

GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH
RAJYA SABHA
UNSTARRED QUESTION No. 604
(ANSWERED ON 04.12.2025)

TRAFFIC SURVEY BY CRRI IN NANDED

604. Dr. Ajeet Madhavrao Gopchade:

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

- (a) the major technological achievements of CSIR-Central Road Research Institute (CRRI) during the last three years and how these innovations have been translated into field-oriented ones;
- (b) whether CRRI has conducted surveys to manage rising pilgrim and tourist traffic in Nanded,
- (c) the action taken to waive or subsidise CRRI's technical study /survey fee for Nanded, given its status as an important Sikh pilgrimage destination; and
- (d) Government to further strengthen, modernise and accelerate the institute's research and field-implementation activities?

ANSWER

MINISTER OF STATE (INDEPENDENT CHARGE) FOR THE
MINISTRY OF SCIENCE AND TECHNOLOGY AND EARTH SCIENCES

(DR. JITENDRA SINGH)

- (a) CSIR-Central Road Research Institute (CRRI), New Delhi, a constituent laboratory of Council of Scientific and Industrial Research has made significant progress in developing sustainable, innovative, and implementation-ready technologies for the road and transport sector during the last three years. Notable achievements include the valorization of steel slag for road construction, the development of cementitious materials for sub-base and base stabilization, and the design of mobile cold mixer-cum-paver (MCMP) systems for efficient pothole repair. CSIR-CRRI has also introduced two-pack on-site pothole filling mixes, ready-to-use pothole mixes using slag aggregates, and advanced bituminous rejuvenators and recycling processes, alongside the production of bio-bitumen through pyrolysis of lignocellulosic biomass as a sustainable alternative to conventional binders.

CSIR-CRRI has further developed cementitious grout for cement-grouted bituminous macadam, indigenized pelletized fibers for Stone Matrix Asphalt (SMA) mixes, and modified mix seal surfacing (MSS+), contributing to enhanced pavement durability. Smart traffic monitoring solutions such as automated vehicle counting and classification systems, as well as noise barrier designs, have been implemented to improve road safety and environmental quality. In addition, CSIR-CRRI has pioneered portable and wearable light and glare measurement devices, along with the Vibro Integrity Sensing Device (VInSD) and its aerial inspection unit (VAIU), enabling non-destructive assessment of pavement and infrastructure integrity.

These innovations have been translated into practical field applications through demonstration stretches, pilot projects on national and state highways, urban and industrial corridors, and collaborative initiatives with PWDs and private concessionaires. Many technologies, including steel slag aggregates, MCMP, pothole repair mixes, bio-bitumen, rejuvenators, and specialized construction materials, have been successfully transferred to industry through licensing, allowing for commercial-scale production and broader implementation. Overall, CSIR-CRRI's research efforts have resulted in scalable, sustainable solutions that enhance pavement life, promote efficient use of materials, support road recycling, and integrate smart monitoring systems, ensuring direct benefits to India's road infrastructure development.

- (b) CSIR-CRRI submitted a proposal to Nanded Waghala City Municipal Corporation, Nanded in April 2025, following a request from the Commissioner. Subsequently, in response to the Commissioner's request to subsidize the study fee, a revised proposal was submitted in September 2025, which is presently under consideration at Nanded Waghala City Municipal Corporation, Nanded.
- (c) In view of Nanded's significance as an important Sikh pilgrimage destination, CSIR-CRRI considered the request of the Commissioner, Nanded Waghala City Municipal Corporation, Nanded, for a fee concession and submitted a revised proposal to Nanded Waghala City Municipal Corporation, Nanded in September 2025, reflecting the subsidy.
- (d) Yes, Sir. The Research Council, constituted by CSIR, regularly reviews the research programmes, performance, and strategic direction of CSIR-CRRI and provides guidance for future R&D directions.

In the roads and transport sector, CSIR-CRRI's work is also aligned with the policy priorities of the Ministry of Road Transport & Highways (MoRTH), which considers CSIR-CRRI's research for national standards, trials, and field deployment. The Government has taken several measures to enhance, modernize, and accelerate the research and field-implementation activities of CSIR-CRRI, which include:

- Strengthening of the laboratory through multi-year Government-supported programmes for capacity building, infrastructure modernisation, and translational research.
- Funding and approval of field trials, pilot projects, and demonstration stretches for the technologies developed by CSIR-CRRI to enable faster adoption of new pavement materials, sustainable construction solutions, and mobility systems.
- Scaling up of CSIR-CRRI technologies through CSIR's technology transfer and business development mechanisms, along with adoption by State PWDs, MoRTH, NHAI, and other road agencies.
- Institutional collaborations and MoUs with industry, transport bodies, and Government organisations to accelerate applied research and real-world implementation.
- Training and capacity-building programmes for engineers, departments, and students to support smooth field adoption and improved implementation practices.
