

GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS
RAJYA SABHA
UNSTARRED QUESTION NO -2022
ANSWERED ON – 05/08/2026

**FUTURE READY INDIAN ROADS AND SMART TRANSPORTATION
INFRASTRUCTURE**

2022. SHRI I.S. INBADURAI:

Will the Minister of ROAD TRANSPORT AND HIGHWAYS be pleased to state:

- (a) whether Government has prepared a roadmap to develop future-ready road infrastructure across the country with smart technology, climate resilience, improved safety and sustainable mobility;
- (b) the details of initiatives undertaken for intelligent traffic management, electric vehicle corridors, accident reduction, durable road construction and integration of advanced technologies;
- (c) whether Government proposes to upgrade existing highways and State roads with modern safety standards, digital monitoring systems and world-class maintenance practices; and
- (d) whether a comprehensive National Vision Document on future-ready Indian roads covering connectivity, logistics, safety, environmental sustainability and emerging transport technologies is proposed, if so, the details thereof?

ANSWER

THE MINISTER OF ROAD TRANSPORT AND HIGHWAYS

(SHRI NITIN JAIRAM GADKARI)

(a) to (d) Government in Ministry of Road Transport and Highways is primarily responsible for development and maintenance of National Highways (NHs). Development and maintenance of NHs is taken up as per vision envisaged for Viksit Bharat 2047 towards enhancing logistic efficiency to global standards on National Highways and promoting ease of living and ease of doing business with focus on safety & sustainability. This includes development of access-controlled High-Speed Corridors (HSCs) / Expressways, NH Decongestion around cities, Port, Coastal, Airport and National Industrial Corridor Development Corporation (NICDC) prioritized Industrial Node Connectivity, acceleration of private investment, promotion of vehicle fleet

modernization, technology enabled transport services in automatic and faceless mode, enhanced road safety and enhanced user convenience. Accordingly, works on NHs are taken up based on the traffic density, connectivity requirement, condition of the road and synergy with PM Gati Shakti National Master Plan (NMP). At present, 1,191 NHs projects in 25,917 km length costing ₹7.15 Lakh Crore are under construction in the country.

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 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.

In order to strengthen the enforcement of traffic rules for ensuring traffic management in the country, the Government brings amendments in the Motor Vehicles Act from time to time. In accordance with the provisions of the Motor Vehicles (Amendment) Act, 2019, Government published rules in August 2021 for Electronic Monitoring and Enforcement of Road Safety at high-risk and high-density corridors on National Highways, State Highways and at critical junctions in cities having a population of more than one million and cities under National Clean Air Programme (NCAP) in the country. Enforcement of these rules comes under the sole jurisdiction of the State / Union Territory (UT) Governments.

All NHs works are carried out as per standards, guidelines, manual, code of practice of Indian Roads Congress as well as specifications for Road and Bridge Works. Necessary road safety measures are taken up during design, construction, operation and maintenance stages. Road Safety Audit (RSA) of NHs has been made mandatory at all stages i.e. design, construction, pre-opening stage of NH projects as well as during operation and maintenance stage on existing NHs for ensuring road safety. Based on findings of such audits, necessary remedial measures are taken in a time-bound manner.

Government has also taken various policy reforms and initiatives to promote sustainable development. 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.

Further, Tree plantation and carbon offsetting measures have been integrated into NH projects as part of environmentally sustainable development. Plantation works are invariably taken up along with NHs projects or as separate drives also. Miyawaki plantation and drone monitoring of plantation has also been started to increase the green cover along NHs. Additionally, wherever tree felling is necessary for highway development, compensatory afforestation and tree transplantation are undertaken.

Additionally, to improve travel experience for NHs users, the Government envisions development of Wayside Amenities (WSAs) at approximate intervals of 40-60 km along NHs. Total 512 WSA sites have been awarded so far, out of which 137 are operational. These include 59 dedicated trucker-focused facilities and 84 WSA sites equipped with Electric Vehicle (EV) charging stations, supporting both logistics efficiency and green mobility.
