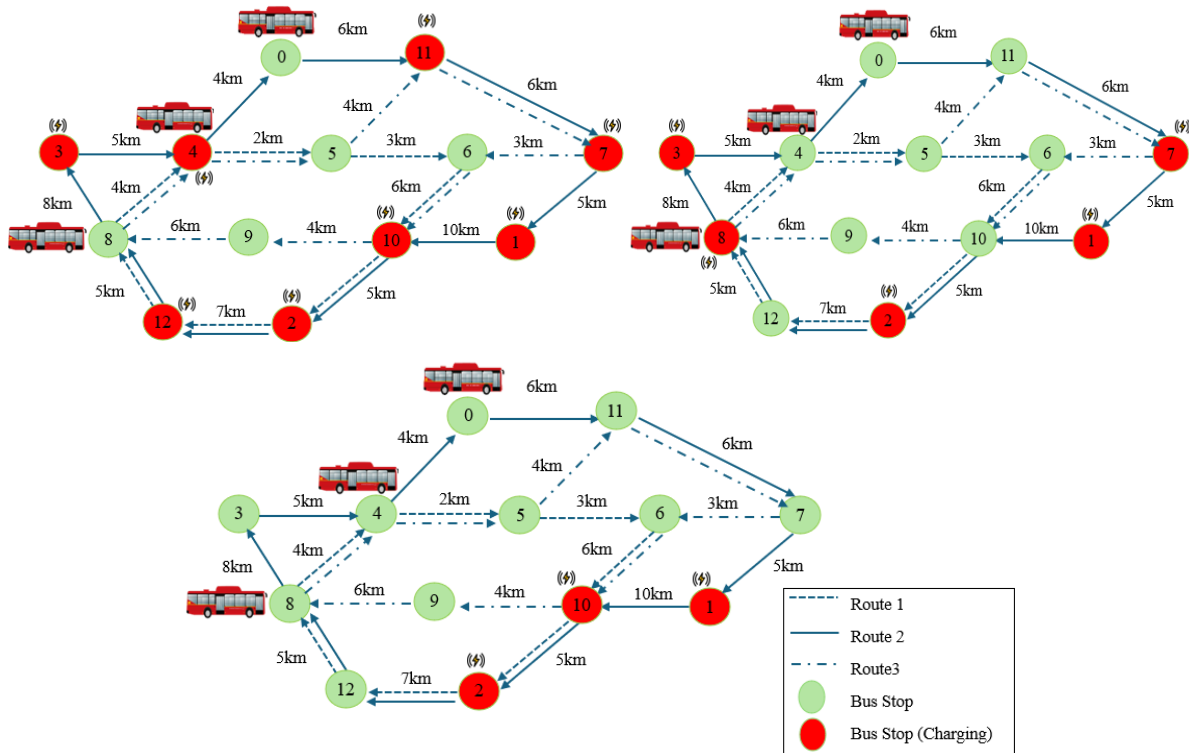


Figure 1: Typical layout of SWPT charging system at bus stops showing SOC variation over distance

The findings from this study underscore the critical role of initial SOC optimization, tailored infrastructure design and strategic planning in achieving cost-effective and sustainable operations for public electric buses. This research provides a foundation for future studies and practical implementations in wireless

charging infrastructure for electric buses, paving the way for sustainable and efficient urban transit systems (refer typical illustration in Figure 2).



(c) Figure 2: Optimized SWPT charging bus stops for single trip (a) I.SOC: 50 % (b) I.SOC: 55 % (c) I.SOC: 60 %

CONSULTANCY PROJECTS

Road Safety Audit (RSA) and Design for the PWD North and North East Zone Roads in the State of Karnataka (Package - 1) under KSHIP-3 Project

Sponsoring Agency: Karnataka State Highway Improvement Project (KSHIP), Karnataka.

Joint Venture with CSIR-Central Road Research Institute and M/s. LEA Associates South Asia Pvt. Ltd.

Duration of the project: From January 2023 to December 2025

Broad Objectives: The objective of the consultancy services is to provide quality technical support to assess, design, and supervise defined road safety features on the state highways in the core road network of Karnataka. In achieving these objectives, the RSA is required to provide all requisite assistance and support to the PIU-KSHIP in compliance with ADB's policies for project design and implementation.

Scope: The scope of the project is listed below

- Review of the road safety audits carried out earlier by Planning and Roads Asset Management Centre (PRAMC) (around 270 Kms)
- Review of the road safety audits carried out earlier under KSHIP- II (around 230Kms)
- Detailed Road Safety Audit of SH/MDR under the CRNM(around 7000Kms)
- iRAP assessment of SH/MDR under the CRN in North and North East zone PWD Roads

- Training on Road Safety Audit, iRAP Assessment, Road Safety Awareness and Campaigns, Work Zone Safety as part of DPR

Summary of the work: As part of the project road safety audits were conducted and crash prone spots i.e. black spots were identified coupled with suggesting appropriate remedial measures. The suggested RSA and blackspot remedial measures were presented and discussed in the Workshops held in a couple of district level workshops held in the state of Karnataka (refer Figure 2).



Figure 2: Glimpses of the workshops held in Karnataka

Pre-Opening Stage Road Safety Audit of Urban Extension Road Package - II

Sponsoring Agency: National Highway Authority of India (NHAI)

Duration of the project: From April 2024 to March 2025

Broad Objectives : The study road sections were subjected to Pre-opening stage Road Safety Audit where the construction is in the verge of completion and thus awaiting the clearance for the Completion Operation Date (COD).

The details of the sections and packages are described below:

- **Dwarka Expressway:** It is an elevated grade separated access-controlled carriageway connecting Dwarka in Delhi to Kherki Daula Toll Plaza, Gurgaon in Haryana. The Packages details are as follows:
 - Package 3: Delhi/ Haryana border to Basai Rail Over bridge (ROB) (Km 9.5 to Km 19.70), Length: 10.2 km
 - Package 4: Basai ROB to Kherki Daula (Km 19.70 to Km 28.5), Length: 8.8 km
 The above corridor is a six-lane divided carriageway with elevated service roads of three-lane either side and at grade six-lane divided road.

- **UER-II:** It is a six-lane access-controlled road having elevated at some places with service roads on either side. The Packages details are as follows:
 - Package 3: Nangloi – Najafgarh Road till Sector 24 Dwarka (Km 28.450 to 38.111), Length: 9.661 km

The action plan generated from the above RSA, leading up to the Commercial Operation Date (COD) Operations are summarized below.

- i) Given that the Main Carriageway of the Project Corridor is an Eight Lane Urban Expressway, it is recommended to install distinct Speed Limit Sign Boards indicating 100Kmph for Light Motor Vehicles (LMV) and 60 Kmph for Heavy Motor Vehicles (HMF) on the main carriageway of the Expressway. However, in the case of the Service Road having a Six Lane Divided Configuration, it is suggested speed limits are 60 Kmph for LMV and 40 Kmph for HMF (*refer Figure 2.14*) considering the fact that it will be used by all types of Motorised Vehicles as well as Non-Motorized Traffic and movement of pedestrians due to Bus Stops / Bus Bay located on the edge of the Service Road.
- ii) In addition to the above recommended posting of the Mandatory Speed Limit Signs, it is recommended to provide Overhead Lane Sticking Signs combining with the applicable Speed Limits of 100 Kmph and 60 Kmph *at the earmarked locations* on the MCW of the Expressway. Moreover, since the MCW of the Expressway has eight-lane divided carriageway having four lanes on either side, it is recommended to post two numbers of Overhead Lane sticking signs with 100 Kmph containing the Car picture on the Median Lane and Traffic Lane adjacent to the median whereas the remaining two lanes shall have heavy vehicle picture.
- iii) It is essential to post the Exit Sign which is to be posted at least 2 km before the designated exit locations conforming to Ministry Circular dated 20.7.2023. Exit sign board shall be sequential numbered by taking the number of Exits from the start of the corridor along with direction sign prior to the exit of expressway.
- iv) Though the signs boards indicating the shared cycle track and pedestrian footpath signs have been installed at designated locations adjacent to the edge of the Service Road, the construction of the same is incomplete. It is advisable to complete the shared facility before opening it for road users.
- v) Pedestrian crossing Zebra Marking and Sign are missing in a few of the Major and Minor Intersections located at the Intersecting Road with the Service Roads. These shall be thoroughly enumerated by the concessionaire and prepare a checklist of the missing locations so that needful can be done before the formal opening of the Project Corridor.
- vi) In some of the Minor Roads intersecting with the Service Roads (*which will have high speeding traffic due to Six Lane Divided Configuration*), in addition to Stop Sign provided on the ground, it is recommended to provide Stop Line Marking, Pedestrian Crossing Sign, Object Hazard Marker (OHM) Sign and the construction of Speed Table [*conform to IRC: 99 (2018)*] along with the Pedestrian Crossing Marking which shall be done conforming to IRC:35 (2015),
- vii) VMS gantry at two locations have been erected, however not yet commissioned. Foundation of such gantry need to be reinforced by placing the OHM up front.
- viii) At the Cloverleaf merging with the NH-48 *i.e. Delhi - Jaipur Highway*, it is observed that

there are obsolete Chevron Markings which can cause drivers to make incorrect turns. To address this issue, it is recommended to rectify the same by mask the outdated markings with black paint. Additionally, it was noticed that the impact attenuators have not been installed in the gore area. To enhance safety in these areas, it is recommended for the placement of 9 sets of Sand Filled Impact Attenuators by taking into consideration the available space at also such gore areas.

- ix) CSIR - CRRRI team assessed the illumination levels of street lighting on the MCW of the Expressway and Service Road during night-time at selected locations. The analysis revealed that the illumination level is more than 40 Lux conforming to IRC: SP-84 (2014) and IS:3944. However, there are certain locations on the median and shoulder, such as chainage Km 21/500, Km 24/400, and Km 26/600, where the lux level falls below 40. To ensure the safety and convenience of nighttime road users, it is recommended to enhance the illumination levels at these specific locations.
- x) Lighting conditions at most of the VUPs are fairly good, however in one of the VUPs, lights are yet to be installed. Similarly, another VUP doesn't have sufficient lighting due to the vandalism. Prior to opening to the road users, all three VUPs should be checked for adequate lighting during night time.

Based on the above findings that emanated out of the above Pre-Opening Stage Road Safety Audit, the list of safety issues pointed out in this report need to be implemented on the ground and afterwards only, the Project Corridor can be considered for granting Commercial Operation Date (COD) certification by NHAI.

Comprehensive Traffic Management Study for Limestone Lease Expansion Project based at Kutch

Sponsoring Agency: M/s Sanghi Industry Limited (SIL), Adani Cement

Duration of the project: From May 2024 to July 2024

Broad Objectives: (a) To conduct the traffic assessment of the existing corridor and project the traffic growth in future.

(b) To provide traffic management measures if any required to improve the capacity of the corridor

SIL is now part of Adani group since December 2023. The above referred unit is located at Sanghipuram, Village Motiber, Taluka Abdasa, District Kutch, Gujarat, with the present clinker production capacity of 7.5 million tonnes per annum (TPA) and the cement production capacity of 8.6 million TPA by catering to traffic flow and material production (refer Figures 3, 4 and 5).



Figure 3: Jadua Limestone Mines, Kutch

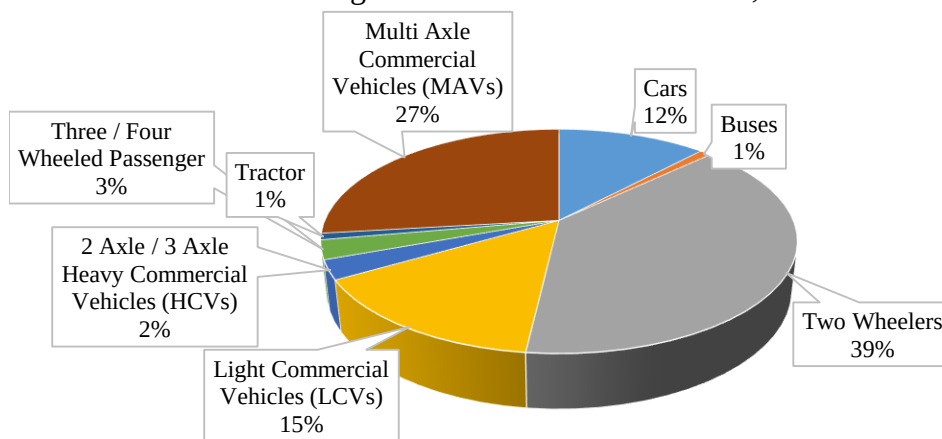


Figure 4: Traffic Composition from Plant to Motiber Chowk

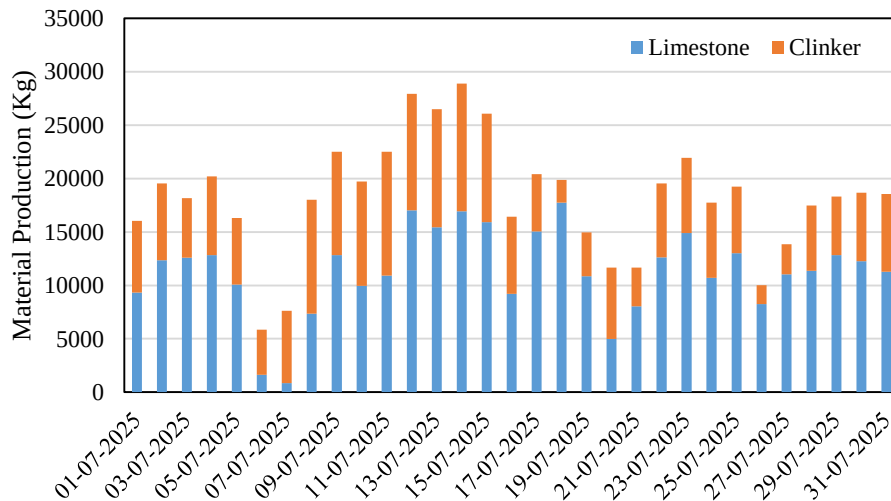


Figure 5: Material production in the month of July 2025

A comprehensive evaluation of the prevailing traffic conditions, together with the projected traffic demand arising from the proposed expansion of limestone mining and associated transportation activities, indicates that the haul road is currently functioning at Level of Service (LOS) A. The jetty road, on the other hand, is operating at LOS C, which reflects a moderate to high traffic volume. These findings confirm that the haul road is within the safe capacity thresholds stipulated by the Indian Roads Congress (IRC) guidelines,

however Jetty road requires widening. Accordingly, the existing infrastructure is deemed sufficient to accommodate both the present and anticipated traffic volumes associated with the expansion of clinker and limestone production. In light of these outcomes, a series of technical recommendations has been formulated to achieve operational efficiency and thus help to enhance road safety.

Evaluation and Testing of SPG drivers

Sponsoring Agency: Special Protection Group (SPG), 9-Race Course Road, New-Delhi-110001

Duration of the project: From Jan 2024 to September 2024

Broad Objectives: Evaluation & Testing of the Drivers

In this project 114 from Special Protection Group were administered, different psychomotor ability test and driving tests i.e. Car driving simulation test, action judgment test, and simple and complex reaction time test, depth perception test (judgment of height, distance and width), night vision and glare test, visual acuity test, driver behavior rating scale (field testing). Three/ Four drivers on each day were tested & evaluated. Visual and psychomotor ability tests were administered to each subject.

i) Driving Simulation test: In this test, 24.66 % drivers were assessed as “Excellent” 30.33 % drivers fell under “Very Good” whereas 45 % drivers performed “Good”.

ii) Reactive capacity (Complex Reaction Time) Test: This test is done with Vienna Test system. In this test 7% drivers performed as “Excellent”, 22.33 % as “Very Good”, and 70.66 % performed as “Good”. None of the driver performed outstanding which shows that the present sample was having “Very Good”/ “Excellent” safety related performance.

iii) Driver Behavior Rating Scale: 23.66% drivers performed “Outstanding” 38% drivers performed “Excellent”, 28% drivers performed “Very Good” and 10.33% drivers performed as “Good”. Most of the driver performed “Very Good” highlighting the present sample characteristic.

COMPULSORY TESTS

i) Glare Recovery Test: This test measures how quickly the drivers can come out of the glare effect caused by the head lights of oncoming vehicles. This test is being conducted by Keystone unit. In the present sample 100 % drivers have “Outstanding” glare result.

ii) Night Vision Test: This test measures driver’s ability to see accurately in darkness. This test is being conducted by Keystone unit. In the present test 100% drivers have “Outstanding” night vision result.

iii) Road Sign Test: This test has been developed to measures the awareness level of the Drivers related to different (mandatory, information, warning signs of the road). In this test 49.66 % performed “Outstanding”, 30.33 % performed “Excellent”, and 20 % performed “Very Good”, which shows that some drivers have to improve in the awareness regarding road signs and road rules.

iv) Visual Acuity Test: This test measures the sharpness of driver’s vision which is basic requirement for safe driving. This test is performed by using Keystone unit. This test measures Driver Vision (Far & Near). Most of drivers were having outstanding eye sight (6/6).

v) Eye Tracker Test: It was used to find out attention behaviour of the drivers in terms of the Gaze plots & Heat maps.



Figure 6: Vision Test & Road Sign Test

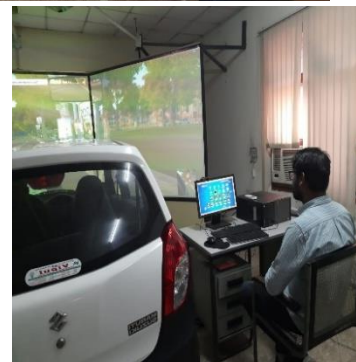
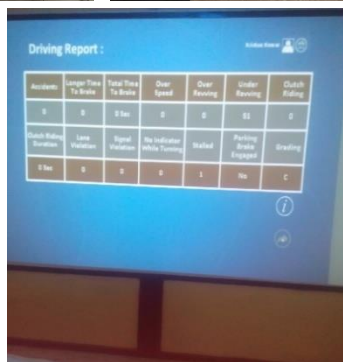


Figure 7: Driving Simulator Lab Test

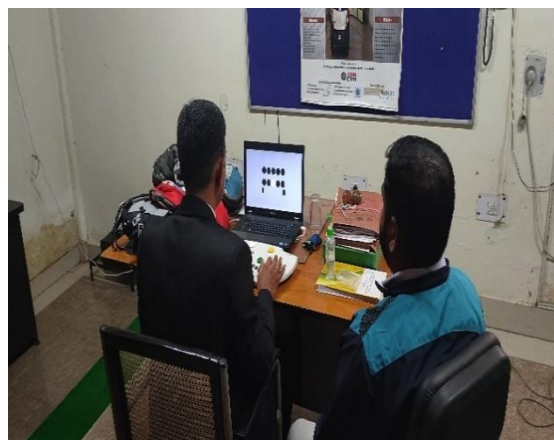
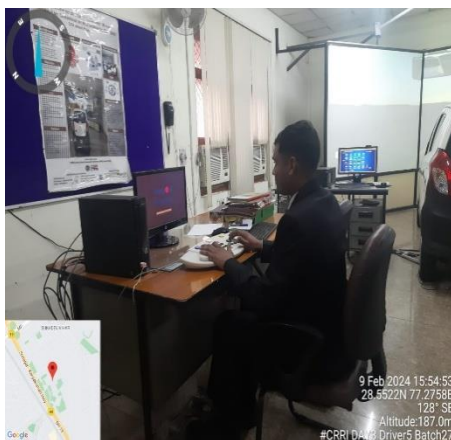


Figure 8: Vienna Test



Figure 9: Driver Field Test/Driver Behaviour Rating

Research & Development Management Divisions

- ❑ Information, Liaison & Training (ILT)
- ❑ Planning, Monitoring & Evaluation (PME)
- ❑ Knowledge Resource Centre (KRC)
- ❑ Computer Centre & Networking (CCN)
- ❑ Maharani Bagh Staff Quarters Maintenance
- ❑ Mechanical and Transport
- ❑ Quality Management
- ❑ राजभाषा
- ❑ Administration

Information, Liaison & Training

Introduction

The Information, Liaison & Training Division acts as a nodal point between the Institute and outside agencies for promotion, utilization and implementation of the Institute's knowledge base. The main activities of the division include the dissemination of information, research liaison, initiating marketing & technology transfer of the Institute's knowledge base; development of human resources & organizing specialized training programs for the highway and transportation professionals. Dissemination of R&D products is promoted through a variety of channels, viz. Publications of Annual Reports, Newsletters, Profiles / Brochures; Organisation of National Get-Together /Conferences/Workshops & Participation in Technical Exhibitions to popularize the significant achievements.

ILT makes efforts to disseminate information, activities, findings and recommendations by organizing various workshops and conferences at CSIR-CRRI through exchanging information and knowledge transfer on roads and roads related areas.

The main services offered by ILT include the following.

- ☐ Human Resource Development
- ☐ Specialized Training Programmes for Highway Engineers
- ☐ Dissemination of Road & Road Transport related Issues
- ☐ Important Days Celebrations / Events Management
- ☐ Technical Exhibitions related to Road and Road Transport
- ☐ Publications of Annual Reports, Newsletters & Profiles, etc.
- ☐ Initiating Technology Transfer and Marketing of the Institute's Knowledge Base
- ☐ International Scientific and Technological affairs
- ☐ Information Collection, Analysis & Management
- ☐ Organisation / management of Jigyasa Programme events
- ☐ Facilitation of M.Tech & B.Tech students for their Thesis / Dissertation works.

Human Resource Development Programme

Human resource development is a philosophy of management and is purported to upgrade the capabilities and professional skills of the personnel working in an organization to match the changing work demands. To enhance the professional capabilities of scientists and scientific staff for undertaking the R&D work in frontline areas of highway engineering and with the urge to develop technologies which have competitive edge and marketable strength, CSIR-CRRI has been devoted in human resources development. Realizing the need for skill development and capacity building of the human resources, training programmes were identified /selected. Staff members received specialized training in the areas of their expertise to cope up with the challenging assignments. The details of those who attended various training programmes and the specialized areas of training are given in section "Participation in Training Programs / Short Term Courses (Outside CRRI).

Institute's Publications

1. CSIR-CRRI Souvenir of 52nd Shanti Swarup Bhatnagar Memorial Tournament, November 14-16, 2024

CSIR-CRRI hosted 52nd Shanti Swarup Bhatnagar Memorial Tournament, Outdoor-2nd Zonal (volleyball and cricket) during November 14-16, 2024. As part of this tournament, a souvenir was prepared and published. The souvenir contains heartfelt wishes / messages from distinguished personalities, advertisements from various companies / CSIR laboratories, major projects undertaken by the Institute, information related to the tournament and its eight participating teams etc.

2. CSIR-CRRI Technical Profile 2025

During the year, CSIR-CRRI Technical Profile 2025 was published in January 2025. The Technical Profile 2025 contained latest achievements / significant contributions of the Institute along with calendar for year 2025.

3. CSIR-CRRI Field & Project Work Record Book 2025

During the year, CSIR-CRRI Field & Project Work Record Book 2025 was published in January 2025. The Field & Project Work Record Book 2025 contained latest information related to Head of Departments / Sections of the Institute along with date wise record entry book.

4. CSIR-CRRI 132nd Research Council Meeting Progress Report, June 26-27, 2024

The report contains detailed information related to the various events, conferences, workshops, training programs and other events organized by CSIR-CRRI and other information on participation in technical exhibitions, conferences, short term training programs (outside CSIR-CRRI), distinguished visitors to the Institute, deputation abroad and students' thesis / dissertation supervision etc. since the last RC meeting (November 28-29, 2023) till June 25, 2024 etc.

5. CSIR-CRRI 133rd Research Council Meeting Progress Report, January 23-24, 2025

The report contains detailed information related to the various events, conferences, workshops, training programs and other events organized by CSIR-CRRI and other information on participation in technical exhibitions, conferences, short term training programs (outside CSIR-CRRI) by CSIR-CRRI staff members, distinguished visitors to the Institute, deputation abroad and students' thesis / dissertation supervision etc. since the last RC meeting (June 26-27, 2024) till January 22, 2025 etc.

6. CSIR-CRRI Technical Posters for showcasing in Mega Exhibitions

Various technical posters related to latest major projects undertaken, equipment / facilities developed by CSIR-CRRI were compiled, edited and printed / published for showcasing in mega exhibitions.

7. CSIR-CRRI Training Calendar / Brochure for the year 2024-2025

A training calendar that contains title and schedule of each regular and customized training programme was also published during the period.

11. Documentation of materials for CSIR Annual, Quarterly and Monthly Reports etc.

During the period, various materials were documented for CSIR Annual, Quaterly & Monthly Reports and others publications and submitted to the concerned departments / sections in time.

Technical Exhibitions

The Institute participated in the following technical exhibitions and depicted its expertise, capabilities and R&D achievements during the year.

1. Mega Exhibitions of CSIR One Week One Theme (OWOT) Campaign

As part of this OWOT Campaign, CSIR-CRRI in association with four other sister CSIR laboratories (viz. CSIR-SERC, CSIR-NBRI, CSIR-AMPRI, and CSIR-CMERI) organized various events and mega exhibitions under the Civil Infrastructure & Engineering (CIE) theme across India (New Delhi, Ahmedabad, Durgapur, Chennai and Bhopal) during September 02 to 06, 2024.



2. Mega Expo of CSIR Foundation Day 2024

CSIR completed its 83rd year of foundation. In this connection, various events were organized from 26th to 30th September 2024 at CSIR as well as CRRI levels. As part of this celebration, two technical thematic exhibitions were organized by CSIR to showcase, connect, and collaborate among various stakeholders. First one was organised at NASC Complex, Pusa, New Delhi on September 26, 2024 while other one was organised at National Science Centre, New Delhi during September 27-29, 2024. CSIR-CRRI actively participated in both the above mega exhibitions.



3. 12th Edition Traffic Infratech Expo, Pragati Maidan

CSIR-CRRI participated in the 12th Edition of TrafficInfraTech Expo 2024 during October 22-24, 2024 at Pragati Maidan. During the expo, CSIR-CRRI showcased some of its major projects and achievements in the field of Road and Transportation Sector.



4. IISF-2024 Curtain Raiser Outreach Event at CSIR-CRRI

CSIR-CRRI celebrated IISF-2024 Curtain Raiser Outreach Event at CSIR-CRRI on November 05, 2024. The event was graced by Dr. SouvikMaiti, Director, CSIR-IGIB Chief Guest and Prof. Rajeev Singh, State Secretary, Vijnana Bharti as Guest of Honor. As part of this celebration, an exhibition was also organised.

5. Exhibition of 83rd Annual Session of Indian Roads Congress

CSIR-CRRI participated in the technical exhibition of the 83rd Annual Session of Indian Roads Congress during November 08-11, 2024 at Raipur, Chhattisgarh. During the expo, CSIR-CRRI showcased some of its major projects and achievements in the field of Road and Transportation Sector.

6. Exhibition of 10th Edition of India International Science Festival (IISF)-2024

CSIR-CRRI participated in the technical exhibition of the 10th Edition of India International Science Festival (IISF)-2024 organized during November 30- December 03, 2024 at IIT Guwahati, Assam. During the exhibition, CSIR-CRRI showcased some of its major projects and achievements in the field of Road and Transportation Sector and signed a MoU with Rajasthan Technical University, Kota, Rajasthan.



7. 7th Edition of Bauma Conexpo India 2024

CSIR-CRRI participated in the technical exhibition of the 7th Edition of Bauma Conexpo India 2024 organized during December 11- 14, 2024 at Greater Noida, Uttar Pradesh. During the exhibition, CSIR-CRRI showcased some of its major projects and achievements in the field of Road and Transportation Sector.

8. Exhibition on ICC Conference 2025: Emerging Technologies Redefining Highways, Rural Roads and Infrastructure

One-day national conference on “ICC Conference 2025: Emerging Technologies Redefining Highways, Rural Roads and Infrastructure” was jointly organized by CIDC-ICC and CSIR-CRRI, New Delhi on February 07, 2025 at CSIR-IGIB Auditorium, New Delhi. The conference was graced by Shri Raghu Srinivasan, Lieutenant General, Director General, Border Roads Organization (BRO) as Chief Guest. Various stakeholder presentations and deliberations were made during the conferences. Besides, a technical exhibition was also organized for the sponsors and organizers of the conference.



9. Rise in India 2025 – The Mega Exhibition

CSIR-CRRI participated in the ‘Rise in India 2025 – The Mega Exhibition’, an event aimed at showcasing India’s advancements across various sectors was held during February 20-22, 2025 at HRIT University, Ghaziabad, Uttar Pradesh. During the grand exhibition, CSIR-CRRI showcased its significant major projects and other achievements / capabilities.

10. Global Road Infratech Summit & Expo 2025

CSIR-CRRI actively participated in the Global Road Infratech Summit & Expo 2025, organized by the International Road Federation – India Chapter (IRF-IC), during March 06-07, 2025 at The Lalit Hotel, New Delhi, India. Under the theme “Vision Zero: Sustainable Infratech and Policy for Safer Roads,”. The event showcased and emphasized road safety through improved infrastructure, innovative technology, and effective management, leading the charge in India’s infrastructure and mobility revolution. During the summit, Prof. Manoranjan Parida, Director, CSIR-CRRI, was conferred with the Road Safety Champion Award by the International Road Federation.



Other Activities

Dissemination of Publications

The Institute’s R&D publications such as its Annual Report, Newsletters and Training Calendars were sent to highway professionals, engineering & academic organizations in the country and abroad. The publications are meant to disseminate R&D based information to the road and transportation engineering professionals / fraternity.

Technical Queries

Technical queries concerning the R&D activities and technical know-how of the Institute were attended. Information on various technologies developed by the Institute were sent to a number of organizations dealing with databases, technology transfer and consultancy assignments pertaining to roads and road transportation.

Press Publicity

Various local press approached CRRI for information on research & developments and studies carried out by the Institute on roads, flyovers, bridges etc. The needed information was provided to the press for the purpose of awareness and publicity.

Press clipping pertaining to road and road transport in particular and Science and Technology in general were culled out from various National dailies and were brought to the notice of the Director and circulated to staff members for information, if needed. These were also compiled in the form of documents.

Publicity through CRRI Advertisement

To popularise the Institute's past R&D achievements and present R&D programmes, capabilities, facilities and expertise, the Institute issued various advertisements at various forums. One such forum was the scientific documents brought out by various organizations on different occasions. The Institute published its various advertisements in the documents brought out by the various organizations on the different occasions.

Publication of Research Outputs

Research Papers emanating from the R&D work were prepared and submitted for publication in various National & International Journals/Conferences by individual staff members. Once the papers were accepted for publications, cases pertaining to deputation of CRRI Scientists to attend various Conference/Symposia were processed by this division.

Visitors

Visits of distinguished professionals and delegates from various organizations related to road and road transportation from India and abroad to CRRI were organized facilitated during the year. The details of the visitors during the year are given in Chapter "Visitors".

Linkages with Professional Bodies

The Institute is represented as the Institutional Member on the various technical, executive and administrative committees and groups of various National and Foreign Organizations. These organizations maintain their databases including R&D activities, organizational heads, etc. of the Member Institutions and regularly seek the updated information. The updated information on CRRI was provided to various organizations and the annual subscriptions were paid to continue the membership. The Institutional membership of the Institute is given in section "Membership of National and International Organisations".

Training Programmes / Courses

Regular Training Programmes

Skill development of human resources by imparting training to the engineers of the user agencies / organizations is an integral part of the research and development programme of the Institute. During the last fiscal year, following refresher courses / training programmes for engineers / professionals of the user organizations related to roads and road transportation in the Govt., Public & Private Sectors were organized. Through these programmes, the Institute imparted training to the junior, middle and senior level engineers of the user organizations and acquainted them with the latest research based information on various aspects of road and road transportation.

During the last fiscal year, the institute conducted following regular training programmes as listed below.

1. CSIR-CRRI conducted a 6-day regular training program on “Pavement Evaluation Techniques and their applications for Maintenance and Rehabilitation” during September 09-13, 2024 at CSIR-CRRI, New Delhi. The training program was inaugurated by Prof. Manoranjan Parida, Director, CSIR-CRRI, and attended by 34 participants from various parts of India.



2. CSIR-CRRI conducted a 6-day regular training program on “Road Asset Management (RAM)” during October 14-19, 2024 at CSIR-CRRI, New Delhi. The training program was inaugurated by Prof. Manoranjan Parida, Director, CSIR-CRRI, and attended by 26 participants from various parts of India.



3. CSIR-CRRI conducted a 5-day regular training program on "Design of Bridge Structure and Foundation" during October 21-25, 2024 at CSIR-CRRI, New Delhi. The training program was inaugurated by Prof. Manoranjan Parida, Director, CSIR-CRRI, and attended by 16 participants from various parts of India.



4. CSIR-CRRI conducted a 5-day training program on "Design, Construction, Quality Control and Maintenance of Rigid Pavements" during December 09 – 13, 2024, at CSIR-CRRI, New Delhi. The training program was inaugurated by Prof. Manoranjan Parida, Director, CSIR-CRRI, and attended by 11 participants from various parts of India.



5. CSIR-CRRI conducted a 5-day training program on "Quality Assurance, Health Assessment and Rehabilitation of Bridges" during December 30, 2024- January 03, 2025, at CSIR-CRRI, New Delhi. The training program was inaugurated by Prof. Manoranjan Parida, Director, CSIR-CRRI, and attended by 46 participants from various parts of India.



6. CSIR-CRRI conducted a 4-day regular training program on “Geo-Spatial Technology (GIS, GPS, RS, etc.) for Roads and Transportation” during January 06 – 09, 2025, at CSIR-CRRI, New Delhi. The training program was inaugurated by Prof. Manoranjan Parida, Director, CSIR-CRRI, and attended by 13 participants from various parts of India.



7. CSIR-CRRI conducted a 5-day regular training program on “Design, Construction and Quality Control in Flexible Pavements” during January 20 – 24, 2025, at CSIR-CRRI, New Delhi. The training program was inaugurated by Prof. Manoranjan Parida, Director, CSIR-CRRI, and attended by 17 participants from various parts of India.



Customized Training Programmes

Besides the online regular training programmes, the Institute also conducted customer oriented /customized training programmes to meet the specific training requirements of the user agencies.

During the last fiscal year, the Institute conducted the following customized training programmes as listed below.

1. CSIR-CRRI conducted 5-day customized training programme on “Latest Trends in the Design, Evaluation and Maintenance of Pavement” during June 20,22,24,26,28, 2024. The training program was inaugurated by Prof. Manoranjan Parida, Director, CSIR-CRRI and attended by 29 officials sponsored by Greater Noida Industrial Development Authority (GNIDA), Uttar Pradesh.



2. CSIR-CRRI conducted customized training programme on “Road Network Planning for the Engineers of PWD Meghalaya” on July 23, 2024 and July 25, 2024 at Shillong, Meghalaya. The training program was inaugurated by Prof. Manoranjan Parida, Director, CSIR-CRRI and attended by 154 officials sponsored by Meghalaya Public Works Department, Govt. of Meghalaya.
3. CSIR-CRRI conducted a 3-day customized training program on “Design, Construction and Quality Control in Flexible & Rigid Pavements for the MPPWD Engineers” during March 24–26, 2025, at CSIR-CRRI, New Delhi. The training program was inaugurated by Prof. Manoranjan Parida, Director, CSIR-CRRI, and attended by 30 officials sponsored by Madhya Pradesh PWD, Govt. of Madhya Pradesh, India.



4. CSIR-CRRI conducted a 5-day training program on "The Applications of Geosynthetics in Road Infrastructure Projects” during March 18-22, 2025 at Sagi Rama Krishnam Raju Engg. College, Bhimvaram, Andhra Pradesh. The training program was inaugurated by Prof. Manoranjan Parida, Director, CSIR-CRRI, and attended by 120 students from the college.
5. CSIR-CRRI conducted a 5-day customized training programme for Andaman Public Works Department (APWD) during September 16-19, 2024 at Sri Vijaya Puram (Formerly Port Blair, Andaman and Nicobar). The Inaugural of the event was graced by Chief Secretary, A&N Administration, Shri Keshav Chandra, IAS, as the chief guest, along with APWD Secretary Ms. Purva Garg, IAS, Prof. Manoranjan Parida, Director, CSIR-CRRI and Chief Engineer Shri T.K. Prijith Rekh, and other senior officers.

15-day Road Safety Audit Certification Course

1. CSIR-CRRI conducted 15-day Certification Course on “Road Safety Audit and Other Road related aspects” during April 15-30, 2024. The training program was inaugurated by Prof. Manoranjan Parida, Director, CSIR-CRRI and attended by many participants from various parts of India.



2. CSIR-CRRI conducted a 15-day Certification course on “Road Safety Audit and Other Road Safety Related Aspects” from November 18 – December 03, 2024, at CSIR-CRRI, New Delhi. The training program was inaugurated by Prof. Manoranjan Parida, Director, CSIR-CRRI, and attended by 70 participants from various parts of India.



Any other Training Programs

CSIR-CRRI organized a regular Hindi Parangat classes for the session of July-November 2024 under Hindi Teaching Scheme, Deptt. of Official Language, Ministry of Home Affairs, GoI w.e.f July 23, 2024. Around 25 staff members of the Institute participated in the training.



Planning, Monitoring & Evaluation

The PME Division serves as the central hub for R&D management at CSIR-CRRI. Its core mandate encompasses the comprehensive planning, monitoring, and evaluation of diverse project categories, including sponsored, collaborative, grant-in-aid, and in-house R&D. Additionally, the Division manages consultancy and technical services, Intellectual Property (IP) portfolios, and business development while providing critical technical support to the Director, the Management Council (MC), and the Research Council (RC).

The ongoing activities of the PME Division are detailed below:

Project Planning & Strategic Resource Management

The Division streamlines the transition from research concepts to formal projects and ensures resource availability:

- **Proposal Facilitation:** PME interacts with scientists to prepare and submit R&D proposals to various funding agencies. This includes processing in-house projects and CSIR-funded initiatives (Fast Track Translational Projects, Focus Based Research, R&D Seed Fund, Facility Creation Projects etc.) and assisting in the submission of proposals to external departments like NHA, MoRTH and DST.
- **Budgeting & Procurement Planning:** The Division formulates the annual R&D budget for the Institute and prepares the comprehensive Procurement Plan to ensure that R&D activities are supported by necessary resources.
- **Infrastructure Prioritization:** PME compiles the R&D Equipment Priority list, ensuring that institutional infrastructure development aligns with strategic research goals.
- **Standardization of Proforma:** The Division designs and maintains project-related proforma, ensuring they remain updated in accordance with ISO requirements and CSIR guidelines.
- **Scrutiny and Registration:** Upon receipt of funding and in-principle approval, PME registers and scrutinizes all projects, assigning unique identity numbers to ensure systematic tracking from inception.

Monitoring & Performance Tracking

Continuous oversight ensures that research remains on track and aligned with institutional goals:

- **Progress Reporting:** The Division Compiles Monthly and Quarterly progress reports for submission to CSIR HQ, providing higher authorities with data for institutional evaluation.
- **Divisional Review Meetings:** PME coordinates divisional review meetings chaired by the Director to assess project status, address bottlenecks, and ensure adherence to technical schedules.
- **Performance Analytics:** PME generates periodic reports on institutional performance parameters, such as technologies developed and licenses transferred, for submission to CSIR.
- **Data Synthesis:** PME manages the input of institutional data into the CSIR-Data Infographics System (C-DIS) and the SCDD-Data Collection Portal (S-DCP) to facilitate high-level data mining.
- **Financial Tracking:** The Division records and monitors External Cash Flow (ECF) from agencies such as NHA, NRDA, and MoRTH, comparing actual receipts against established targets.

Statutory Compliance & Inter-Agency Coordination

PME ensures that all activities meet technical, legal, and administrative standards:

- **Audit & Liaison:** The Division coordinates with the CAG Audit team and the GST department on all related institutional issues. It also maintains constant liaison with CSIR HQ regarding the management of various CSIR-funded projects.
- **Financial Compliance:** PME manages monthly GST-related activities (GSTR-1, 3B) and coordinates with the Finance and Accounts sections to ensure statutory compliance.
- **Advisory Support:** The Division provides data and status updates to the Research Council (RC) and Management Council (MC), enabling these bodies to offer strategic guidance and ratify project activities.
- **Stakeholder Feedback:** PME conducts Customer Satisfaction Evaluations for completed projects to measure and maintain high service standards.
- **Technical & Legislative Support:** The Division addresses technical queries from internal and external stakeholders and prepares replies to Parliament questions.

Digital Infrastructure & Business Development

The Division leverages technology to enhance institutional efficiency and commercial reach:

- **Systems Development:** PME maintains and enhances a web-based "Project Management System." This integrated platform includes modules for expenditure monitoring, manpower deployment, and online invoice generation.
- **Software Implementation:** The Division oversees the implementation of CSIR automation tools, including ACCESS and AMS software.
- **Technology Transfer:** PME facilitates technology transfer agreements and dissemination activities, supporting scientists in industry interactions and forum presentations.
- **IP Protection:** The Division manages the security of Intellectual Property by assisting scientists in filing patents, trademarks, and copyrights resulting from research outcomes.

Knowledge Resource Centre

Knowledge Resource Centre, a hub of learning resources, is one of the central facilities working with a mission to provide quality information resources in all forms to the academic and research community of CSIR-CRRI, New Delhi. The Knowledge Resource Centre of CSIR-CRRI plays an important role in advancing the research and academic mission of CSIR-CRRI and in facilitating the creation and dissemination of knowledge. It is a hub of learning resources and one of the central facilities, working with a mission to provide high-quality information resources in all forms to the academic and research community of CSIR-CRRI. With a commitment to excellence, the Knowledge Resource Centre plays a vital role in the acquisition and dissemination of all types of information resources, providing timely and innovative services that support the academic and research needs of the user community. The range and quality of services offered by the Knowledge Resource Centre are comparable to those of any modern library in India and meet international standards.

The Knowledge Resource Centre has developed a well-balanced and up-to-date collection of over 80,000 books, standards, periodicals, conference proceedings, maps, audio/video cassettes, bibliographic databases, etc., containing worldwide information in the field of highway engineering, traffic and transportation engineering, planning & environment, bridge engineering, geotechnical engineering, pavement and related areas. Reading material ranges with respect to the subject area from



core science & technology to yoga & meditation and also with a massive collection of 2500+ Hindi Books. The publication also ranges in terms of year of publication from the latest to as old as the 18th century. Apart from the procurement of print books, the library achieved phenomenal progress in the subscription of e-resources through National Knowledge Resources Consortium (NKRC) and individually, which includes more than 100+ e-journals/Magazines, e-conferences, e-standards (Indian Standards on Civil Engineering) to its digital collection and KRC OPAC making 24 x 7 Library in a real sense on the institute-wide network. CRRI KRC is an automated library with an RFID system.

Library Collection at a Glance

The Knowledge Resource Centre has a rich collection of print and electronic resources that support the academic and research needs of the CSIR-CRRI fraternity. The collection includes books, journals, databases, software tools, theses and dissertations, magazines and newspapers, etc. The library supports more than 500 users, including students, research scholars, scientists, and staff.

The total collection of the library as on 31st March 2025 stands as follows:

Collection (Print & Electronic)	Quantity	Collection (Print & Electronic)	Quantity
Books	57090+	Full-Text Databases	03
E-Journals	80+	Plagiarism Detection Tools	01
Maps	688	Writing Assistance Tools	01
Microforms	655	Video Cassettes	122

Institute PhD Theses and Dissertations	70+	Bound Volume of Periodicals	15340+
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Knowledge Resource Centre Services & Facilities

❖ Library Membership ❖ RFID-Based Library Circulation ❖ OPAC Search (Online Public Access Catalogue) ❖ Circulation Service (Issue/Return/Renewal/Holds) ❖ Institutional Repository of CRRRI ❖ Electronic Current Awareness in Road Transport (E-CART) ❖ Document Delivery Service ❖ Research Support Service	❖ Library Orientation Programme ❖ Reference Service ❖ Fully Airconditioned Reading Area ❖ Wi-Fi (Wireless Fidelity) Facility ❖ Raj Bhasha (Hindi) Collection ❖ Plagiarism Detection Tools ❖ Grammarly, a comprehensive digital writing assistant Tool ❖ Library Awareness Program ❖ QR Code-Based Library Services
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Print and Electronic Resources

The Knowledge Resource Centre has a rich collection of print resources, including books, theses, Journals, and magazines. The bibliographical information of these resources are accessible through the Library Catalogue or OPAC. The institute also has a rich collection of electronic resources, including access to 100+ electronic Journals and databases through the Institute Subscription and the National Knowledge Resources Consortium (NKRC). These e-resources are being subscribed to and renewed annually.

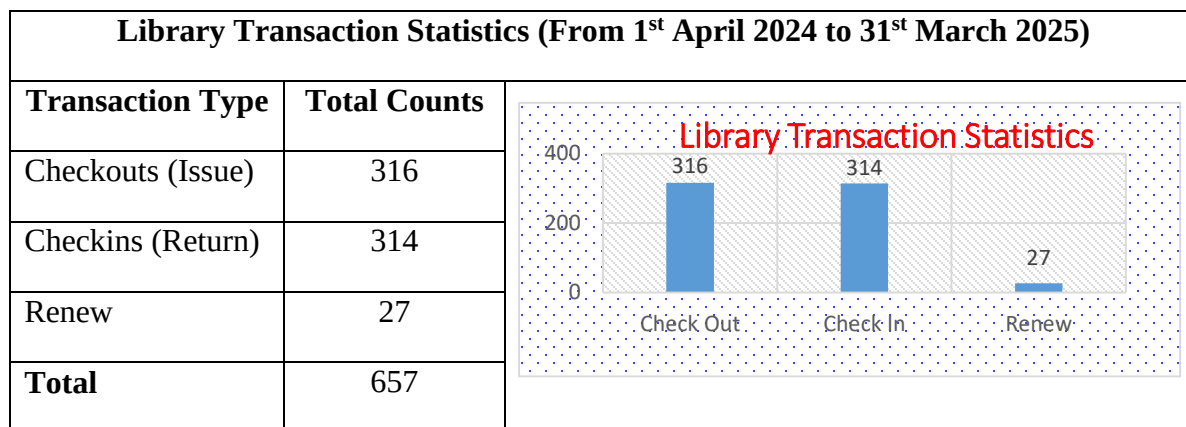
The e-resources subscribed by the Knowledge Resource Centre are as follows:

List of E-Resources (National Knowledge Resources Consortium)

- | | |
|--|---|
| ❖ American Society of Civil Engineers (ASCE) | ❖ ICE Publishing |
| ❖ American Society of Testing and Materials (ASTM) | ❖ IEEE Xplore Digital Library |
| ❖ ASTM International Standards & Engg. Digital Libraries | ❖ Springer Journals |
| ❖ Institution of Civil Engineers (ICE) | ❖ Elsevier Science Direct |
| | ❖ CSIR-NIScPR |
| | ❖ Indian Standards on Civil Engineering |

Library Automation

The Knowledge Resource Centre has automated all its housekeeping operations using an open-source integrated library management system software “**Koha**”. It supports the online public access catalogue (OPAC) through which a user can search books, check issued books, renew and reserve books. Further, it automatically sends all transaction alerts to users, including overdue notices and book due reminders. The transaction statistics of the library from 1st April 2024 to 31st March 2025 is given below (**Source:** Koha).



Out-reach Programmes of the Knowledge Resource Centre

Inauguration of Hindi Book Exhibition and Quiz Competition by our esteemed Director, Prof. Manoranjan Parida



KRC organised various competitions for the children of CRRI staff on the occasion of CSIR Foundation Day



Bhagavad Gita Gifted to KRC by Honorable Director Prof. Manoranjan Parida



Visit of Renowned Linguist Dr. Vimlesh Kanti Verma to KRC and Gift his Authored Books to KRC



Computer Centre & Networking

Computer Centre and Networking Division (CCN Division) fulfils all the IT requirements of this institutes, and provides ICT Support and Services in various R&D activities, execution of consultancy services and handling HRD services etc.

This division is responsible for recommending and implementing information technology (IT) strategies, policies, and procedures. It evaluates organizational needs and provides various IT services, including LAN, Wi-Fi, network security, website and web-based application development and maintenance for both internet and intranet, email services, video conferencing and web meetings, and IT infrastructure maintenance and upgrades.

The comprehensive list of regular activities and IT essential Services provided by CCN division are listed below:

1. IT Infrastructure Management

The CCN Division is responsible for the planning, procurement, installation, configuration, and maintenance of all IT hardware including desktop computers, laptops, workstations, printers, scanners, and related peripherals. The division ensures proper installation and updating of operating systems, performs preventive and corrective maintenance, and manages the lifecycle of IT assets from procurement to disposal.

2. LAN Administration and Maintenance

The CCN Division manages the design, implementation, operation, and maintenance of the organization's network infrastructure, including Local Area Networks (LAN), Wide Area Networks (WAN), Wi-Fi connectivity, and internet services. It ensures reliable and secure network connectivity, monitors network performance, manages IP addressing schemes, configures and maintains network devices such as switches and routers, and ensures secure remote access through VPN and firewall configurations.

3. Secured Wi-Fi:

CCN operates the connectivity through a fully networked campus with state-of-the-art IT infrastructure, computing & communication resources which offers Scientists and Research Scholars the facility of 24x7 uninterrupted, super-fast, reliable and secure Wi-Fi Internet Access having 53 Access Points and 1GBPS LAN Connectivity through NKN to carry out the R&D works with ease.

4. Server Management

The CCN Division is responsible for the installation, configuration, operation, and maintenance of all servers including Intranet Server, Application servers, database servers, and Centralised Antivirus Server.

5. Cybersecurity and Information Security

The CCN Division ensures the security of organizational IT systems, networks, and data by implementing appropriate cybersecurity measures such as antivirus protection, firewalls, intrusion detection and prevention systems, and access control mechanisms. It monitors and prevents cyber threats including phishing, malware, and unauthorized access, and ensures secure authentication and authorization of users. The division also enforces IT security policies, conducts security audits, and promotes cybersecurity awareness among users. The regular Cyber Security awareness programmes and training also conducted by CCN division. A dedicated Cyber Security portal is hosted and maintained by CCN Division in Intranet <http://172.16.2.100/cyber-awareness> for Cyber Security awareness.

The regular IT security guidelines and threat-handling advisories are being shared with all user groups to enhance cyber safety and resilience against emerging threats through the Cyber Swachch Kendra email of CSIR-CRRI (csk.crri@csir.res.in). aiming to strengthen cyber hygiene, promote safe IT practices, and ensure protection of institutional IT infrastructure from the latest cybersecurity threats.

6. Email and Communication Systems Management

The CCN Division manages the organization's official email systems and communication platforms, including creation and maintenance of email accounts, Migration of email accounts to new platform and ensuring secure and uninterrupted email services. The division also supports video conferencing systems and digital communication tools to facilitate seamless collaboration and communication. Various group emails and role based email accounts also facilitated by this division

7. Software Management

The CCN Division is responsible for the installation, configuration, maintenance, and updating of all licensed software used within the organization. It ensures compliance with software licensing agreements, manages software inventory, and provides support for specialized software applications required for administrative, technical, and research purposes.

8. User Support and Helpdesk Services

The CCN Division provides technical support and assistance to users for resolving hardware, software, and network-related issues. It installs and configures IT systems for new users, troubleshoots technical problems, and ensures minimal disruption to organizational activities.

9. Website and Web Services Management

The CCN Division is responsible for the development, maintenance, and updating of the organization's official website of CSIR-CRRI i.e crriidom.gov.in and web-based various applications. This Bi-lingual website is regularly updated with current news& events, tender details, training programme details, Information on RTI Suo-motu disclosure etc.

CCN also manages web servers, domain names, and hosting services, and ensures that websites remain functional, secure, and up-to-date. The division also supports internal web portals and ensures proper access and security controls.

10. AEBAS Implementation:

Maintenance of Aadhar Enabled Bio-metric Attendance devices in CRRI is being done by CCN Division. BAS portal operation, Device Activation and maintenance, RD Services update etc also carried out as and when required

11. RTI Online:

Nodaling with the RTI online, CIC RTI portal related tasks are done by CCN Staff. Implementation of Suo-Muto Disclosure in CRRI Web, Submission of Quarterly Reports and Transparency Audit are done by this division quarterly and annually

12. Emerging Technologies Support

The CCN Division evaluates, implements, and supports emerging technologies such as cloud computing, artificial intelligence, data analytics, and Internet of Things (IoT), wherever applicable. It assists the organization in adopting modern technologies to improve efficiency, enhance research capabilities, and support digital transformation initiatives.

Other Activities :

Skill Development /Training Programme :

Sh. S, Mariappan Senior Technical Officer(3) a two-day Cyber Security Conference titled “**Cybersecurity in the Dynamic Digital-Age,**” organized by M/s. Strategic Inc. from 23 and 24-08-2024

Sh. S, Mariappan Senior Technical Officer(3) and Sh. Vivek Dubey, Senior Technical Officer(3) has attend a one-day “**CISO Workshop on Cyber Security**” Organised by National e-Governance Division (NeGD), Meity. scheduled for 18th September 2024 at the Stein Auditorium, India Habitat Centre.

Observance of Cyber Jagrukta Month – October 2024 in CSIR-CRRI

CCN Division has celebrated/ observed “Cyber Jagrukta Month” During October 2024, and CCN has organised various awareness activities and training programmes. The following awareness activities were conducted

- “See Yourself in Cyber” Pledge
- Display of Cyber Awareness Materials
- Regular Updates on the Cyber Security Portal of CRRI’s Intranet Site
- Cyber Swachhta Activities (Removal of e-waste & Identification of vulnerable systems)
- Offline Data Security Drive – Implementation of BitLocker
- Half-Day Training Programs
- Guest Lectures by Cybersecurity Experts
- Cybersecurity Awareness Competitions (Essay, Poster and Quiz Competitions)

1. Cyber Security Awareness Camp at Maharani Bagh Residential Campus :

CCN Division has organised a half-day Cyber Security Awareness Camp was organized on 19-10-2024 by Sh. S. Mariappan, CISO, Sh. Vivek Dubey, DCISO, Secretary RWA, and for the wards of CRRI staff members. The camp included an interactive learning session on emerging cyber threats and ways to tackle them. Additionally, a poster competition was held for the children to encourage creative engagement with cyber security themes.



Cyber Security Awareness Camp at Maharani Bagh Residential Campus

2. Half-Day Training Programs

To educate staff members of CRRI on the evolving threat landscape and provide simple, effective steps to protect themselves, their information, and technology, The following lectures were delivered on **22nd October 2024**.

- i. **Cyber Security - Policies & Guidelines** delivered by **Sh. S.Mariappan**, Sr Technical Officer(3) & CISO
- ii. **Cyber Safety – Settings, Do’s and Don’ts** – delivered by **Sh.Vivek Dubey**, Sr Technical Officer& DCISO



Cyber Security Awareness cum Training Lecture given by Sh. S. Mariappan & Sh. Vivek Dubey



Cyber Security Awareness Month 2024, Closing Event

Engineering Services

Table 1: List of Completed Works at ESD (2024-2025)

Sl. No.	Name Of Work
1.	Annual Maintenance Contract for Institute Office Campus at CRRI, New Delhi-110025.
2.	Construction Of cafeteria building1 st floor (Now AcSIR) at CRRI NEW DELHI 110025.
3.	Renovation of PED, GTE Division and Administrative Block (E-II Section) at CRRI, New Delhi.
4.	Supply, Installation, Testing and Commissioning of Street lights and Flood lights along with laying of cables at CSIR-CRRI, New Delhi-110025.
5.	Geotechnical Investigation for Construction of Multi-Story Building at CSIR-CRRI, Office Campus, New Delhi-110025.
6.	Construction of Laboratory Waste Bins in Front of R.P Division at CSIR - CRRI New Delhi 110025.
7.	Internal / External Painting Work of CRRI Institute Campus Building Blocks at Mathura Road, New Delhi-110025.
8.	Cleaning, Sanitation ad Housekeeping Services for CSIR-CRRI Bldgs. & Office Campus, new Delhi-110025 and CSIR-CRRI Staff Colony at Maharani Bagh, New Delhi-110065.

Table 2 : List of Ongoing Works at ESD (2024-2025)

Sl. No.	Name Of Works
1.	Annual Maintenance Work (Civil) for Institute & MRSQ Campus at CRRI, New Delhi - 110025.
2.	Upgradation of Rain Water Harvesting System at CSIR-CRRI, New Delhi - 110025.
3.	Cleaning, Sanitation and Housekeeping Services for CSIR-CRRI Bldgs. at Office Campus, Mathura Road Staff Quarter and CRRI Staff Colony at Maharani Bagh, New Delhi.
4.	Providing & Controlling the Fogging, larvae, Rodent & Termite etc. at CRRI office & MRSQ Campus, New Delhi - 110025.
5.	Machined Cleaning of Drain lines, Manhole and Old Sewer Well at CRRI Office & MRSQ Campus, New Delhi - 110025.
6.	Management of Solid Waste of Bulk Generation of CRRI Institute Campus and MRSQ Campus through DDSIL.
7.	Renovation/Refurbishment of Ground Floor Flexible Pavement Division at CRRI, New Delhi.
8.	Renovation of ground floor Lab corridor at CSIR-CRRI, Mathura Road, New Delhi-110025.
9.	CAMC of CCTV Camera System at Institute campus of CSIR-CRRI, New Delhi - 110025.
10.	Annual Maintenance Contract (AMC) of 380 KVA & 750 KVA DG set (Cummins Make) equipped with Dual Fuel Kit at CSIR-CRRI, New Delhi - 110025.
11.	Comprehensive Annual Maintenance Contract for the Passenger Lifts of Administrative Block and Library Building at CSIR-CRRI, New Delhi - 110025.
12.	CAMC of Water Purifier and RO's at CSIR-CRRI, New Delhi - 110025.
13.	AMC of Fire Extinguishers at CSIR-CRRI, New Delhi - 110025.
14.	Comprehensive Annual Maintenance Contract (CAMC) of DRRI-VRV-AC of DRRI Office, PA Room, Conference Hall of Director Office at CSIR-CRRI, New Delhi-110025.

वर्ष 25-2024 के दौरान ESD से संबंधित पूर्ण किए गए कार्यों के photographs निम्नानुसार है।

1. Annual Maintenance Civil के अंतर्गत CSIR-CRRI के मुख्य द्वार पर New Signage के कार्य की कुछ तस्वीरें।



2. CSIR-CRRI के Cafeteria First Floor (Now AcSIR) के नवीनीकरण के कार्य की कुछ तस्वीरें।

कार्य का नाम - Construction Of cafeteria building 1st floor (Now AcSIR) at CRRI NEW DELHI 110025.



3. Renovation of GTE Division, PED and Administrative Block (E-II Section) at CRRI, New Delhi के कार्य की कुछ तस्वीरें।

GTE Division



PED



4. CSIR-CRRI में LED Street lights, LED Bollard Lights, LED Flood lights के installation तथा Underground Cable laying के कार्य की कुछ तस्वीरें।



5. Geotechnical Investigation for Construction of Multi-Story Building at CSIR-CRRI, Office Campus, New Delhi-110025 के कार्य की कुछ तस्वीरें।



6. Construction of Laboratory Waste Bins in Front of R.P Division at CSIR - CRRI New Delhi 110025 के कार्य की कुछ तस्वीरें।



7. Internal / External Painting Work of CRR I Institute Campus Building Blocks at Mathura Road, New Delhi-110025 के कार्य की कुछ तस्वीरें।

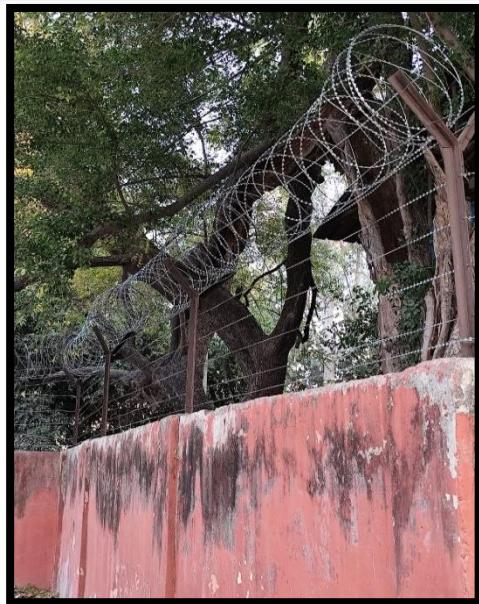


8. Cleaning, Sanitation and Housekeeping Services for CSIR-CRRI Bldgs. & Office Campus, new Delhi-110025 and CSIR-CRRI Staff Colony at Maharani Bagh, New Delhi-110065 के कार्य की कुछ तस्वीरें।

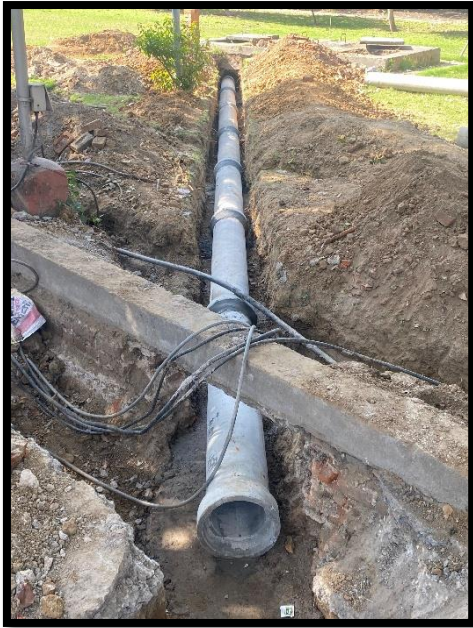


वर्ष 25-2024 के दौरान ESD से संबन्धित चल रहे कार्यों के photographs निम्नानुसार है।

1. Annual Maintenance Work (Civil) for Institute & MRSQ Campus at CRRI, New Delhi – 110025 के कार्य की कुछ तस्वीरें।



2. Upgradation of Rain Water Harvesting System at CSIR-CRRI New Delhi – 110025 के कार्य की कुछ तस्वीरें।



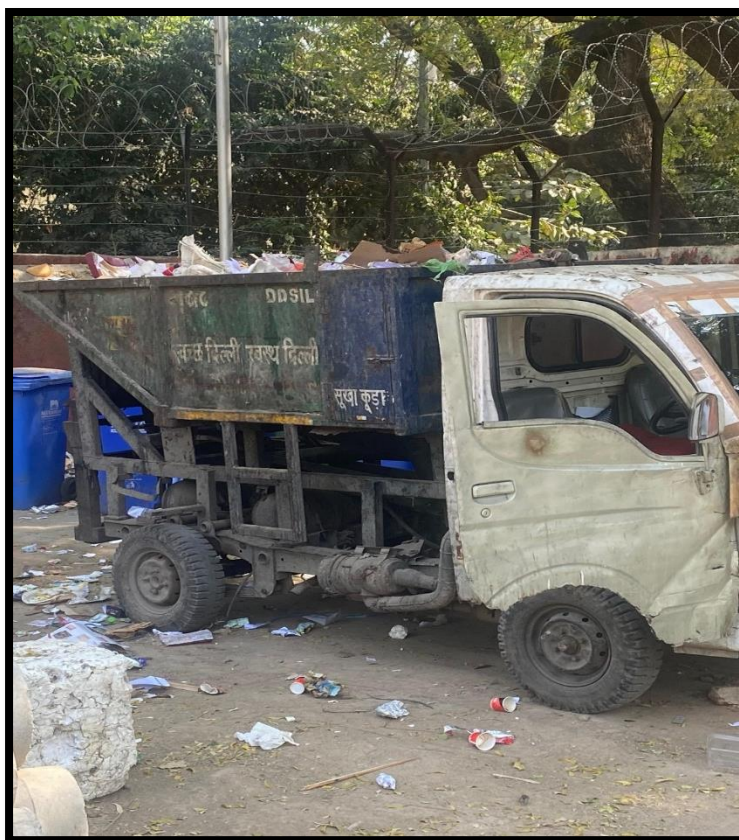
3. Cleaning, Sanitation and Housekeeping Services for CSIR-CRRI Bldgs. at Office Campus, Mathura Road Staff Quarter and CRRI Staff Colony at Maharani Bagh, New Delhi के कार्य की कुछ तस्वीरें।



4. Providing & Controlling the Fogging, larvae, Rodent & Termite etc. at CRRl office & MRSQ Campus, New Delhi – 110025 के कार्य की कुछ तस्वीरें।



6. Management of Solid Waste of Bulk Generation of CRRl Institute Campus and MRSQ Campus through DDSIL के कार्य की कुछ तस्वीरें।



8. Renovation of ground floor Lab corridor at CSIR-CRRI, Mathura Road, New Delhi-110025 के कार्य की कुछ तस्वीरें ।



9. CAMC of CCTV Camera System at Institute campus of CSIR-CRRI, New Delhi – 110025 के कार्य की कुछ तस्वीरें।



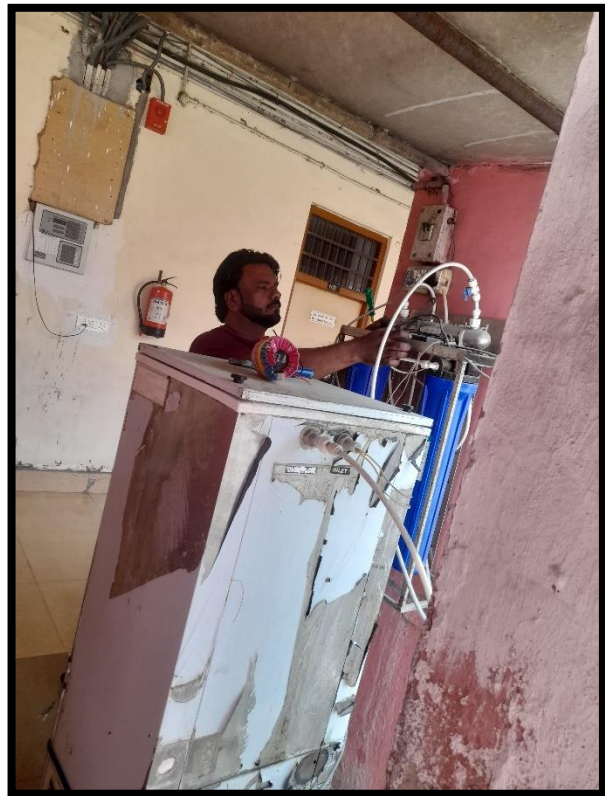
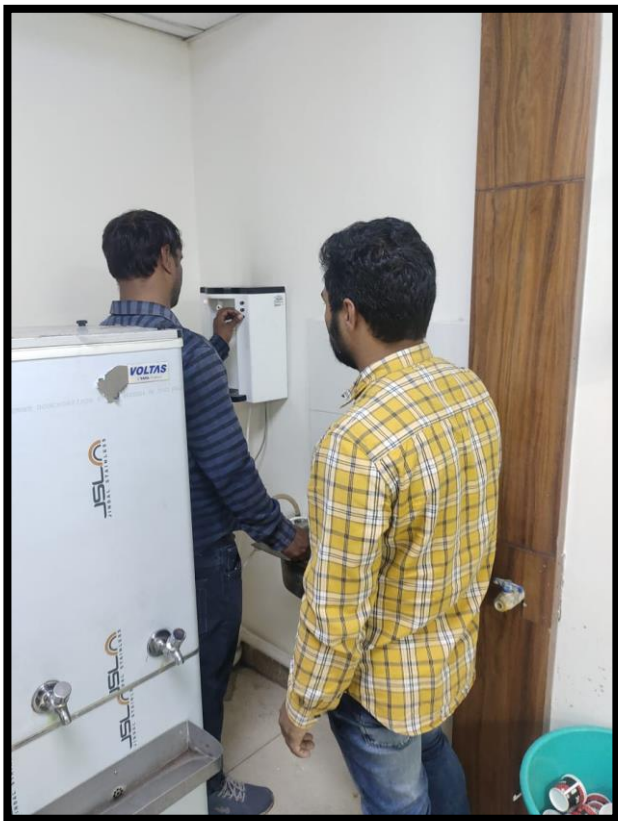
10. Annual Maintenance Contract (AMC) of 380 KVA & 750 KVA DG set (Cummins Make) equipped with Dual Fuel Kit at CSIR-CRRI, New Delhi – 110025 के कार्य की कुछ तस्वीरें।



11. Comprehensive Annual Maintenance Contract for the Passenger Lifts of Administrative Block and Library Building at CSIR-CRRI, New Delhi – 110025 के कार्य की कुछ तस्वीरें।



12. CAMC of Water Purifier and RO's at CSIR-CRRI, New Delhi – 110025 के कार्य की कुछ तस्वीरें।



13. AMC of Fire Extinguishers at CSIR-CRRI, New Delhi – 110025 के कार्य की कुछ तस्वीरें।



14. Comprehensive Annual Maintenance Contract (CAMC) of DRRI-VRV-AC of DRRI Office PA Room Conference Hall of Director Office at CSIR-CRRI, New Delhi-110025 के कार्य की कुछ तस्वीरें।

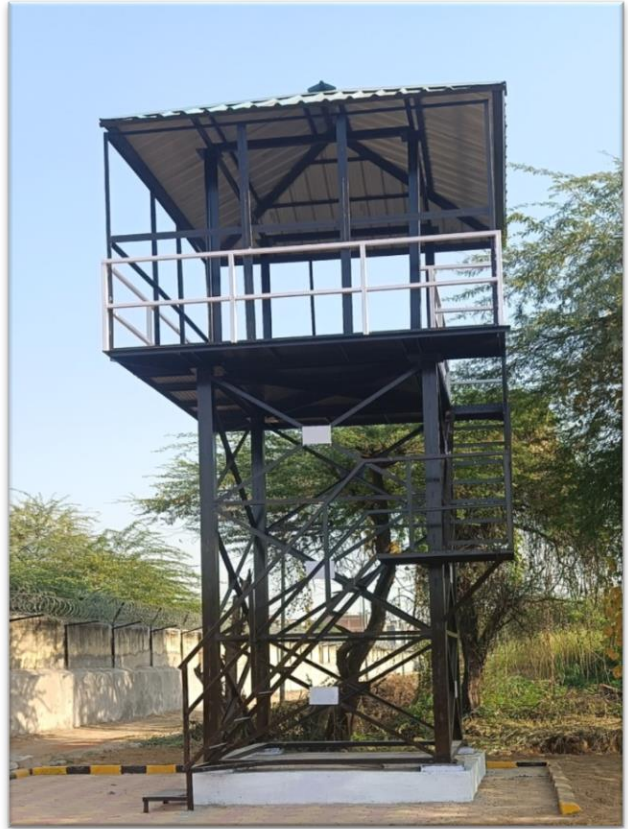


Maharani Bagh Staff Quarters Maintenance

A: Work Completed



Roof replacement and renovation work of existing maintenance office and construction of temporary shed for sitting of staff at CRRI Staff Colony, Maharani Bagh, New Delhi-110065



Construction of Security Tower post and two-layered wire fencing on Boundary wall at Campus-II and other miscellaneous works at CRRI Staff Colony, Maharani Bagh, New Delhi-110065



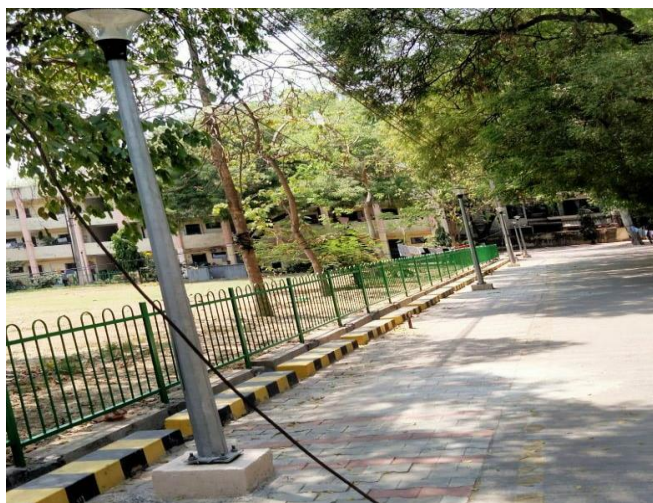
De-silting and replacing existing filter media in the Rain Water Harvesting Unit at CRRI Staff Colony, Maharani Bagh, New Delhi-110065.



Supplying Installation Testing & Commissioning of Dual Fuel Kit in Existing 125 kVA & 40 kVA DG Set Installed at CRR I Staff Colony Maharani Bagh N.Delhi-110065



Repalcement of old meter panel and other miscellaneous electrical work at CRRl staff colony maharani bagh new delhi-110065 .



Supplying & Fixing of Street lights & other electrical works at CRRI Staff Colony, Maharani Bagh,ND-65.

B: Work in Progress



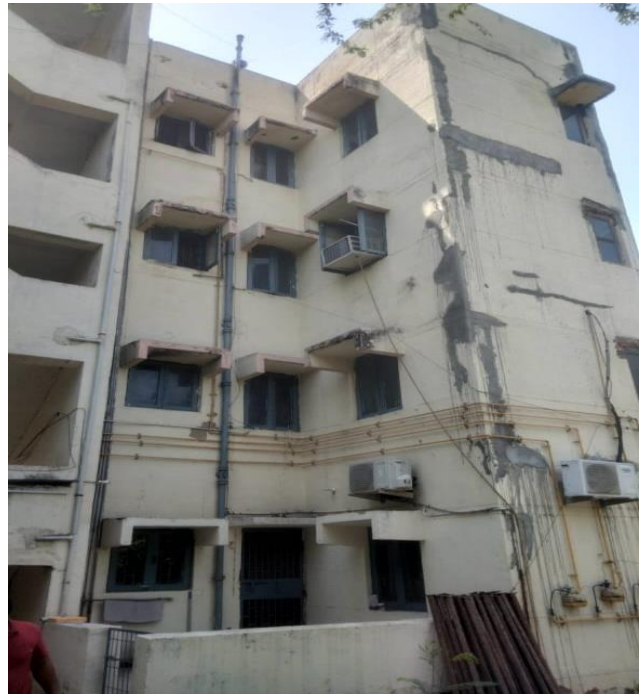
Providing and Fixing Mild Steel fencing around the parks/ lawns of Campus-I and Campus-II of Maharani Bagh Staff Quarter.



Construction of service road along the Yamuna side Boundary wall, i/c Repair/Plastering from the outer side of the Boundary wall and construction of Walkway/ footpath in the jungle area of Campus -II area along with Peripheral of the lawn area i.e. front of Type -C (33-40) quarters at Campus-I of CRR I Staff Colony, Maharani Bagh, New Delhi-110065.



Balance work of Structural Repairs and Renovation/Rehabilitation of the Existing Twelve Storied Multi-storey Building (Phase-I) at CRR I Staff Colony, Maharani Bagh, New Delhi-110065.



Structural Repair/ Rehabilitation of columns beam and Replacement of damaged sunshed of the existing building blocks 32 qtrs in campus II (Type II, Type III & Type IV) at CRRI Staff Colony, Maharani Bagh, New Delhi-110065

Mechanical and Transport

Thrust Areas

- Design and development of mechanical equipment required for R&D divisions
- Repair of mechanical equipment
- Transport Management System

Significant Achievements

- Fabrication of Mould for I - Section Beam Casting and Bridge divider
- Creation and Fabrication of Expansion Joint Testing Facility
- Development of Nuclear Density Gauge mounting device
- Development of LVDT mounting device
- Development of Falling Weight Impact Tester
- Fabrication of Chimney models etc.
- Design & Development of Gym Facility

Major Infrastructural Facilities

- Spot Welding machine
- Lathe machine
- Welding Set (Portable)
- Surface Grinder
- Gas welding set
- Arc Welding Machine
- Power Hack Saw Model HS-20
- Steel Rolling 11”(Metal Press)
- Arbour Press on Coloum Machine
- Circular Saw Cutter Machine



Automatic Drill Machine



Spot Welding Machine



Surface Grinder Machine

Quality Management

Quality Management

The Quality Management Division is responsible for ensuring that the IS/ISO 9001:2015 Quality Management System operates effectively and efficiently in the Institute. Adopting a higher level of quality standards in the working of the Institute is also the mandate of the Division. During the year, the division was engaged in conducting internal quality audits, discussing the findings of the audit in the Management Review & Committee meetings, ensuring the Institute's readiness for the external audits to be conducted by certification agency i.e. Bureau of Indian Standards (BIS) for the Renewal of the license as per the requirements of IS/ISO 9001: 2015, a higher level of quality standards in the working of the Institute.

Internal Quality Audits (IQA)

The Internal Quality Audits are a systematic and independent examination of the system to determine whether the planned arrangements are implemented effectively and are suitable to achieve the objectives. The audit was carried out by trained quality auditors of the Institute with the following objective:

- To determine the conformity or non-conformity of the quality system elements with specified requirements.
- To determine the effectiveness of the implemented quality system in meeting the specified quality objectives.
- To provide the auditee with an opportunity to improve the quality system.
- To meet all applicable requirements.
- To ensure the Institute's readiness for Renewal Audit

During the internal audit, two aspects, namely the requirement of the quality management system as defined in the Quality Manual and the Quality System Procedures, were focused. It was observed that Inspection, Measuring and Testing (IMT) Equipments needs to be calibrated. It was informed by the Divisions that calibration of equipments is to be handled by the Calibration Committee and the Purchase Section of the Institute. Training needs of the staff were also to be identified. The Non-Conformity Reports (NCRs) and Corrective Action Reports (CARs) were communicated to the auditees to ensure the corrective and preventive actions. The action taken by the auditees was verified subsequently, and NCs were closed. Auditees were instructed to comply and submit the Action Taken Report of non-conformities and Opportunities for Improvement (OFIs) raised during surveillance audits held on 23rd- 24th April 2024 and 23rd-24th June 2025.

Internal Quality Audits of the Institute were carried out from 24th-27th February 2025 and 03rd-17th November 2025 to check and ensure whether the IS/ISO 9001:2015 QMS is effectively and efficiently in place in the Institute for Renewal audit to be conducted by certification agency, i.e. Bureau of Indian Standards (BIS). The audit findings were discussed in the 37th Management Review Meeting held on 23rd April 2025 and the 38th Management Review Meeting held on 10th December 2025. Thereafter, the Renewal Audit by the Certification Agency, i.e. BIS, was conducted from 15th-17th December 2025.

राजभाषा

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24.09.2024

В соответствии с требованиями законодательства Российской Федерации о персональных данных, сообщаем, что информация, содержащаяся в документах, предоставленных Вами, не подлежит разглашению. Данная информация является конфиденциальной и предназначена исключительно для использования в целях, указанных в заявлении. Любое разглашение или использование информации в иных целях без согласия уполномоченного лица является нарушением законодательства и может повлечь за собой ответственность.

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CSIR-CRRI Research activities are fully supported by dedicated staffs in the administration. It has different arms to assist its day-to-day functioning such as DRRI Secretariat, Controller of Administration, Personal Cell, Vigilance, Establishment-I, Establishment-II, Finance & Accounts and Stores & Purchase Sections. They maintain personal files, service books and Annual Confidential Report folders of around 250 staff members. They deal with allotment of staff quarters & scientist apartments, matters pertaining to estates, leaves, deputation/foreign services, pension, medical reimbursement etc. They deal with parliamentary questions and other related matters. These departments are also dealing with all administrative matters including their appointment, promotion, transfer, posting, deputation, and disciplinary issues, apart from other service matters that may come up from time to time. This division has the following sub-divisions.

- **DRRI SECRETARIAT**
- **COA's Office**
- **AO's OFFICE**
- **PERSONNEL CELL**
- **VIGILANCE CELL**
- **ESTABLISHMENT-I**
- **ESTABLISHMENT-II**
- **SECURITY**
- **GUEST HOUSE (WING I & II)**
- **CANTEEN**
- **FINANCE & ACCOUNTS SECTION**
- **STORES & PURCHASE SECTION**
- **RAJBASHA**

General Information

Important Days Celebrations

Swachhta Pakhwada-2024

As part of Swachh Bharat mission, the action plan for Swachhta Pakhwada during May 01 to May 15, 2024 was undertaken by the scientists and staff members of CRRI and the goals were achieved enthusiastically. During the Swachh Bharat Pakhwada, cleanliness drives in all the divisions / sections including canteen, guest house, hostel, garden, library, toilets, stores, residential colonies etc. were accomplished including weeding out of old files as per the record retention schedule. Besides, essay, debate and drawing competitions were organized for the staff members and their wards to bring about the importance and relevance of "Swachh Bharat Mission" in India today. Further, promotion of Swachh message through website, banners, posters, hoardings was completed. Furthermore, various expert lectures by distinguished speakers from outside the Institute were also organized. During the occasion, a Swachhta Pakhwara Run that start from Guest House to Reception area was organized in the Institute and Prof. Manoranjan Parida, Director, CSIR-CRRI and staff members participated the event enthusiastically.



National Technology Day 2024

National Technology Day 2024 was celebrated at CRRI-CRRI on May 15, 2024 to mark the technological development with participation of scientists, engineers, and researchers. This year May11, 2024 was on Saturday. On this occasion, a lecture on “Decarbonisation in Road sector” was delivered by the Chief Guest, Sh. S.K. Nirmal, Secretary General, Indian Roads congress (IRC), MoRTH, Govt. of India.



World Blood Donors Day 2024

World Blood Donors Day 2024 was celebrated at CRRI-CRRI on June 14, 2024 to express gratitude to blood donors for their selfless act of saving lives through voluntary blood donation. The campaign slogan for the year 2024 was “20 years of celebrating giving: Thank you, blood donors”. This day serves as a reminder of the critical need for regular, non-remunerated voluntary blood donations and aims to raise awareness about the life-saving impact of these donations. As part of this occasion, a pledge was taken by staff members of the Institute and an expert lecture on “Continuous need and promotion of culture of regular and unpaid blood donation to increase the diversity and sustainability of the blood donor pool” was given by the Chief Guest, Dr. Vamsi K. Yenamandra, Physician-Scientist, CSIR-IGIB, New Delhi.



International Yoga Day 2024

International Yoga Day 2024 was celebrated at CRRI-CRRI on June 21, 2024 as a global celebration of well-being with the theme “Yoga for Self and Society”. The theme recognizes that inner serenity and self-care are the cornerstones of a happy and healthy existence. As part of this occasion, an expert lecture on “Yoga for Self and Society” was given by the Chief Guest, Dr. Sanjiv Pathak, Chaitanya Yoga Foundation, Faridabad, Haryana. Besides, Prof. Manoranjan Parida graced the one-hour yoga session and the staff members of the Institute performed the session enthusiastically.



73rd Foundation Day of CSIR-CRRI

CRRI-CRRI celebrated its 73rd Foundation Day on July 16, 2024. On this occasion, Dr.(Mrs.) N. Kalaiselvi, DG, CSIR and Secretary, DSIR inaugurated the newly constructed Research Laboratory of CRRI's AcSIR Research scholars. As part of this occasion, a technical posters competition was also organized in the Institute. Besides, an expert lecture was given by the Chief Guest, Prof. Prateek Sharma, VC, Delhi Technical University, New Delhi.



78th India Independence Day

CSIR-CRRI celebrated 78th India Independence Day on August 15, 2024 on the theme "Viksit Bharat," or "Developed India,". Prof. Manoranjan Parida, Director, CSIR-CRRI hoisted the National Flag in CRRI campus on this day. As part of this celebration, various cultural programs, games and fun activities were organized for the staff members and their children.



Indian Organ Donation Day

CSIR-CRRI celebrated Indian Organ Donation Day on August 03, 2024 to spread awareness about organ donation, dispel myths and misconceptions associated with organ donation and motivate & encourage the citizens of the country to donate organs and tissues after death.

National Sports Day 2024

National Sports Day was celebrated in the Institute on 29 August 2024 to mark the tradition of sports in India and as a tribute to the hockey legend and Padma Shree Awardee Major Dhyan Chand. As part of this celebration, a "FIT INDIA PLEDGE" was taken by staff members on 29.08.2024 and various sports and games were organised in the Institute.



83rd Foundation Day of CSIR

CSIR completed its 83rd year of foundation. In this connection, various events were organized from 26th to 30th September 2024 at CSIR as well as CRRI levels. As part of this celebration, two technical thematic

exhibitions were organized by CSIR to showcase, connect, and collaborate among various stakeholders. First one was organised at NASC Complex, Pusa, New Delhi on September 26, 2024 while other one was organised at National Science Centre, New Delhi during September 27-29, 2024. CSIR-CRRI participated in all the above exhibitions by showcasing its new and innovative products/projects and technologies. Shri Dharmananda Sarangi, DG (RD) & SS, Ministry of Road Transport & Highways, Government of India, Chief Guest, and Shri Anil Kumar Shrangarya, Director Project, National Capital Region Transport Corporation, Guest of Honor graced the foundation function organised by CSIR-CRRI on September 30, 2024. On this occasion, Shri Anil Kumar Shrangarya delivered a lecture on “Implementation of RRT in NCR: A paradigm shift in regional mobility”.



Special Campaign 4.0 for institutionalizing Swachhata and minimizing pendency in Govt. Offices

CSIR-CRRI celebrated “Special Campaign 4.0 for institutionalizing Swachhata and minimizing pendency in Govt. Offices”, an initiative of Govt. of India in two phases. The first phase namely the Preparatory phase was celebrated during September 14-30, 2024 while the other phase namely the Implementation phase was celebrated during October 02-31, 2024. During both phases, various activities/cleanliness drives led by Prof. Manoranjan Parida, Director, were carried out in the Institute. Besides, an expert lecture on “Impact of Cleanliness on Health” was given on October 03, 2024, by Dr. Monika Pant, Consultant Doctor, Ayurveda and Municipal Councilor, Delhi. Further, an expert lecture on “Physical and Mental Health” was given on October 23, 2024, by Dr. Nishu Dhawan, Chief Medical Officer, Deen Dayal Upadhyay Hospital, Govt. of Delhi. Furthermore, an expert lecture on “Management of Solid Waste for Sustainable development” was delivered on October 30, 2024 by Dr. Narender Kumar, Director, Swalambam.



The National Cyber Security Awareness Month (CSAM 2024)

CSIR-CRRI observed “The National Cyber Security Awareness Month (CSAM 2024)” with the theme “Secure Our World” during October 01-31, 2024. The initiative aims to promote a culture of cyber hygiene and encourage safe online practices. As part of this awareness campaign, a Pledge ceremony was administered by Prof. Manoranjan Parida, Director, CSIR-CRRI on October 08, 2024. Besides, various activities/lectures were also organized by the Institute.



The Vigilance Awareness Week 2024

CSIR-CRRI observed “The Vigilance Awareness Week 2024” from October 28, 2024 to November 02, 2024, with the theme “Culture of Integrity for Nation’s Prosperity”. As part of this awareness campaign, an Integrity Pledge was taken by staff members of the Institute on October 28, 2024. During the aforementioned week, various / programs such as display of banners/posters, competitions in drawing, essay writing, quizzes, etc. were also organized for the staff members and students.



4th Janjatiya Gaurav Divas

In commemoration of 150th birth anniversary of Bhagwan Birsa Munda, CSIR-CRRI celebrated the 4th Janjatiya Gaurav Divas from November 15 to November 26, 2024 to coincide with the Constitution Day across the country. As part of this celebration, various activities such as poster and quiz competitions were organized for the students, staff members and their wards. The closing event of the programme was organised on 26th November, 2024, and the event was graced by Sh. Kundan Singh Jangpangi, Retd. IPS as Chief Guest. A lecture highlighting the services provided by the concerned Department/Ministry to the

tribal population, at the grassroots level for maximizing the outreach of schemes and programs of the Ministries/departments among the tribal population of the country was delivered by the Chief Guest.



New Year Day 2025

A get-together was organized on the occasion of New Year Day at CSIR-CRRI on January 02, 2025. Prof. Manoranjan Parida, Director, CSIR-CRRI, in his address, highlighted the achievements of the Institute during the preceding year (2024) and motivated the CRRI staff members to meet new challenges and demands in the field. Prof. Manoranjan Parida extended best wishes to all the staff members and their families of the Institute. On this occasion, Prof. Manoranjan Parida released the CSIR-CRRI Field & Project Work Record Book-2025.



International Women's Day 2025

As part of the International Women's Day 2025 celebration, CSIR-CRRI organised various activities like yoga sessions and sexual harassment awareness programs etc. during March 03-10, 2025. Besides, a lecture on "Women's Health, Breast and Cervical Cancer" was delivered by Dr. Renita Bhamrah (Oncology), Director (Scientific Services), Syneos Health on March 6, 2025.



Workshops/ Conferences/ Seminars Organised

India Energy Swaraj Yatra

CSIR-CRRI organized India Energy Swaraj Yatra during April 23-26, 2024. As part of this event various activities were carried out / showcased in the Institute for the students from various schools in Delhi and staff members of the Institute.



One-day workshop on “FWD: Experiences and Challenges in Data Collection, Analysis and Interpretation”

One-day workshop on “FWD: Experiences and Challenges in Data Collection, Analysis and Interpretation” was conducted in the Institute on June 25, 2024. Around 150 participants from both academia and industries attended the workshop. During the workshop, various distinguished speakers from private and government organisations highlighted the applications and challenges of using FWDs in the field. Besides, a technical exhibition was also organised for showcasing FWDs by sponsors of the workshop.

One-Day International Conference on “Steel Slag Road: A Sustainable Green Infrastructure

Transforming Waste to Wealth”

One-Day International Conference on “Steel Slag Road: A Sustainable Green Infrastructure Transforming Waste to Wealth” was organized jointly by CSIR-CRRI and PHD Chamber of Commerce and Industry (PHDCCI) on June 29, 2024 at Hotel The Oberoi, New Delhi. The conference was supported by Ministry of Steel, Govt. of India and National Institution for Transforming India (NITI Aayog), Govt. of India. During the conference, various distinguished speakers from private and government organisations highlighted the advantages of using steel slag in constructing roads.



Dr. P. Raychaudhuri Memorial Lecture Series

CSIR-CRRI started the “Dr. P. Raychaudhuri Memorial Lecture Series” in 2018 in the honor of Late Dr. P. Raychaudhuri, the First Head of Bridge Division, CSIR-CRRI for his significant professional contributions to the Nation. The 7th Lecture of the Series was organized on August 23, 2023, and Er. Ashok Kumar Basa, FIE Executive Vice-President, World Federation of Engineering Organisations, delivered the lecture on “Evolution of Bridges”. Prof. Manoranjan Parida, Director, CSIR-CRRI felicitated Er. Ashok Kumar Basa, and family members of Dr. P. Raychaudhuri.



One-day workshop on “AI/ML Techniques for Pavement Evaluation”

CSIR-CRRI organized a one-day workshop on “AI/ML Techniques for Pavement Evaluation” on 19th September, 2024 in Hybrid Mode @CSIR-CRRI. Scientists of CSIR-CRRI and Dr. Deeksha Arya, Faculty, University of Tokyo, Japan made presentations. CSIR-CRRI look forward to the possible collaboration with University of Tokyo.



One-day workshop on “Network Survey Vehicle Applications for Maintenance of Road Infrastructure (NSV-AMRI-2024)”

CSIR-CRRI conducted a one-day workshop titled “Network Survey Vehicle Applications for Maintenance of Road Infrastructure (NSV-AMRI-2024)” on September 23, 2024 for the various stakeholders including students and professionals in road and transport sector. Shri D. Sarangi, Director General (Road Development), was Chief Guest, and Prof. Praveen Kumar, IIT Roorkee, was Guest of Honour. Prof. Manoranjan Parida, Director CSIR-CRRI, presided and delivered the welcome address, with Dr. Pradeep Kumar, Chief Scientist, PED, as coordinator. Over 150 participants from industries, stakeholders, and CRRI attended. The workshop highlighted the transformative role of Network Survey Vehicles (NSVs) in road management. Their advanced capabilities in data collection, evaluation, and GIS integration can enhance maintenance, improve safety, and ensure durable road infrastructure, fostering sustainable and resilient systems for the future.



CSIR One Week One Theme (OWOT) Campaign

After the success of Council of Scientific & Industrial Research (CSIR) One Week One Lab Campaign conducted by all CSIR Laboratories / Institutes in 2023, Dr. Jitendra Singh, Hon'ble Minister of Science & Technology, Govt. of India and Vice President, CSIR has launched CSIR One Week One Theme (OWOT) Campaign on June 24, 2024 to showcase the technology packages, indigenous products, processes and devices developed by CSIR Laboratories / Institutes across India. This campaign was focused on the eight themes of CSIR such as Energy and energy devices; Chemicals and petrochemicals; Aerospace, electronics and strategic sectors; Civil infrastructure and engineering; Agriculture, nutrition and biotech; Healthcare; Mining, minerals, metals and materials; and Ecology, environment, earth, ocean sciences and water. As part of this OWOT Campaign, CSIR-CRRI in association with four other sister CSIR laboratories (viz. CSIR-SERC, CSIR-NBRI, CSIR-AMPRI, and CSIR-CMERI) conducted various events under the Civil Infrastructure & Engineering (CIE) theme across India (New Delhi, Ahmedabad, Durgapur, Chennai and Bhopal) during September 02 to 06, 2024.



IISF-2024 Curtain Raiser Outreach Event

CSIR-CRRI celebrated IISF-2024 Curtain Raiser Outreach Event at CSIR-CRRI on November 05, 2024. The event was graced by Dr. Souvik Maiti, Director, CSIR-IGIB Chief Guest and Prof. Rajeev Singh, State Secretary, Vijnana Bharti as Guest of Honor. As part of this celebration, various competitions and lectures were organized for the students under the Jigyasa programme.



52nd Shanti Swarup Bhatnagar Memorial Tournament Second Zonal Outdoor

CSIR-CRRI hosted 52nd Shanti Swarup Bhatnagar Memorial Tournament Second Zonal Outdoor for volleyball and cricket, during November 14-16, 2024. This tournament is a tribute to Dr. Shanti Swaroop Bhatnagar, whose pioneering contributions to Indian science inspire us to this day. It emphasizes the essential role of sports in fostering resilience, unity, and excellence within our scientific community - values that are integral to both sports and scientific endeavors. Eight different laboratories of CSIR participated in the tournament.



National Road Safety Month

CSIR-CRRI is observing “National Road Safety Month” from January 01-31, 2025 with an aim to enhance road safety around on the adjoining roads as well as sensitize the citizens about road safety which is in line with the theme announced by MoRT&H i.e. “Sadak Suraksha Jeevan Raksha”. As part of the month-long observance, more than half a dozen activities are being conducted by the institute and some are typically presented below.

1. Pledge administered by CSIR - CRRI staff at the Front lawn area on 08.01.2025.
2. Visibility Enhancement of Trees located on the Road Edges
Banners display on NH-44
3. Visibility Enhancement of Less Height Roofs in GTE Division
4. Enhancement of rear visibility of Autos on C.V. Raman Marg
5. Expert talk titled “Traffic Safety Barriers” by Prof. P.K. Sikdar, Adviser, International Road Federation (India Chapter) was followed by an intensive panel discussion on “Road Safety: Efforts versus Impact considering the 5Es of safety” on 27.01.2025
6. Program on “Road safety awareness and health check-up for traffic police personnel” on 28.01.2025



133rd Research Council Meeting of CSIR-CRRI

133rd Research Council Meeting of CSIR-CRRI was organized during January 23-24, 2025. Prof. Manoranjan Parida, Director, CSIR-CRRI welcomed Prof. Mahesh Tandon, Research Council, Chairman, Tandon Consultants Pvt. Ltd. and all other members of the research council. Various presentations were made by scientists of the Institute during the meeting.



One-day national conference on “ICC Conference 2025: Emerging Technologies Redefining Highways, Rural Roads and Infrastructure”

One-day national conference on “ICC Conference 2025: Emerging Technologies Redefining Highways, Rural Roads and Infrastructure” was jointly organized by CIDC-ICC and CSIR-CRRI, New Delhi on February 07, 2025 at CSIR-IGIB Auditorium, New Delhi. The conference was graced by Shri Raghu Srinivasan, Lieutenant General, Director General, Border Roads Organization (BRO) as Chief Guest. Various stakeholder presentations and deliberations were made during the conferences. Besides, a technical exhibition was also organized for the sponsors and organizers of the conference.



Workshop on “Automatic Vehicle Counting and Classification (AVCC) Systems: Technologies”

CSIR-CRRI organized a national workshop on “Automatic Vehicle Counting and Classification (AVCC) Systems: Technologies” on February 28, 2025 at Auditorium, CSIR-CRRI. The workshop was graced by Ms. Monika Bharadwaj, IPS, Additional Commissioner of Police (Traffic), Delhi Police as Chief Guest. Various stakeholder presentations and deliberations were made during the conferences.



Global Road Infratech Summit & Expo 2025

CSIR-CRRI actively participated in the Global Road Infratech Summit & Expo 2025, organized by the International Road Federation – India Chapter (IRF-IC), during 6-7 March 2025 at The Lalit Hotel, New Delhi, India. Under the theme “Vision Zero: Sustainable Infratech and Policy for Safer Roads,” the event showcased and emphasized road safety through improved infrastructure, innovative technology, and effective management, leading the charge in India’s infrastructure and mobility revolution. During the summit, Prof. Manoranjan Parida, Director, CSIR-CRRI, was conferred with the Road Safety Champion Award by the International Road Federation.



JIGYASA Programme

The Council of Scientific and Industrial Research (CSIR) has launched a student-scientist connect programme called 'JIGYASA' on July 06, 2017, under which CSIR has joined hands with Kendriya Vidyalaya Sangathan. The focus of this programme is to connect school students and scientists so as to extend student's classroom learning with that of a very well planned research laboratory based learning. This initiated scientific interaction between present scientific fraternities and the upcoming generation and also imbibed curiosity and scientific vision in children. The mentorship and encouragement of our scientists to foster scientific temper give continuity for technological advancement of India. This inculcated the culture of inquisitiveness on one hand and scientific temper on the other, amongst the school students and their teachers.

During the period, the following events were organised for the school students.

S. No.	Activity	Date	No. of Students	No. of teachers
1	Demo of Solar Bus of Prof Solanki for Jigyasa Students – KV AFS Tughlakabad	23rd April 2024	70	5
2	Demo of Solar Bus of Prof Solanki for Jigyasa Students – Dev Samaj Modern School	25th April 2024	50	2
3	Energy Swaraj Yatra Lecture of Prof Solanki for CRR I Staff and, AcSIR & Jigyasa students	26th April 2024	90	3
4	'Testing of Aggregates & Bitumen (Organic Binder) for science students' training program for ALT School students	28th and 29th April 2024	42	6
5	National Technology Day	15th May 2024	40	1
6	Internship Orientation Programme 2024- 2025	7th June 2024	100	
7	20th World Blood Donor Day 2024	14th June 2024	30	1
8	Summer Reboot Camp under Jigyasa at CSIR- CRR I	26th – 28th June 2024	103	30
9	73 rd Foundation Day of CSIR-CRR I Jigyasa Lab Visit	16th July 2024	202	15
10	One Week One Theme' Jigyasa students lab visit	6th September 2024	171	4
11	83 rd CSIR Foundation Day observed as "Open Day"	30 th September 2024	265	4

12	Dr. Vinod Karar, Chief Scientist, Scientist Lecture for the students of class XI & XII Science Stream at PM SHRI Kendriya Vidyalaya Pragati Vihar	28 th October 2024	84	2
13	Jigyasa Students Quiz organised on the occasion of 10th IISF 2024 Outreach Event at CSIR-CRRI Kendriya Vidyalaya Paschim Vihar	5 th November 2024	104	3
14	Dr Ravindra Kumar, Chief Scientist Lecture and follow up Quiz on Climate Change and Evolving Transport, JNV, Sardhana, Meerut, UP	12 th December 2024	83	2
15	Educational visit of Class XI Science Students from KV Ghaziabad and JNV Mungeshpur and SKV	13 th December 2024	211	7
16	Kendriya Vidyalaya Noida in Jigyasa Students Scientific Aptitude Assessment (Competency Mapping) under organised at CSIR-CRRI	12 th January 2025	42	2
17	Safe Project Design Competition organized by CSIR-CRRI under Jigyasa Programme during National Road Safety Month Dev Samaj	22 nd January 2025	90	5
18	Safe Project Design Competition organized by CSIR-CRRI under Jigyasa Programme during National Road Safety Month KV Tughlakabad	28 th January, 2025	90	2
19	PM Shri KV Faridabad No. 2 CSIR-CRRI Lab Visit under Jigyasa Programme during National Road Safety Month 2025 Closing Ceremony	31 st January 2025, Friday	100	4
20	Jigyasa School visit of Class XI Science Students from KV Palwal	11 th February 2025	160	6



Visit of students from PM Shri KV Faridabad No. 2 to CSIR-CRRI on January 31, 2025

Honours & Awards / Appreciations Received

Honours & Awards

- Dr. Vidhi Vyas received award for ‘Young Woman Researcher in Pavement Engineering’ by Centre for Women Development, Venus International Foundation for the contribution and achievement in the discipline of Engineering, VIWA 2025, Chennai, India. (March 2025).
- Dr. Rajeev Goel, Chief Scientist is Member, Seismic Academy Advisory Board, Hilti, India since Feb 2022
- Dr. Rajeev Goel, Chief Scientist is Coordinator, Principal Technical Agency (PTA) from CSIR-CRRI for National Rural Infrastructure Development Agency, New Delhi for Scrutiny of DPR’s of PMGSY since Feb 2022
- Dr. Rajeev Goel, Chief Scientist is reviewer of Research papers of many International/National Journals such as ASCE Journal of Bridge Engineering; ACI Materials & Structural Journal; Computers and Concrete; Indian Roads Congress; etc.
- Dr. Rajeev Goel, Chief Scientist joined the following events as Guest of Honour:
 - Technical Session on ‘Sustainable Construction Materials – Building Greener Future’, organised by JK Cement at Gr. Noida on Dec 21, 2024.
 - Concrete Day Celebrations 2024 by ICI Ghaziabad on September 14, 2024 at Radisson Blu, Kaushambi, Ghaziabad
- Dr. Rajeev Goel, Chief Scientist is Advisory committee member of several Seminars/conferences
- Dr. Rajeev Goel, Chief Scientist is recognised as ‘External Examiner’ by Delhi Technological University for PG and UG Students
- Dr. Rajeev Goel, Chief Scientist is recognised as Member, ‘Doctoral Advisory Committee’ of Research Scholars of AcSIR and Delhi Technological University (DTU), Delhi
- Dr. Rajeev Goel, Chief Scientist is Guest Faculty at Indian Academy of Highway Engineers (IAHE), Noida for imparting training to Engineers of MoRTH/NHAI/BRO
- Dr. Rajeev Goel, Chief Scientist took part as Panelist during Panel discussion for Seminar on “Best Practices, Emerging Trends and Technologies in Planning, Construction and Maintenance of Bridges” organised by IRC, Guwahati, Assam, April 25-26, 2025.
- Dr. Naveet Kaur, Principal Scientist selected for 16th CIDC Vishwakarma Award under category ‘Scientist’
- Dr. Naveet Kaur, Principal Scientist received 2nd Runners-Up Award in the category of “Best Case Study on Research for New Technologies and Innovation in Corrosion Management” at the 2nd CII National Corrosion Management Practices - Competition & Awards held on March 5, 2025.
- Dr. Naveet Kaur, Principal Scientist received Best Paper award for paper titled “Development of Drone based Concrete Homogeneity testing device suitable for inaccessible structures”, IEEE International Conference, Feb 28th –Mar 01st, 2025
- Dr. Naveet Kaur, Principal Scientist received third prize in poster presentation during VIVIDUS-2024 for “Enhancing Risk Mitigation for Bridges under Earthquake disaster using geo-seismic sensor”, on the occasion of 73rd Foundation day of CSIR-CRRI, July 16, 2024
- Dr. Naveet Kaur, Principal Scientist attained DGCA certified Pilot Certificate for flying drones under small category (< 25 kg) during November 18-22, 2024.

- Dr. Naveet Kaur, Principal Scientist selected as Jury Member for the 3rd CE & CR Awards 2024
- Dr. Naveet Kaur, Principal Scientist is identified as a Subject Expert on Sep 6, 2024 by Union Public Service Commission for assisting them in various Interviews / Personality Test Boards,
- Dr. Rajeev Goel, Chief Scientist is selected Member, Research Advisory Committee of NCCBM, Ballabgarh for year 2023 and 2024.
- Dr. Rajeev Goel, Chief Scientist is selected Member, Management Council of CSIR-CRRI for period 2023-2025
- Dr. Naveet Kaur, Principal Scientist is selected Member, Management Council of CSIR-CRRI for period 2023-2025
- Dr. Naveet Kaur, Principal Scientist took part as Panelist during Panel discussion for Seminar on “Best Practices, Emerging Trends and Technologies in Planning, Construction and Maintenance of Bridges” organised by IRC, Guwahati, Assam, April 25-26, 2025.
- Dr. Naveet Kaur, Principal Scientist joined the editorial board of Scientific Reports by Nature Journal on Nov. 16, 2024
- Dr. Naveet Kaur, Principal Scientist selected External Examiner for BTech Project internship at Central University of Haryana, Mahendergarh, June 19, 2024
- Dr. Naveet Kaur, Principal Scientist selected Review Board Member of IEEE International Conference on Innovation In Computing & Engineering ICE 2025, Shiv Nadar University, New Delhi, Feb 28th –Mar 01st, 2025.
- Dr. Naveet Kaur, Principal Scientist selected as Jury Member for the 3rd CE & CR Awards 2024
- Dr. Naveet Kaur, Principal Scientist is identified as a Subject Expert on Sep 6, 2024 by Union Public Service Commission for assisting them in various Interviews/Personality Test Boards,
- Dr. Pankaj Goel received Pr. B. B. Pandey Memorial Award from the hands Honorable Minister of Road Transport and Highways, Sh. Nitin Gadkari on 8th November 2024 from the Indian Roads Congress for their outstanding work presented in their paper entitled “Engineered Cementitious Composite Concrete as Pavement Overlay Material” authored by Pankaj Goel, Rakesh Kumar, and Bishwajit Bhattacharjee.
- डॉ. पंकज गोयल को उनके शोध पत्र विषय, “सीमेंट कंक्रीट की सड़कों में आने वाली चौड़ी दरारों की मरम्मत के लिए मैग्नीशियम ऑक्सीक्लोराइड सीमेंट-आधारित माइक्रो कंक्रीट का एक टिकाऊ और पानी मुक्त मरम्मत सामग्री के रूप उपयोग” लेखक डॉ. राकेश कुमार, डॉ. पंकज गोयल और प्रोफेसर मनोरंजन परिड़ा, राष्ट्रीय हिंदी विज्ञान सम्मेलन-2024, भोपाल 30-31 जुलाई, 2024 में द्वितीय पुरस्कार मिला.
- Dinesh Ganvir, Principal Scientist, chaired a Technical session on Pavement Engineering systems at 15th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC 2024), 20th December 2024, organized by IIT Mumbai
- Dr Siksha Swaroopa Kar Received Civil Engineering & Construction Review Award under the category of Use of Path-breaking Construction Equipment for our innovation on the “Development of Pothole Repair System.” August 2025
- Dr. G. Bharath received the Best Technology Award for the development of a biobinder for road construction at the Global Road Construction Conference in December 2024.
- Dr. G. Bharath also received the Best Paper Award at the Global Road Construction Conference in December 2024.

- DR G Bharath: CSIR-Central Road Research Institute has been shortlisted as a nominee to the Equipment and Manufacturing Award for the project Development of Bio-Bitumen from Pyrolysis of Lignocellulosic Biomass, IRF World Congress 2024
- Pradeep Kumar N K V, Dr. Sarfaraz Ahmed , Dr. G. Bharath awarded for 2nd best research paper prize for “Performance Evaluation of High-Performance Bituminous Mixes With Varied Content of Reclaimed Asphalt Pavement Material for Sustainable Pavements” at Global Road Infratech Summit and Expo (GRIS), March 6-7, 2025, The Lalit Hotel, New Delhi
- Dr G Bharath: CRRI received the Special Jury Award from the Hon’ble Minister of State for Road Transport & Highways, Shri Harsh Malhotra, under the Build India Infra Awards for Innovative Technology for the Bio-Bitumen Project.
- Dr G Bharath: Received the CIDC (Construction Industry Development Council) Vishwakarma Achievement Award 2025 under the Scientist Category for contributions to innovative and sustainable road construction technologies
- Dr. Rajiv Kumar received the Best Paper Award for the research paper “Laboratory Investigation of Lignin as An Alternative Extender to Bitumen for Asphalt” at the Global Road Construction Conference in December 2024.
- Dr. Parvathi G. S. received the prestigious 16th CIDC Vishwakarma Award, 2025, for the achievement in the category of Scientist Working in the Construction Industry.



- Mayuresh Ghule, M.Tech dissertation student of Dr. Parvathi G. S. received best paper award in 10th Indian Young Geotechnical Engineering Conference held at IIT Indore from 10-12 March 2025, for the dissertation work carried out at CRRI titled “Forensic Evaluation of Retaining Wall Failure on Clay Slopes: A Case Study”.
- Syeda Sabina Yashmin and Dr. A K Shina received Best Poster Award (2025) in 8th conference of transportation research group of India, IIT Guwahati, for the Research paper title - Validation of laboratory modulus of red mud waste material with field modulus.

- Dr. A K Shina received MoRT&H Hackathon Technology Demonstration award (2024) for Project Title – Construction, Supervision and Performance evaluation of MSW embankment – A pilot study. Category – Valued use of processed municipal waste.



- Dr. A K Shina received International Green Apple Environment Award (2024), London, UK, for Project title - Recycle of Jarofix Waste Material for Sustainable Road Construction.



- Dr. A K Shina received CII National Award for Environmental Best Practices (2024). For Most Innovative Environmental Project – Bulk Recycling of Jarofix Waste Material for Road Construction.



- Dr. S Ravishankar, received the Best Paper Award at the Indian Geotechnical Conference 2025 for the work “Recycled C&D Waste Aggregates for Sustainable Pavements: Laboratory Insights and Field Experience”- co-authored with Sh. Ayush Dhoundiyal, Dr. Raheena M, and Dr. Sandeep Singh.
- Dr.S. Velmurugan served as the Reviewer cum External Examiner for 2 Ph.D. thesis submitted to IIT Bombay and Anna University respectively.

Invited Talks/ Lectures Delivered / Meeting Attended (Outside CRRI)

Invited Talks and Lectures Delivered

Name & designation of staff	Title of Lecture/Speech	Purpose)conference or otherwise (Give full details	Date
Dr. Pradeep Kumar, Chief Scientist	Panellist	One-Day Workshop on Falling Weight Deflectometer (FWD) at CSIR-CRRI	25th June, 2024
Dr. Pradeep Kumar, Chief Scientist	Sensor technologies, innovations, risk assessment in pavement management	One-day workshop on Advances in Transportation Geotechnics Conducted by the School of Civil Engineering, SASTRA Deemed to be University, Thanjavur	8th March 2025
Dr. Deepa S, Scientist	Meeting at IOCL R&D office Faridabad	IOCL and CRRI meeting	27th May 2024
Dr. Aakash Gupta, Scientist	Functional evaluation of pavements using NSV	GNIDA Workshop	26th June 2024
Er .Sachin Gowda M K, Scientist	Design of Overlay Thickness for Flexible Pavements using the FWD Technique	RASTA-Center for Road Technology, Bengaluru.	10th July 2024
Dr. Aakash Gupta, Scientist	Functional Evaluation of Flexible Pavements using NSV	RASTA-Center for Road Technology, Bengaluru.	10th July 2024
Dr. Aakash Gupta, Scientist	Structural evaluation of pavements using FWD	Training program on Pavement Evaluation Techniques and their applications for Maintenance and Rehabilitation	11th September 2024
Dr. Aakash Gupta, Scientist	XGboost Shap framework for pavement performance prediction	Workshop on AI/ML applications in Pavement engineering	19th September 2024
Dr. Deepa S Scientist	Meeting with NHAI officials at NHAI office	Discussion on project proposal	20th September, 2024
Dr. Aakash Gupta, Scientist	Keynote speaker	International Conference on Civil, Materials and Environment 5. for Sustainability (ICCMES 2024), at Jaypee University Solan HP	4th October 2024

Dr. Deepa S, Scientist	Meeting with NTRO officials at CRRI	Demonstration of advanced equipments	07th November 2024
Dr. Aakash Gupta, Scientist	Delivered a Guest Lecture at JSS Academy of Technical Education, Noida on “Modern Technologies in Pavement Evaluation”	JSS Academy of Technical Education, Noida	18th November 2024
Dinesh Ganvir, Pr. Scientist	Design of White topping” under the training programme	Customized Training Programme for the Engineers of UT of Andaman & Nicobar Islands	16-20 September, 2024
Dinesh Ganvir, Pr. Scientist	Design and Construction Aspects of Whitetopping	Delivered the expert Lecture to CPWD Engineers organized by National CPWD Academy– Online Mode	10 th June 2024
Yatin Chaudhary, Scientist	Analysis and Design of Cement Concrete Pavements	Customized Training Programme for the Engineers of UT of Andaman & Nicobar Islands	16-20 September, 2024
Yatin Chaudhary, Scientist	Cement Concrete Mix Design for Pavements	Customized Training Program for CPWD Engineers on Flexible and Rigid Pavements	20 February 2025
Yatin Chaudhary, Scientist	Analysis and Design of Cement Concrete Pavements	Customized Training Program for CPWD Engineers on Flexible and Rigid Pavements	20 February 2025
Yatin Chaudhary, Scientist	Full Depth Reclamation Technique as a Sustainable Road Construction Practice	Faculty Development programme on “Advances in Transportation and Geotechnics for Future Infrastructure	1 st – 6 th April, 2024
Yatin Chaudhary, Scientist	Analysis and Design of Cement Concrete Pavements	One Week Short-term Training Program on Pioneering Advances in Civil Engineering (PACE-2024)	27 th September, 2024

Dr. Rajeev Goel, Chief Scientist	Repair and Rehabilitation Techniques for Highway Bridges’	Training Program on ‘Quality Assurance, Inspection of Bridges, Assessment and Rehabilitation of Bridges’, Organised by CRRI during December 30, 2024 to January 03, 2025 at CRRI	January 03, 2025
	Load Test and Rating of Highway Bridges	Training Program on ‘Quality Assurance, Inspection of Bridges, Assessment and Rehabilitation of Bridges’, Organised by CRRI during December 30, 2024 to January 03, 2025 at CRRI	December 31, 2024
	Design of Foundation with Example	Training on ‘Design of Bridge Structure and Foundation’, Organised by CRRI during October 21-25, 2024 at CRRI	October 23, 2024
	Design Provisions of IRC-112	Training on ‘Design of Bridge Structure and Foundation’, Organised by CRRI during October 21-25, 2024 at CRRI	October 23, 2024

	Load & Load Combinations as per IRC-6	Training on ‘Design of Bridge Structure and Foundation’, Organised by CRRI during October 21-25, 2024 at CRRI	October 21, 2024
	Overview of Bridge Design & Construction	Training on ‘Design of Bridge Structure and Foundation’, Organised by CRRI during October 21-25, 2024 at CRRI	October 21, 2024
	Common mistakes in DPRs of Bridges (Dos & Don’ts)	Workshop on Bridges “Building Connections, Bridging Gaps, Creating Opportunities” organised by National Rural Infrastructure Development Agency, Ministry of Rural Development, Govt. of India at Bhubaneshwar	October 4, 2024
	Digital Technologies in Bridge Design, Construction and Maintenance	Engineers Day Celebration at Ranchi, Organised by Jharkhand Engineers Services Association	September 15, 2024
	Preparation of DPR for Long Span Bridges	Online Workshop on “Bridges Construction, Supervision and Maintenance for PMGSY” organised by National Rural Infrastructure Development Agency	August 13, 2024
Dr. Naveet Kaur, Principal Scientist	Delivered lecture on “Advance technologies for Bridge Inspection”	Training for PWD official of Government of Orissa	May 7, 2025
	Delivered online lecture on “Engineering Resilience: Science behind Structural Health Monitoring”	Short Term course on “Integrating Advances in Geotechnical and Highway Engineering for Sustainable and Resilient Infrastructure”, Dr BR Ambedkar, NIT Jalandhar	April 29, 2025
	Delivered online lecture on “Revolutionising structural Assessment with Drone based Technology”	Special Lecture for CVL 864 course at IIT Delhi	April 24, 2025
	Delivered a lecture on “Science behind sensors and SHM”	Certificate course by SSPL, India, IITD incubated Company, IIT Delhi	April 19, 2025
	Delivered a lecture on “Development of Remotely Piloted Aerial Vehicle-Bridge Monitoring System”	133 rd RC meeting organised at CSIR-CRRI	January 23, 2025
	Delivered online Lecture on “Condition Assessment of Bridges using Drone Technology”	Training Programme on Geo Spatial Technology (GIS, GPS, RS) for Road and Infrastructure	January 8, 2025
	Delivered lecture on “Structural Health Monitoring: Science behind Instrumentation”	Training programme on Quality Assurance, Health Assessment, and Rehabilitation Techniques, organised by CSIR-CRRI	January 2, 2025
	Delivered lecture on “Science behind SHM”	India International Science Festival, partly organised by CSIR-CRRI	November 4, 2024
	Delivered lecture on “Use of Drone Technology for Condition Assessment of Structures”,	ATAL-FDP program on “Application of Structural Dynamics in Advanced Sensing Technologies and Energy Harvesting of Structures by Theory and	October 25, 2024

		Experiments”, VPKBIET, Baramati, Pune	
	Delivered online lecture on “General Design Features of Bridges-IRC:5”	An online training program ‘Design of Bridge Structure and Foundation’ organised by CSIR-CRRI	October 21, 2024
	Delivered lecture on “Uncharted Skies: Exploring evaluation with Drone Technology”	NIRMANA-2024 International Conference on “Smart and Sustainable construction with Futuristic Technologies”, Bangaluru, organised by Instruct	Sep 12, 2024
	Delivered a lecture on “Condition Assessment of Structures using Drone Technology”	Possible research collaboration with the Faculty from University of Tokyo during their visit to CSIR-CRRI	Sep 9, 2024
	Delivered online lecture on “Condition Assessment of Structures using Unmanned Aerial Vehicle”	The Seismic Shift- Seismic Academy Annual Conference 2024, organised by Seismic Academy, Indian Habitat Centre, New Delhi	Sep 4, 2024
	Briefed about the Bridge Division and Bridge Management System	Orientation Program for Research Interns at CSIR-CRRI	June 7, 2024
	Delivered online lecture on “Digital Era in Structural Health Monitoring”	Online Lecture organised by Thapar University	April 26, 2024
	Delivered lecture for project proposal on “Facility Creation for Structural Safety of Bridges using Mobile Bridge Inspection Unit”	Call for proposals for CSIR FCP 2.0. Presented as Co-PI of the project	April 3, 2024
Dr Siksha Swaroopa Kar, Senior Principal Scientist	Decarbonisation of Road Construction Sector	Roundtable discussion on Transport in Climate Action: National Priorities and Global Expectations for COP 30" organized by TERI	26th September 2025.
	Cold Mix technology for road construction and maintenance“	Workshop on "Emerging Technologies for Sustainable Road Infrastructure Path to Develop Madhya Pradesh, KAYAKALP-2025 organised by Department of Urban Development & Housing MP at Bhopal, Madhya Pradesh	19th September 2025
	From Lab to Highway: Sustainable and Smart Construction Practices for India’s Future Roads”	Expert Lecture at Smart Mobility Conference 2025, Delhi	7th October 2025,
	“Impact of Bitumen Emulsion Composition on Cold Recycling Performance for Low and High Traffic Pavements”	International Conference on Bitumen Emulsion 2025	18th July 2025
	Participated and presented (virtual) feedback at	“Stakeholder Feedback Workshop on “Development and Assessment of High Polymer Modified Bitumen Binder and Mix for Heavy Traffic Road” NIT Raurkela,	24 May 2025

	India's Road Network and Future Development from the perspective of a CSIR-CRRI	Modified Asphalt Research Center 2nd Future Research Focus Workshop" organized by MARC, University of Wisconsin-Madison.	20th Feb 2025.
	"Indian Road Infrastructure: The impact of CSIR-CRRI'S Contribution" as part of CSIR Raman Research Fellowship.	a) Department of Civil, Construction, and Environmental Engineering, North Carolina State University, Raleigh, North Carolina, USA. b) National Center for Asphalt Technology, Auburn University (NCAT), Alabama USA c) Center for Research and Education in Advanced Transportation Engineering Systems (CREATES), Rowan University, Glassboro, New Jersey, USA d) Illinois Center for Transportation, University of Illinois Urbana-Champaign IL, USA e) Department of Sustainability, California State University, Northridge, California, USA	28th Jan 2026 to 28th May 2026
Dr G Bharath (Guest Lecture)	Mix Design and Quality Control Practices in Pavement Construction	Four-day workshop organised by department of civil engineering, IIT Roorkee	April 4-7th, 2024.
	Ongoing research Projects	Visited IIT Hyderabad, BITS Pilani (Hyderabad Campus), IIIT Hyderabad and discussed with faculty members for possible research collaborations.	April, 2024
	Delivered presentations on:(i) Full Depth Reclamation for Rural Road Projects(ii) Cement Grouted Bituminous Macadam as a Surfacing Layer in Rural Roads.	Workshop on "New Technology Initiatives under PMGSY," held at IIT Bhubaneswar	November 18–22, 2024
	Pavement Recycling	Workshop on "State Roads Maintenance & Rehabilitation (M&R): Challenges & Best Practices," organized by the R&B Department, Government of Andhra Pradesh, CRRI, and SRM University AP.	7 th October 2024
	Full Depth Reclamation	Customized five-day training program for the Engineers of Andaman PWD, organized by CSIR-CRRI."	16th-20th September 2024
	Pavement Recycling	TATA Projects group on Pavement Recycling during the Quality Connect and Knowledge Sharing session	7th November 2024
	Full Depth Reclamation	Workshop on Full Depth Reclamation (FDR)" presented On behalf of the National Rural Infrastructure Development Agency (NRIDA), Ministry of Rural Development,	20th May 2024, Dimapur, Nagaland

Dr. Sarfaraz Ahmed Scientist	Sustainable Pavement Engineering and its Practice in Indian Context	Delivered keynote Lecture on Advanced Civil Engineering Practices for Sustainable Infrastructure Development (ACED) Organized by The Institution of Engineers (India), U.P. State Centre, Lucknow	November 28, 2025
Dr. Parvathi G. S. Principal Scientist	“Design of remedial measures for the distressed RS walls: Case studies”	Workshop on Reinforced Soil Walls: Distresses and Remedies, CBIP, New Delhi	4 th April 2024
	“Road Construction with Jute Geotextiles: Insights from CRRI’s Experience.”	National conference on "Jute Geotextiles in Civil Engineering: Sustainable Solutions for the Future" on	13 th September 2024
	Development of ‘Biodegradable Prefabricated Vertical Drain’ by Molding Technique– A Sustainable Solution for Road Construction Over Soft Soil	Monitoring committee meeting for CSIR FBR projects at CSIR-SERC, Chennai	Dec 10th, 2024, and March 4, 2025
	Development and Field Testing of ‘Biodegradable Prefabricated Vertical Drain’ – A Sustainable Solution for Road Construction Over Soft Soil	10 th Mission Steering Group (MSG) under the Chairmanship of the Hon’ble Minister of Textiles	11 th Nov. 2024
	Executive Committee Meeting	The Indian Chapter of the International Geosynthetics Society	2 nd Oct. 2024
Prof. Manoranjan Parida, Dr. K Ravinder, Dr. Abhishek Mittal and Dr. Parvathi G. S	Online	Meeting with Dr. K. M. Abraham, Chief Financial Advisor for the Chief Minister, Kerala, and CEO of Kerala Infrastructure Investment Fund Board (KIIFB), and his team regarding the New Materials and Technologies for Highway Infrastructure developed by CSIR-CRRI, and exploring possible collaboration.	13 th Dec. 2024
Dr. A. K. Sinha, Sr. Pr. Scientist and Dr. Parvathi G. S., Principal Scientist	“Construction, Supervision and Performance evaluation of Municipal Solid Waste Embankment - A Pilot study”	Hackathon: 2024 Technology Demonstration Scheme,	19 th Sept. 2024
Dr. A. K. Sinha	Participated and presented project research work of MSW in Hackathon.	Sponsored by MoRTH, New Delhi.	16 th January 2025

	Delivered lecture - Recycle of red mud waste material in road construction.	Sponsored by Jharkhand Engineer services association, Ranchi, Jharkhand.	15th September 2024,
	Delivered lecture – Mobility Infrastructure and planning (MIP).	One week one theme (OWOT), Sponsored by CSIR-CRRI at CSIR-AMPRI, Bhopal, Madhaya Pradesh.	December, 2024
	Delivered lecture - Industrial waste materials for road construction.	Sponsored by IIT (ISM), Dhanbad.	
	Delivered lecture - Industrial waste materials for road construction	Sponsored by NIT Surat.	
	Presented GTE divisional research work in IRC Annual session 2024, Raipur.		
	Lecture delivered at SRKR engineering college, Bhumivaram, AP under skill development % days training program for undergraduate civil engineering students	sponsored by Ministry of Textile, GOI.	
Dr. Minal Chandra, Senior Scientist	Charging Infrastructure Development for Electric Vehicles in Indian Cities	Indo-Africa International Summit on Electric Vehicles, Greater Noida,	19th November 2024.

Invited Lectures/Speech Delivered and Meetings Attended

1. Talk on “Engineering Aspects of Road Safety” in the Conference Road Safety - Road Safety Month Ranchi, Jharkhand during February 12-13, 2024 by Sh. Subhash Chand
2. Invited talk on “Integrating augmented reality, virtual reality, and driving simulator for enhanced driver response strategies” during the workshop on “Applications of Driving Simulators and Virtual Reality in Advanced Road Safety Research” on October 25-26, 2024, at IIT Roorkee.
3. Talk on Traffic Safety and a motivating Science talk for class XI & XII Science Stream students at PM SHRI Kendriya Vidyalaya Pragati Vihar, Delhi on 28.10.2024 as part of Jigyasa programme.
4. Delivered lectures to Jigyasa students on 4 different occasions at CSIR-CRRI, and college students
5. Four hours session on 22 Oct. during the training Programme on ‘Disaster Management: Road Safety’ by Uttarakhand Academy of Administration, attended by Officers from Uttarakhand Govt.:
6. Enhancing road safety through augmented reality and advanced instrumentation: A situation awareness perspective
7. Legal framework for road safety & disaster response: An overview of standards, laws, & enforcement

8. Hands on session for design & environmental qualification as per airworthy requirement organized at IIIT Una during Workshop on the Application of Optical Principles in Engineering in association with Dr Divya Agrawal, Principal Scientist, CSIR-CSIO Chandigarh.
9. 2 hours lecture on Display Technologies for Augmented and Virtual Reality in association with Dr Divya Agrawal, Principal Scientist, CSIR-CSIO Chandigarh at IIIT Una during Workshop on the Application of Optical Principles in Engineering
10. Panel discussion in workshop on ‘Disaster Risk Reduction: Preparedness & Long Term Recovery’ where I spoke on “Strengthening Infrastructure Resilience & Long Term Recovery through used of Instrumentation and IT” organized by R.S. Tolia Uttarakhand Academy of Administration, attended by Officers from Uttarakhand Govt. held at Hotel Drona, Dehradun
11. Participated as lead panellist on the topic “Real time data-based river monitoring, restoration and rejuvenation" scheduled on 15th October 2024” at Amity University, Noida Campus during International Conference on Trends and Recent Advances in Civil Engineering (TRACE 2024).
12. Session Chair for Lecture Session – 1: Emerging Transportation Technologies-I during the 15th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC) organized by IIT Bombay: 18 December 2024.
13. Lecture by Dr. Vinod Karar and Dr. Jitendra Goyal on “Interventions by CSIR – Central Road Research Institute in Road Sector” & quiz in which there was participation of more than 100 students
14. Coordination and conducting quiz during talk by Dr. Siksha Swaroopa Kar on Waste to Wealth in road Construction attended by about 100 participants.

Meeting Attended (Outside CSIR-CRRI)

- ✓ Had the opportunity to discuss with the Hon'ble Chief Minister of Andhra Pradesh, Shri Nara Chandrababu Naidu, about new technologies in road construction and maintenance, as well as the future planning of road infrastructure in the state.
- ✓ Interacted on New/Futuristic Idea “Development of Bio-Binders for Sustainable Bituminous Roads” in MoRTH office with Honorable Road Transport Minister.
- ✓ Meeting with R&B officials (Principal Secretary and Engineering Chief) office at Vijayawada, Andhra Pradesh and discussed about the Feasibility in adopting Full depth reclamation (FDR) technology for state roads
- ✓ Discussed with GVMC officials and the District Collector regarding CRRI's works for implementation in urban and rural roads of Visakhapatnam.
- ✓ Coordinated “Five-day Training course on the application of Geo-synthetics in Road Infrastructure Projects” for the 120 UG students, SRKR Engineering College, Andhra Pradesh.
- ✓ Coordinated the Workshop on "State Roads Maintenance & Rehabilitation (M&R): Challenges & Best Practices," organized by the R&B Department, Government of Andhra Pradesh, CSIR-CRRI, and SRM University AP
- ✓ Involved as a co-coordinator in organizing a One-Day Workshop on Falling Weight Deflectometer (FWD) held on June 25th, 2024, at CSIR-CRRI, New Delhi.

Participation in Conferences/ Seminars / Workshops

Name & designation of staff	Details of conference/seminar	Venue	Dates
Dr. Vidhi Vyas Scientist	1st Indian Ground Penetrating Radar symposium	Delhi, India	24-25 April 2024
All PED Staff	Workshop on Falling Weight Deflectometer	New Delhi	25 June 2024
Dr. Neelam Jain Gupta, Chief Scientist	Workshop on Vehicular Emission for Road Transport Sector sponsored by PCRA	CSIR-CRRI	11th September, 2024
All PED Staff	Workshop on Network Survey Vehicle Applications for Maintenance of Road Infrastructure (NSV-AMRI-2024)	New Delhi	23 September 2024
Dr Deepa S, Scientist	Thermal Analysis and Rheology Seminar by NETZSCH Analyzing & Testing	New Delhi	12 November 2024
Dr Deepa S, Scientist	Global Convention on Cold Central Plant Recycling (GC-CCPR)	New Delhi	December 4, 2024
Dr Deepa S, Scientist	Bauma CONEXPO INDIA	Greater Noida	12 December 2024
Sachin Gowda M K Scientist	Global Road Construction Conference 2024	Rajasthan International Centre in Jaipur.	18th December 2024
Dr. Neelam Jain Gupta Chief Scientist	Technical Sessions and the Product Launch event of “REJUBIT: a joint innovation by CSIR-CRRI and Ooms India graced by the Hon’ble Minister Sh. Nitin Gadkari, Minister of Road Transport and Highways, Government of India	CSIR-CRRI	6th February 2025
Dr. Neelam Jain Gupta Chief Scientist and Dr Deepa S, Scientist	CIDC-ICC-CRRI Conference on Emerging Technologies Redefining Highways, Rural Roads and Infrastructure	New Delhi	07 February 2025
Dr. Pradeep Kumar, Chief Scientist and Dr. Neelam Jain Gupta Chief Scientist	Workshop on Automatic Vehicle Counting & Classification, AVCC Systems: Technologies, Applications and Future Trends,	CSIR-CRRI	28th February 2025
Dr. Pradeep Kumar, Chief Scientist and Dr. Neelam Jain Gupta Chief Scientist	Demo on ESRI Indo Arc GIS Software	CSIR-CRRI	28th February, 2025
Dr Deepa S, Scientist and Sachin Gowda M K Scientist	GLOBAL ROAD INFRA SUMMIT & EXPO “Vision Zero: Sustainable Infratech and Policy for Safer Roads”	Delhi, India	6th and 7th March 2025

Dr. Rakesh Kumar, Chief Scientist	18th NCB International Conference & Exhibition on Cement, Concrete and Building Materials	New Delhi	27-29th November 2024
Yatin Chaudhary, Scientist	18th NCB International Conference & Exhibition on Cement, Concrete and Building Materials	New Delhi	27-29th November 2024
Yatin Chaudhary, Scientist	International Oil & Gas Chemistry, Chemicals and Additives Conference & Exhibition (IOGCA 2024)	New Delhi	26-27 September 2024
Dinesh Ganvir, Principal Scientist	15 th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC 2024)	IIT Mumbai	18-20 December 2024
Dr. Rakesh Kumar	18th NCB International Conference & Exhibition on Cement, Concrete and Building Materials	New Delhi	27-29th November 2024
Yatin Chaudhary, Scientist	18th NCB International Conference & Exhibition on Cement, Concrete and Building Materials	New Delhi	27-29th November 2024
Yatin Chaudhary, Scientist	International Oil & Gas Chemistry, Chemicals and Additives Conference & Exhibition (IOGCA 2024)	New Delhi	26-27 September 2024
Dinesh Ganvir, Principal Scientist	15 th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC 2024)	IIT Mumbai	18-20 December 2024
Sh. Anshul Saxena, Senior Technical Officer (1)	International Conference on “Steel Slag Road: A Sustainable Green Infrastructure Transforming Waste to Wealth”	The Oberoi, New Delhi	29 June 2024
Sh. Anshul Saxena, Senior Technical Officer (1)	AcSIR-CRRI Science Club Organizes Workshop on Communication and Presentation Skills	AcSIR, Headquarter	12-13 July 2024
Dr. Siksha Swaroopa Kar, Senior Principal Scientist	Participated and Chaired session at 11th International Conference on Transportation Systems Engineering & Management (CTSEM 2025)	Bhopal	July 4 - 5, 2025,
	Participated and co-chaired a session “Implementation, quality control and machineries in FDR and Green Technologies” at Seminar on “Full depth Recycling and Green Technologies in Road Construction” organised by Indian Road Congress,	Lucknow.	29-30th August, 2025
	chaired a session at 3rd International Conference on Transportation Infrastructure Projects: Conception to Execution (TIPCE)	IIT Roorkee, Uttarakhand, India.	September 18-21, 2025,
	National Symposium on “Seventy-Five years of Accomplishment of Mausam: Journal of Meteorology, Hydrology and Geophysics	Indian Meteorological Department., New Delhi	13 January, 2025

Dr G Bharath, Principal Scientist	IRF World Congress 2024	Istanbul, Turkey.	October 15th to 18 th 2024
	Global Road Construction Conference	Jaipur	19 th December 2024.
Dr Rajiv Kumar, Senior Scientist	13th Asia-Pacific Conference on Transportation and the Environment, Singapore.	Singapore	July 8–10, 2024
	Global Road Construction Conference	Jaipur	19 th December 2024.
Dr. Sarfaraz Ahmed, Scientist	International Conclave on Sustainable Construction (Member of Scientific Committee)	Indian Institute of Infrastructure and Construction, Kollam, Kerala	5-7 December 2024
	Workshop on Reinforced Soil Walls: Distresses and Remedies	CBIP, New Delhi	4 th April 2024
	National conference on "Jute Geotextiles in Civil Engineering: Sustainable Solutions for the Future"	IISC Bengaluru	13 th September 2024
	International Workshop on Advances in Roadways and Railway Applications using Geosynthetics	IIT Hyderabad	3 rd October 2024
	13 th Annual Conference of Deep Foundations Institute: DFI-India 2024	Panaji, Goa	September 19- 21, 2024
	CRRI conference on Innovation Technologies in Road Construction	India Expo Centre, Greater Noida	12 th Dec. 2024
Dr. Parvathi G. S. Principal Scientist	International Conclave on Sustainable Construction (Member of Scientific Committee)	Indian Institute of Infrastructure and Construction, Kollam, Kerala	5-7 December 2024
	Workshop on Reinforced Soil Walls: Distresses and Remedies	CBIP, New Delhi	4 th April 2024
	National conference on "Jute Geotextiles in Civil Engineering: Sustainable Solutions for the Future"	IISC Bengaluru	13 th September 2024
	International Workshop on Advances in Roadways and Railway Applications using Geosynthetics	IIT Hyderabad	3 rd October 2024
	13 th Annual Conference of Deep Foundations Institute: DFI-India 2024	Panaji, Goa	September 19- 21, 2024
	CRRI conference on Innovation Technologies in Road Construction	India Expo Centre, Greater Noida	12 th Dec. 2024
Dr Naveet Kaur, Principal Scientist	Global Road Infratech Summit & Expo 2025 under the theme “Vision Zero: Sustainable Infratech and Policy for Safer Roads”	Organized by International Road Federation (IRF), The Lalit, New Delhi,	March 6 - 7, 2025
	Lecture on “Conduct Rules (CCS)” by Shri Mukund Sahai, former CoA, NBRI	CSIR-CRRI	October 9, 2024
	International Seminar on “Advances in Bridge Management” Lalit hotel, Bengaluru	Organized by IRC and PIARC, MoRTH, PWD Karnataka	Sep 25-26, 2024
	One day Workshop on Network Survey Vehicle’	CSIR-CRRI	Sep 23, 2024

	One Day 7 th International Workshop on C3S Corrosion and its control in Concrete Structures,	IIT Madras	Sep 24, 2024
	Day 3 of One Week One Theme (OWOT) at CSIR-CMERI, Durgapur	CSIR-CMERI Durgapur	Sep 3, 2024
	Day 4 of One Week One Theme (OWOT) at CSIR-SERC, Chennai	CSIR-SERC, Chennai	Sep 4, 2024
	Lecture on “Purchase Guidelines” by Sr COSP, CRRI	CSIR-CRRI	May 10, 2024
Dr. Rajeev Goel, Chief Scientist	CEMCON 2025	Organised by Indian Concrete Institute, Pune Centre at Pune	March 21-22, 2025
	Global Road Infra Summit & Expo “Vision Zero: Sustainable Infratech and Policy for Safer Roads”	Organised by International Road Federation at New Delhi	March 06-07 2025
	Workshop on ‘Automatic Vehicle Counting and Classification Systems	Organised by CSIR-CRRI at New Delhi	February 28, 2025
	BIS Webinar on ‘Geotechnical Engineering Services’	Organised by BIS at New Delhi	January 22, 2025
	18 th NCB International Conference & Exhibition on Cement, Concrete and Building Materials “Cementing the Net Zero Future”	Organised by National Council for Cement and Building Materials, Ballabgarh at Yashobhoomi, Delhi	November 27-29, 2024
	International Seminar on “Advances in Bridge Management”	Organised by Indian Roads Congress in association with MoRTH, PIARC (World Road Federation) and PWD Karnataka at Bengaluru	September 25-26, 2024
	Seismic Academy Annual Conference 2024 on ‘THE SEISMIC SHIFT’	Organised by Seismic Academy at Delhi	September 04, 2024
	Bridge 2024 Conference on 'Revolutions in Bridge Engineering Past, Present and Future'	Organised by Indian Institution of Bridge Engineers at Bengaluru	August 7-8, 2024
	Workshop for Committee Members of BIS	Organised by Bureau of Indian Standards at Noida	August 04, 2024
	Seminar & Exhibition on ‘Modern Trends in Construction Technology & Embracing Innovation & Building A Better Tomorrow’	Organised by Civil Engineering & Construction Review at New Delhi	August 02, 2024

	Technical Seminar on ‘Post-installed anchorage to concrete – Gains insight to Draft Indian Code’	Organised by Hilti India at New Delhi	July 05, 2024
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Participation in Training Programs/ Short Term Courses (Outside CRRI)

Participation in Training Programs/ Short Term Courses (Outside CRRI)

S.No.	Name & Designation of Staff	Topic	Venue	Date
1.	Dr. Ambika Behl Dr. Mukti Advani	2 nd Batch of INSA-NCGG Leadership Development Program in Science & Technology (LEADS)	INSA, New Delhi	1-7 April 2024,
2.	Sh. Om Prakash Yadav Superintending Engineer (Electrical) Sh. Kewal Krishan Gola Executive Engineer (RAC)	Two Day Capsule Course on “Air Conditioning Heating & Mechanical Ventilation”	NITS(Noida)	27-28 May 2024
3.	Shri Parwez Akhtar JE (Electrical)	Two Day Capsule Course on NBC 2016 – Fire & Life Safety	NITS(Noida)	01-02 July 2024
4.	Sh. Jitender Giri Engineer-in-Charge (ESD) Shri Ankit Kumar Nishad Junior Engineer (Civil)	One Day Capsule Course on “Construction Project Management”	NITS(Noida)	04 July 2024
5.	Dr. Ravindra Kumar Chief Scientist	3 rd Batch of INSA-NCGG Leadership Development Program in Science & Technology (LEADS)	INSA, New Delhi	8-14 July 2024
6.	Shri Vaibhav Varshney AEE (ESD)	One Day Capsule Course on “Waterproofing in Buildings”	NITS(Noida)	02 August 2024
7.	Dr. Minal Sh. Romeil Sagwal Dr. Sampath Kumar Pasupunuri Dr. Ashish Walia	DST Funded Training Programme on “Transformative Pathways of Science, Technology and Innovation for Attaining the Sustainable Development Goals”	IPE, OU Campus, Hyderabad	21-25 October 2024
8.	Dr. Sarfaraz Ahmed Dr. Rajiv Kumar Sh. V K Kanaujiya Sr. TO (3)	Lead Auditor Course on Quality Management System as per IS/ISO 9001:2015	NITS BIS(Kolkata)	18-22 November 2024

	Ms. Neha Chaudhary Tech. Assistant Ms. Parul SSA(G)			
9.	Dr. Rajiv Kumar	DST Sponsored 5 Day Training Programme on “Climate Risk Management : Policy and Governance”	Lal Bahadur Shastri National Academy of Administration, Mussoorie (LBSNAA), Mussoorie	9-13 December 2024
10.	Dr Naveet Kaur	5 day residential training “Nurturing Future Leadership Program”	Key initiative under the Malaviya Mission Teacher Training Program (MMTTP), sponsored by the Ministry of Education, organised by and at IIT Roorkee	January 6-10, 2025
11.	Dr. Sampath Kumar	Five days residential training program on “National Future Leadership Program NFLP”	IIT Roorkee, Roorkee	06-10 January, 2025
12.	Dr Aakash Gupta	Training on ACR-PCR (Aircraft Classification Rating – Pavement Classification Rating) from ICAO, Canada (online mode)	Online Mode by ICAO (Canada)	19–20 November 2024
		Participated in LBSNAA Training on Climate Risk Mitigation	Lal Bahadur Shastri National Academy of Administration (LBSNAA), Mussoorie	9–13 December 2024
13.	Sachin Gowda M K Scientist	Mix Design and Quality Control Practices in Pavement Construction	IIT Roorkee	04 th to 07 th March 2024.
14.	Dr. Siksha Swaroopa Kar	Fully Prepared to Lead: Personal Professional Development Planning” course by the	University of Wisconsin–Madison, USA	15th Feb to 15th May 2025
15.	Dr. Minal Chandra	Scientific Leadership and Management Skills	Berkley lab, UC-Berkley, UC Davis and Gladstone Institutes	April, 2024
16.	Sh. Ishant Kashyap Technician-I,	Right to Information – RTI	Online-IGOT karmayogi Bharat Portal https://igotkarmayogi.gov.in/ Course offered by Bharat Sanchar Nigam Limited (BSNL)	03-07-2024
		Training Program on Eoffice	Online-IGOT karmayogi Bharat Portal https://igotkarmayogi.gov.in/	13-09-2024

			Course offered by Haryana Institute of Public Administration (HIPA)	
		Introduction to E- Office	Online-IGOT karmayogi Bharat Portal https://igotkarmayogi.gov.in/ Course offered by Bharat Sanchar Nigam Limited (BSNL)	27-02-2025

New Facilities / Equipment Procured / Developed

New Facilities / Equipment Procured / Developed

Name of the Division	Name of the Facility / Equipment
Pavement Evaluation Division	SimaPro Software for Life Cycle Assessment
Bridges and Structures Division	Impedance Analyser (LCR) Meter
	Corrosion Analyser
	Electrochemical Workstation
	Subframe assembly for Cyclic and fatigue Test Rigs
	Air Compressor
	Fully computerized Servo Controlled Compressive Testing Machine (5000 kN Capacity)
	Hydraulic Universal Testing Machine (3000 kN capacity)
	Duct for Oil Coolers
	Projector
	Cover meter Profometer 651AJ
	Cut and pull out Test (CAPO) System
	Customized Drone with Integrated NDT Sensor
Geotechnical Engineering Division	Interactive panel and accessories
	Cross-Plane Permeability of Geosynthetics



Handheld Temperature and Humidity Meter

Ph Resistivity meter

Laboratory equipment such as weighing machine, trolley, water distillation unit etc.

Flexible
Pavements
Division

Universal Testing Machine-30kN



Thesis / Dissertation Supervision

Thesis / Dissertation Supervision

Ph.D. SUPERVISION

S.No.	Names of Student	Institute	Title of Project/Thesis	Supervisors
In Progress as on March 2025				
1	Sundar Singh	AcSIR-CRRI	EV Charging network performance evaluation	Dr. Minal Chandra and Dr. Ch. Ravi Sekhar,
2	S. Mariappan	AcSIR-CRRI	Development of EV charging application	Dr. Minal Chandra,
3	Komal	AcSIR-CRRI	Development of Smog Eating Pavements	Dr Rina Singh and Dr Siksha Swaroopa Kar
4	T. Lakshmi	AcSIR-CRRI	Graphene oxide polymer nanocomposites: self healing and cleaning aspects in bitumen	Dr Rina Singh and Dr Abhishek Mittal
5	Chhaya Sharma	Ph. D (Completed in Dec 2024)	Study of Generation and Variation of LSPR under a Polarized Beam	Dr Jyori Katyal and Dr Rina Singh
6	Bishnu Kumar Padhi	AcSIR-CRRI	Development of Maintenance Decision Models for Flexible Pavement	Dr. Pradeep Kumar,
7	Anshul Saxena	AcSIR-CRRI	A Hybrid Sensing and Analytics Approach for Network-Level Road Condition Monitoring	Dr. Pradeep Kumar, and Dr. Hardeo Kumar Thakur, Bennett University, Greater Noida
8	Amresh Kumar	AcSIR-CRRI	FWD Data-Driven Lifecycle Cost Analysis for Optimized Pavement Management	Dr. Pradeep Kumar, and Dr. Tanuj Chopra, Thapar Institute of Engineering & Technology, Patiala
9	Nazia Parvez	AcSIR-CRRI	Performance of reinforced concrete structures under impact load and mitigation with different materials using ABAQUS	Muslim Ansari, CBRI Roorkee and Dr. Vidhi Vyas,
10	Shashank Sonal	AcSIR-CRRI	Life Cycle Assessment of Highways	Dr. Deepa S., CSIR-CRRI and Dr Nivitha M R, PSG college of technology Coimbatore
11	Rajesh Karel	IIT Dhanbad	Deterioration Models for Flexible Pavements	Dr. S. S. Mahapatra, IIT Dhanbad and Dr. Sampath Kumar, CSIR-CRRI
12	Kumar Shashi Bhushan	Delhi Technological University, Delhi	Study of Nature of Ground Waves and Protection of Civil Engineering Structures by Passive Isolation	Dr. Rajeev Goel and Dr. Anil K Sahu (DTU)
13	Neha	NERIST, Arunachal Pradesh	Construction and Demolition Waste - A Viable Source of Coarse Aggregates for Sustainability	Dr. Rajeev Goel and Dr Sudhist Mishra (NERIST, Arunachal Pradesh)

14	Alok Rathore	AcSIR-CRRI	Resilience based Assessment and Effect of Retrofitting for Bridges	Dr. Rajeev Goel and Dr. Rajeev K. Garg (DTU)
15	Neeraj Jain	AcSIR-CRRI	Design & Development of Multi-layered Bridge Systems	Dr. Rajeev Goel
16	Gaurav Verma	AcSIR-CRRI	Development of low cost natural fibre based composite material for bridge construction	Dr Rajeev Goel and Dr Naveet Kaur
17	Mukesh Vashan	AcSIR-CRRI	Analysis of Bridges under Earthquake	Dr Rajeev Goel and Dr Naveet Kaur
18	Shyam Sundar Choudhary	AcSIR-CRRI	Health assessment of cables of prestressed concrete bridges	Dr. Rajeev Goel
19	Prateek Sharma	AcSIR-CRRI	Structural performance of GFRP reinforced concrete beams	Dr. Rajeev Goel and Dr. Narinder Dev (DTU)
20	Amit Trivedi	AcSIR-CRRI	Mechanical, Durability and Microstructural Properties of GPC made with Multi Blended Materials and Application in Infrastructure	Dr. Rajeev Goel and Dr. Rakesh Kumar
21	Sreenitya Singamsetty	IIT Delhi	Non-rectilinear configuration of piezo sensors for structural health monitoring and energy harvesting	Dr. Naveet Kaur and Prof. Suresh Bhalla (IIT Delhi)
22	Goldi Gupta	AcSIR-CRRI	Corrosion Assessment in real life field conditions	Dr Naveet Kaur and Dr Shweta Goel
23	Naveen Kumar	AcSIR-CRRI	Development of Impact Echo test integrated with customized drone	Dr Naveet Kaur
24	Amit Trivedi	AcSIR-CRRI	Mechanical, Durability and Microstructural properties of GPC made with Multi Blended Materials and Application in Infrastructure	Dr. Rakesh Kumar and Dr. Rajeev Goel
25	R. Umadevi	AcSIR-CRRI	Fatigue Performance Model for the FDR Layer	Dr. G Bharath and Prof. Satish Chandra
26	V K Kanaujia	AcSIR-CRRI	Performance Evaluation of Geosynthetic Reinforced Pavements	Dr. G Bharath and Prof. Nikhil Saboo
27	Gaikwad Siddharth		Laboratory and Field Performance Evaluation of Reinforced Bituminous Pavements	Dr. G Bharath and Prof. Kranthi Kumar
28	Bhavesb Bhambhani	IIT Roorkee	Evaluation of Waste Engine oil residue for partial replacement of conventional bitumen	Prof. Satish Chandra and Dr. G Bharath
29	Sayantan Sasmal	NIT Silchar	Investigation on the performance of biomass modified bio oil in tack coat	Prof. Ambika Kuity and Dr. G Bharath
30	Abhishek Kumar	AcSIR-NML	Development of an efficient and sustainable process for recycling construction and demolition waste using gas-solid fluidized bed separator	Dr Ganesh C and Dr. G Bharath
31	Katkar Sarang Sanjay	BITS Pilani	Use of Waste Cooking Oil Modified Bio binders in Bituminous Mix	Prof. Vijay Kakade and Dr. G Bharath

32	MGurunath	Mahindra University, Hyderabad	Performance Characteristics of stabilized base layers with emulsion	Dr. Deepti Avirneni and Dr. G Bharath
33	Sushma	SRM University, AP	Moisture Susceptibility Evaluation of bituminous mixes for Indian Conditions	Dr Dr. A. Uma Maheswar and Dr. G Bharath
34	Suresh Chand Bairwa	Malaviya National Institute of Technology Jaipur	Performance Evaluation of High Modulus Asphalt Mixes Containing Stone Waste	Dr. Pawan Kalla MNIT, Jaipur & Dr. Sarfaraz Ahmed
35	Sandeep Kumar	AcSIR-NPL	Study of Surface Texture Characteristics of Automobile Components used in the Internal Combustion Engine Using Tactile Profilometer	Dr. Mukesh Jewariya, CSIR-NPL, and Dr Parvathi G. S.
36	Pankaj Bhatt	AcSIR-CRRI	Strength and deformation behavior of Municipal Solid Waste in Road Construction	Dr A. K. Sinha, Dr. Parvathi G. S., and Dr. Manojit Samanta, CSIR-CBRI
37	Shivam	AcSIR-CRRI	Geonaturals for ground improvement	Dr Parvathi G. S
38	Ms. Vanshi Dhar	CSIR-CRRI	Economic feasibility of Electric Buses in India	Dr. Ch. Ravisekhar and Dr. Ramesh Ch. Majhi

M. Tech. Dissertations (Completed)

S.No	Name	College / University address	Topic	Supervisor
1	Mr. Aamir Khan	Deenbandhu Chhotu Ram University of Science And Technology, Murthal Sonipat ,Haryana	Impact of Road Signs on Road Users	Dr. K. Ravinder
2	Mr. Abhay Vivek Kumar Dixit	Faculty of Technology and Engineering, The Maharaja Sayajirao University of Baroda, Vadodara	Artificial Intelligence (AI) Based Grey spot Production on Urban Highways	Dr. Mukti Advani
3	Mr. Akbari Divyang Kumar	Sardar Vallabhbhai National Institute of Technology, Surat	Driver's Engagement and Safety Assessment: Leveraging Vehicle Telematic Data	Dr. Ch. Ravi Sekher
4	Mr. Allwyn David Bogi	Central University of Jharkhand	Assessing The Factors Influencing Bus Trip Generation In Ranchi City	Dr. Ch. Ravi Sekher
5	Mr. Aryan Attri	Maharaja Sayajirao University, Vadodara	Utilisation of Fly ash and GGBFS as Road Base Construction Material in flexible Pavement Through Geopolymerization	Dr. Abhishek Mittal
6	Mr. Basvaraj Mantur	RASTA- Centre For Road Technology, Bengaluru	Performance Evaluation of Asphalt Pavement Incorporating ISF Slag as a Fine Aggregate	Dr Aakash Gupta
7	Mr. Bimal Sharma	Delhi Technological University, Shahbad, Daulatpur	Assessment of Bridge Load Carrying Capacity Under Static and Dynamic Load Testing	Dr. Naveet Kaur
8	Mr. Gandhi Dhruv Nileshbhai	The Maharaja Sayajirao University, Vadodara	Comparative Evaluation of Cold Patching Asphalt Mixtures Prepared with EAF Steel Slag and Natural Aggregates for Waterlogged Potholes Patch Repair in Flexible Pavements	Sh. Satish Pandey
9	Mr. Hemendra Sharma	Kautilya Institute of Technology and Engineering, Jaipur	Assessing Transportation Sustainability Using an Indicator-Based Method	Dr. Ravindra Kumar
10	Mr. Madhur Saini	NIT Kurukshetra	Application of Machine Learning Algorithm for Pavement Performance Evaluation	Dr. Vidhi Vyas
11	Mr. Mayuresh N. Ghule	Visvesvaraya National Institute of Technology, Nagpur	Finite Element Modelling of Slope Instability in Clayey Soil and the Design of Remedial Measures.	Dr. Parvathi G S
12	Mr. Md. Wazid Ali Ansari	Central University of Jharkhand	Noise Mapping of Goa City and Identification of Hotspots	Dr. Nasim Akhtar
13	Mr. Mohsin Zaki	National Institute of Technology Kurukshetra	Developing A Model Between Mode Choice and Accident Indices Of Million-Plus Cities In India	Dr. Mukti Advani

14	Mr. Pawan Kumar	Visvesvaraya National Institute of Technology, Nagpur	Development of Bridge Management System for Conditions Assessment of Bridges	Dr. Naveet Kaur
15	Mr. Prateek Verma	NIT Kurukshetra	Optimizing the Establishment of an Agricultural Corridor in Meghalaya's Hilly Region Through QGIS-Assisted Ant Colony Optimization Along Pre-existing Road Networks	Dr. Ravindra Kumar
16	Ms. Priyanka	Deenbandhu Chhotu Ram University Of Science And Technology, Murthal Sonipat ,Haryana	Accident Black Spot Rectification And Engineering Intervention	Dr. K. Ravinder
17	Ms. Priyanshi Singh	Gautam Buddha University, Gautam Buddh Nagar, UP	Quantification And Comparison of The Vehicular Emissions Obtained By Using Top- Down And Bottom-Up Approach	Dr. Mukti Adwani
18	Mr. Raj Amrutlal Patel	The Maharaja Sayajirao University Of Baroda, Gujarat	Microscopic Traffic Simulation Considering Adaptive Traffic Control System	Dr. E. Madhu Dr. S Velmurugan
19	Ms. Rajinder Kaur	Thapar Institute of Engineering and Technology, Patiala	Evaluation of Lignin to be used as a Bitumen Modifier	Dr. Ambika Behl
20	Mr. Rohan Kiran Pokale	Visvesvaraya National Institute of Technology, Nagpur	Prediction of Interaction Coefficient of Geogrids and Geo-Straps With Various Geomaterials Using Machine Learning	Dr. Parvathi G S
21	Mr. Satyam Kumar	Sardar Vallabhbhai National Institute of Technology, Surat	Vehicle Breakdown and Pollution Emission Scenario Analysis	Dr. Mukti Adwani
22	Mr. Subodh Bende	Delhi Technological University, New Delhi	Novel Method for Finding the Interfacial Shear Stress Between FRP-Concrete Interface	Dr Naveet Kaur
23	Ms. Trusha Dalal	LD College of Engineering, Ahmedabad	Performance Evaluation of 100% Reclaimed Asphalt Pavement Mixes	Dr. Deepa S
24	Mr. Veekshith Gowda K T	RASTA- Centre For Road Technology, Bengaluru	Influence of Aggregate Gradation and Ageing Factors on Performance of Dense Graded Asphalt Mixes	Sh. Sachin Gowda M K
25	Mr. Vishnu K	College of Engineering, Trivandrum, Kerala	Flexible Pavement Crust Evaluation Using Ground Penetrating Radar	Dr. Vidhi Vyas

M. Tech. Internship (Completed)

S.No	Name	College / University address	Topic	Supervisor
1	Ms. Ameera Pc	National Institute of Technology, Calicut, INDIA	Influence of Particle Size ,Shape and Geotextile Type on Interface Shear Strength	Dr. Parvathi G S
2	Mr. Amit Kumar Singh	National Institute of Technology, Trichy	Noise Mapping, Identification of Hot Spots And Mitigation Plan For Control of Noise Pollution for Surat City	Dr. Ch. Ravi Sekhar
3	Mr. Aniket Kumar	Central University of Haryana	Noise Mapping in QGIS, Identification of Hot spots and Mitigation Plan for Control of Noise Pollution for Surat	Dr. Nasim Akhtar
4	Mr. Aryan Kumar	Indian Institute of Technology (IIT)Delhi	Estimation of Vehicular Emission Using VKT	Dr. Mukti Adwani
5	Mr. Avikal Shrivastava	Indian Institute of Technology (IIT)Kharagpur	Laboratory study on Estimation of Geosynthetic Reinforced Granular layer under Repeated Load.	Er. V. K. Kanaujia
6	Ms. Chahat Kalra	Central University of Haryana	Noise Mapping in QGIS, Identification of Hot Spots and Mitigation Plan for control of Noise Pollution for Ahmedabad	Dr. Nasim Akhtar
7	Mr. Chandan Mahajan	National Institute of Technology , Trichy	Analysis And Simulation of Traffic Performance In Different Breakdown Scenarios Using PTV Vissim	Dr. Mukti Adwani
8	Ms. Debosmita Ghosh	Indian Institute of Engineering Science and Technology	Enhancing Earthquake Diaster Risk Mitigation For Bridge Traffic in Parts of North India through Geo- Seismic Sensor Network	Dr. Vinod Karar
9	Mr. Harsh Shashank	National Institute of Technology Surathkal, Karnataka	Assess the Expected Quantities of Convention Alternative,Innovative And Waste Material That Can be Utilized for The Civil Infrastructure Using Current and Projected Civil Infrastructure Projects	Dr. G.Bharath
10	Ms. Harshita Verma	IIT Bhubaneshwar, Odisha	Assessment of Gap Acceptance Behavior for On-Street Parking	Sh. Ramesh Majhi
11	Mr. Himanshu Yogi	National Institute of Technology, Tiruchirappalli	Noise Mapping,Identification of Hot Spots and Mitigation Plan for Control of Noise Pollution for Vadodara City	Dr. ch. Ravi Sekher
12	Mr. Konalika Vyanktesh Haridas	National Institute of Technology, Tiruchirappalli	Microscopic Traffic Simulation of Road Network at Sha	Dr. E. Madhu
13	Ms. Koshalya Godha	Manipal university jaipur Jaipur, Rajasthan	Health Monitoring of Bridges Through Instrumentation	Sh. G.K.Sahu
14	Mr. Krishna Dev Nishad	National Institute of Technology, Trichy	Evaluation of Pedestrian-Vehicle Conflict Severity at Unprotected Mid-Block Crosswalk	Dr. S. Padma
15	Ms. Krishna P B	National Institute of Technology, Calicut, India	Interaction Response of Geosynthetics with Marginal Materials	Dr. Ravi Shankar S

16	Mr. Kura Akash	National Institute of Technology Tiruchirappalli	Analysis of Trip Generation Model by Multiple Linear Regression	Dr. S.padma
17	Ms Meenu Muraleedharan	National Institute of Technology, Calicut, India	Stability Analysis of Gentle Slopes and Embankment Using GEO5 Software	Dr. P.S Prasad
18	Ms Moobashara Jawed	Jamia Millia Islamia, New Delhi	RNA-seq Differentially Expressed Gene Analysis Pipeline	Smt. Reeta Kukreja
19	Mr. Niraj Kumar Singh	National Institute of Technology Tiruchirappalli	Noise Mapping , Identification of Hot Spots And Mitigation Plan For Control Of Noise Pollution For Ahmedabad City	Dr. Ch. Ravi Sekher
20	Mr. Puneet Sharma	National Institute of Technology Tiruchirappalli	Traffic Prediction On Rural Highways Using Regression Analysis	Dr. S.Padma
21	Mr. Rajkumar Dhakad	National Institute of Technology Tiruchirappalli	Pedestrian Facility based on Traffic Volume in Urban areas(At specific Location in Delhi	Dr.S.padma
22	Ms Rushali Mishra	Amity University, Noida	Noise Modelling Using Traffic and Noise Survey Data of Goa	Dr. Ch. Ravi Sekhar
23	Mr. Saurabh Kumar	National Institute of Technology Tiruchirappalli	Correlaton Analysis Between Vehicle Emission For Selected Location In New Delhi	Dr. S.Padma
24	Ms Shabnam Barbhuiya	Jamia Millia Islamia, New Delhi	A Preliminary Investigation of Skin lesion Detection using YOLOv5 and the ISIC Dataset	Sh. Vivek Dubey
25	Mr. Shailesh Kumar	National Institute of Technology, Trichy	Collecting of Running Vehicle Data of Different RTOs in Delhi and Analysis of Traffic Performance at Dwarka Mor in Delhi using PTV Vissim	Dr. Mukti Adwani
26	Ms Sreeshma Govindan	National Institute of Technology Calicut, India	Stability Analysis Of Steep Slope Using GEO5 Software	Dr. P. S Prasad
27	Mr. Suraj Kumar	Central University of Haryana	Noise Mapping in QGIS, Identification of Hot Spots and Mitigation Plan for Control of Noise Pollution for Vadodara City	Dr. E. Madhu
28	Ms. Tina Rani	Indian Institute of Technology kharagpur	Optimization of Speed Limit for Urban Road	Dr. Ch. Ravi Sekhar
29	Mr. Trilochan Sahu	National Institute of Technology Tiruchirappalli	Integrated Transport Network Development Plan (ITNDP)	Dr. Ravindra Kumar

B. Tech. Dissertation (Completed)

S.No	Name	College / University address	Topic	Supervisor
1	Ms. Amita Patra	Kalinga Institute of Industrial Technology, Bhubaneshwar	Effect of Crumb Rubber Particle Size on the Performance of Crumb Rubber Modified Asphalt Mixes	Dr. Ambika Behl

2	Mr. Anshuman Yadav	Manav Rachna International Institute of Research Studies, Faridabad	Assessment of Pre-Mature Failure of Flexible Pavement and Suggestion for Improvement Measures Needed	Sh. A.K. Sagar
3	Ms. Nikita Singh	DIT University, Dehradun	Health Monitoring of Bridges through Instrumentation	Sh. G.K. Sahu
4	Mr. Sathwik Bikumalla	Lovely Professional University, Phagwara, Punjab	Digitization of Airfield Pavement Network to Develop Airfield Pavement Management System	Dr. Pradeep Kumar
5	Mr. Shahbaz Alam	Manav Rachna International Institute of Research Studies, Faridabad	Investigation of Flexible Pavement of Suggest Maintenance and Rehabilitation Measures.	Sh. A.K. Sagar
6	Ms. Shreya Nag	Birla Institute of Technology and Science Pilani, Pilani Campus	A Machine Learning Framework for Predicting Layer Moduli from Deflection Basin Parameters.	Dr. Vidhi Viyas
7	Ms. Shruti Chaturvedi	Birla Institute of Technology and Science Pilani, Pilani Campus, Rajasthan	Predictive Modeling of Pavement Structural Capacity Using FWD Data	Dr. Vidhi Viyas
8	Mr. Vivek Upadhyay	DIT University, Dehradun	Structural Stability of Existing Structures	Dr. Rajeev Goel

B. Tech. Internship (Completed)

S.No.	Name	College / University address	Topic	Supervisor
1	Ms. Anjali Chandra	Banasthali Vidyapith, Tonk, Rajasthan	Pedestrian Detection Modelling System	Dr. A. Mohan Rao
2	Mr. Alajangi Chandra Sekhar	GMR Institute of Technology, Andhra Pradesh	A Review on Effect of Different Materials on Mechanical Properties and Carbon Emissions of the Cement Concrete Pavement	Sh. Yatin Chaudhary
3	Mr. Aamir Sohail	Jamia Millia Islamia, New Delhi	Literature Review on Transportation Engineering & Safety	Sh. Subhash Chand
4	Mr. Abhi Nebhnani	Birla Institute of Technology and Science Pilani, Rajasthan	Analysis of Demographics, Academic Performance, and Internship Preferences Among CSIR-CRRI Interns: A Comprehensive Study	Smt. Kamla Masih
5	Mr. Abhigyan Shukla	Birla Institute of Technology and Science Pilani, Rajasthan	Optimal Allocation of Stationary Wireless Charging Facilities for Electric Buses	Dr. Ramesh Majhi
6	Mr. Abhilasha Chauhan	Banasthali Vidyapith, Tonk, Rajasthan	Estimation of Driver Fatigue Using Body Pose	Dr. A. Mohan Rao
7	Mr. Abhinav Satish	Birla Institute of Technology and Science Pilani, Rajasthan	Projection and Analysis of ECF of CRRI	Sh. Ravinder Deekonda

8	Mr. Abhiram Varma Mudunuri Subramanya Varaha	Birla Institute of Technology and Science, Pilani	Biochar Modified Bituminous Binder	Dr. Abhishek Mittal
9	Mr. Adarsh Singh	Madhav Institute of Technology and Science, Gwalior	Study of Traffic Engineering Highway Planning and Designing	Dr. Subhash Chand
10	Mr. Aditya Dibyadarshan Mohanty	Birla Institute of Technology and Science, Pilani	A Comprehensive SWOT Analysis of CRRI	Sh. Ravinder Deekonda
11	Mr. Aditya Garg	JSS Academy of Technical Education, Noida	Road Health and Safety Monitoring	Dr. Pradeep Kumar
12	Mr. Aditya Nandan Kumar	Manipal Institute of Technology, Jaipur	Expansion Joints	Sh. J.K. Goyal
13	Mr. Adityanshu Mohapatra	Birla Institute of Technology and Science, Pilani, Rajasthan	Condition Assessment of Bridges Using Modern Technologies	Dr. G.K. Sahu
14	Mr. Ahmad Azeem	Aligarh Muslim University, Aligarh	Insights into Road Safety: Literature Review and Comprehensive Data Analysis Approach	Dr. A. Mohan Rao
15	Mr. Ahmed Karim Mustafa	Guru Gobind Singh Indraprastha University, New Delhi	Calculation of Vehicular Emission and Vehicle Kilometers Travelled for Four Major Cities Bengaluru Chennai Delhi and Mumbai	Dr. Mukti Advani
16	Mr. Akash Sharma	Guru Jambheshwar University and Technology, Hisar	Advancing Road Safety Through Comprehensive Star Ratings and Assessments.	Dr. A. Mohan Rao
17	Mr. Akshay Chandrashekar Madiwal	Guru Gobind Singh Indraprastha University, Delhi	Evolution of Emission Factor and Understanding the Depreciation Pattern of Pollutants with Wet and Dry Deposition	Dr. S. Padma
18	Mr. Alugolu Santosh Kumar	GMR Institute of Technology, Andhra Pradesh	Fiber Reinforced Geopolymer Concrete for Pavement Quality Concrete	Sh. Dinesh Ganvir
19	Mr. Amit Kumar	National Institute of Technology, Calicut	Quality and Accurate Mapping of Images	Smt. Reeta Kukreja
20	Mr. Anirudh Dubey	Birla Institute of Technology Science, Pilani, Rajasthan	Time Series Modelling for Prediction of Air Temperature	Dr. Abhishek Mittal
21	Ms. Anjali	Guru Jambheshwar University of Science and Technology, Hisar	Stress Strain Behaviour of Biomass Incinerator Ash for Road Construction	Sh. Vijai Kumar Kanauija
22	Mr. Ankit Kumar Sharma	Madhav Institute of Technology and Science, Gwalior	Intersecting Challenges: A Strategic Approach to Traffic Engineering and Safety at Shalimar Bagh	Sh. Subhash Chand
23	Mr. Anter Toby Tastse	National Institute of Technology, Warangal	Pavement Evaluation Using Machine Learning Tools.	Dr. Deepa S
24	Mr. Anuj Gupta	Mahadev Institute of Technology and Science, Gwalior	Interface Properties of Geosynthetics & Soil	Dr. Ravi Shankar S
25	Mr. Anurag Khokhar	Harcourt Butler Technical University, Kanpur	ILT Training Management System	Ms. Kamla Masih
26	Mr. Aravind Santhosh	Birla Institute of Technology and Science, Pilani	Strategies for Self-Sustainability of CSIR CRRI	Sh. Ravinder Deekonda
27	Mr. Arnav Verma	Birla Institute of Technology Science, Pilani, Rajasthan	Behavior Classification and Intent Prediction in Drivers	Dr. A. Mohan Rao
28	Ms. Arunee Agrawal	Birla Institute of Technology Science, Pilani, Rajasthan	Link Wise Traffic Estimation for Rajkot Road Network	Dr. Ch. Ravi Sekhar
29	Mr. Aum Jena	Birla Institute of Technology and Science Pilani, Hyderabad Campus	Valuation of Patent through Case Study Approach	Smt. Nidhi

30	Mr. Avala Parimal Prasad	Birla Institute of Technology and Science, Pilani, Rajasthan	Functioning & Interactive Website for ILT/HRD Division	Dr. Ravindra Kumar
31	Mr. Ayush	Central University of Haryana	Stabilization of Soil using Egg Shells Powder	Sh. Vijai Kumar Kanaujia
32	Mr. Ayush Kumar	Chandigarh University, Mohali, Punjab	Estimation of Road Geometric Using Mobile GPS Data	Dr. A. Mohan Rao
33	Mr. Ayush Sharma	National Institute of Technology, Delhi	An Advanced Methodology for Pavement Condition Assessment Using a Stacking Regressor Model	Dr. Aakash Gupta
34	Mr. Baldeo Rajan	National Institute of Technology, Warangal	Effect of Acceleration Noise in Economic Analysis of Highway Project Using HDM 4 -A Case Study on 45 km Road Section	Dr. Sampath Kumar Pasupunuri
35	Mr. Brijesh Anand	Shree Guru Gobind Singh University, Gurugram	Characteristics of Micro surfacing Mix Design	Dr. Rajiv Kumar
36	Mr. Chenda Sasank	GMR Institute of Technology, Andhra Pradesh	Comparative Study on Two Types of Cement (OPC & PPC) by Partially with Cementitious Materials	Sh. Romeil Sagwal
37	Mr. Danish Junaid	Integral University Lucknow, Uttar Pradesh	Database Preparation for Accident Modeling	Dr. A. Mohan Rao
38	Mr. Darshit Agrawal	Birla Institute of Technology and Science, Pilani, Rajasthan	Development of Machine learning Models for Estimating Elastic Moduli of Pavement layers	Dr. Abhishek Mittal
39	Mr. Devendra Kumar Sharma	Dayalbagh Educational Institute, Dayalbagh, Agra	Construction Failure Investigation and Mitigation of Failure of Reinforced Earth Retaining Wall	Dr. Anil Kumar Sinha
40	Mr. Devesh Ojha	Indian Institute of Technology, Mandi	Evaluation of Ageing Characteristics of Bituminous of Mixtures Containing Bio-Binders.	Dr. Gottumukkala Bharat
41	Ms. Divisha Saini	Banasthali Vidyapith, Tonk Rajasthan	Driver Fatigue Estimation Using Head Pose.	Dr. A. Mohan Rao
42	Mr. Diwakar Arya	Netaji Subhas University of Technology, Delhi	Pavement Evaluation Using Machine Learning Tools.	Dr. Deepa S
43	Mr. Donkada Sai Mohan	GMR Institute of Technology, Andhra Pradesh	Development of Machine Learning Model to Predict In - Depth Pavement Temperature	Dr. Ashish Waliya
44	Mr. Dushyant Soni	Shri G.S Institute of Technology & Science, Indore	Study of Road Users Over Speeding Behaviour at Selected Blackspot Locations Through Spot Speed Analysis and In-Person Stated Preference Survey	Dr. Ramesh Majhi
45	Mr. Ekansh Garg	Birla Institute of Technology and Science Pilani Campus, Rajasthan	Conversion of Classified Traffic at Mid-Block and Junctions in PCU & Identification of Peak Hour	Dr. S. Padma
46	Mr. Ettedi Ranjith	Birla Institute of Technology and Science, Pilani, Rajasthan	Transport planning, Mapping and Cost Analysis of Roads in Meghalaya Region	Dr. Ravindra Kumar
47	Mr. Garvit Krishnia	Birla Institute of Technology and Science, Pilani, Rajasthan	Condition Assessment of Bridges Using Modern Technologies	Dr. G.K. Sahu
48	Mr. Gaurav	Guru Jambheshwar University of Science Technology, Hisar	Numerical Analysis of the Behaviour of Embankment over Soft Soil with Stone Columns.	Dr. Ravi Shankar
49	Mr. Hafizurrahman	Integral University Lucknow, Uttar Pradesh	Suitability of Palpa Cement {OPC 43 Grade} in Cement Concrete Road Construction.	Sh. Romeil Sagwal
50	Mr. Harsh Sharma	Raj Kumar Goel Institute of Technology, Ghaziabad	Design of Rigid Pavement	Dr. Rakesh Kumar
51	Mr. Hasit Garg	Birla Institute of Technology and Science, Pilani, Rajasthan	Addressing Design Flaws in Major Black Spots of Delhi	Dr. S. Padma

52	Mr. Hemant Sablania	Netaji Subhas University of Technology,	Pavement Evaluation Using Machine Learning Tools.	Dr. Deepa S
53	Mr. Irshad Alam	Integral University Lucknow, Uttar Pradesh	Suitability of Palpa Cement {OPC 53 Grade} in Cement Concrete Road Construction.	Sh. Romeil Sagwal
54	Ms. Isha Apurva	Birla Institute of Technology and Science, Pilani, Rajasthan	Traffic Engineering and Safety Speed and Delay Study and Data Analysis	Sh. Subhash Chand
55	Ms. Ishanya Singh	Birla Institute of Technology and Science, Pilani, Rajasthan	Identification of Various Input Parameters for HDM 4	Sh. Sampath Kumar Pasupunuri
56	Mr. Jitish Juneja	Birla Institute of Technology and Science, Pilani, Rajasthan	Analyzing Library Book Issue Patterns: A Statistical Approach	Smt. Lalita Jangpangi
57	Ms. Kalpeeta Khinchi	Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT), Jaipur	Effect of Size of Crumb Rubber on The Properties of Bitumen	Dr. Ambika Behl
58	Ms. Kamakshi Kamboj	Birla Institute of Technology and Science Pilani, Goa Campus	Computer Network Traffic Analysis Using Python	Sh. Vivek Dubey
59	Mr. Kanishka Dhammapriya	Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT), Jaipur	Full Depth Reclamation	Sh. Satish Pandey
60	Mr. Kanumula Dileep Naidu	GMR Institute of Technology, Andhra Pradesh	Performance Evaluation of Chemical Based Full Depth Reclamation Material Used for Road Construction	Dr. Sarfaraz Ahmed
61	Mr. Karteek Datti	GMR Institute of Technology, Andhra Pradesh	High Early Strength of Concrete	Dr. Pankaj Goel
62	Mr. Kashish Kumar	Guru Jambheshwar University of Science and Technology, Hisar	Analysis of Heavy Motor Vehicle Headlight Glare	Dr. Vinod Karar
63	Ms. Komal Verma	Banasthali Vidyapith, Tonk Rajasthan	NDT Tools In Pavement Evaluation: Calibration Validation	Dr. Akash Gupta
64	Mr. Krapank Dixit	Madhav Institute of Technology and Science, Gwalior	Planning and Designing of Rural and Urban Roads.	Sh. Subhash Chand
65	Mr. Krish Kumar	Birla Institute of Technology and Science, Pilani, Rajasthan	IRASTE Telangana : Identification and Rectification of Black Spots	Dr. S. Velmurugan
66	Ms. Kuhoo Agarwal	Banasthali Vidyapith, Tonk, Rajasthan	Application of Ground Penetrating Radar for Bituminous Pavement Evaluation	Dr. Vidhi Vyas
67	Ms. Ladi Goutam	National Institute of Technology, Warangal	Understanding Different Distresses, Development of Road Deterioration and Distress Progression Models and Work Effects on Pavements	Dr. Pradeep Kumar
68	Ms. Lata Kunj	Ch. Devi Lal State Institute of Engineering and Technology, Haryana	Study of Can Bus and Vehicle System: Instrumentation Clusters, Battery Management, Sensors, and Lighting	Dr. Vinod Karar
69	Ms. Loveesha Goyal	Birla Institute of Technology and Science, Pilani, Rajasthan	Accident Black Spot Rectification and Engineering Interventions	Dr. K. Ravinder
70	Mr. Manas Chowdhary	Birla Institute of Technology and Science, Pilani, Rajasthan	Finding Optimum Speed of Inter Urban Road through Linear Programming Problem (LPP) and First Optimization	Dr. K. Ravinder
71	Mr. Manish Kumar	Birla Institute of Technology and Science - Pilani, Rajasthan	Freight Trip Generation Data Modelling	Dr. Ch. Ravi Sekhar
72	Mr. Mayank Kumar	K.R Mangalam University, Sohna, Gurugram	Strategic Data Insights: Evaluating Target's Performance in Brazil	Sh. Vijay Kaushul

73	Mr. Md. Shahid Khan	Jamia Millia Islamia, New Delhi	Study the damage caused in the bridge due to fire	Dr. Naveet Kaur
74	Mr. Medisetti Sai Sohen	National Institute of Technology, Calicut	Freight Trip Rates of Cities with Population Less Than 2 million	Dr. Ch. Ravi Sekhar
75	Ms. Meghali Gogoi	Central University of Haryana, Haryana	Stabilization of Black Cotton Soil Using Rice Husk Ash	Sh. Vijai Kumar Kanaujia
76	Ms. Mehar Devnani	Birla Institute of Technology and Science - Pilani, Rajasthan	Freight Demand Modelling	Dr. Ch. Ravi Sekhar
77	Ms. Mishita Chowdhury	Kalinga Institute of Industrial Technology Bhubaneswar,	Feasibility Study of Using Waste Plastic in Asphalt Pavement	Dr. Ambika Behl
78	Mr. Mohammad Areeb	Netaji Subhas University of Technology, (East Campus) Delhi	Visitor Record Management System	Sh. Vivek Dubey
79	Mr. Mohammad Kaif	Raj Kumar Goel Institute of Technology and Management, Ghaziabad	Online Examination System	Sh. Vivek Dubey
80	Mr. Mohd Abrar Nasir	Zakir Husain College of Engineering and Technology, AMU, Aligarh	Noise Mapping Identification of Hot Spots and Mitigation Plan for Control of Noise Pollution for Ahmedabad City	Dr. Nasim Akhtar
81	Mr. Mohd Talha Jamil	Jamia Millia Islamia, Jamia Nagar, New Delhi	Stability Analysis of Slope Using GEO-5 Software	Dr. Kanwar Singh
82	Mr. Mohd Zeeshan Khan	Jamia Millia Islamia, New Delhi	Adoption of Electric Vehicles in Haryana	Dr. Mukti Adwani
83	Mr. Mohit Kumar	Jamia Millia Islamia, New Delhi	Road Safety Audit and Traffic Engineering	Dr. S. Velmurugan
84	Ms. Nancy Anand	Banasthali Vidyapith, Tonk, Rajasthan	Traffic Sign Recognition TSR System Using Deep Learning	Ms. Reeta Kukreja
85	Ms. Navya Gupta	Birla Institute of Technology and Science, Pilani Rajasthan	Data Modelling of Driver Monitoring System (DMS) and Advanced Driver Assistance System (ADAS)	Dr. Ch. Ravi Sekhar
86	Mr. Nayab Waseem	Jamia Millia Islamia, New Delhi	Soil Nailing Using GEO-5 Software	Dr. Kanwar Singh
87	Mr. Nikhil Rajoriya	Madhav Institute of Technology and Science, Gwalior	To Study Glare from Oncoming Vehicle on Delhi NCR Roads	Dr. Vinod Karar
88	Mr. Nikhil Singh Yadav	Madhav Institute of Technology and Science, Gwalior	To Study Glare from Oncoming Vehicle on Delhi NCR Roads	Dr. Vinod Karar
89	Mr. Niranjana Hiremath	Birla Institute of Technology and Science, Pilani Rajasthan	Data Analytics in Civil Engineering	Dr. Akash Gupta
90	Mr. Nitin	Guru Jambheshwar University of Science and Technology, Hisar	Assessment of Light Glare of LMV's for Oncoming Traffic Issues	Dr. Vinod Karar
91	Mr. Nitin Yadav	K.R Mangalam University, Sohna, Gurugram	AI Driven Model for Internship Selection & Employability Forecasting	Dr. Ravindra Kumar
92	Mr. Ojas Zutshi	Manav Rachna International Institute of Research and Studies, Faridabad	Visitor's Entry Form	Sh. Vivek Dubey
93	Mr. Pawan Kumar	Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Punjab	Ultra High Performance Concrete	Dr Pankaj Goel
94	Mr. Poojan Bharat Advani	Government Engineering College, Bhavnagar	Mitigating Road Contamination: An ANFIS Approach to Classify Spit and Debris on Road	Dr. Vinod Karar
95	Ms. Prachi Rauthan	Banasthali Vidyapith, Newai, Tonk	Identification and Classification of Pavement Surface Defects Using AI/ML	Dr. Pradeep Kumar

96	Mr. Pranav Pratap Singh Bahri	Amity University, Noida	Development of an Engineering Application to Calculate Using VBA	Sh. S Mariappan
97	Ms. Pranjal Srivastava	Banasthali Vidyapith, Tonk, Rajasthan	Applications of computer Vision On Driver Monitoring	Dr. A. Mohan Rao
98	Ms. Perna Sharma	Banasthali Vidyapith, Tonk, Rajasthan	Network Traffic Analyzer	Dr. A. Mohan Rao
99	Mr. Priyansh Jain	Birla Institute of Technology and Science Pilani, Hyderabad Campus	SWOT Analysis of CRRIs Cost Optimization Strategies	Sh. Ravinder Deekonda
100	Mr. Rahul Kumar Verma	Ch. Devi Lal State Institute of Engineering and Technology, Haryana	Study of Can Bus and Vehicle System: Instrumentation Clusters Battery Management, Sensors, and Lighting	Dr. Vinod Karar
101	Ms. Rajarshi Tripathi	Birla Institute of Technology and Science Pilani, Rajasthan	Adaptive Traffic Signals Using Artificial Intelligence and Machine learning To Optimize Traffic Conditions	Dr. E. Madhu
102	Mr. Rajaryan Mishra	Netaji Subhas University of Technology, Delhi	Pavement Evaluation Using Machine Learning Tools.	Dr. Deepa S
103	Mr. Ravi Pratap Singh	Raj Kumar Goel Institute of Technology, Ghaziabad	High Early Strength Concrete Material	Dr. Rakesh Kumar
104	Ms. Ria ray	Banasthali Vidyapith, Tonk Rajasthan	Research Study on Driver Intent Recognition During Lane Changing	Dr. A. Mohan Rao
105	Mr. Rishabh	Guru Jambheshwar University of Science and Technology, Hisar	Ground Improvement Techniques for The Construction of Multi Model Logistics Park Over Soft Soil.	Mrs. Mariya Dayana
106	Mr. Sagar Jain	Thapar Institute of Engineering and Technology, Patiala	Hot In-Place Recycling of Flexible Pavements: A Case Study	Sh. Manoj Kumar Shukla
107	Mr. Sahil Ansari	Jamia Millia Islamia, New Delhi	Literature Review of Transportation Engineering & Safety	Sh. Subhash Chand
108	Ms. Saima Tasneem Usmani	Banasthali Vidhyapith, Tonk, Rajasthan	Health Monitoring of Bridges through Instrumentation	Dr. J. K Goyal
109	Mr. Sameer Kumar	Delhi Technological University, Delhi	Dynamic Noise Mapping Through QGIS: A Case Study of Indian State of Rajkot, Gujarat	Dr. Nasim Akhtar
110	Ms. Sankeerti Nagulapalli	Birla Institute of Technology and Science, Pilani, Rajasthan	Planning, Budgeting and Mapping of Roads in Meghalaya	Dr. Ravindra Kumar
111	Mr. Sandeep Kashyap	Kalinga Institute of Industrial Technology, Odisha	Impact of Pothole Repairing Techniques on Traffic Flow	Dr. Siksha Swaroopa
112	Mr. Sarthak Choudhary	Birla Institute of Technology and Science-Pilani, Hyderabad Campus	Development and Enhancement of a Traffic Simulation Program Adapted to Indian Conditions for User-Friendly Operation	Dr. E. Madhu
113	Mr. Satwik Gupta	Birla Institute of Technology and Science, Pilani, Rajasthan	Condition Assessment of Bridges Using Modern Technologies	Sh. Nitesh Goyal
114	Ms. Shatakshi Saxena	Banasthali Vidhyapith, Tonk, Rajasthan	Pedestrian Detection	Sh. Vivek Dubey
115	Mr. Shivam Rathore	Madhav Institute of Technology and Science, Gwalior	Traffic Engineering and Safety CRRIs Traffic Optimisation Study: Shalimar Bagh	Sh. Subhash Chand
116	Mr. Shivendra Pal Singh	Birla Institute of Technology and Science, Pilani, Rajasthan	Planning, Mapping and Budgeting of Roads in Meghalaya Region	Dr. Ravindra Kumar
117	Ms. Shrishti Sinha	Birla Institute of Technology and Science, Pilani, Rajasthan	Client Database Management System	Sh. Ravinder Deekonda
118	Mr. Shubhayan Nandi	Birla Institute of Technology and Science, Pilani, Rajasthan	Condition Assessment of Bridges Using Modern Technologies	Dr. G.K. Sahu

119	Mr. Soumya Choudhury	Birla Institute of Technology and Science, Pilani, Hyderabad Campus	Capacity Analysis of Urban and Intra-Urban Roads using Python	Dr. Ch. Ravi Sekhar
120	Mr. Sudarshan Nabira	Birla Institute of Technology and Science, Pilani, Goa Campus	Use of Data Analytics to Check If a Driver is Safe to be Allowed to Drive	Dr. Vinod Karar
121	Mr. Suprith S	PES University, Bangalore, Karnataka	Real-Time Safety Boost: YOLOv8 Pedestrian Detection System	Sh. S Mariappan
122	Mr. Suraj Chaudhary	Manipal University Jaipur, Rajasthan	Integrated Transport Network Development Plan (ITNDP)	Dr. Ravindra Kumar
123	Mr. Suraj Kumar	Integral University Lucknow, Uttar Pradesh	Database Preparation for Accident Modeling	Dr. A. Mohan Rao
124	Mr. Swajeet Swain	Birla Institute of Technology and Science, Pilani, Rajasthan	Quality and Accurate Mapping of Images	Ms. Reeta Kukreja
125	Ms. Swati Maurya	Central University of Jharkhand, Ranchi	Comprehensive Evaluation of Road Crash Occurrences on Indian Highway	Dr. Ch. Ravi Sekhar
126	Mr. Syed Sharib Javed	Jamia Millia Islamia University, New Delhi	Mix Design of SMA	Sh. Gajendra Kumar
127	Ms. Tanisha Gupta	Birla Institute of Technology and Science, Pilani, Rajasthan	Computer Network Packet Analysis Using Python	Sh. Vivek Dubey
128	Mr. Tarun Kaswan	Birla Institute of Technology and Science Pilani, Rajasthan	Cement Stabilised Pavement Layer with FDR Materials.	Dr. Ravi Shankar S
129	Mr. Tarun Kumar	Netaji Subhas University of Technology, NSUT, Dwarka, Delhi	Computer Centre and Networking CSIR -CRRI Canteen Web Application	Ms. Reeta Kukreja
130	Mr. Tejas Tuli	Birla Institute of Technology and Science Pilani, Rajasthan	Analysis of Delay Days from Historical Data	Sh. Ravinder Deekonda
131	Mr. Tiju C Joseph	Ganga Institute of Technology and Management, Kablana, Haryana	Understanding the Falling Weight Deflectometer: A State-of-the-art Equipment in Pavement Evaluation	Dr. Ashish Walia
132	Mr. Tiyyala Chetan Ram	GMR Institute of Technology, Andhra Pradesh	CO2 Emissions in Road Infrastructure Construction	Sh. Gagandeep Singh
133	Mr. Trambadiya Nishant Lalitbhai	Indian Institute of Technology (IIT), Roorkee	Analysis on the Adaptability of Electric Vehicles, with a Focus on Evaluating the Impact of Demographic Factors.	Dr. Mukti Advani
134	Mr. Trinayan Bordoloi	Thapar Institute of Engineering and Technology, Patiala	To Check the Feasibility of Crossing Republik Road	Sh. Subhash Chand
135	Mr. Tushar Rawat	Delhi Technological University Bawana, Delhi	Integrated Transport Network Development Plan (ITNDP)	Dr. Ravindra Kumar
136	Mr. Uttkarsh Singh	Central University of Haryana	Stabilization of Clayey Soil Using Foundry Sand for Subgrade Construction	Sh. Vijai Kumar Kanaujia
137	Mr. Vaibhav Krishna	Birla Institute of Technology and Sciences, Pilani, Hyderabad Campus.	Traffic Assignment Model: A Case Study of Bharatpur City	Dr. Ch. Ravi Sekher
138	Mr. Vaibhav Singla	Birla Institute of Technology and Sciences, Pilani, Hyderabad Campus	Speed Model Development for Urban Roads	Dr. Ch. Ravi Sekher
139	Ms. Vandana	National Institute of Technology, Warangal	Prediction of Deflection Bowl Parameters of Asphalt Pavements using Machine Learning Techniques	Sh. Sachin Gowda MK
140	Ms. Vani Manglik	Banasthali Vidhyapith, Tonk, Rajasthan	Pedestrian Detection	Sh. Vivek Dubey

141	Mr. Vikas Kumar bind	Jamia Millia Islamia University, New Delhi	Study on FDR Technology and Use of C&D Waste in Pavement Construction	Dr. Ravi Shankar S
142	Mr. Vikas Kumar Prajapati	Raj Kumar Goel Institute of Technology, Ghaziabad	Hybrid Fiber Reinforced as Repair Material	Dr. Rakesh Kumar
143	Mr. Vishal Sharma	Maharaja Surajmal Institute of Technology, Delhi	Development of Job Card Application (Exposure Study on Java & Web Technology)	Sh. S. Mariappan
144	Mr. Vivegan S	Birla Institute of Technology and Science, Pilani, Rajasthan	Condition Assessment of Bridges Using Modern Technologies	Sh. G. K. Sahu
145	Mr. Vivek Kumar	Jamia Millia Islamia University, New Delhi	Road Safety Audit and Traffic Engineering	Dr. S. Velmurugan
146	Ms. Yanshi Sharma	Delhi Technological University, New Delhi	Employee Management System (Telephone Directory)	Dr. Ravindra Kumar
147	Ms. Zoya Fatma	Jamia Hamdard University, New Delhi	Safety of Women in Buses and on Bus Stands	Dr. Vinod Karar

M. Sc. Internship (Completed)

S.No	Name	College / University address	Topic	Supervisor
1.	Mr. Aniket Kumar	Central University of Haryana	Noise Mapping in QGIS, Identification of Hot spots and Mitigation Plan for Control of Noise Pollution for Surat	Dr. Nasim Akhtar
2.	Ms. Chahat Kalra	Central University of Haryana	Noise Mapping in QGIS, Identification of Hot Spots and Mitigation Plan for control of Noise Pollution for Ahmedabad	Dr. Nasim Akhtar
3.	Ms Moobashara Jawed	Jamia Millia Islamia, New Delhi	RNA-seq Differentially Expressed Gene Analysis Pipeline	Smt. Reeta Kukreja
4.	Ms Shabnam Barbhuiya	Jamia Millia Islamia, New Delhi	A Preliminary Investigation of Skin lesion Detection using YOLOv5 and the ISIC Dataset	Sh. Vivek Dubey
5.	Mr. Suraj Kumar	Central University of Haryana	Noise Mapping in QGIS, Identification of Hot Spots and Mitigation Plan for Control of Noise Pollution for Vadodara City	Dr. E. Madhu

Visitors to the Institute

Visitors to the Institute

Name of Scientist & Designation	Institute visited	Date	Purpose
Dr. Anand Sreeram, Assistant Professor, University of Nottingham, UK	CSIR-CRRI	02.08.2024	To deliver a lecture on “Engineering bitumen to meet the transportation demands of the future” and to explore potential future collaborations with CSIR-CRRI
A Nepal Academy of Science and Technology (NAST) delegation team led by Prof. (Dr.) Dilip Subba, Vice-Chancellor, NAST, Nepal	CSIR-CRRI	19.02.2025	To explore potential future collaborations with CSIR-CRRI
Prof. Chetan Solanki, IIT Bombay, Solar Man of India and Founder of Energy Swaraj Foundation	CSIR-CRRI	26.04.2024	To deliver a lecture on “6 Point Understanding of Climate Change & Corrective Actions”.
Mrs. Anushree Attero, Sustainability expert, Attero Recycling Pvt Ltd, Noida	CSIR-CRRI	01.05. 2024	To deliver a lecture “E Waste Management”.
Shri Pradeep Khandewal, Chief Engineer (Retd.), MCD, Govt. of Delhi	CSIR-CRRI	01.05. 2024	To deliver a lecture “MCD Future Planning E Waste”.

Prof. Archak Mittal, Transportation Systems Engineering, IIT Bombay	CSIR-CRRI	02.08.2024	To deliver a lecture on “Engineering bitumen to meet the transportation demands of the future” and to explore potential future collaborations with CSIR- CRRI.
Shri Dharmananda Sarangi, DG (RD) & SS, Ministry of Road Transport & Highways (MoRTH), Government of India, and Shri Anil Kumar Shrangarya, Director Project, National Capital Region Transport Corporation (NCRTC)	CSIR-CRRI	30.09.2024	To grace the 83rd CSIR Foundation Day function organized by CSIR-CRRI on September 30, 2024
Sh. Naimulla, Engineer-in- Chief, R&B Deptt., Govt. of AP	CSIR-CRRI	24.06.2024	To discuss about future collaborations with CRRI
Ms Lucky Nagarajan, Sr. Manager, Geocomp U.S.A.	CSIR-CRRI	24.06.2024	For exploring collaborative research on geophysical techniques

Deputation Abroad

Deputation Abroad

Name of Scientist & Designation	Country visited	From	To	Purpose
Dr. Ambika Behl and Sh. Santish Pandey	Dubai	04.02.2025	06.02.2025	To attend 14 th REX Fules Global Expo and Conference held from February 04-06, 2025 at Hotel Crown Plaza, Dubai
Dr. Siksha Swaroopa Kar	University of Wisconsin, USA	29.01.2025	28.05.2025	Raman Research Fellowship
Dr. Gottumukkala Bharath	Istanbul, Turkey	15.10.2024	18.10.2024	Presented a research paper at the IRF World Congress 202, CRRIs "Biobinder Technology" which was ranked among the top three technologies at the IRF World Congress, Turkey, in 2024.
Dr. Ravindra Kumar	Taiwan	27.09.2024	25.10.2024	To visit at International Centre for Land Policy Studies and Training (ICLPST) to participate in the 159th Regular Session on Infrastructure Development and Planning- Net Zero and Sustainable Development.
Sh. Satish Pandey	USA	08.09.2024	15.09.2024	To attend the visit RMG facility at Chicago and to deliver presentation and meeting at Missouri University of Science and Technology at Rolla, USA
Dr. Rajiv Kumar	Singapore	08.07.2024	10.07.2024	To attend the 13th Asia-Pacific Conference on Transportation and Environment (APTE)
Dr. Minal Chandra	USA		30.09.2024	Postdoctoral training at Institute of Transportation Studies (ITS), University of California- Davis, USA

Membership of Staff in Various Technical Committees

Membership of Staff in Various Technical Committees

Name of the Scientist /Staff & Designation	Position held	Name of the committee
Dr. Pradeep Kumar, Chief Scientist	Member	H-6 Committee: Road Maintenance and Asset Management Committee, Indian Roads Congress, New Delhi
	Member	Standing Committee on Road Asset Management System (RAMS), Ministry of Road Transport and Highways (MoRTH), Government of India
	Member	Updating of the Operations Manual for PMGSY Roads, National Rural Infrastructure Development Agency (NRIDA), Ministry of Rural Development, Government of India
	Member	Committee Constituted for Studying and Recommending the Acceptable Limits for Different Pavement Distresses on national Highways and Expressways in India, National Highways Authority of India Government of India
	Principal Member	Resource Management Sectional Committee, MSD 12, Management and Systems Division Council (MSDC), Bureau of Indian Standards, India
Sh. Sunil Jain, Chief Scientist	Member	Construction execution Services, Sectional Committee, SSD 21, Bureau of Indian Standards, India
	Member	Expert Member of UG and PG Board of Studies Civil Engineering Department, Deen Bandhu Chhotu Ram University of Science and Technology, Murthal, Sonapat, Haryana
Dr. Rajeev Goel, Chief Scientist	Member Secretary	B1 Committee of IRC on “General Design Features (Bridges and Grade Separated Structures)” of Indian Roads Congress
	Member	B1.1 Sub-committee of IRC for Revision of IRC:5-2015 of Indian Roads Congress
	Member	B1.5 sub-committee of IRC for New Document on “Crash Barriers and Railings for Bridges” of Indian Roads Congress

	Member	B8 Committee of IRC on "Management, Maintenance and Rehabilitation Committee" of Indian Roads Congress
	Member	Expert Committee of IRC on 'Preparation of Guidelines for Use of Fiber Reinforced Polymer Bars in National Highways Works in different RCC structures such as bridges, viaducts, retaining walls, fascia panel of RE wall, drains etc.' of Indian roads Congress
	Principal Member	Civil Engineering Division Council of Bureau of Indian Standards (BIS)
	Principal Member	Structural Engineering and Structural Sections Sectional Committee, CED 07
	Principal Member	Standardization Work under the Special Structures Sectional Committee, CED-38 of Bureau of Indian Standards (BIS)
	Principal Member	Earthquake Engineering Sectional Committee, CED-39 of Bureau of Indian Standards (BIS)
	Principal Member	Concrete Reinforcement Sectional Committee, CED-54 of Bureau of Indian Standards (BIS)
	Principal Member	Framing document for launching Ready Mixed Concrete certification of Bureau of Indian Standards (BIS)
	Alternate Member	Construction Management Including Safety in Construction Sectional Committee, CED-29
	Alternate Member	Safety in Construction Sectional Committee, CED-45
	Principal Technical Auditor	Scrutiny of DPR's of various states for National Rural Infrastructure Development Agency (NRIDA)
	Member	Technical committee for Cement Sector under Indian Carbon Market, Bureau of Energy Efficiency, Ministry of Power
Dr Naveet Kaur	Vice President and Founding Member	Indian Structural Health Monitoring Society
	Council Member	Indian Road Congress
Siksha Swaroopa Kar	Member Secretary	Indian Road Congress- Reduction of Carbon Footprint in Road Construction and Environment (G-3)
	Member	BIS- EED 08 – Waste Management Sectional Committee
	Alternate Member	BIS- PCD 06 Bitumen, Tar and Related Products Sectional Committee
Dr G Bharath	Co-opted Member	H-9 committee IRC

	Co-opted Member	H-6 committee IRC
Dinesh Ganvir	Alternate Member	CED-2
Dr. Parvathi G. S. Principal Scientist	Executive Committee Member	Indian Chapter of the International Geosynthetic Society
Dr.S. Velmurugan	Co-Convener	Intelligent Transportation System Committee i.e. G-7 of IRC.
	Member	H-1 Committee and H-8 Committees of IRC
	Member since July 2023	Research Council of NATPAC
	Transportation Research Group (TRG-India)	TRG Member (Life member)
Kamini Gupta	Transportation Research Group (TRG-India)	TRG Member (Life member)
Dr Minal Chandra	Member	Transport & Logistics Services - SSD-II-1

Membership of National and International Organisations

Membership of National and International Organisations

- Australian Road Research Board (ARRB), 80A Turners street, PORT MELBOURNE, Australia
- Bureau of Indian Standards, Manak Bhawan, 9 Bahadur Shah Zafar Marg, New Delhi
- Indian Institute of Bridge Engineers (IIBE), New Delhi
- Indian Association of Special Libraries and Information Centers, Kakugachi, Kolkata
- Transportation Research Board of the National Academy of Science, National Research Council, 2101, Constitution Avenue, Washington DC, USA
- Indian Geotechnical Society, C/o Central Soil and Material Research Station, Olof Palme Marg, Hauz Khas, New Delhi
- Indian Roads Congress (IRC), Kama Koti Marg, Sector-6, R.K. Puram, New Delhi
- Government of Indian Librarians Association (GILA) C/o Planning Commission, Library, Yojna Bhawan, Sansad Marg, New Delhi
- Society for Information Science, NISCAIR Building, Hillside Road, New Delhi
- Indian Group of Geotextiles, Central Board of Irrigation & Power, Malcha Marg, Chanakyapuri, New Delhi
- Associate Membership of Current Science Association, Bangalore
- International Road Federation (IRF) India Chapter, New Delhi

MoUs, Agreements and Patents

MoUs Signed: 21

1. A Memorandum of Understanding (MoU) signed on 04 April 2024 between CSIR-CRRI and National Institute of Technology, Karnataka, Surathkal for Academic and research collaboration in the areas of mutual interest.
2. A Memorandum of Understanding (MoU) signed on 22 April 2024 between CSIR-CRRI and National Institute of Technology, Jalandhar, Punjab, for Academic and research collaboration in the areas of mutual interest.
3. A Memorandum of Understanding (MoU) signed on 16 July 2024 between CSIR-CRRI and Delhi Technological University (formerly Delhi College of Engineering), New Delhi, for Academic and research collaboration in the areas of mutual interest.
4. A Memorandum of Understanding (MoU) signed on 19 July 2024 between CSIR-CRRI and Visvesvaraya National Institute of Technology (VNIT), Nagpur, for Academic and research collaboration in the areas of mutual interest.
5. A Memorandum of Understanding (MoU) signed on 05 August 2024 between CSIR-CRRI and Indian Institute of Technology Bombay (IIT-Bombay), Mumbai, for Academic and research collaboration in the areas of mutual interest.
6. A Memorandum of Understanding (MoU) signed on 21 August 2024 between CSIR-CRRI and Birla Institute of Technology and Science (BITS) Pilani, Rajasthan, for Academic and research collaboration in the areas of mutual interest.
7. A Memorandum of Understanding (MoU) signed on 30 August 2024 between CSIR-CRRI and Indian Institute of Technology, Jammu, J&K, for Academic and research collaboration in the areas of mutual interest.
8. A Memorandum of Understanding (MoU) signed on 02 September 2024 between CSIR-CRRI and Indian Institute of Technology Delhi (IIT-Delhi), for Academic and research collaboration in the areas of mutual interest.
9. A Memorandum of Understanding (MoU) signed on 04 September 2024 between CSIR-CRRI and Institute of Infrastructure, Technology, Research and Management (IITRAM), Ahmedabad for Academic and research collaboration in the areas of mutual interest.
10. A Memorandum of Understanding (MoU) signed on 06 September 2024 between CSIR-CRRI and Maulana Azad National Institute of Technology (MANIT), Bhopal, for Academic and research collaboration in the areas of mutual interest.
11. A Memorandum of Understanding (MoU) signed on 11 September 2024 between CSIR-CRRI and Urban Road Infrastructure Development Agency (URIDA), Uttar Pradesh, to technical collaborates on the various fields of interest for knowledge-led development of Uttar Pradesh Urban infrastructure.
12. A Memorandum of Understanding (MoU) signed on 20 September 2024 between CSIR-CRRI and Indian Institute of Technology Patna, Bihar, for Academic and research collaboration in the areas of mutual interest.
13. A Memorandum of Understanding (MoU) signed on 03 October 2024 between CSIR-CRRI and Indian Institute of Technology, (Indian School of Mines), Dhanbad, for Academic and research collaboration in the areas of mutual interest.

14. A Memorandum of Understanding (MoU) signed on 17 October 2024 between CSIR-CRRI and Construction Industry Development Council (CIDC), New Delhi, for Academic and research collaboration in the areas of mutual interest.
15. A Memorandum of Understanding (MoU) signed on 28 October 2024 between CSIR-CRRI and Anna University, Chennai, for Academic and research collaboration in the areas of mutual interest.
16. A Memorandum of Understanding (MoU) signed on 01 December 2024 between CSIR-CRRI and Rajasthan Technical University (RTU), Kota, Rajasthan, for Academic and research collaboration in the areas of mutual interest.
17. A Memorandum of Understanding (MoU) signed on 21 December 2024 between CSIR-CRRI and M/s Praj Industries Limited, Maharashtra, for Technical Collaboration.
18. A Memorandum of Understanding (MoU) signed on 08 January 2025 between CSIR-CRRI and Indian Institute of Technology Bhubaneswar (IIT-Bhubaneswar), Odisha, for Academic and research collaboration in the areas of mutual interest.
19. A Memorandum of Understanding (MoU) signed on 31 January 2025 between CSIR-CRRI and Bal Raksha Bharat (Also known as Save the Children), New Delhi to promote road safety, sustainable infrastructure, and child-friendly construction practices across India.
20. A Memorandum of Understanding (MoU) signed on 20 February 2025 between CSIR-CRRI and Indian Institute of Technology Tirupati (IIT-Tirupati), Andhra Pradesh, for Academic and research collaboration in the areas of mutual interest.
21. A Memorandum of Understanding (MoU) signed on 24 March 2025 between CSIR-CRRI and Madhav Institute of Technology & Science Deemed University (MITS-DU), Gwalior, for Academic and research collaboration in the areas of mutual interest.

International Agreements Signed: 01

1. A Project Based Agreement signed on 07th March 2025 with Isparta University of Applied Sciences, Türkiye, for Developing Universal Aging Protocol for Bitumen and Asphalt Mixtures Based on Climate Change Effect with Artificial Intelligence.

National Agreements Signed: 06

1. A Project Based Agreement (PBA) signed on 16 July 2024 with M/s Ashita Renewables, Uttar Pradesh, for Development of Fiber Pellet for SMA Application.
2. A Project Based Agreement (PBA) signed on 06 August 2024 with M/s Urban Improvement Trust (UIT), Bharatpur, Rajasthan, to Comprehensive Mobility Plan for Bharatpur City.
3. A Project Based Agreement (PBA) signed on 19 September 2024 with New Delhi Municipal Council (NDMC), New Delhi, For Functional and Structural Evaluation of Roads, Construction Quality Supervision and Training of Engineers and Staff Members.
4. A Memorandum of Agreement (MoA) signed on 06 December 2024 with THDC India Limited (THDCIL), Uttarakhand, for Consultancy services for checking the adequacy of existing 55 m span through type Steel Truss Bridge over river Alaknanda on Hat Kaudia road, Pipalkoti, District

Chamoli, Uttarakhand for the transportation of the Generator Transformer for the Vishnugad Pipalkoti Hydro Electric Project (444 MW).

5. A Project Based Agreement (PBA) signed on 20 February 2025 with National Highways Authority of India (NHAI), Indian Institute of Technology Tirupati (IIT-Tirupati), Indian Institute of Technology, Palakkad (IIT-Palakkad), And National Institute of Technology, Rourkela (NIT-Rourkela), For Field Test Sections of Asphalt Rubber Pavement Systems: Design, Construction, and Performance Monitoring.
6. A Tripartite Technology Management Agreement (TTMA) signed on 25 February 2025 with Government of Assam, Guwahati And M/s Ramuka Global Services LLP, Surat, Gujarat, for Utilization and Implementation of the Technology for “ECOFIX: Ready to use Pothole Repair Mix for Instant repair of Distressed Roads In State of Assam”.

Technology Transferred: 06

1. A Technology titled “Design of Noise Barrier Based on Different Frequencies (A) Low Frequency Noise Barrier Configuration (B) Middle Frequency Noise Barrier Configuration and (C) High Frequency Noise Barrier Configuration” transferred to M/s Safebarrier International Private Limited, Maharashtra, through the Technology Transfer Agreement (TTA), which was signed on 01 May 2024.
2. A Technology titled “Design of Noise Barrier Based on Different Frequencies (A) Low Frequency Noise Barrier Configuration (B) Middle Frequency Noise Barrier Configuration and (C) High Frequency Noise Barrier Configuration” transferred to M/s Unitech Couplers India Private Limited, Tamil Nadu, , through the Technology Transfer Agreement (TTA), which was signed on 01 May 2024.
3. A Technology titled “Design of Noise Barrier Based on Different Frequencies (A) Low Frequency Noise Barrier Configuration (B) Middle Frequency Noise Barrier Configuration and (C) High Frequency Noise Barrier Configuration” transferred to M/s Technocrats Kohlhauer Infrastructure Private Limited, Mumbai through the Technology Transfer Agreement (TTA), which was signed on 16 July 2019, and has been extended up to 15 January 2030.
4. A Technology titled “Development of Ready to Use Pothole Mix using Iron and Steel Slag Aggregates” transferred to M/s Ramuka Global Services LLP, Surat, Gujarat, through the Technology Transfer Agreement (TTA), which was signed on 18 October 2024.
5. A Technology titled “A Bituminous Rejuvenating Agent and a Process for Recycling of Bituminous Pavements” transferred to M/s Ooms Polymer Modified Bitumen Private Limited, Haryana, through the Technology Transfer Agreement (TTA), which was signed on 17 January 2025.
6. A Technology titled “Development of rejuvenator for recycling of asphalt pavement material for Hot-in-Plant and Hot-in-Situ Recycling of Bituminous pavement” transferred to M/s M/s Verma Industries, New Delhi, through the Technology Transfer Agreement (TTA), which was signed on 04 November 2019, and has been extended up to 31 March.

Patents Filed: 02

1. Patent titled **“Process of Producing Bio-Bitumen from Pyrolysis of Lignocellulosic Biomass”**, filed on 31 July 2024 having an **Application No.: 202411063553**.
2. Patent titled **“Development of Ready to Use Pothole Mix using Iron and Steel Slag Aggregates”**, filed on 31 March 2025, having an **Application No.: 202511031995**.

Trademarks Filed: 03

1. Trademark titled **“REJUBIT”** filed on 23 April 2024 under class 19 (**Application no.: 6400017**).
2. Trademark titled **“MAGNICRETE (BS-101)”** filed on 20 May 2024 under classes 1 & 19 (**Application no.: 6440656**).
3. Trademark titled **“ECOFIX”** filed on 21 August 2024 under class 19 (**Application no.: 6585000**).

Trademarks Registered: 03

1. Trademark titled **“Mobile Cold Mixer cum Paver”** registered under classes 7, 19 & 37 valid till 23 January 2033 (**Application No.: 5778134**).



2. Trademark titled **“STEEL SLAG ROAD”** registered under classes 6, 19, 37, 40 and 42 valid till 06 November 2033 (**Application No.: 5652758**).



3. Trademark titled **“ECOFIX”** registered under class 19 valid till 21 August 2034 (**Application No.: 6585000**).

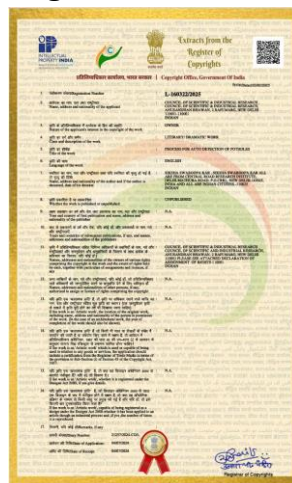


Copyright Filed and Registered: 02

1. Copyright titled **“CODE FOR AUTO DETECTION OF POTHOLES”** registered with **Diary no. 21256/2024-CO/SW** having a **Registration No. - SW-19352/2024**.



2. Copyright titled **“PROCESS FOR AUTO DETECTION OF POTHOLES”** registered with **Diary no. 21257/2024-CO/L** having a **Registration No. - L-160322/2025**.



Papers in Journals

Papers in SCI Journals

1. Ahmed, S., Rao, K. V. K., Vedagiri, P., et al. (2025). Impact analysis of laterally distributed truck wheel loads on pavement performance of multilane highway using strip-based approach. *Innovative Infrastructure Solutions*, 10, 152. **(IF: 2.3)**
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5. Farhat Azad, Gupta, K., Swaropakar, S., & Karar, V. (2024). A review of government initiatives for women safety in bus transport. *Indian Highways*.
6. Gowda, S., Ganesha, K., Vijaykumar, S., Gupta, A., & Jaya, R. S. (2024). Sensitivity analysis of HDM-4 models for developing road asset management in India: A case study on regional calibration approach. *Indian Highways*, 52(11), 36–52.
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Papers in Conferences / Seminars

Papers in Conferences / Seminars

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4. Baral, S., Nasir, M., Parida, D. K., & Nayak, S. (2024). Evolution of educational rankings: A deep dive into India's NIRF 2024. In Proceedings of the International Conference on Marching Beyond the Libraries: Leadership, Creativity and Innovation, KIIT University, Bhubaneswar, India.
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Articles in Books / Magazines

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1. Dr. Rajeev Goel, Chief Scientist contributed in the finalization of the following documents of Indian Roads Congress (IRC) and Bureau of Indian Standards (BIS):

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1.	IRC: 05	2024	Standard Specifications and Code of Practice for Road Bridges Section-1: General Features of Design (Ninth Revision)
2.	IRC:SP:35	2024	Manual for Bridge Management, Inventory, Inspection and Maintenance (First Revision)
3.	IRC:SP:40	2024	Standard Specifications and Code of Practice for Road Bridges, Section IV – (Brick, Stone
4.	IRC:78 (Part - I)	2024	Standard Specifications and Code of Practice for Road Bridges, Foundations and Substructure Part I General Features and Working Stress Design (Third Revision)
5.	IRC:SP:104	2024	Guidelines for Fabrication and Erection of Steel Bridges (First Revision)
6.	IRC:SP:143	2024	Guidelines on Steel Concrete Composite Box Girder Superstructure for Road Bridges
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9.	IS 6461 (Part 1)	2024	Cement Concrete - Glossary of terms : Part 1 Concrete Aggregates (First Revision)
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12.	IS 6461 (Part 4)	2024	Cement Concrete - Glossary of Terms : Part 4 Types of Concrete (First Revision)
13.	IS 6461 (Part 5)	2024	Cement Concrete - Glossary of Terms : Part 5 Formwork for Concrete (First Revision)
14.	IS 6461 (Part 6)	2024	Cement Concrete - Glossary of Terms : Part 6 Equipment Tools and Plant (First Revision)
15.	IS 6461 (Part 7)	2024	Cement Concrete - Glossary of Terms : Part 7 Mixing, Laying, Compaction, Curing and other construction aspects (First Revision)
16.	IS 6461 (Part 8)	2024	Cement Concrete - Glossary of Terms : Part 8 Properties of Concrete (First Revision)
17.	IS 6461 (Part 9)	2024	Cement Concrete - Glossary of Terms : Part 9 Structural Aspects (First Revision)
18.	IS 6461 (Part 10)	2024	Cement Concrete - Glossary of Terms : Part 10 Tests and Testing Apparatus (First Revision)

19.	IS 6461 (Part 11)	2024	Cement Concrete - Glossary of Terms : Part 11 Prestressed Concrete (First Revision)
20.	IS 6461 (Part 12)	2024	Cement Concrete - Glossary of Terms : Part 12 Miscellaneous Terms (First Revision)
21.	IS 18736	2024	Micropiles for Slope Stabilization for Mitigation of Landslides - Guidelines
22.	IS 18758	2024	Thermo-Hydraulic Design of Induced Draught Counterflow Cooling Towers - Guidelines
23.	IS 18661	2024	Precast Concrete Grating Specification
24.	IS 1173	2025	Hot Rolled and Slit Steel Tee Bars — Dimensions and Properties
25.	IS 1252	2025	Hot Rolled Steel Sections for Shipbuilding — Dimensions and Tolerances
26.	IS 1946 (Part 2)	2025	Fixing Devices in Walls, Ceilings and Floors of Solid Construction Part 2 Design of Post-Installed Anchorage to Concrete — Code of Practice
27.	IS 1946 (Part 3)	2025	Fixing Devices in Walls, Ceilings and Floors of Solid Construction Part 3 Testing and Assessment of Post-Installed Adhesive Anchoring Systems
28.	IS 3908	2025	Aluminium Beam, Channel and Angle Sections- Dimensions and Properties (Second Revision)
29.	IS 4967	2025	Earthquake Instrumentation of Dam Projects (First Revision)
30.	IS 9198	2025	Compaction Rammers for Soil Testing- Specification (First Revision)
31.	IS 9640	2025	Split spoon sampler for standard penetration test of soil - Specification (First Revision)
32.	IS 9669	2025	CBR Mould and Its Accessories - Specification (First Revision)
33.	IS 10074	2025	Compaction Mould Assembly for Light and Heavy Compaction Test of Soil - Specification (First Revision)
34.	IS 10077	2025	Equipment for Determination of Shrinkage Factors of Soils - Specification (First Revision)
35.	IS 10442		Earth-Augers Spiral Type - Specification (First Revision)
36.	IS 10837	2025	Moulds and accessories for determination of density index (relative density) of cohesionless soils - Specification (First Revision)
37.	IS 11196		Equipment for Determination of Liquid Limit of Soils by Cone Penetration Method - Specification (First Revision)
38.	IS 11209	2025	Determination of Permeability of Soils - Mould Assembly - Specification (First Revision)
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46.	IS 12979	2025	Mould for determination of linear shrinkage of soil - Specification (First Revision)
47.	IS 13365 (Part 1)	2025	Quantitative Classification Systems of Rock Mass - Guidelines: Part 1 Rock Mass Rating (RMR) for Predicting Engineering Properties (First Revision)
48.	IS 13365 (Part 3)	2025	Quantitative Classification Systems of Rock Mass - Guidelines: Part 3 Determination of Slope Mass Rating (First Revision)
49.	IS 13468	2025	Apparatus for Determination of Dry Density of Soil by Core Cutter Method - Specification (First Revision)
50.	IS 14458 (Part 8)	2025	Retaining Wall for Hill Area - Guidelines: Part 8 Design of Reinforced Cement Concrete (RCC) Retaining Walls
51.	IS 19117	2025	Design and construction of combined piled raft foundations - Code of practice
52.	IS 18705	2024	Thermo-Hydraulic Design of Natural Draught Counter Flow Cooling Towers — Guidelines

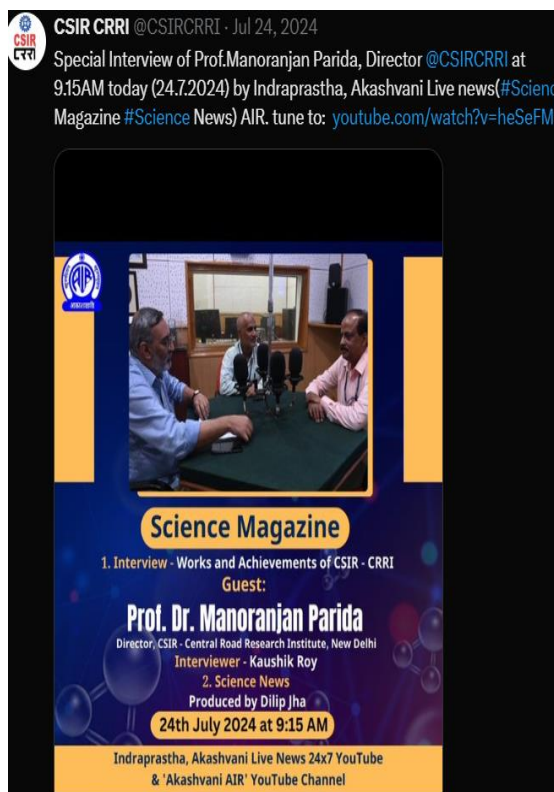
Publications in Hindi

Publications in Hindi

1. डॉ. राकेश कुमार, डॉ. पंकज गोयल और प्रोफेसर मनोरंजन परिड़ा, "सीमेंट कंक्रीट की सड़कों में आने वाली चौड़ी दरारों की मरम्मत के लिए मैग्नीशियम ऑक्सीक्लोराइड सीमेंट-आधारित माइक्रो कंक्रीट का एक टिकाऊ और पानी मुक्त मरम्मत सामग्री के रूप उपयोग", राष्ट्रीय हिंदी विज्ञान सम्मेलन-2024, भोपाल 30-31 जुलाई, 2024.
2. भारतीय बस चालकों की मनोवैज्ञानिक और शारीरिक क्षमताओं की खोज: एक वास्तविक अध्ययन द्वारा, कामिनी गुप्ता, देव सिंह ठाकुर, मुकेश कुमार, नीलिमा चक्रवर्ती, मुक्ति आडवाणी, व वेलमुरुगन, Sadak Darpan, 2024
3. प्रतिकूल मौसम के दौरान चालक के behaviour और दुर्घटना की विशेषताओं का विवरण , नीलिमा चक्रवर्ती, कामिनी गुप्ता व वेलमुरुगन, अंक26 , जून) 2023 Published in 2024)
4. शहरी सड़कों पर चालक की आंखों की गतिविधियां और दृश्य व्यवहार विश्लेषण, कामिनी गुप्ता, राजन वर्मा, ए मोहन राव, प्रियदर्शन , तकनीकी लेख प्रतियोगिता, in Sept 2024 (Secured the First prize)
5. राजीव गोयल (2024), "व्यथित कंक्रीट संरचनाओं का एनडीटी तकनीकों द्वारा आकलन", सीएसआईआर-केंद्रीय सड़क अनुसंधान संस्थान, नई दिल्ली
6. सत्यजीत नायक, मिताली महापात्र एवं शशांक भटनागर (2024), "सीएसआईआर-केंद्रीय सड़क अनुसंधान संस्थान, नई दिल्ली की अनुसंधान उत्पादकता और विजुअलाइज़ेशन: एक वैज्ञानिक दृष्टिकोण", *सड़क दर्पण हिंदी पत्रिका*, 2023 (26) pp. 21-28

CSIR-CRRI in Media

Social Media



IIT Bhubaneswar signs pact with CRRI for research

Hemanta Pradhan / Jan 8, 2025, 23:20 IST

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Bhubaneswar: IIT Bhubaneswar on Wednesday signed a memorandum of understanding with CSIR-Central Road Research Institute (CRRI) to promote collaborative research, facilitate exchange of ideas, develop new knowledge, and enhance high-quality research acumen. The MoU was signed by Dinakar Pasla, dean (sponsored research and industrial consultancy), IIT Bhubaneswar, and Manoranjan Parida, director,

CSIR-CRRI. Shreepad Karmalkar, IIT director, was also present.

Major thrust areas of joint research will be traffic and transportation engineering, pavement engineering, [road safety](#) and other allied civil engineering areas such as geotechnical engineering and bridge engineering, official sources said.

"The modes of cooperation will include exchanges of faculty and students for the purposes of research and teaching. The two institutes will help each other in the development and implementation of collaborative research projects, professional development programmes, capacity-building efforts and dissemination of findings through scholarly publications and white papers," read an official statement from IIT.

International Conference on Steel Slag Road: Member (Science) Niti Aayog, Dr.V.K.Saraswat releases the Guidelines for Utilization of Steel Slag in Road Construction

Posted On: 01 JUL 2024 4:46PM by PIB Delhi

Member (Science) Niti Aayog, Dr. V.K. Saraswat in the First International Conference on Steel Slag Road jointly organized by CSIR-CRRI and PHDCCI at New-Delhi, released the Guidelines for Utilization and Processing of Steel Slag as Processed Steel Slag Aggregates in Road Construction. During this occasion, Dr. Saraswat emphasize the importance of sustainable development and the efficient utilization of industrial waste of steel industries i.e. Steel Slag, in infrastructure projects in the country. Dr. Saraswat informed that the adoption of these guidelines for construction and maintenance of road network using steel slag, is expected to bring numerous benefits, including cost saving, reduced environmental impact and improved road performance. He further said that CSIR-CRRI Steel Slag Road Technology is making significant contribution to realize the vision of Hon. Prime Minister of India Shri Narendra Modi ji for "Waste to Wealth". He further congratulated Dr. Manoranjan Parida Director CRRI and Shri Satish Pandey, Principal Scientist and inventor of steel slag road technology for their exemplary contributions for the development and implementation of this technology on pan India basis.



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BBMP successfully utilized pilot project CSIR CRRRI steel slag based instant pothole repair technology ECOFIX to fix the Bengaluru City Road

Posted on December 11, 2024vipin gaur in City News, Nai News



BPCL Signs Agreement with CSIR

BY- PSU CONNECT - 13 APR 2024


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New Delhi: BPCL recently celebrated a significant milestone with the signing of a Memorandum of Agreement (MoA) with CSIR (Central Road Research Institute). This collaboration marks a crucial step forward in our Waste Plastic Road (WPR) initiative, showcasing our commitment to environmental sustainability and innovation.

Border Road organization (BRO) and BPCL's joint demonstration in Arunachal Pradesh, along with ITC Ltd.'s trial in Gujarat, confirms the durability of waste plastic roads under extreme climatic conditions.

India to implement steel slag in roads, aiming for sustainable infrastructure

The guidelines advocate for the processed use of steel slag aggregates in road construction, tapping into the waste from steel industries to foster environmental sustainability.

ETEnergyWorld

Updated On Jul 2, 2024 at 08:06 AM IST • Read by 911 Professionals



New Delhi: In a significant move towards sustainable infrastructure development, Dr. V.K. Saraswat, Member (Science) of Niti Aayog, released new guidelines for

the utilization of steel slag in road construction. This announcement was made at the First International Conference on Steel Slag Road, jointly organized by CSIR-CRRI and PHDCCI in New Delhi.

The guidelines advocate for the processed use of steel slag aggregates in road construction, tapping into the waste from steel industries to foster environmental sustainability. According to Dr. Saraswat, the implementation of these guidelines is expected to yield substantial

Home » Sustainability » Gadkari inaugurates India's first national highway using bio-bitumen developed by Praj Industries

Gadkari inaugurates India's first national highway using bio-bitumen developed by Praj Industries

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By **ICN Bureau** | December 26, 2024



The Minister of Road Transport and Highways, Nitin Gadkari has inaugurated the country's first sustainable road made at the Nagpur-Mansar Bypass Project, NH44 using lignin-based bio-bitumen.

This eco-friendly technology made by Praj Industries, India's leading industrial biotech company, can partially replace fossil-derived bitumen and is being used to create the country's first national highway.

Praj's proprietary technology refines crude lignin into Lignin Bio-Bitumen and has the potential to replace fossil-based bitumen and offer sustainable solutions to the road infrastructure industry. This green construction material, with a blending

capacity of up to 15%, offers significant benefits, including a 70% reduction in greenhouse gas (GHG) emissions compared to fossil-based bitumen.

India would require around 15 lakh tons of bio-bitumen to achieve 15% blending with conventional bitumen. Through this investment, India can save Rs. 4,000 - 4,500 crore on foreign exchange, marking a transformative step toward sustainable and eco-friendly road infrastructure.

Commenting on this development, Nitin Gadkari, Minister of Road Transport and Highways, congratulated Praj on the successful development of this technology and said "The bio-bitumen used in this project, developed by Praj Industries in collaboration with CSIR-CRRI, is a significant step toward sustainability. It reduces our dependency on imported bitumen and provides an innovative solution by turning agricultural waste into a valuable resource."

Staff News (Retirements, VRS, Transfer from / to CSIR-CRRI)

Retirements & Voluntary Retirement Scheme (VRS)

Following staff members have retired from service of the Institute during the period. CSIR-CRRI Welfare Committee organized functions to bid all of them a grand farewell.



Dr. Vasant G. Havangi, Chief Scientist, 30.04.2024



Sh.H.L. Sachdev, Sr.Tech. II, 30.04.2024



Sh. Sanjay Kumar, Sr.Tech. II, 31.05.2024



Sh. P.V. Pradeep Kumar, Chief Scientist, 31.05.2024



Sh. S.S. Gaharwar, Chief Scientist, 30.06.2024



Sh. Ram Singh, Work Assistant, 30.06.2024



Sh. Ashok Kumar, Prinipal Technical Officer, 30.06.2024



Sh. A.K Sabharwal, Principal Technical Officer, 31.10.2024



Smt. Satindar Kaur, Section Officer, 30.11.2024



Smt. Sumitra Devi, Work Assistant, 28.02.2025



Sh. R.K. Panigrahi , Sr. Principal Scientist, 28.02.2025

Transfers / Joining to CSIR-CRRI

Smt. Ruksha	ASO (G)	24.03.2025 (New Joining)
Ms. Rajni Yadav	ASO (G)	26.03.2025 (New Joining)
Sh. Rinku Meena	ASO (G)	26.03.2025 (New Joining)
Sh. Vikki	ASO (G)	26.03.2025 (New Joining)
Smt. Monika	ASO (F&A)	25.03.2025 (New Joining)
Sh. Anubhav Singh	ASO (F&A)	24.03.2025 (New Joining)
Ms. Neha Dhankad	ASO (S&P)	24.03.2025 (New Joining)
Sh. Rishikant	ASO (G)	14.08.2024 (Transfer on Promotion from CSIR- CDRI and joined CRRI)
Smt. Priyanka Gupta	Section Officer	30.08.2024 (Transfer)
Sh. Anil Kumar Upadhyay	Section Officer	23.09.2024 (Transfer from CSIR- NBRI and joined CRRI)
Sh. Manoj Sawroop Shukla	Section Officer	02.12.2024 (Transfer from CSIR- CIMAP and joined CRRI)

Transfers from CSIR-CRRI

Sh. Amit Wasnik	Technician	03.01.2025
Sh. Sudip Santra	Technician	03.01.2025
Sh. Chanderkant	Section Officer	13.01.2025

Resignations from CSIR-CRRI

Sh. Mohamad Akil	Tech. Assitt	30.10.2024
Ms. Anupriya	Technician	14.02.2025

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Acknowledgements

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