

India's First Wildlife-Safe Road on NH-45

In December 2025, the National Highways Authority of India (NHAI) introduced India's first "wildlife-safe" road initiative on National Highway 45 (NH-45) in Madhya Pradesh. This project implements a novel speed-control method to protect wildlife in a critical corridor between Bhopal and Jabalpur.

Overview of the NH-45 Project

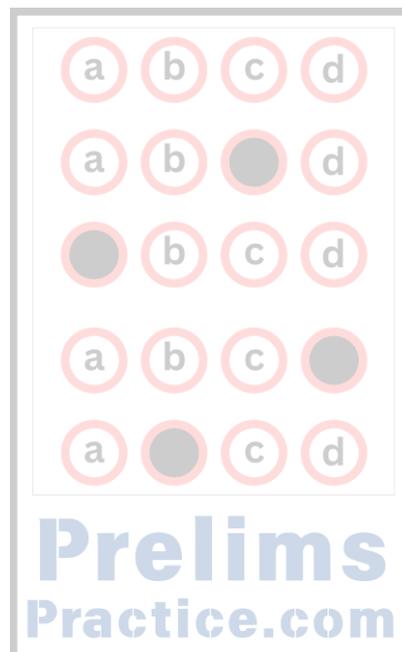
- **Location:** The project is situated on a 11.96-km stretch of NH-45, specifically the Hiran–Sindoor section about 60 km from Jabalpur. It passes through the Veerangana Durgavati Tiger Reserve and near the Nauradehi Wildlife Sanctuary.
- **Cost:** The broader highway expansion project, which includes these safety features, is valued at approximately ₹122.25 crore.
- **Key Innovation:** The road features India's first "table-top red markings"—a 5-mm thick, raised red thermoplastic surface designed to alert drivers visually and physically.

Key Features and Safety

- **Table-top Markings:** Unlike standard speed breakers, these are slightly elevated, textured red surfaces that create a rumble effect. They naturally force drivers to slow down without sudden braking.
- **High Visibility:** The bold red colour was chosen specifically to be more eye-catching than standard white or yellow markings, signaling a sensitive wildlife-heavy zone.
- **Wildlife Underpasses:** Approximately 25 strategically placed underpasses have been built along this 12-km stretch based on animal movement patterns to allow safe crossing beneath the highway.
- **Structural Barriers:** The stretch includes eight-foot-high chain-link fencing on both sides to guide animals away from the road surface and toward the underpasses.
- **Advanced Monitoring:** The corridor is equipped with speed detection devices to alert motorists and monitor driver behaviour in the tiger reserve.
- **Inspiration:** The design was inspired by international standards, specifically models like Dubai's Sheikh Zayed Road.

NOTE POINT

While NH-45 is noted for the first "wildlife-safe" red tabletop marking, NH-44 (passing through Pench Tiger Reserve) remains historically significant as India's first dedicated wildlife corridor with large-scale mitigation measures, including the world's longest animal underpass at 750 meters.



Explanation of Exam Oriented Key Points

01

National Highways Authority of India (NHA)

Institutional Framework

- **Establishment:** Set up under the National Highways Authority of India Act, 1988.
- **Nature:** An autonomous agency under the Ministry of Road Transport and Highways (MoRTH).
- **Operational Status:** Officially operational since February 10, 1995.
- **Composition:** Led by a Chairperson, supported by up to six full-time and six part-time members appointed by the Central Government.

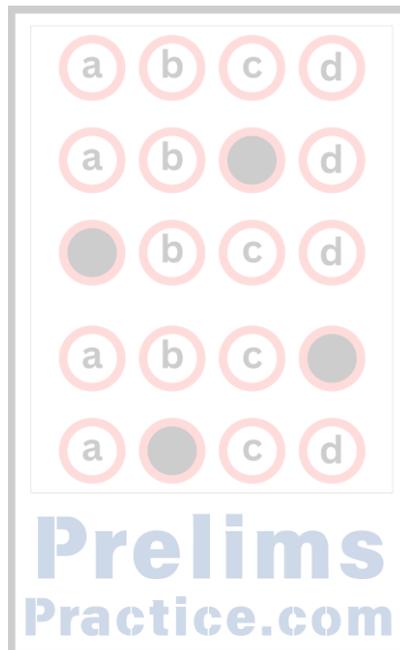
Mandate and Functions

- **Scope:** Responsible for the development, maintenance, and management of National Highways (NH) and any other highways entrusted to it.
- **Traffic Regulation:** Empowered to regulate and control traffic on these highways.
- **Toll Collection:** Authorized to levy and collect tolls and fees (e.g., through FASTag).
- **Consultancy:** Provides consultancy and construction services at both national and international levels.
- **Advisory Role:** Serves as an advisor to the Central Government on highway policy.

Key Initiatives and Funding Models

- **Major Programs:**
 - **Bharatmala Pariyojana:** Aimed at filling critical infrastructure gaps and improving road freight efficiency. As of June 2025, over 20,378 km has been constructed under this scheme.
 - **National Highways Development Project (NHDP):** Includes the Golden Quadrilateral and North-South/East-West Corridors.

- **Asset Monetization Strategy (2025-30):** In July 2025, NHAI launched a strategy to unlock value from operational assets using Toll-Operate-Transfer (ToT), Infrastructure Investment Trusts (InvITs), and Securitization.
- **Hybrid Annuity Model (HAM):** Increasingly used for new projects, where the government provides 40% construction support.
- **Green Highways Policy:** Promotes eco-friendly corridors with mandatory tree plantation targets. For 2025, NHAI has set a target of 52 lakh trees under the "Ek Ped Maa Ke Naam 2.0" initiative.



Practice Questions:

1. With reference to the recently introduced "wildlife-safe" road initiative, consider the following statements:

- I. The initiative features India's first "table-top red markings," which are raised thermoplastic surfaces designed to create a rumble effect
- II. The project stretch passes through the Veerangana Durgavati Tiger Reserve in Madhya Pradesh
- III. To prevent animal-vehicle collisions, the initiative relies solely on physical barriers like eight-foot-high chain-link fencing
- IV. The structural design of the speed-control method was inspired by road safety models from Dubai

How many of the statements given above is/are correct?

- a) Only one
- b) Only two
- c) Only three
- d) All four

Answer: c

Explanation: **Statement I is Correct:** The 5-mm thick red thermoplastic markings are a novel speed-control innovation. **Statement II is Correct:** The 11.96-km stretch is located within the Veerangana Durgavati Tiger Reserve. **Statement III is Incorrect:** The project uses a multi-layered approach including 25 wildlife underpasses and electronic speed detection devices, not just fencing. **Statement IV is Correct:** The design was inspired by international standards like Dubai's Sheikh Zayed Road.

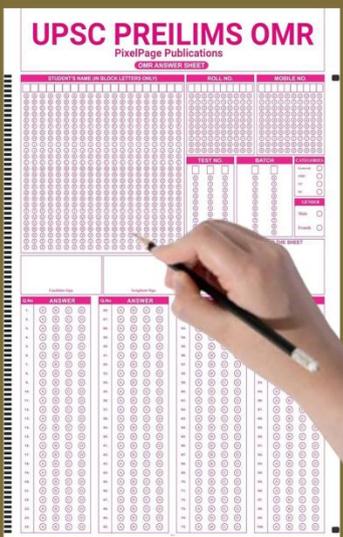
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