CSIR CRRI Newsletter

In This Issue

Down The Memory Lane- Part VII - Pg 1
Highlights of Major Projects - Pg 2
Meetings/Workshops/ Conferences Organized - Pg 15
Technical Exhibition - Pg 16
Right to Information (RTI) - Pg 16
Honours & Awards Received - Pg 17
Training Programmes Conducted - Pg 17
राजभाषा गतिविधिया - Pg 21
Lectures Delivered/Invited Talks (Outside CRRI) - Pg 23
Deputations Abroad - Pg 24
Important Day Celebrations - Pg 25
Agreements / Patents / MoUs - Pg 28
Visitors to the Institute - Pg 30
Staff News (Retirements, Transfer, New Joining) - Pg 31
CSIR-CRRI in Media - Pg 33

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DOWN THE MEMORY LANE - PART VII

The Nilgiris saw the calamitous landslides in 1978, and it was a challenge to stabilize the slope on Coonoor – Ooty highway, and this challenge was taken by the scientists of CRRI. Horizontal drains were installed on hill slopes on the highway in 1980-81 (Figure 1) for sub-surface drainage and slope stabilization. Later this technique was applied to stabilize hill slope at Porthimund dam site of Tamil Nadu State Electricity Board in Ooty area.

Figure 1 Installation of Horizontal Drains on Coonoor – Ooty Highway

Another challenging project of 1980s was inventorization of 67 National Highways in the country. The total length covered was 31,700 km spread all over the country. A data base in terms of road surface roughness and horizontal & vertical profile was developed for each kilometer. The bump indicator developed by the institute was used to determine the road roughness of the entire length of these 67 National Highways (Figure 2). In addition to these, information on junction types, pavement width, surface type and pavement condition were also collected.

Bump Integrator

In addition to the above, the institute developed two major Geotechnical equipment during late 80s. These were improved version of Casagrande's Piezometer to measure pore water pressure up to 0.27 kg/cm2, and a modified triaxial cell to realistically measure swell pressure both in vertical and lateral directions of a specimen.

Satish Chandra
Director, CSIR-CRRI

Highlights of Major Projects

Development of Mobile Application for Supply Chain and Freight Transportation Management for Farmers – Kisan Sabha

Covid-19 situation across the world has threatened all the sectors. In India too, many sectors are badly affected specially the agriculture sector as it overlaps with the time of harvest. In present situation of Covid 19, farmers are looking for help in seed/ fertilizer procurement, etc. A robust supply chain management was urgently required to facilitate the timely delivery of the produce at the best possible prices. Kisan Sabha emerged as a great platform for the farmers and overall agriculture eco-system.

Presently, the total downloads are around more than a lakh (Web+ Mobile) and 10,000 farmers are using Kisan Sabha. We can really help the govt, in its goal of making the farmers more self-reliant as envisioned by our PM as part of *Atmanirbhar Bharat Abhiyaan*. Kisan Sabha App was conceived keeping the following objectives in mind:

- It connects the farmers, directly to transporters, Service provider (like pesticides/ fertilizer/ dealers, cold store and warehouse owner), mandi dealers, customers (like big retail outlets, online stores, institutional buyers) and other related entities.
- It gives the option to choose best rated mandi out of 4 nearby mandis. This will improve the income of farmers.
- Since farmers can directly connect, interference of middlemen is reduced. Margins can be added to farmers' income itself.
- Small and medium farmers can hire logistics as per their demand.
- Freight calculator is being provided, giving them options to choose the cheapest transport facility.
- Equipment are also being provided to farmers for their cultivation and other activities as service providers can also be directly contacted.
- KisanSabha also provides a platform for people who want to buy directly from farmers in bulk.
- Refrigerated trucks, cold storage facilities and warehouses are also part of Kisan Sabha.

Kishan Sabha has 6 major modules taking care of Farmers/Mandi Dealers / Transporters / Mandi Board Members / Service Providers / Consumers.

Latest Updates & Ground Level Activities Undertaken:

- 1,10,500 downloads (Web & Mobile)
- 18 You Tube Promotions by Other Channels
- News coverage by 26 web pages
- 13 organizations wants to join Kisan Sabha
- 4.2 rating at Google Play Store
- Unnat Bharat Abhiyan Joines hands with Kisan Sabha by signing MoU with CSIR to cover PAN India KVK's
- Promotion of Kisan Sabha through Whatsapp auto Sender. Sending 400 messages daily.

Activities Mainly Conducted with Odisha Partner-ICE Foundation are:

- Our Hon'ble Finance Minister, has announced to create 10,000 FPO's by end of 5 years. Mandates of FPO's are well being covered by Kisan Sabha, we plan to make 20 FPOs within this year

- Connected to one FPO - Mukulishi Sparsha Producer in Balasore
- Connected 2500 farmers
- 34 consumers,3 Startups,20 Women SHG groups, Currently operation in 6 dsitricts of Odisha out of 30 (Puri, Khurda, Balasore, Kendrapara, Nayagarh & Gajapati (Aspirational District) covering 13 Blocks with outreach to 200 Panchayat.
- Joined with 3 Start-ups (2 are technology based- Maharashtra & Orissa)

Women Farmers registered in Kisan Sabha growing vegetables for community and local markets

Awareness Initiatives for Kisan Sabha among Farmers of Odisha

Commuting in Urban Area during Covid-19 Pandemic : Social Distancing

CSIR-CRRI, New Delhi has come out with a document on "Guidelines for Public Transport and Feeder Modes considering Social Distancing Norms" which was released by the Hon'ble Minister Dr. Harsh Vardhan ji, the cabinet minister, Department of Science and Technology & MoHFW along with Dr. Sekhar C Mande, DG, CSIR and Prof. Satish Chandra, Director, CSIR-CRRI on May 04, 2020. The document mentions a systematic and strategic approach to be adopted to move ahead during the COVID-19 pandemic.

Multi dimensional approach is recommended at every stage of public transport commuting like walking from home to bus stop/ metro station, using feeder modes like cycle rickshaw, electric rickshaw, shared auto rickshaw etc., area of bus stop and metro stations and while travelling inside the bus and metro to reach destination. Taking into the account of total leg of the trip from origin to destination, following two approaches are suggested for possible implementation considering social distancing:

- Redesigning the facilities suiting to social distancing

- *Pedestrians:* Marking s on Foot Paths and Widened Zebra Crossings at Intersections
- *Metro, Metro Station and Surrounding Area:* Boarding/ alighting times, Feeder bus services, Subway/ Lift/ Escalator, Double the dwell times, Information on vacant Seats in a coach, Queuing by commuters on platform and ticket counters, Baggage Scanner/ Security Checkup, Card scanning, Markings/ procedure to follow from entry gate to platform, inside the train and before alighting, Online ticketing and use of Arogya Sethu
- *Bus and Bus Stop:* Rear door boarding and alighting, Increasing of Dwell Time, Staggered bus seating arrangements, Limiting Access to Bus Drivers Area, Limiting seating at Bus Stops/ Stations, Cleaning of Common Areas and Automated Fare Collection System
- *E-Rickshaws, Autos and Taxis:* One Commuter, Usage of Apps for booking and payment in digital mode, Partition between driver and commuter as well as within commuters, Parking places, Self driving car rentals

- Reducing the demand and Capacity Enhancement
- *Demand Reduction:* Encourage Short length trips by intermediate public transport modes (rickshaws, autos, etc.), Easy access for IPT vehicles near entry gates of metro and bus stops, Dedicated path/ lane to IPT and PT, Staggered days and/or hours for offices/ schools/ markets/ shopping area can be adopted.
- *Capacity Enhancement and Management:* Changes in Timetable, Providing dedicated services to healthcare personnel, patients and any other category of the work force falling under essential services, Readjust routes and frequencies , Policy towards different time schedule of economic and social activities, Attractive or targeted offers to encourage the use of public transport, Induction of school buses, charted buses, tourist buses, other mini tourist buses/ vans incase increased demands, exceptional measures, prioritize political and financial support from Government.



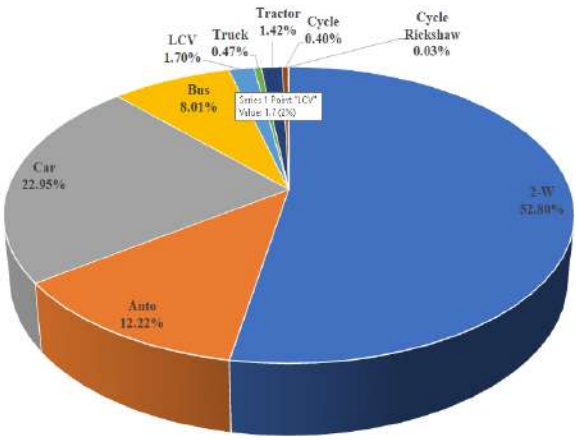
In order to discuss further to implement such norms in Indian cities, an International Webinar on Social Distancing Norms for Transportation in COVID-19 - Need and Challenges has been organized by CSIR-Central Road Research Institute (CRRI), New Delhi for two days inviting experts and professionals in this area from May 15-16, 2020. This Webinar address most of the core issues such social distancing norms, coping the transportation issues in pandemic situations, lessons from other countries, challenges and suggestion for Indian conditions. The eminent speakers/ experts from various organizations namely Ahmadabad Traffic Police, Massey University, Auckland, New Zealand, CSIR-CRRI, New Delhi, AIIMS, New Delhi, CIA G.Local.com, BRTS Bhopal, DTC, New Delhi, Indian Railway and Electro Motion Mechtronic Pvt. Ltd. have participated in the Webinar.

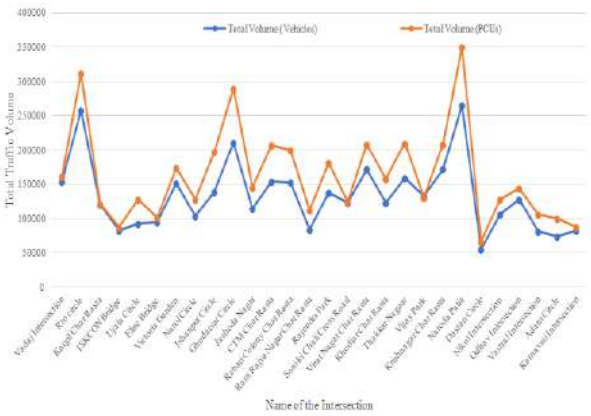
Comprehensive Mobility Plan (CMP) – Ahmedabad

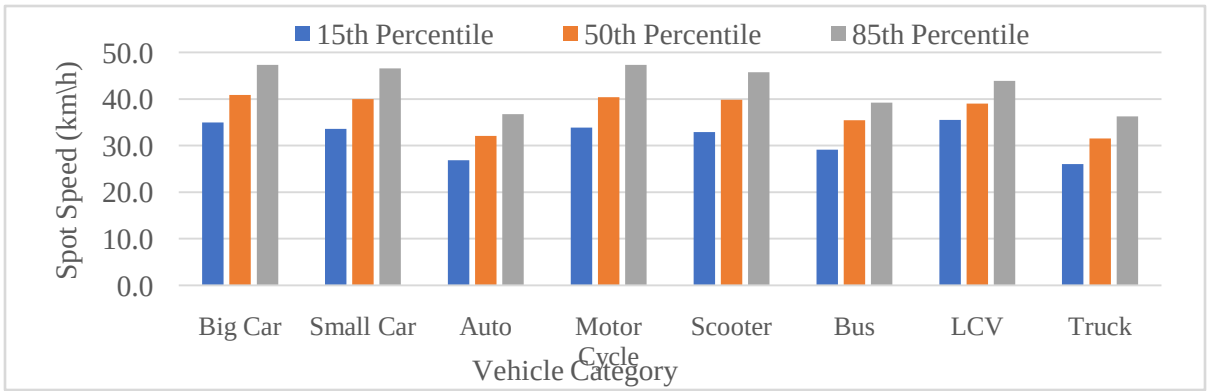
Funding Agency: Vadodara Municipal Corporation, Gujarat

This study is focused to develop comprehensive mobility plan for Ahmedabad city. Various traffic surveys like classified traffic volume count survey, household survey, origin-destination survey, spot speed survey, speed and delay survey, pedestrian volume count survey, parking survey, freight survey, public transport passenger survey, and road Inventory survey were conducted. Existing traffic characteristics such as average daily traffic, traffic composition characteristics and peak hour characteristics were estimate for Identified 37 intersections and 10 mid-block sections. The spot speed characteristics such as average travel time, 85th Percentile travel time were estimated. Passenger travel characteristics include travel characteristics at outer cordon and travel characteristics of various household were analyzed. Public transport characteristics include bus passengers and Intermediate public transport passenger. The existing pedestrian facilities were studied and improvement measures were suggested.

The parking demand and supply for the study was also estimated. Freight travel characteristics at various outer cordon was investigated. The traffic volume data and travel behavior data was considered to develop travel demand model for base and horizon year. Traffic growth rates were estimated considering the past trends of motor vehicles registered in Ahmedabad city and these were considered for estimating the horizon year traffic. This will be useful to improving and strengthening the road infrastructure facilities as well as proposing new infrastructure facilities. Intersection Improvement plans were proposed taking into account the future traffic, prevailing site conditions and proposed city development plans. Five year accident data (2015-2019) was considered to carry out accident analysis and the main causes of accidents in Ahmedabad city were analyzed. The strategies of various short term and long term plans were prepared to implement the same in the study area.







Comparison of Spot Speed characteristics of various category

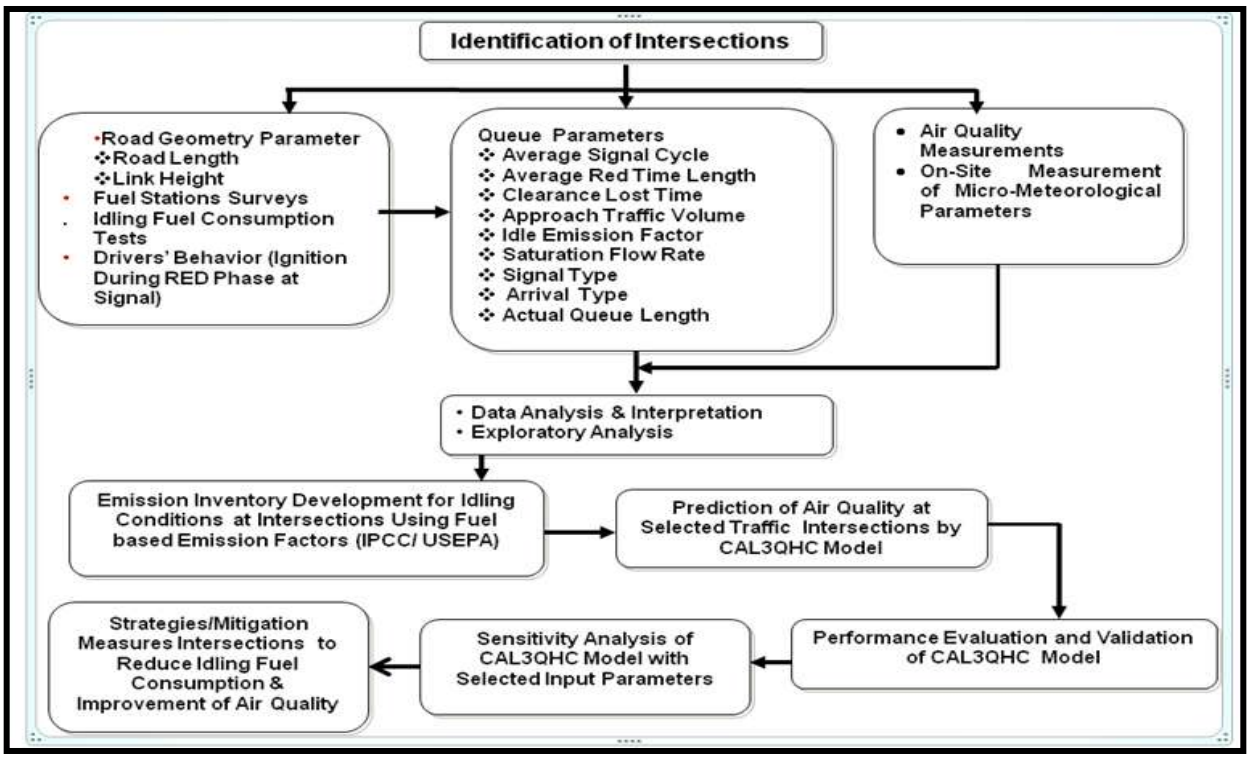
Estimation of Fuel Losses and Assessment of Air Quality at Selected Traffic Intersection(s) in Delhi

Funding Agency: Central Pollution Control Board (CPCB), Ministry of Environment Forests and Climate

The direct effect of idling of motor vehicles at various traffic intersections is fuel losses (i.e wastage of fuel), resulting in significant increase in air pollution levels there and ultimately converting these traffic intersections into urban "hot spots". At these "hot spots", air pollution levels generally exceed the stipulated air quality standards, prescribed by various regulatory agencies. The situation becomes much more serious during the winter months due to unfavourable meteorological conditions.

Three signalised intersections viz., ITO, Lodhi Road near IMD office and Mathura Road in front of CRRI Main gate were selected for the present study. As part of the study various surveys including (videography)Traffic volume count (48 hours Continuously Weekend and Weekday) for idling and non-idling vehicles, fuel station survey (for determining age profile of vehicles), road geometry survey were carried out for summer and winter seasons. Simultaneously, ambient air quality and on-site meteorological data at the CPCB monitoring stations situated at these traffic intersections were also collected. Idling fuel consumption for different categories of vehicles data were taken from earlier studies carried out by CRRI. The study also involved using fuel-based IPCC emission factors which converts quantity of different types of fuels into direct GHGs (viz., CH4, CO2, N2O) and Indirect GHGs (viz., CO, NO2, Volatile Organic Compounds: VOCs) based on the Nat Calorific Value (NCV) of the respective fuel(s).

The methodology adopted for the present study is presented in the following flow chart given below.



Various surveys (viz., traffic volume, fuel station, signal timing) as well as secondary data related to air quality and meteorological data have already been completed/collected and have been compiled.

Road Safety Audit and Treatment for Identified Black Spots on Varanasi - Shaktinagar (SH-5A): Narayanpur to Hathinala Road Section

Funding Agency: Uttar Pradesh State Highway Authority (UPSHA), Lucknow

Considering the rising trends of road crash severity on the state highways, it was felt essential by the Uttar Pradesh State Highways Authority (UPSHA) to mitigate it on the roads falling under their jurisdiction through the conduct of Road Safety Audit (RSA). In this context, Varanasi - Shaktinagar Road (SH-5A) starting from Km. 0.000 (at Narayanpur) of Mirzapur District up to Km 113.440.000 (at Hathinala) was identified by UPSHA for the conduct of Road Safety Audit (RSA) and thereby to undertake appropriate remedial measures. The detailed RSA findings along with the road safety measures as well as development of action plans for the identified black spots for the identified black spots have been discussed. Based on the above study, needful action can be taken by UPSHA at their end for implementation after the closure meeting. A typical illustration of safety issues identified on the Project Corridor along with suggested measures for the same as well as specific measures for one of the 16 identified crash prone locations are presented in the figures given below.

Missing panels of Cement Concrete Crash Barrier (CCB) on the flyover portion is a safety problem @ Km 21/500 in Varanasi to Hathinala direction

Embankment is more than 3 m @ Km 28/000 wherein Wire Rope is installed in Varanasi to Hathinala direction; This is a good practice followed by UPSHA needing replication at all such locations

Discontinuity in MBCB is a major safety problem @ Km 54/700 in Varanasi to Hathinala direction

Level difference between LHS and RHS (about 1.5 m) is a major safety problem @ Km 68/100 needing immediate installation of MBCB on the median portion

Development and Testing of Prototype Pothole Repair Machine

Funding Agency: CRRI and M/s JCB India Ltd.

One of the most common problems with roads is the structural failure on the road surface due to moisture on the road and traffic passing over the affected area that result in formation of potholes. The potholes are very dangerous as it causes fatal road accidents. The potholes are usually repaired manually by pouring the repairing material into the potholes and then compacting the repairing material with a hand held roller rammer or a roller machine. Such method is time consuming and quality of work is sometimes low. CSIR-CRRI has developed laboratory model of pothole repair machine which further needs to be upgraded. Hence, CRRI has collaborated with M/s JCB India Limited and developed a prototype machine on Backhoe platform comprising a compaction assembly (plate compactor), a sweeper, an emulsion reservoir, a compressor unit and multiple air tanks and a bitumen mixing assembly. The demonstration was done at Pune and the repaired pothole was monitored for six months. The large scale demonstration has also been conducted at CRRI campus in presence of field engineers of different government departments. Now, the machine is ready to launch in market for wider application.

Demonstration of Pothole Repair Machine at CSIR-CRRI

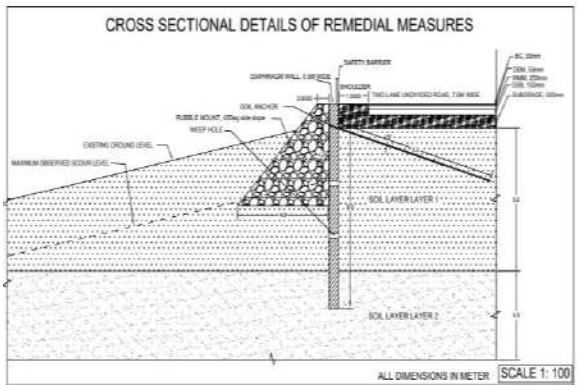
Design of Road Remediation and erosion protection works for the reconstruction of flood damaged Shangumugham beach road, Thiruvananthapuram

Funding Agency: Public Works Department, Kerala

The Kerala State Public Works Department road near Shangumugam was investigated for the coastal erosion. Tidal and rainfall data of the area was collected. Satellite images of the road for varying time was analysed for the erosion characteristics and maximum uprush limit of the coastal waves. From the satellite image analysis, it was inferred that the increase in tidal height caused an increase in the maximum wave up-rush limit, also shifting the shoreline approximately 40m inland. The increase in

The increase in tidal height along with the storm surge due to heavy rainfall caused the damage of shangumugam beach road. One lane for a stretch length of 260m was damaged during the last two monsoon season (2018 and 2019). The subsoil majorily comprises of only silty sand with medium sized sand particles of weight 78% and fines less than 22%. Apart from the initial 3m of medium dense sandy strata, subsoil is majorly dense in nature with Standard Penetration Test (SPT) N around 30. Analysis was done to calculate the wave height as well as the force and moment caused due to wave impact. Design was done for remediation work comprising of Diaphragm wall with a single line of soil anchors, and rip rap armor unit. Pavement design for road remediation was also done as per the prevailing codes.

Flood damaged beach road, Shangumugam



Cross sectional details of remedial measures suggested

Sustainable Road Pavements in High Altitude Regions Using Geosynthetics

Funding Agency: National Mission on Himalayan Studies (NMHS)

The objective is to improve performance of pavement layers built using local marginal materials, which are confined in geosynthetics. CSIR-CRRI team collected three different locally available marginal materials, viz., landslide material, tunnelling muck and local soil from the proposed trial site. The indigenously developed repeated load apparatus is being used to study the effect of Geosynthetic confinements provided in pavement layers (at Laboratory scale). Repeated Load Test conducted to compute the Traffic Benefit Ratio (TBR) from laboratory experiment data for the case

Test Section with Geocell placed on Subgrade (Manali, Himachal Pradesh)

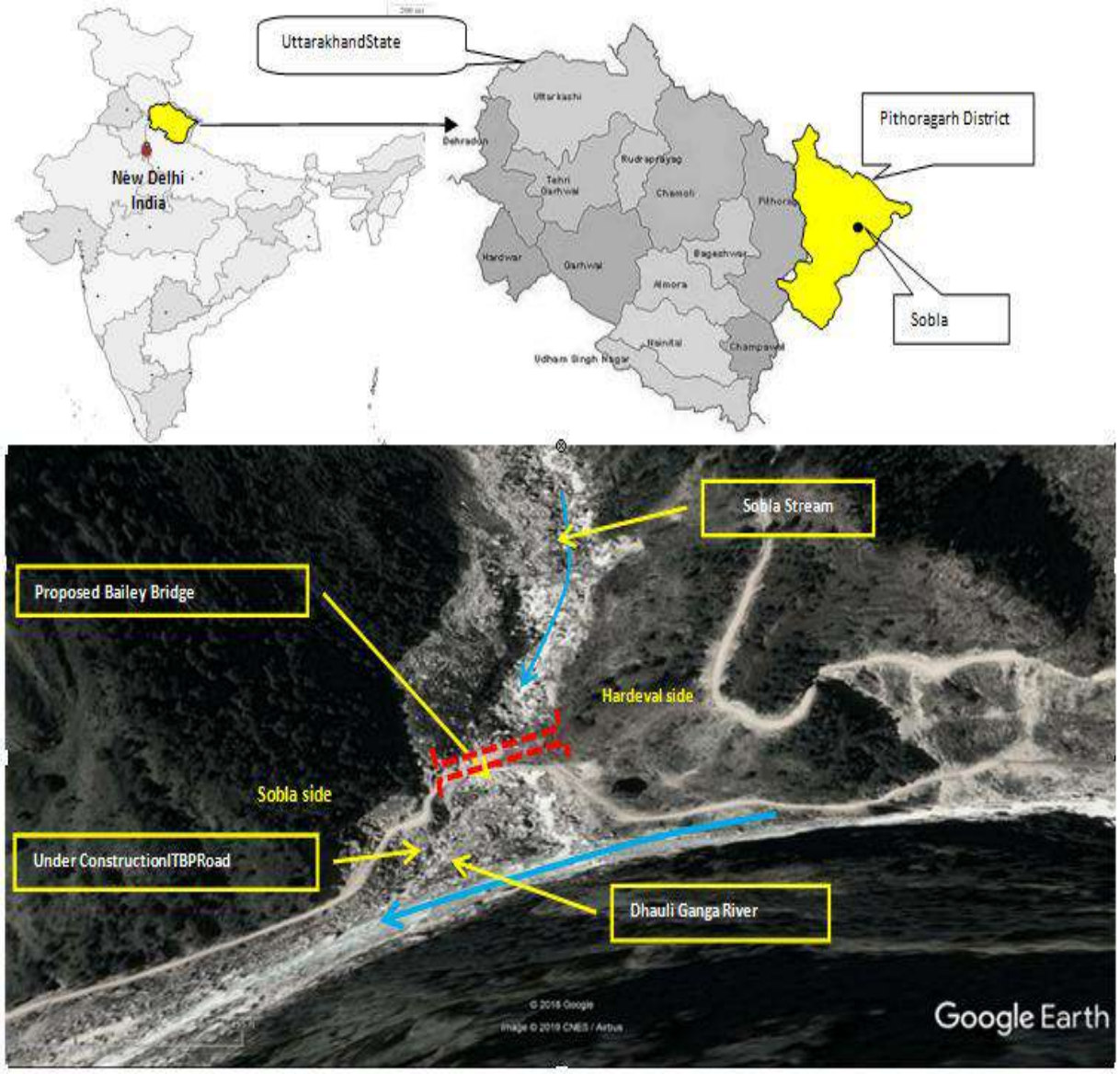
Test Section with Geogrid placed on Subgrade (Tenga Valley, Arunachal Pradesh)

Investigation, Design and Remedial Measures for Protection of Slopes at Bailey Bridge, Pumbai Valley

Funding Agency: Central Public Works Department (CPWD), Border Fencing Zone, New Delhi

The study area comes under the Higher Himalaya region, which is facing slope stability and rockfall problems at different places. CPWD officials observed rock fall problem at chainage 1.0km, where Bailey suspension bridge is proposed to be constructed. The main objective is to arrest rock fall and stabilize the slopes by providing Remedial measures at the proposed abutments of Bailey bridge on either side.

A detailed field investigation was carried out using the contour map on 1:500 scale with 1m contour interval. Geological structural data, sample and other information were collected from the field. Stereographic analysis was used with the help of geological structural data to find out mode of failures. Laboratory tests on soil and rock samples were carried out to engineering properties of field samples.



Location of the study area

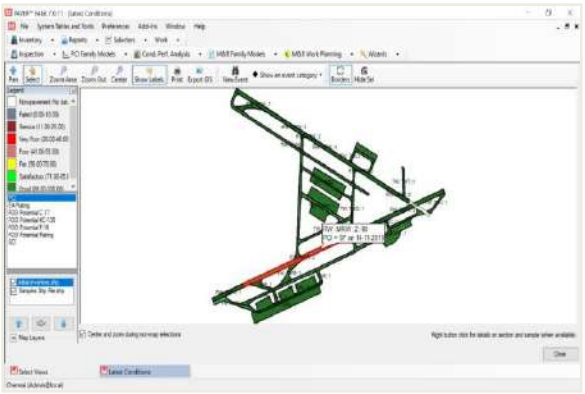
Development of Airfield Pavement Management System (APMS)

Funding Agency: Airport Authority of India, Govt. of India

Under the project ten airports are considered. CSIR-CRRI team has successfully evaluated Chennai and Rajahmundry Airfield Pavement Network i.e. first observations in the month of November 2019. The field investigations carried out mainly include functional assessment of airfield pavement network using state of art survey tools such as Automated Road Survey System (ARSS). For the development of APMS, Geographic Information System (GIS) based database has been prepared with the integration of georeferenced base map with the Global Positioning System (GPS) tagged Distress data collected using Automated Road Survey System. GIS with Google Maps, Hawkeye Processing Tool Kit, and PAVER software tools have been used for the development work.

The report presents the importance of APMS, Data requirements, collection and analysis methodologies for rating of Airfield Pavement Network including Runways, Taxiways and Apron Area in terms of Pavement Condition Index (PCI) as per ASTM D 5340 – 18 guidelines. Based on functional condition data and PCI rating, recommendations are made towards improving the condition of different sections of the airfield pavement to make them suitable for the anticipated aircraft operations.

NSV Survey on Rajahmundry Runway



PCI representation of the Chennai Airfield Network in PAVER

Field Investigation and Experimentation on Prevention of Premature Longitudinal cracking in Concrete Pavement

Funding Agency: Ministry of Road Transport and Highways, Govt. of India

Premature longitudinal cracking has been observed on many concrete pavement highways constructed in the recent past. One of the reasons for such longitudinal cracking has been noticed to be related to saw cutting operation. Sometimes, saw cutting is delayed which may result in cracking in the pavement. Depth of saw cutting has also been found responsible for such premature cracking.The construction of concrete pavement highways, either two lane or four lane, is going on in many parts of the country. These project sites may provide an opportunity for doing further investigation and field experimentation related to longitudinal cracking of the concrete pavements.

Development of Road Maintenance Management System (RMMS) for Public Works Department of Kerala

Funding Agency: Public Works Department Kerala, Govt. of Kerala

The objective of the project is to establish a web based road information system and road maintenance management system (RMMS) for the Kerala state PWD roads.

The major activities of the study include training to Kerala PWD officials on RMMS concept, one time road inventory and pavement condition (functional and structural) survey using Modern Survey Techniques viz. Network Survey Vehicle (NSV) and Falling Weight Deflectometer (FWD) for 4000 km of State Highways (SH), technical assistance for procurement of web based RMMS software, analysis using Highway Development and Management Tool (HDM-4) for the identified road network.

CRRI team has successfully completed the Road Inventory and Pavement Condition Survey work on 4000 km of road network in 14 district of Kerala, during October 2019 to January 2020 using Network Survey Vehicle System.

NSV Survey at Site in Tiruvanantpuram

Evaluation and Quality Assessment of Resurfacing Works of Test Track in Hero MotoCorp Ltd. Plant in Gurugram

Funding Agency: M/s Hero MotoCorp Ltd., Gurugram, Haryana

The objective of the project is to conduct quality checking of resurfacing work on the test track. CSIR-CRRI team visited the site and visually assessed the present condition of test track.

On the basis of existing surface Condition and considering the type of traffic (i.e. two wheelers) and frequency of traffic for which this track facility is needed, the remedial measures were suggested.

Post construction evaluation of test track which include various tests performed on site and at CSIR-CRRI laboratory. These are (i) Surface friction (ii) Texture depth (iii) Bitumen content (iv) Core density (compaction) (v) Riding quality

Some of the photographs are given below showing the various post construction testing activities.

Photographs Showing Evaluation of Test Track

The Chief Engineer and Regional Officer (Maharashtra & Goa), Govt. of India, Ministry of Road Transport and Highways (MoRTH), has sponsored a project for conducting field experimentation in this regard. The objectives of the project are to investigate the effect of saw cutting depth, saw cutting timing and relocation of longitudinal joints for the prevention of cracking. The project is to be executedat five different project sites of concrete pavement construction in Maharashtra.

Longitudinal Cracking in Concrete Pavement

Review of Repair Methodology for Cracked PQC Panels at Rewa-Katni-Jabalpur and Jabalpur-Lakhnadon road on NH-7

Funding Agency: M/s Larson & Toubro Ltd., Jabalpur

Four laning of Rewa-Katni-Jabalpur-Lakhnadon Section of NH-7 from Km 311.000 to Km 546.425 in the state of Madhya Pradesh was undertaken on EPC mode under NHDP-IV. The work was awarded to M/s L&T Ltd. Plastic shrinkage cracks and other types of cracks have developed in rigid pavement slabs under Package IV (Rewa-Katni-Jabalpur, from Sleemnabad to Jabalpur) and Package JL (Jabalpur to Lakhnadon) under PIU-Jabalpur, NHAI. The L&T Ltd. requested the CSIR-CRRI, New Delhi to review the repairing methodology adopted at site and suggest appropriate method of repairing of different types of cracks developed in the rigid pavement slabs. A site visit was undertaken for visual distress survey. Majority of the panels having cracks were observed to have plastic shrinkage cracks of different severity in both the Packages. These cracks at most of the locations had already been repaired by epoxy filling. Full depth transverse cracks, full depth corner cracks, longitudinal cracks were also observed in some of the slabs. Full depth repair (FDR) for full depth cracks, cross stitching for longitudinal cracks, and epoxy filling was suggested for plastic shrinkage cracks.

Repaired Plastic Shrinkage Cracks

Full Width and Full Depth Transverse Crack

MEETINGS / WORKSHOPS / CONFERENCES ORGANISED

124th Research Council Meeting of CSIR-CRRI

124th Research Council Meeting of CSIR-CRRI was held on December 02-03, 2019 in CSIR-CRRI. Prof. Satish Chandra, Director, CSIR-CRRI welcomed Prof. Tarun Kant, the chairman and all the members of the research council. Various presentations were made by scientists of the institute during the meeting. DG, CSIR also joined the meeting on first day and addressed the scientists.

Scientist-Student Interactive Workshops under '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. As a part of JIGYASA programme, CSIR-CRRI organised various interactive meets from October 01, 2019 to March 31, 2020 for the students of different schools of Delhi NCR. A total of 96 students and 7 teachers participated in these meets.

S. No.	Date	Name of the Programme	No. of Days	No. of KV Schools	No. of Students	No. of Teachers
1	30-10-2019	Interactive Meet/Workshop	1	1	40	2
2	27-12-2019	Interactive Meet/Workshop	1	1	56	5
Total				**2**	**96**	**7**

Mass Housing Workshop on February 20, 2020

A workshop on Mass housing was organised on February 20, 2020 at CSIR-CRRI for Skill Development and Technology dissemination. It was attended by Students, Researchers, Technocrats and Stake holders. dissemination. It was attended by Students, Researchers, Technocrats and Stake holders.

TECHNICAL EXHIBITION

80th IRC Annual Session

As part of 80th IRC Annual Session from December 19-22, 2019 at Patna, a technical exhibition was organized to showcase the latest in technologies, products and projects in the road and transport sectors for various stakeholders across the globe. CSIR-CRRI also took part of the exhibition by showcasing its expertise & capabilities in the fields of Roads & Transportation sector and got appreciation certification from the organizers.

RIGHT TO INFORMATION (RTI)

CSIR-CRRI received 88 RTI applications during the period from October 01, 2019 to March 31, 2020 and all were replied in time.

HONOURS & AWARDS RECEIVED

- Prof. Satish Chandra, Director, CSIR-CRRI was elected Fellow of National Academy of Science (India), FNASc.
- Dr. Vasant G. Havangi, Chief Scientist received CIDC Vishwakarma award (2019). A Trophy and Scroll of commendation from was given to him from the Board of Governors of Construction Industry Development Council (CIDC) for outstanding contribution to Research and Development under the Category 'Scientist'. New Delhi.
- Mr. Dinesh V. Ganvir, Principal Scientist was invited as Session Chair for theme on "Utilization of waste materials, Sustainability" during 5th Conference of Transportation Research Group (CTRG-2019), December 18-21, 2019, Bhopal.
- Sh. S.S. Gaharwar, Sr. Pr. Scientist received the 'Bharat Vikas Award – 2019', from the Institute of Self Reliance, Bhubaneshwar (Odisha) for 'Quality Standardization in Highway Engineering'.

TRAINING PROGRAMMES CONDUCTED

Regular Training Programmes

The institute conducted the following three regular training programmes during the period from October 01, 2019 to March 31, 2020.

- Five Days Training Programme on "Design of Bridge Structure and Foundation" from November 04 to November 08, 2019. The training programme was inaugurated by Prof. Satish Chandra, Director, CSIR-CRRI and it was attended by 24 Participants from various parts of India.
- Five Days Training Programme on "Pavement Evaluation Techniques and their Applications for Maintenance and Rehabilitation" from January 06 to January 10 2020. The programme was inaugurated by Prof. Satish Chandra, Director, CSIR-CRRI and it was attended by 15 Participants. Among them, 6 participants were from the abroad while the remaining participants were from various parts of India.
- Five Days Training Programme on "Design, Construction, Quality Control and Maintenance of Rigid Pavements" from January 27 to January 31, 2020.The training programme was inaugurated by Prof. Satish Chandra, Director, CSIR-CRRI and it was attended by 25 participants. Among them, 4 participants were from the abroad while the remaining participants were from various parts of India.

Customized Training Programmes

Besides the regular training programmes, the Institute also conducted twelve customer oriented /customized training programmes during the period to meet the specific training requirements of the user agencies. These are detailed below.

- Five Days Customized Training Programme on "Design construction & Quality Control of Flexible Pavements" from October 21 to October 25, 2019. The training programme was inaugurated by Prof. Satish Chandra, Director, CSIR-CRRI and it was attended by 33 participants sponsored by NRIDA, Govt. of India.
- Five Days Customized Training Programme on "Landslide Mitigation & Detailed Project Report preparation" from November 25 to Novemeber 29, 2019. The training programme was inaugurated by Prof. Satish Chandra, Director, CSIR-CRRI and it was attended by 28 participants sponsored by NRIDA, Govt. of India.
- Five Days Customized Training Programme on "Modern Survey Techniques including GIS/GPS and Total Station & Quality Control, Material Testing Procedures & Lab Practices" from December 09 to December 13, 2019. The training programme was inaugurated by Prof. Satish Chandra, Director, CSIR-CRRI and it was attended by 29 participants sponsored by NRIDA, Govt. of India.
- Five Days Customized Training Programme on "Landslide Mitigation & Detailed Project Report preparation" from January 06 to January 10, 2020. The training programme was inaugurated by Prof. Satish Chandra, Director, CSIR-CRRI and it was attended by 34 participants sponsored by NRIDA, Govt. of India.
- Five Days Customized Training Programme on "Landslide Modern Survey Techniques including GIS/GPS and Total Station & Quality Control, Material Testing Procedures & Lab Practices" from January 20 to January 24, 2020. The training programme was inaugurated by Prof. Satish Chandra, Director, CSIR-CRRI and it was attended by 35 participants sponsored by NRIDA, Govt. of India.
- Five Days Customized Training Programme on "Design Construction & Quality Control of Flexible Pavements" from February 03 to February 07, 2020. The training programme was inaugurated by Prof. Satish Chandra, Director, CSIR-CRRI and it was attended by 48 participants sponsored by NRIDA, Govt. of India.
- Five Days Customized Training Programme on "Modern Survey Techniques including GIS/GPS and Total Station & Quality Control, Material Testing Procedures & Lab Practices" from February 17 to February 21, 2020. The training programme was inaugurated by Prof. Satish Chandra, Director, CSIR-CRRI and it was attended by 30 participants sponsored by NRIDA, Govt. of India.
- Five Days Customized Training Programme on "Modern Survey Techniques including GIS/GPS and Total Station & Quality Control, Material Testing Procedures & Lab Practices" from February 24 to February 28, 2020. The training programme was was attended by 55 participants sponsored by NRIDA, Govt. of India.
- Five Days Customized Training Programme on "Modern Survey Techniques including GIS/GPS and Total Station & Quality Control, Material Testing Procedures & Lab Practices" from March 02 to March 06, 2020. The training programme was inaugurated by Prof. Satish Chandra, Director, CSIR-CRRI and it was attended by 50 participants sponsored by NRIDA, Govt. of India.

- Five Days Customized Training Programme on “Traffic Engineering & Road Safety Audit” from October 14 to October 18, 2019. The training programme was inaugurated by Prof. Satish Chandra, Director, CSIR-CRRI and it was attended by 32 participants sponsored by SIRD, Govt. of Tamilnadu.
- Five Days Customized Training Programme on “Capsule on Airfield Engineering” for the officers of Border Roads Organisation” from December 02 to December 06, 2019. The training programme was attended by 15 participants sponsored by Border Roads Organisation, Govt. of India.
- Two Days Customized Training Programme on “Landslide Mitigation & Detailed Project Report Preparation” from February 10 to February 11, 2020. The training programme was attended by 11 participants sponsored by National Distaster Management Authority (NDMA), Govt. of India.

Landslide Mitigation & Detailed Project Report preparation (November 25- 29, 2019)

Traffic Engineering & Road Safety Audit (October 14-18, 2019)

Modern Survey Techniques including GIS/GPS and Total Station & Quality Control, Material Testing Procedures & Lab Practices (February 24-28, 2020)

International/Special Training Programmes

The Institute conducted one international training programmes during the period to meet the specific training requirements. The detailes are below.

- Twelve Days Customized Training Programme on "Soil Aggregate, Concrete Cement, Steel, Bitumen and Asphalt Tests" for the officers of NRAP-MRRD, Kabul, Afghanistan, from December 02 to December 13, 2019. The training programme was attended by 04 participants sponsored by NRAP-MRRD, Kabul, Afghanistan.

Soil Aggregate, Concrete Cement, Steel, Bitumen and Asphalt Tests (December 02 -13, 2019)

- CSIR-CRRI conducted 15 Days Certification Course on "ROAD SAFETY AUDIT AND OTHER ROAD SAFETY RELATED ASPECTS" from November 04 to November 18, 2019 for Road Safety Auditors / Highway Engineers / Traffic Engineers / Transportation Planners and Student Interns. The course was inaugurated by Prof. Satish Chandra, Director, CSIR-CRRI and it was attended by 65 participants from various parts of India.

Road Safety Audit And Other Road Safety Related Aspects (November 04 -18, 2019)

राजभाषा गतिविधियां

संस्थान की राजभाषा कार्यान्वयन समिति की तिमाही बैठक का कार्यवृत्त

संस्थान की राजभाषा कार्यान्वयन समिति की वर्ष 2019 की चौथी एवं अंतिम तिमाही बैठक संस्थान के निदेशक, प्रो. सतीश चंद्र की अध्यक्षता में दिनांक 24/10/2019 को संस्थान के सम्मेलन कक्ष में संपन्न हुई । बैठक में समिति के अध्यक्ष सहित 25 सदस्य एवं प्रतिनिधि सम्मिलित हुए । सर्वप्रथम संस्थान के निदेशक व राकास के अध्यक्ष प्रो. सतीश चंद्र ने बैठक में उपस्थित समिति के सदस्यों का स्वागत किया। तत्पश्चात निदेशक महोदय की अनुमति से सदस्य सचिव ने बैठक की कार्यसूची की मदों को क्रमश: प्रस्तुत किया ।

मद सं 1 बैठक में सदस्य सचिव ने सीएसआईआर व राजभाषा विभाग से प्राप्त दिशानिर्देशों तथा वार्षिक कार्यक्रम 2019-20 के निर्धारित लक्ष्यों की प्राप्ति सुनिश्चित करने पर बल दिया । राजभाषा से सम्बंधित संवैधानिक प्रावधानों का उल्लेख करते हुए सभी प्रमुखों व सदस्यों से नियम के अनुसार हिन्दी में कार्य सुनिश्चित करने का अनुरोध किया गया । इसके लिए यह सुझाव दिया गया कि सभी प्रमुखों का एक व्हाट्सऐप ग्रुप बनाया जाए, जिससे हिंदी से सम्बंधित सूचनाओं को अविलंब प्रेषित किया जा सके । इसके लिए श्री डी. रविन्द्र, पीएमई को यह कार्य सौंपा गया ।

मद सं 2 बैठक में जुलाई से सितम्बर 2019 की तिमाही के लिए अनुभागों एवं प्रभागों से प्राप्त राजभाषा कार्यान्वयन संबंधी प्रगति रिपोर्ट में पत्राचार, फाइलों एवं अन्य दस्तावेजों पर टिप्पणी लेखन तथा धारा 3(3) के संबंध में दिए गए आंकड़ों पर चर्चा की गई । सदस्य सचिव ने बताया कि प्रगति रिपोर्ट में दिए गए आंकड़ों के रिकार्ड का रखरखाव आवश्यक है ताकि राजभाषा मानीटरन समिति के द्वारा आंकड़ों का प्रत्यक्ष सत्यापन किया जा सके। निदेशक महोदय ने जीटीई प्रभाग को पत्राचार में हिंदी बढ़ाने का निदेश दिया ताकि संस्थान की समेकित तिमाही रिपोर्ट में बेहतर आंकड़े दिए जा सकें ।

मद सं 3 बैठक में सदस्य सचिव ने बताया कि हिंदी के प्रति सकारात्मक वातावरण का निर्माण करने के लिए हिंदी पखवाड़े के दौरान अनेक प्रतियोगिताओं का आयोजन किया गया । हिंदी पखवाड़े के दौरान अनेक बाह्य विशेषज्ञों एवं विद्वानों को संस्थान में आमंत्रित भी किया गया, जिससे हिंदी से जुडी ज्ञानवर्द्धक जानकारी प्राप्त हुई । इसके साथ ही **राष्ट्रीय हिंदी कार्यशाला** का आयोजन भी किया गया जिसके द्वारा संस्थान में हिंदी के प्रति सकारात्मक वातावरण तैयार हुआ तथा राष्ट्रीय स्तर पर संस्थान को ख्याति प्राप्त हुई । निदेशक महोदय ने नराकास, दक्षिण दिल्ली को कार्यशाला की स्मारिका के साथ इसकी संक्षिप्त रिपोर्ट प्रेषित करने का निदेश भी दिया ।

मद सं 4 बैठक में निदेशक महोदय ने यह सुझाव दिया कि स्वागती पर लगे डिजिटल डिस्प्ले बोर्ड को भी द्विभाषी डिस्प्ले किया जाए। इसके लिए सीसीएन प्रभाग को द्विभाषी सामग्री रखने के निदेश दिए गए तथा प्रशिक्षण कार्यक्रम की सूचना के संदर्भ में इसका कार्यान्वयन आईएलटी प्रभाग को सुनिश्चित करने को कहा गया। सदस्य सचिव ने यह भी बताया कि स्वागती कक्ष में सूचना बोर्ड की तरह प्रयुक्त स्टैंड को केवल राजभाषा संबंधी गतिविधियों की सूचना के लिए प्रयोग किया जा रहा है।

मद सं 5 बैठक में सदस्य सचिव ने बताया कि 'सड़क दर्पण' पत्रिका अंक 18 का प्रकाशन एवं वितरण किया गया तथा अगले अंक के प्रकाशन के लिए संस्थान के कार्मिकों से सामान्य विषयों पर अधिक से अधिक लेख और रचनाएं भेजने का अनुरोध किया गया है । निदेशक महोदय ने 'सड़क दर्पण' के अगले अंकों में संस्थान में संपन्न हुई राष्ट्रीय कार्यशाला में प्रस्तुत किए गए कुछ लेखों को शामिल करने का सुझाव दिया ।

अध्यक्ष महोदय को धन्यवाद के साथ बैठक का समापन किया गया ।

हिंदी में तकनीकी प्रस्तुतीकरण

सीआरआरआई एक अनुसंधान एवं विकास प्रयोगशाला है जहां मूलत: वैज्ञानिक कार्यों में हिंदी के प्रयोग को बढ़ाने के लिए तकनीकी प्रस्तुतीकरण का नियमित आयोजन किया जाता है । तकनीकी विषयों की हिंदी में प्रस्तुतीकरण एवं व्याख्यान की श्रृंखला के अंतर्गत 12 दिसंबर 2019 को 'सूक्ष्म सतहीकरण : शहरी सड़क के रखरखाव हेतु पर्यावरण प्रदूषण मुक्त तकनीक' विषय पर हिंदी में एक तकनीकी प्रस्तुतीकरण का आयोजन किया गया ।

पीईडी प्रभाग के वरिष्ठ प्रधान वैज्ञानिक श्री सुनील जैन ने सूक्ष्म सतहीकरण या माइक्रोसरफेसिंग विषय पर तैयार किए गए अपने पावर प्वाइंट प्रस्तुतीकरण में

बताया कि सड़क निर्माण के क्षेत्र में सूक्ष्म सतहीकरण एक अत्यंत महत्वपूर्ण विधि है जिसकी सहायता से सड़क के सेवाकाल में बढ़ोतरी होती है। इस विधि से मरम्मत कार्य की लागत में बचत के साथ सड़क की उत्तम सतह सुनिश्चित करना भी संभव होता है जिससे परिवहन लागत में उल्लेखनीय कमी आती है।


सूक्ष्म सतहीकरण : शहरी सड़क के रखरखाव हेतु पर्यावरण प्रदूषण मुक्त तकनीक' विषय पर एक तकनीकी प्रस्तुतीकरण

कार्यशाला के दूसरे सत्र में तिमाही प्रगति रिपोर्ट भरने के संबंध में चर्चा की गई । राजभाषा विभाग, गृह मंत्रालय के वार्षिक कार्यक्रम 2019 -20 के अंतर्गत सरकार द्वारा निर्धारित लक्ष्यों के पूर्णरूपेण अनुपालन के साथ साथ संसदीय राजभाषा समिति के अनुसार अपेक्षित दायित्व को पूरा करने के लिए सरकारी कामकाज से संबंधित आंकड़ों का रखरखाव अपेक्षित होता है । सत्र में तिमाही प्रगति रिपोर्ट भरने में आने वाली कठिनाइयों के संबंध में चर्चा की गई और सभी समस्याओं का समाधान किया गया । हिंदी कार्य को आसानी और शीघ्रता से करने में सहायक विविध डिजिटल टूल्स पर चर्चा के दौरान भारत सरकार के राजभाषा विभाग के साइट पर उपलब्ध विभिन्न सुविधाओं के उपयोग की जानकारी भी दी गई।

संस्थान में आयोजित हिंदी कार्यशाला के अंतिम सत्र में राजभाषा मॉनीटरन समिति के दोनों सदस्यों - वरिष्ठ प्रधान वैज्ञानिक श्री सुनील जैन व श्री एस एस गहरवार के सहयोग से हिंदी अधिकारी ने हिंदी में कार्य करने संबंधी समस्याओं के समाधान प्रस्तुत किए । प्रतिभागियों को हिंदी में काम बढ़ाने के लिए डिजिटल सुविधाओं का अधिकाधिक प्रयोग करने के लिए प्रेरित किया गया । इस संबंध में, वॉइस टाइपिंग, ऑनलाइन अनुवाद, हिंदी में ईमेल, ऑनलाइन शब्दकोश संबंधी सुविधाओं पर भी चर्चा की गई तथा हिंदी में काम बढ़ाने के लिए प्रतिभागियों को प्रेरित किया गया।

हिंदी संपर्क कार्यशाला

वर्ष 2020 की पहली हिंदी कार्यशाला को वर्चुअल संपर्क कार्यशाला के रूप में आयोजित किया गया। कोविड-19 जनित विशेष परिस्थितियों को ध्यान में रखते हुए जनवरी से मार्च की अवधि के लिए इस तिमाही कार्यशाला का आयोजन गैर पारंपरिक विधि से संपन्न किया गया। इसके लिए डिजिटल विधि एवं सामाजिक संचार का उपयोग करते हुए, संदेश और संवाद का माध्यम अपनाया गया तथा हिंदी में काम बढ़ाने के लिए प्रेरित किया गया । कोविड-19 के कारण घोषित लॉकडाउन तथा कार्यालय में अधिकांश कार्मिकों की अनुपस्थिति को देखते हुए ईमेल व व्हॉट्सऐप के द्वारा राजभाषा कार्यान्वयन की प्रमुख बातों की जानकारी सभी प्रमुखों को प्रेषित की गई।

संपर्क कार्यशाला के दौरान सभी आरएंडडी प्रभागों में हिंदी में कार्य को अपेक्षित मात्रा तक बढ़ाने के लिए सभी प्रमुखों से अनुरोध किया गया कि पत्राचार, फाइल वर्क, टिप्पणी लेखन आदि मूल रूप से हिंदी में ही करें और करवाएं। इसके साथ साथ आवेदन लिखना, टेस्टिंग रिपोर्ट बनाना, हस्ताक्षर करना, रिकॉर्ड रखना आदि में हिंदी का ही प्रयोग अपेक्षित है । प्रभागों के द्वारा व्याख्यान, शोध पत्र लेखन व प्रकाशन आदि हिंदी में सुनिश्चित किए जाएं। साथ ही, प्रभागों में चार्ट, डिस्प्ले सामग्री, यंत्रों पर दर्शाए गए विवरण, नेमप्लेट, मुलाकाती कार्ड, मुहर आदि हिंदी या द्विभाषी होने चाहिए । तकनीकी रिपोर्ट, परियोजना रिपोर्ट, अन्य रिपोर्ट आदि में भी हिंदी का अधिकाधिक प्रयोग अपेक्षित है।

सभी प्रमुखों को सूचित किया गया कि संघ का राजकीय कार्य हिंदी में करने के लिए भारत सरकार के गृह मंत्रालय द्वारा वार्षिक कार्यक्रम 2020-2021 जारी कर दिया गया है। इसकी पीडीएफ प्रति सभी की सूचनार्थ एवं अनुपालन के लिए भेजी गई और राजभाषा संबंधी भारत सरकार के दिशानिर्देश के अनुपालन का अनुरोध किया गया । संघ सरकार की राजभाषा नीति के अनुसार हिंदी में कार्य करना सबका संवैधानिक दायित्व है । संस्थान में निर्धारित हिंदी के जांचबिंदुओं के अनुसार भी सबको भारत सरकार के दिशानिर्देशों का अनुपालन सुनिश्चित करना चाहिए । वर्चुअल संपर्क कार्यशाला में इस बात को रेखांकित किया गया कि सभी प्रभागों के प्रमुख अर्थात राकास सदस्यों, हिन्दी में प्रवीणता प्राप्त सभी अधिकारियों तथा सभी वरिष्ठ वैज्ञानिकों का यह सामूहिक दायित्व है कि राजभाषा संबंधी दिशानिर्देशों का पूर्ण अनुपालन सुनिश्चित कराएं ।

LECTURES DELIVERED / INVITED TALKS / MEETINGS ATTENDED (OUTSIDE CRRI)

Name & Designation of staff	Title of Lecture / Talk / Activity	Purpose (conference or otherwise)	Date
Prof. Satish Chandra, Director	Green Technologies for Highway construction	Workshop on 'Highway Development – Challenges and Way Forward' organized by Indian Academy of Highway Engineers (IAHE), Noida	Nov 19, 2019
Mr.Manoj K. Shukla, Sr.Pr. Scientist	Discussion	Meeting with Commissioner Kolkata Municipal Corporation and officials of KMC and NGT and PWD Kolkata for Implementation of Environmental friendly Cold Mix Technology in Kolkata City	Feb 07, 2020
Dr. Ambika Behl, Principal Scientist	Waste Plastic Technology for Roads (Invited Talk)	AME Bitumen and Road Construction Conference 2020, Dubai	Jan 08, 2020
Dr Siksha Swaroopa Kar, Senior Scientist	New Technologies for Rural Road Construction	Regional Workshop on "Quality Control, New Materials & Techniques in Road Sector" organized by IRC and IIT, Roorkee	Feb 07-08, 2020
	Cold Mix Technology for Road Construction	Workshop cum Demonstration on "Cold Mix Technology" organized by Public Works Department, Aizwal, Mizoram	Dec 03, 2019
	Large scale adoption of Cold Mix Technology and Green Roads in the State of Odisha	Workshop on"Cold Mix Technology" organized by Works Department, Odisha Govt.	Jan 28, 2020
Dr. Pankaj Gupta, Sr. Principal Scientist	Landslide Investigation - Gaps and Ways forward	First International Conference on Landslides Risk Reduction and Resilience – 2019, New Delhi	Nov 28, 2019
Dr A K Sinha, Principal Scientist	Industrial waste material for road construction	National seminar on alternative highway construction material, Ranchi	Dec 14-15, 2019
Sh. K. Sitaramanjaneyulu Chief Scientist	Infrastructure Conclave 2019-Challenges and way Forward	PHD House, New Delhi	Nov 06, 2019
Sh. Sunil Jain, Senior Principal Scientist	Flexible Pavement Surface Distresses, their Identification, Causes, Measurements and Maintenance	Training cum Workshop Programme at Deenbandhu Chhotu Ram University of Science and Technology, Murthal	Jan, 2020
Dr. Rakesh Kumar, Sr. Principal Scientist	Design and Maintenance of Rigid Pavements	National CPWD Academy, Ghaziabad, Course on "Contemprary Practice for Design and Construction of Rigid and Flexible Pavements"	Nov 26, 2019

Name & Designation of staff	Title of Lecture / Talk / Activity	Purpose (conference or otherwise)	Date
Sh. Binod Kumar Sr. Principal Scientist,	Design and Construction of Short Paneled Concrete Pavement	One day workshop on Plastic Waste in Bituminous Road Construction and Whitetopping, Organised by Lucknow Development Authority, Lucknow.	Nov 29, 2019
	Sustainability Features of Design, Construction, Operation and Maintenance of Rigid Pavements	One-day seminar on Sustainability of Infrastructure, Organised by S. V. Polytechnic College, Bhopal.	Feb 29, 2020
	Whitetopping: Cement Concrete Overlay on Bituminous Roads	16th NCB International Seminar on Cement, Concrete and Building Materials	Dec 05, 2019
Sh. Dinesh V. Ganvir, Pr. Scientist	Effect of Jarosite as Partial Replacement of Fine Aggregate in Pavement Quality Concrete Mixes"	5th Conference of Transportation Research Group (CTRG-2019), Bhopal	Dec 21, 2020
Dr. A. Mohan Rao, Sr. Principal Scientist	Guest of Honor	Delivered a motivation speech in Annual Day function, St. Gregorios School, Sector – 11, Dwarka, as a part of JIGYASA CSIR	Nov 15, 2019
Sh. S.S. Gaharwar, Sr Pr. Scientist	Quality Assurance for Precast Bridges	Site Engineers of M/s L&T of Dwarka Expressway Project, New Delhi, organized by M/s Ultratech Cement at Hotel Country Inn, Gurugram	Mar 06, 2020
Dr. Naveet Kaur, Sr. Scientist	"Structural Health Monitoring and Energy harvesting using Piezoelectric Transducers"	Organised by Indian association of structural Engineers (IAStructE) at Indian Habitat Centre	Nov 28, 2019
	Advanced Sensing and Energy Harvesting Solutions for Infrastructure in Smart Cities'	Centre for SeNSE, IIT Delhi	Mar 05, 2020

DEPUTATION ABROAD

Name of Scientist & Designation	Country visited	From	To	Purpose
Dr. Ambika Behl, Principal Scientist	Dubai	08.01.2020	09.01.2020	Speaker at AME Bitumen & Road Construction Conference 2020, Dubai
Dr. Mukti Advani, Principal Scientist	Washington D.C., USA	12.01.2020	16.01.2020	To attend and present paper at 99th of Annual Meeting Transportation Research Board (TRB) at Washington D.C.

IMPORTANT DAYS CELEBRATIONS

Vigilence Awareness Week (Oct 28 - Nov 01, 2019)

Vigilance Awareness Week “Integrity- A way of life” was observed at CSIR-CRRI during 28th October to 1st November 2019. On October 28, 2019 a pledge was administered by the Director, CSIR-CRRI to the staff members of CRRI for maintaining integrity and to continue to strive to bring the transparency in all spheres of life. Banners and posters were displayed at the prime location in the premise of the Institute. Various competitions like quiz, speech/debate and Nukkad Natak were organised at CRRI for Vigilance awareness among staff and the students.














Rashtriy Ekta Divas (Oct. 31, 2019)

On the eve of "Communal Harmony Campaign and Fund Raising Week" and Sardar Vallabh Bhai Patel Jayanti, a National Integrity Pledge was taken by all the staff members of CSIR-CRRI on October 31, 2019.

National Integration Week (November 19-25, 2019)

National integrity pledge was administered by the Director, CSIR-CRRI to the staff members of CSIR-CRRI on November 19, 2019.

New Year Celebration (January 01, 2020)

A get-together was organised on the occasion of New Year Day at CSIR-CRRI on 1st January 2020. Prof. Satish Chandra, Director CSIR-CRRI, in his address highlighted the achievements of the Institute during the preceding year (2019) and expressed the hope that the scientists and technologists will do more R&D work in the coming year and motivated the CRRI family to meet new challenges and demands in the field. Prof. Satish Chandra extended best wishes to all the staff members and their families of the institute.

31st National Road Safety Week And Road Safety Awareness Campaign (January 11-17, 2020)

31st Road Safety Week was observed to increase understanding of the dangers related to high speeding and other risk taking practices, thereby saving lives on the roads. As a part of Road safety week, various activities were conducted by CSIR-CRRI team for Bicycle safety, two wheeler safety, bus safety and pedestrian safety. The main theme of the week was pedestrians' safety campaign in which approximately, 5000 pamphlets in bilingual message and full length Road Safety banners were prepared displaying safety aspects for pedestrians and bicyclists' safe movements and safety rules. These banners showing safe activities and road safety rules for all categories of road users were fixed on the walls of institute premises so that all road users commuting on the NH-2 can see and learn from them. Posters and Pamphlets were also distributed to pedestrians and vehicle users on Delhi-Mathura Road.

AGREEMENTS, MoUs and PATENTS

Agreement signed

❖Earth Watch Institute India Trust for a project "pavement evaluation of process waste plastic incorporated pavement section with user perspective" in Dec 2019.

MoUs signed

❖National Highway & Infrastructure Development Corporation Ltd. (NHIDCL) on November 12, 2019

❖Madhav Institute of Technology & Science (MITS) , Gwalior on November 27, 2019

❖LN Petrochem Pvt Ltd. , New Delhi in March 03, 2020

❖Rural Connectivity Training and Research Centres (RCTRC) of Assam, Chattisgarh & Madhya Pradesh on January 10, 2020

❖Manipur Institute of Technology, Imphal on February 17, 2020.

❖IIT BHU, Varanasi on February 06, 2020.

Intellectual Property Management

Patent Granted

- Stepwise repeated destabilization and stabilization of highly collapsible soil mass by soil nailing technique used for construction of railway/road (Patent No. GB2519270) - UK Patent.

Trade Mark Filed:

- Trade Mark application for Rejupave under class 19 filed jointly with Verma Industries, Application No. 4348225 on November 15, 2019

Technology Transferred

- Rejuvenator for recycling of Asphalt pavement material for Hot in plant and Hot in situ recycling of bituminous Asphalt pavement (Exclusive Licence to Verma Industries, New Delhi) on November 04, 2019.

- Customised Bitumen Emulsion for mix seal surfacing based on Aggregates of UP state (Exclusive License to M/s JMVD Industries Pvt Ltd, Lucknow) on march 05, 2020.

VISITORS TO THE INSTITUTE

The personalities visited the Institute is given below :

- Dr. Peter T. Savolainen from Michigan State University, USA visited CSIR-CRRI on Oct. 04, 2019 for research collaboration on traffic safety.

- Prof. Hussain Bahia, Director, Modified Asphalt Resaerch Centre of University of Wisconsin Madision, USA visited CSIR-CRRI on January 28, 2020 for an interactive session with scientists of CSIR-CRRI.

- Dr. P.K. Verma, Resource Person with the Securities and Exchange Board of India (SEBI) visited CSIR-CRRI on February 05, 2020 and presented a lecture on 'Finiancial Literacy" and "Investor Awareness Program" as part of SEBI's initiative to create awareness among citizens on Ponzi schemes in the market.

STAFF NEWS (Retirements, New Joining & Transfer)

Retirements from CSIR-CRRI

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.

Shri Bhavesh Passwan, Head Arm Guard
on 30-11-2019

Dr. M.N. Nagbhushan, Sr. Pr. Scientist on
31-12-2019

Shri Jagdish Singh Jangpangi,
Sr. Technician (2) on 31-12-2019

Shri Veena Varma, Assistant Grade-1
on 31-01-2020

Smt. Praveen Bhatia, Assistant Grade-1
on 31-01-2020

Shri Harish Kumar, Sr. Technician (2)
on 29-02-2020

Smt. Renu Chadha, Pr. TO on 29-02-2020

Shri Satyaveer Singh, Sr. Technician (2)
on 29-02-2020

Transfer from CSIR-CRRI

Shri Satish Kumar, Private Secretary Transferred to CSIR Headquaters, New Delhi w.e.f November 25, 2019.

New Joinings in CSIR-CRRI

S.No.	Name of the Employee	Designation	Date of Joining	Place of Posting
1	Ajinkya Balaji Wandhare	Tech. I	26.12.2019	RPD
2	Anupriya	Tech. I	30.12.2019	FPD
3	Abhijeet Kumar	Tech. I	31.12.2019	MBSQ
4	Chandan Kumar	Tech. I	31.12.2019	BES
5	Vineet Kumar Sharma	Tech. I	31.12.2019	Maint.
6	Vimal Khushwaha	Tech. I	31.12.2019	MBSQ
7	Amit Wasnik	Tech. I	02.01.2020	GTE
8	Sikander	Tech. I	02.01.2020	TES
9	Saurab Chandra	Tech. I	02.01.2020	FPD
10	Ashwani Kumar	Tech. I	02.01.2020	RPD
11	Sujit Kumar	Tech. I	06.01.2020	FPD
12	Happy kumar Mahawar	Tech. I	07.01.2020	BES
13	Abhi Mandal	Tech. I	07.01.2020	TPE
14	Anand	Tech. I	08.01.2020	GTE
15	Ashish Tripathi	Tech. I	09.01.2020	PED
16	Nitin Mishra	Tech. I	10.01.2020	PED
17	Kartik Dutta	Tech. I	14.01.2020	Maint.
18	Chirag Kapoor	Tech. I	15.01.2020	BES
19	Anija TS	Tech. I	23.01.2020	TES
20	Prajapati Abhay Chandrabhushan	Tech. I	27.01.2020	ILT
21	Sakshi Gupta	Tech. I	28.01.2020	TPE
22	Neeraj Prajapati	Tech. Asstt.	15.07.2019	TPE
23	Mayank Grover	Tech. Asstt.	20.12.2019	FPD
24	Mohd. Akil	Tech. Asstt.	23.12.2019	TES
25	Saurabh Kumar Verma	Tech. Asstt.	26.12.2019	FPD
26	Rajesh Kumar	Tech. Asstt.	01.01.2020	PME
27	Rohit Chamoli	Tech. Asstt.	01.01.2020	GTE
28	Dinesh Kumar Mandal	Tech. Asstt.	07.01.2020	BES
29	Muzahid Hussain	Tech. Asstt.	07.01.2020	CCN
30	Keshav Kaushik	Tech. Asstt.	08.01.2020	TPE
31	Avala Narayana Rao	Tech. Asstt.	08.01.2020	BES
32	Ankit Kumar Nishad	Tech. Asstt.	13.01.2020	PED
33	Satyajit Nayak	Tech. Asstt.	16.01.2020	DLS
34	Jitender Kumar Yadav	Tech. Asstt.	17.01.2020	Guest House
35	Amit Shekhar	Tech. Asstt.	17.01.2020	PED
36	Ratan Bishwash	Tech. Asstt.	28.01.2020	MBSQ
37	Prakash Singh	Tech. Asstt.	31.01.2020	CCN

CSIR-CRRI IN MEDIA

THE TIMES OF INDIA, KOZHIKODE | MALAPPURAM | KOTTAKKAL | KANNUR
WEDNESDAY, MARCH 4, 2020

TIMES CITY

CRRI begins study on Nadukani Ghat Road

Team Has Collected Samples, Trying To Find Cause Of Repeated Landslips, Plan On Redesigning Road

It is expected that the team will wind up the inspection on Friday and submit a detailed report to PWD authorities soon

3-day seminar on Malayalam language held

Kannur corporation all set for change of guard

Man on motorbike collapses, dies

Metro faces a noisy issue

Environment-friendly Technology for road construction in Mizoram

OUR REPORTER
AIZAWL, DEC 3

The Central Road Research Institute (CSIR-CRRI) and Mizoram PWD together organised a training and awareness program to study the environmentally friendly road construction technology called 'Coldmix technology' at the PWD Conference Hall in Tuikhuahtlang on Tuesday. According to sources, the 'Coldmix technology' comprises of 'Cold asphalt mix being produced by mixing unheated mineral aggregate with either emulsified bitumen or foamed bitumen.

Unlike hot mix asphalt (HMA), cold asphalt mix does not require any heating of aggregate which makes it economical and relatively pollution-free (no objectionable fumes or odors). Production of cold asphalt mix does not require high investment in equipment, which makes it economical. It is also suitable for use in remote areas. Cold asphalt mixes can be used both for initial construction (100% virgin mixes) and for recycling of asphalt pavements."

Er J Zothanpuia Chief Engineer MPWD spoke at the program appreciating the CRRI representatives for arranging the training and awareness session. He encouraged the engineers to make good use of the program for the construction of better quality roads in the state.

Dr. Sasha Swaroopa Sr. Scientist- Flexible pavement CSIR-CRRI said the Coldmix technology decreases pollution as heating of cold tar is not required.

The other advantages she highlighted were that the technology can be used through all seasons including monsoon season and also paves way for increased productivity. Er. Deepak Singh, Territory In-charge, M/s Bitchem Asphalt Technology Limited ... the program ... technology which was discovered by the CSIR- CRRI and Bitchem Asphalt Technology Limited through various stages of Research and Development is widely successful in different parts of India.

'Jah aan karein toh

केंद्रीय सड़क अनुसंधान संस्थान के वैज्ञानिक ने बातचीत में कहा

निगरानी न होने से पुल कमजोर बन रहे

मत

सेक्टर-तीन पुल को प्रशासनिक मंजूरी मिली

कोल्ड मिक्स तकनीक से सड़क बनाने से नहीं फैलेगा प्रदूषण

Hi-tech machine here, end of road for potholes

ADITI TANDON
TRIBUNE NEWS SERVICE

NEW DELHI, JANUARY 3

In what could mean the end of road for killer potholes, the government's apex road research laboratory in collaboration with JCB India has developed the first indigenous pothole repair machine.

The Central Road Research Institute (CRRI) under the Ministry of Science and Technology worked with JCB India over a year to create a prototype that was successfully tested recently.

"We have demonstrated the machine to stakeholders who gave some inputs for improvements. The CRRI and JCB India are now working on the suggestions. We plan to launch the working model of the machine by May. This is the first attempt to develop an indigenous pothole repair machine," said Dr Satish Chandra, director, CRRI, a lab under the Council for Scientific and Industrial Research (CSIR).

THREE KEY FEATURES

The machine has an automatic pothole cleaner, a mixer to develop repair solution and a unit for placement & compaction

The 'Made in India' machine can repair 15 to 20 potholes in an hour. Manually, only four potholes can be repaired in the same time.

Dr Shiksha Kar, a CSIR-CRRI scientist who worked on the machine, said the indigenous technology was tested on roads in Pune.

"Six months have passed and repairs on potholes have

CONTINUED ON PAGE 7

The Tribune Sat, 04 January 2020 https://epaper.tribuneindia

जाम से छुटकारा दिलाने को सेंट्रल रोड रिसर्च इंस्टीट्यूट देगा सलाह

यह हैं शहर की मुख्य सड़कें

कई मुख्य सड़कों पर होता है वाहनों का दबाव

इन सड़कों का होगा अध्ययन

... नहीं कर सकेंगे सरकारी 10 सेक्टरों में

Chief Editor:
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