

**GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS**

**LOK SABHA
UNSTARRED QUESTION NO. 3021
ANSWERED ON 06TH AUGUST, 2026**

MAINTENANCE OF HIGHWAY SANITATION

3021. SHRI AZAD KIRTI JHA:

Will the Minister of ROAD TRANSPORT AND HIGHWAYS

सड़क परिवहन और राजमार्ग मंत्री

be pleased to state:

- (a) the steps taken by the Government to ensure sustained maintenance of highway sanitation beyond campaign periods to prevent relapse into unsanitary conditions;**
- (b) the details of provisions in place for incentivizing or penalizing concessionaires under performance-based contracts for highway cleanliness and upkeep;**
- (c) the percentage of ongoing and completed National Highway projects that have incorporated eco-friendly construction materials and energy-efficient street lighting systems along with the details of such projects;**
- (d) the mechanisms in place for independent verification of compliance and the steps being taken to expand designated green corridors; and**
- (e) whether the Government has initiated or proposed pilot projects employing Internet of Things (IoT), Artificial Intelligence (AI) and other emerging technologies for smart highway operations and enhanced traffic management and if so, the details thereof?**

ANSWER

THE MINISTER OF ROAD TRANSPORT AND HIGHWAYS

(SHRI NITIN JAIRAM GADKARI)

(a) Government in Ministry of Road Transport and Highways is primarily responsible for development and maintenance of National Highways (NHs). Apart from organising cleanliness drives / campaigns on NHs, Government has undertaken various initiatives to ensure the sustained maintenance of highway sanitation on NHs, some of which are as under: -

- i. Strict contractual maintenance obligations and penalty clauses incorporated in Operation & Maintenance (O&M) and concession / contract agreements, making Contractors / Concessionaires directly accountable for maintenance of project highway, roadside drains, culverts, medians, slopes, structures, and Right of Way (RoW) in a clean and hygienic condition by regularly removing debris, litter, waste materials, hazardous spillages, organic growth etc.**
- ii. Routine inspection by Authority Engineer (AE) / Independent Engineer (IE) to monitor compliance with maintenance obligations and ensure highway amenities, user fee plazas and wayside rest stops maintain hygiene standards year-round.**
- iii. Deployment of dedicated maintenance mobile application / dashboard to report, track and resolve sanitation issues in real time.**
- iv. Directions issued for construction of toilet facilities at all NH User Fee Plazas in both directions after crossing the plaza where such facilities are not presently available; temporary pre-fabricated or mobile toilet blocks to be placed on newly completed access-controlled NHs till Wayside Amenities come up.**

v. Mapping of toilet facilities on the Rajmarg Yatra App as well as installation of advance signages for public visibility for improved user experience.

(b) Government has adopted structured maintenance mechanisms through Performance-Based Maintenance Contracts (PBMC), wherein the payment for the deliverables is linked to the Contractor successfully meeting certain clearly defined performance indicators / Service Levels as defined in the standard PBMC Document. Further, there is a provision for penalty / reduction in routine maintenance monthly payment for non-achievement of the desired service levels of highway cleanliness and upkeep.

(c) Government has taken various policy reforms and initiatives to promote sustainable development through use of eco-friendly construction materials and energy-efficient street lighting systems on NHs. Various sustainable and recycled materials, such as use of Bamboo Crash Barrier, use of Fly Ash / Pond Ash in embankment and structural works, Reclaimed Asphalt Pavement (RAP) in bituminous layers, and Construction and Demolition (C&D) Waste / Recycled Aggregates are used in suitable highway works as per technical specifications. The use of plastic waste in bituminous mixes, natural geo-textiles (such as Jute/ Coir etc.) in addition to other sustainable materials including Slag, Bio Bitumen / Molasses, Crumb Rubber and other recycled or industrial by-products are promoted as per feasibility and guidelines to improve pavement performance for addressing environmental concerns.

Accordingly, Government has completed NHs works in about 9,400 km using eco-friendly construction materials and NHs works in another 5,200 km are under construction.

Government has also installed solar-based street lighting systems in about 3,300 km NH length and installation in another 700 km has been taken up.

(d) As part of the Green Highways (Plantation, Transplantation, Beautification and Maintenance) Policy 2015, Government undertakes

plantation along available surplus median and roadside land of Right of Way (ROW) of various NH stretches in the country either as part of NHs projects or on standalone basis, in accordance with Indian Roads Congress (IRC):SP:21 guidelines. During the last five years, approximately 1.32 Lakh km of NHs in the country have been covered with the plantation of over 3.61 Crore saplings.

Miyawaki plantation and drone monitoring of plantation has also been started to increase the green cover along NHs apart from deployment of External Professionals for implementation and supervision of greening endeavors and monitoring and evaluation of plantations through routine inspection by AE/IE.

Further, Government has developed the Green Cover Index, which uses high-resolution satellite data to assess plantation presence and health within NH RoW. The first assessment covered about 31,000 km across 24 States, with results available on Geographic Information System (GIS) based portal hosted on Bhuvan geo-platform of Indian Space Research Organisation (ISRO).

(e) Government has been progressively adopting Artificial Intelligence (AI), Internet of Things (IoT) and other emerging technologies for smart highway operations and enhanced traffic management on NHs.

The Government has envisaged deployment of Advanced Traffic Management Systems (ATMS) with the objective of improving road safety and reducing accidents on NHs. ATMS has provisions for various electronic enforcement devices which help in speedy identification of incidents (including traffic violations) on the highway stretches and effectively monitor the highways, thereby improving incident response time and road safety. The Government has taken up Region-wise implementation of ATMS in all Four lane and above NHs in a phased manner to have an all-integrated development of traffic management rather than project level implementation. Accordingly, Government has approved ATMS implementation in 531 km length and process has been initiated for approval in another 6,000 km.

Government has also decided to implement Multi-Lane Free Flow (MLFF) Electronic Toll Collection system on NHs, which facilitates barrier-less tolling using integrated technologies including Automatic Number Plate Recognition (ANPR) with AI analytics and RFID-based Electronic Toll Collection (FASTag), where the user fee shall be charged from the vehicle users without having to stop, slow down or stay in a given fee plaza lane. 17 fee plazas have been awarded, out of which 6 fee plazas are already live.
