GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS

RAJYA SABHA
UNSTARRED QUESTION NO - 3774
ANSWERED ON – 25/03/2026

MAINTENANCE OF ROAD QUALITY

3774. Dr. Laxmikant Bajpayee:

Will the Minister of Road Transport and Highways be pleased to state:

(a) whether the bad condition of road is due to a combination of poor construction quality, inadequate maintenance and corruption;
(b) whether it is also a fact that contractors are cutting corners on materials i.e. using low-grade material/bitumen, there are inadequate drainage systems, situation of over-loaded vehicles and frequent uncoordinated utility trenching; and
(c) if so, in what manner Government propose to eliminate these factors and improve quality of Indian roads to make them long lasting?

ANSWER

THE MINISTER OF ROAD TRANSPORT AND HIGHWAYS

(SHRI NITIN JAIRAM GADKARI)

(a) to (c) The Government in the Ministry of Road Transport and Highways is primarily responsible for development and maintenance of National Highways (NHs). All efforts are made to ensure that the NHs are constructed as per stipulated quality standards specified in the Indian Roads Congress (IRC) specifications and codes.

NHs development projects are executed on mainly three modes i.e. (i) Build Operate and Transfer (BOT), (ii) Hybrid Annuity Model (HAM) and (iii) Engineering Procurement and Construction (EPC), for which design responsibilities as per project scope is vested with the Contractor/ Concessionaire.

Drainage systems on NHs are designed keeping in mind expected traffic, importance and configuration of road, sources of water, hydrology and hydro-geologic conditions of catchment area, geometric characteristics of the road, presence of extreme gradients and cross slope, areas of excavation and landfill, existing drainage systems, etc. However, localized issues in drainage systems are caused due to non-clearance of existing drainage system, blockage of the drainage outfall by unauthorized construction, poor maintenance of drainage system in some cases and unprecedented rainfall leading to flooding of drainage systems. In order to prevent such issues, provision of additional culverts and upgradation of discharge capacity of existing drainage system has been made duly considering the site conditions.

NHs are designed and constructed to carry traffic carrying loads in vehicles as per stipulated norms considering the projected traffic during the design life period, the spectrum of axle loads etc. which inter-alia envisaged to duly factor in the impact of actual vehicular loads of traffic plying on NHs.

Contractors/ Concessionaires undertake the shifting of utilities (such as electric lines, water pipes, gas pipelines, and telecom cables) in coordination with the concerned utility agencies, as per contractual provisions and as per costs approved by the Government.

To ensure that highway construction adheres to stipulated quality standards, Consultants (Authority's Engineer/ Independent Engineers- AE/IE) are appointed by the executing agencies for day-to-day supervision of works at site. Officials of executing agencies undertake inspections from time to time and ensure adherence of conformity of quality of the work done by the Concessionaire/ Contractors with stipulated requirements.

The Government has prioritized the maintenance of existing NHs network and inter-alia evolved a mechanism to ensure Maintenance and Repair (M&R) of all NHs sections through accountable maintenance agency. Concession period including maintenance for projects on BOT is 15 to 20 years and on HAM is generally 15 years. Concessionaire is responsible for maintenance of the respective NHs stretches within the concession period of the project. Only in case of EPC projects, Defect Liability Period (DLP) is 5 years for the bituminous pavement works and 10 years for concrete pavement works. For Toll-Operate-Transfer (TOT) and InvIT (Infrastructure Investment Trust) projects, concession period including maintenance is 20 to 30 years. Concession period for Projects on Operate, Maintain and Transfer (OMT) is generally 9 years.

For all remaining sections of NHs stretches, where DLP has ended or is not under any concession period of BOT/HAM/TOT/InvIT project, Government has taken a policy decision to undertake maintenance works through Performance Based Maintenance Contract (PBMC) or Short Term Maintenance Contract (STMC). While STMC works are generally undertaken for a contract period of 1-2 year, PBMC works are undertaken for a contract period of about 5-7 years.

Repair of identified defects / issues in the road condition as well as other maintenance / repair works are completed by the Contractor / Concessionaire within the stipulated timeline as per provisions of the Contract/ Concession Agreement. Actions against defaulting agencies have been taken up as per the provisions of the Contract/ Concession agreement in cases of deficiencies/ damages, such as termination of contract agreement, levying of penalties/ liquidated damages, debarment/ blacklisting, declaring as non-performers etc. As per information provided by the executing agencies of the NHs, major deficiencies in NH stretches in the last three years and current year have been reported for 67 projects / stretches.

11 officers were removed from service on account of performance assessment and other disciplinary actions taken on 11 officers for various reasons including negligence and dereliction of duties.

The Government has additionally taken the following initiatives for improvement of quality control systems in implementation of NHs works: -

i. Adoption of Automated & Intelligent /Machine-aided Construction (AI-MC) in NH projects;

ii. Assessments of road conditions through Network Survey Vehicle (NSV) mandated for all NHs and Expressway works at the time of completion and every six months thereafter, which is monitored through electronic platform. NSV system for road condition assessment has been revamped using analytics for enforcement of contractual provisions during Operation and Maintenance (O&M) through dedicated central cell;

iii. Operationalization of a centralized system called NHAI One App for Monitoring and rectification of highway defects which enables geo-tagging of defects along with photographs;

iv. Analysis of High-Resolution Imagery collected from Drone Surveys in Drone Analytics Monitoring System (DAMS) integrated with Artificial Intelligence/ Machine Learning algorithms for periodic evaluation of progress and quality of ongoing NHs works from time to time;

v. Deployment of Mobile Quality Control Vans (MQCVs) equipped with Non-Destructive Testing Equipment on pilot basis in four States, namely in Gujarat, Rajasthan, Odisha and Karnataka, for diagnostic assessment of overall health and quality of works from time to time during project implementation phases;

vi. Deployment of Third-Party Quality Auditors for independent quality audits of NH works on a case-to-case basis.

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