भा रा रा प्रा
NHAI

Azadi Ka Amrit Mahotsav

75

MILESTONES OF
Highway Development

Building Arteries of Modern India

CREATING MARVELS OF MODERN INDIA

India has the second largest road network in the world. The National Highway network traverses through difficult terrains and remote corners of our country thus posing unique challenges, only to be inundated with the spirit of 'achieving the unachievable'. These modern marvels are shining examples of India's engineering prowess and are actively contributing to shape a 'New India'.

नितिन गडकरी
NITIN GADKARI

मंत्री
सड़क परिवहन एवं राजमार्ग
भारत सरकार
Minister
Road Transport and Highways
Government of India

MESSAGE

Under the visionary leadership of our dynamic Prime Minister Hon'ble Shri Narendra Bhai Modi Ji India's infrastructure development over the last eight years has made phenomenal strides.

Today, National Highways are being built at a rapid pace and the road sector has become a key component in the infrastructure growth story of new India.

It is heartening to note that NHAI is bringing out a beautiful Coffee Table Book on '75 Iconic Projects' that have been accomplished by NHAI.

As we celebrate 'Azadi ka Amrit mahotsav' to commemorate 75 years of India's independence, this remarkable book is a testimony of NHAI's ambitious development journey, its engineering marvel and immense contribution in nation building.

I firmly believe that creation of world class National Highway infrastructure is indispensable for the growth and scaling up our competitiveness as a nation. NHAI has been relentlessly working to achieve this goal. These highways have played a hugely constructive role in connecting people, providing better accessibility to markets, education & healthcare facilities, and generating employment opportunities.

Besides the highways, NHAI is also working to develop ropeways under the 'Parvatmala Programme' and Multi Modal Logistics Parks to provide last mile connectivity and facilitate movement of both people as well as goods.

I extend my sincere appreciation for all the efforts the officers and the staff of the NHAI have put in to make these 75 milestones of highway development a great success.

I also congratulate the talented team which has compiled this very attractive Coffee Table Book.

I am confident this book will serve as a great reference to the dedication and effort that has gone into building of the National Highway network in the service of our great nation.

I wish all the very best to NHAI in its efforts and initiatives.

(Nitin Gadkari)

Date: 6th December, 2022
Place: New Delhi

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पीवीएसएम, एवीएसएम, वाईएसएम (से.नि.)
GEN. (DR) VIJAY KUMAR SINGH
PVSM, AVSM, YSM (Retd)

सत्यमेव जयते

आज़ादी का अमृत महोत्सव

राज्य मंत्री
सड़क परिवहन, राजमार्ग;
एवं नागर विमानन मंत्रालय
भारत सरकार
Minister of State for
Road Transport, Highways;
and Civil Aviation
Government of India

7th December, 2022

MESSSAGE

Roads and Highways have been the arteries of India for economic growth and social development. As we celebrate 'Azadi Ka Amrit Mahotsav' to commemorate 75 years of India's Independence, the release of this coffee table book is both timely and relevant to the current times.

2. Today, India has a broad and vibrant canvas as far as infrastructure development is concerned. With *Bharatmala Pariyojna*, NHAI is implementing one of largest and most ambitious National Highway infrastructure program till date.

3. The Government of India has a vision that looks beyond just developing highways and includes the holistic and integrated development of the infrastructure framework. Initiatives such as 'PM Gati Shakti' - National Master Plan for Multi-modal Connectivity, brings together infrastructure schemes of various Ministries and State Governments like inland waterways, dry/land ports, UDAN etc. to improve connectivity & make Indian businesses more competitive.

4. Multi- Modal Logistics Parks (MMLPs) have been conceptualized to strengthen the country's logistics infrastructure and enable efficient inter-modal freight movement. Parvatmala, the National Ropeways Development Program is another project which envisions development of Ropeways in hilly areas and decongest urban areas to provide last mile connectivity. NHAI is playing an important role in implementation of these programs.

5. I am pleased to note that the coffee table book has outlined a number of projects that over the years, have not only shaped the Indian National Highway Framework but has also chiefly contributed to the growth of our nation.

6. I congratulate all those who have contributed to put India on the world map through their dedication and hard work by creating world class National Highways. I would also like to congratulate the NHAI team for putting together this wonderful book.

7. I wish NHAI all the very best for their upcoming projects.

[General (Dr.) V K Singh]

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अलका उपाध्याय, आई.ए.एस.
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सड़क परिवहन और राजमार्ग मंत्रालय
Ministry of Road Transport & Highways
भारत सरकार / **Government of India**

MESSAGE

As India is celebrating *'Azadi ka Amrit Mahotsav'* to commemorate 75 years of Independence, I am happy to note that NHAI has published a Coffee Table Book '75 Milestones of National Highway Development'.

This Coffee Table Book highlights some of the most prestigious National Highway projects that have been built over the years and have been instrumental in contributing to the socio–economic landscape of our country.

The Government of India has shown immense faith in the road sector. Its vision looks beyond just developing highways. It includes the holistic and integrated development of the infrastructure framework reaching out to provide the last mile connectivity and enhancing ease of living.

NHAI has shouldered its responsibility to build the National Highways network with a lot of diligence and persistence. Time and again it has proved its engineering prowess and has fuelled the growth of infrastructure development in the country.

Lastly, I would like to acknowledge the effort of NHAI team that has compiled this wonderful book.

I wish you all the very best for the future.

(Alka Upadhyaya)

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संतोष कुमार यादव, भाईएएस
अध्यक्ष
SANTOSH KUMAR YADAV, IAS
CHAIRMAN

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
सड़क परिवहन और राजमार्ग मंत्रालय
National Highways Authority of India
MINISTRY OF ROAD TRANSPORT & HIGHWAYS

MESSAGE

I am happy to share that NHAI has published a Coffee Table Book '75 Milestones of National Highway Development'. As we celebrate *'Azadi ka Amrit Mahotsav'* to commemorate 75 years of independence, this coffee table book highlights prestigious National Highway projects that transformed the landscape of the infrastructure development in the country.

2. Ever since its inception, NHAI has been the corner stone of National Highway development in the country. This book is a great reference point of NHAI's commitment to create 'Modern Marvels' and impeccable implementation of many programs for the development of the National Highways.

3. Keeping in view the ever-evolving landscape and needs of the infrastructure development, we are steadfast in our resolve to continue to build world class National Highways & allied infrastructure that will contribute to the growth of our nation.

4. I would also like to acknowledge contributions of NHAI officers, consultants, concessioners, and engineers whose hard work has given us these most outstanding projects. Also, I would like to thank the team that has put together this book.

(Santosh Kumar Yadav)

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About Roads & Highways in India

Roads are known as arteries of India. These roads connect villages to cities, distant with near and hinterland to urban markets and help in the economic development of our country. Today, India has the second largest road network in the world spanning over 63.71 lakh km. Since independence, network of the National Highways in India has grown seven times from 19,811 km in 1950-51 to around 1,42,000 km in 2022.

In February 1995, National Highways Authority of India (NHAI) was constituted by an Act of Parliament namely National Highways Authority of India Act, 1988 for the development, maintenance and management of National Highways vested or entrusted to it by the Central Government.

In the year 2000, NHAI was mandated with the ambitious highway development program, National Highways Development Project (NHDP). Phase-I of NHDP involved four-laning of the Golden Quadrilateral, which at that time was the largest highway project in India spanning over 5,800 km. It formed a quadrilateral connecting India's four major metros Delhi (North), Kolkata (East), Mumbai (West) and Chennai (South).

Under NHDP, NHAI also developed the North–South–East–West Corridor (NS-EW). The corridor connects Srinagar in the North with Kanyakumari in the South and Porbandar in the West with Silchar in East. NHAI's mandate was further expanded with implantation of National Highway Development Project spanning over seven phases for upgradation of existing highways of over 54,000 km.

In 2017, the Government announced India's largest ever highway development program, 'Bharatmala Pariyojna' Under which, 34,800 km National Highways were envisioned to be upgraded in phase-1. Under this program, NHAI is also implementing development of 27 new Greenfield Expressways to connect remote areas and open new avenues for economic development. Bharatmala Pariyojna promises to optimise the efficiency of road traffic movement across the country by bridging critical infrastructure gaps. The focus is on reducing the cost of logistics, promoting multimodal transportation, last-mile connectivity and improving existing supply chain infrastructure in the country.

This Digital Coffee Table Book covers 75 iconic projects that NHAI has developed since its inception.

Over the years, NHAI has also evolved as a multidisciplinary professional body. In addition to building the National Highway infrastructure, a lot of focus has been on managing National Highway operations that include Managing Toll collection through implementation of Electronic Toll Collection system FASTag, Implementing Advance Traffic Management System on National Highways, Development of Way-Side Amenities for the comfort of highway users, Strengthen country's logistics infrastructure by implementing Multi- Modal Logistics Parks and provide last mile connectivity in hilly areas, religious places and congested urban areas through Ropeways under the Parvatmala Pariyojna.

NHAI is focused towards building a world class National Highway infrastructure that will contribute towards the overall growth of trade and commerce and the socio-economic development of our country.

AHMEDABAD-VADODARA EXPRESSWAY

Ahmedabad-Vadodara Expressway is India's first expressway and connects the important cities Ahmedabad and Vadodara in Gujarat. Designated as National Expressway-1 (NE1), it is a 95 km long Expressway with 2 lanes on each side and one service lane.

With a capital cost of Rs 2,125 crore, the project was executed in two stages. The first stage comprised 43.4 Km from Ahmedabad to Nadiad while the second stage was from Nadiad to Vadodara. Work on Phase-I started in August 2000 and the second phase was initiated in June 2001. The Expressway became commercially operational in February 2004.

Major Highlights

- Consists of 9 minor bridges, 100 culverts, 20 canal crossings, and irrigation pipelines.
- Two exits provided for Nadiad (50 km from Vadodara) and Anand (35 km from Vadodara).
- Part of the National Highways Authority of India's (NHAI) Golden Quadrilateral Project.
- Major artery of public transport connecting Gujarat's two economic centres and reduces the time travel between the two cities from about 2.5 hours on NH 8 to nearly an hour.
- Carries over 55,000 PCUs daily and touches Ahmedabad at the CTM Crossroads and joins Vadodara at Savli village.
- Equipped CCTV & speed cameras and an access control system.
- Wayside amenities include restrooms, fuel stations, refreshment plazas etc.

DR SYAMA PRASAD MOOKERJEE TUNNEL
CONNECTING CHENANI TO NASHRI

This engineering marvel is an ideal example of the “Make in India” and “Skill India” initiative. With an investment of about Rs. 3,720 crore, it was dedicated to the nation on 2nd April 2017. The project involved the construction of a single-tube, two-lane main tunnel with a 13m diameter, along with a 6m-diameter escape tunnel running parallel to it.

Formally named Dr Syama Prasad Mookerjee Tunnel, the Chenani-Nashri Tunnel is India's longest road tunnel between Udhampur and Ramban in Jammu & Kashmir. Built at an elevation of about 1,200 m in the foot of the Himalayan Mountains, the 9 Km long twin-tube all-weather tunnel is also Asia's longest bi-directional road tunnel.

The tunnel is a part of the four-lane widening of 286 km long National Highway between Srinagar and Jammu and reduces travel time between the two cities by two hours bypassing about 41 km of road length. It also ensures all-weather passage on a route that was prone to heavy traffic jams and disruptions due to landslides, snow, and sharp curves.

The main tunnel is connected to the escape tunnel through pedestrian and vehicular emergency cross passages at every 300m and 1,200m, respectively.

Major Highlights

- India's first intelligent tunnel equipped with Integrated Tunnel Control System (ITCS)
- Entrance Detection Control System
- Electrical Fire Signaling System (Fire Detection)
- Active Fire Fighting System
- Video Surveillance System
- Tunnel Ventilation System
- Evacuative Broadcast System
- FM Rebroadcast System
- Wireless Communication System (WCS)
- SOS call boxes at every 150 m
- Advanced scanners to ward off any security threat

BRIDGE
ON CHAMBAL RIVER AT KOTA

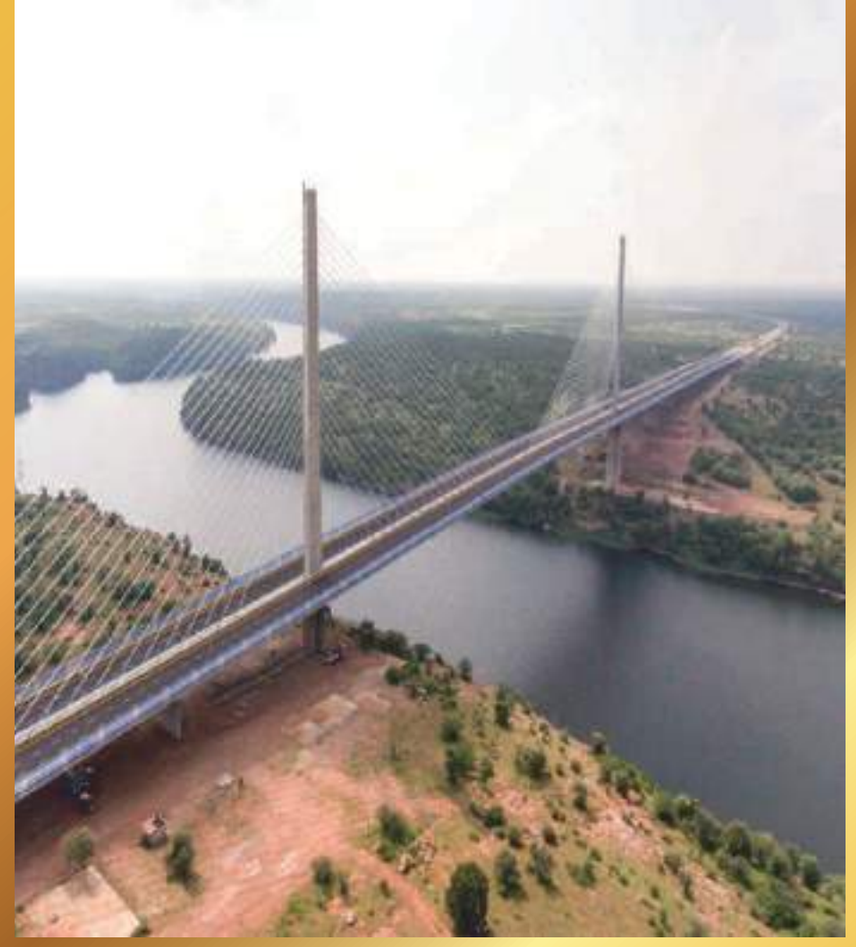
One of the iconic engineering marvels for India is the 6-lane single plane cable-stayed bridge across river Chambal in Kota.

The 1.4 km-long bridge is 30-metre-wide with a 1.5-metre width of footpaths on both sides. A 400-metre access bridge and a 300-metre approach road are also a part of the project.

Its height is 125 metre, with the longest span at 350 metre. The pylons are 80-metre-high above the top of the deck. The stay cables are composed of individually sheathed strands having triple protection: galvanisation, wax filling, and individual polyethylene sheaths. The external cable duct has helicoids to eliminate rain and wind-induced vibrations.

One of the major highlights of the bridge is its environment and wildlife-friendly design. A stretch of nearly 300 metre of the bridge has been suspended with cables, avoiding any pier in the riverbed. This has been done to protect the National Chambal Gharial Wildlife Sanctuary which is home to the endangered gharial, the red-crowned roof turtle, and the Ganges river dolphin.

The bridge was built under the National Highways Development Project (NHDP) Phase II. Its opening completed the work on the 3,300-km East-West Corridor, which connects 14 National Highways passing through seven states and 28 prime cities of the country.



Major Highlights

- Project Cost: Rs 278 crore
- Rajasthan's first cable-stayed bridge
- Environment and wildlife-friendly design
- Considerable reduction in travel time and traffic congestion
- Opened to traffic in August 2017
- Equipped with modern security measures including a mechanism to inform the control room about traffic, rain, cyclones, and earthquakes

DELHI-MEERUT EXPRESSWAY-

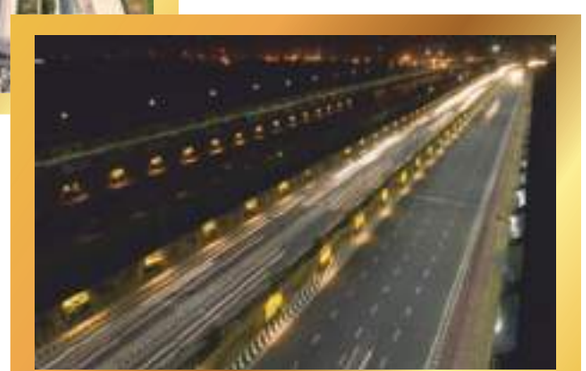
INDIA'S FIRST 14-LANE EXPRESSWAY

India's first 14-lane expressway, the Delhi-Meerut Expressway has been constructed on NH-9 and NE-3, connecting the national capital with Meerut in Western Uttar Pradesh.

The project was split into 4 packages:

- Package-I of 8.7 km from Nizamuddin to U.P. Gate in Delhi involved the construction of 6 lane expressway + 8 lane NH. It was completed in record time of 18 months in June 2018, against the expected period of 30 months.
- Package-II of 19.2 km from U.P. Border to Dasna in U.P involved the construction of 6 lane expressway + 8 lane NH; it was completed in March 2021.
- Package-III of 22.2 km from Dasna to Hapur Bypass in U.P. involved the construction of 6 lane NH with service road and was completed in September 2019.
- The Greenfield Package-IV of 31.7 km from Dasna to Meerut in U.P. involved the construction of 6 lane expressway and was completed in March 2021.

The project with total length of around 82 km was completed at a total cost of over Rs. 6,285 crores.



Key Benefits:

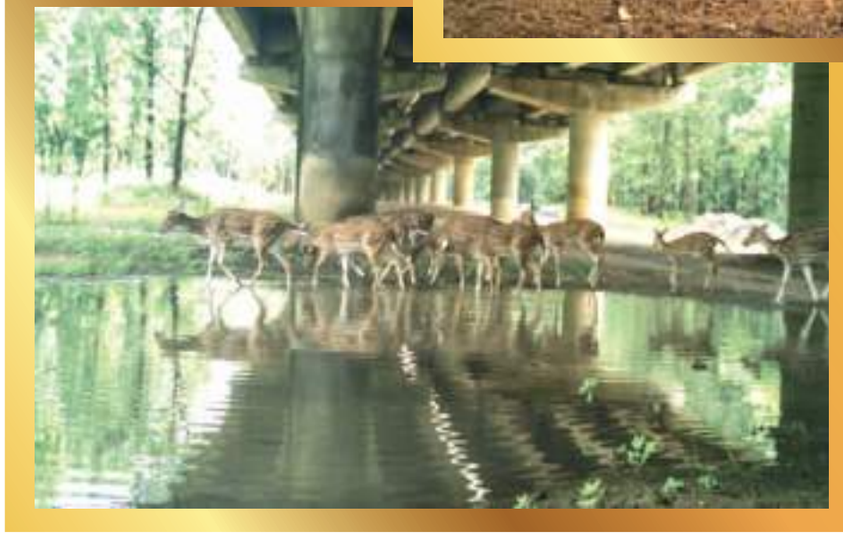
- The project has reduced the travel time between Delhi and Meerut to 45 minutes which was around 2.5 hours earlier.
- The project has reduced the pollution level in Delhi, NCR.

Salient Features:

- The project included the construction of 3 ROBs, over 50 km of Service Roads, 5 Major Bridges, 19 Minor Bridges, 8 Flyovers, 44 VUPs, 4 PUPs, and 2 Wayside Facilities.
- The project included the construction of Asia's heaviest, 115m long truss girder RoB at Chipiyana Buzurg, Ghaziabad. It reduces the travel time and eases the traffic movement between the two cities, providing a seamless travel experience.
- To safeguard the pedestrian movement and motivate cyclists, a dedicated cycle track & footpath of width of 2.50m and 2.00m has been provided on either side of the highway.
- The project is equipped with Solar Lighting and Drip Irrigation facilities.
- NHAI has proposed Automatic Number Plate Reader cum FASTag System (ANPR) on Fee Plazas at every entry and exit location, so that users can pay the fee for the length utilized by them without stoppage of vehicle on Fee Plaza.

INDIA'S FIRST DEDICATED WILDLIFE CORRIDOR ON NAGPUR-JABALPUR SECTION OF NH-44

The Wildlife Corridor on Nagpur-Jabalpur Section of National Highway 44 cutting through prominent national parks in Madhya Pradesh and Maharashtra, is a prime example of integrating environmental management in infrastructure development. This is the world's longest and India's first dedicated wildlife corridor which has been developed by NHAI as a mitigating measure to reduce wild animal mortality on NH 44, which crosses through Pench Tiger Reserve and Kanha Tiger Reserve in central India. Also, NH 44 is the longest highway in India and is a part of the North-South Corridor connecting Srinagar to Kanyakumari.



According to a study by Wildlife Institute of India, 17 species have been using these underpasses including tigers and leopards.

Features

- The 37-km long wildlife corridor comprises minor bridges and underpasses offering a safe passage for animals.
- The corridor has been designed to limit man-animal conflict and maintain natural habitat for long-term viability of India's tiger population.
- These cave-like, concrete underpasses are layered with soil to resemble the natural habitat of the animals while CCTV cameras have been fitted at strategic locations to monitor their movement.
- The corridor has been developed following the "Eco-friendly Measures to Mitigate Impacts of Linear Infrastructures on Wildlife" guidelines framed by the Wildlife Institute of India (WII). Besides the WII, NHAI interacted with the National Tiger Conservation Authority (NTCA) and World Wide Fund for Nature (WWF), Ministry of Environment, Forest & Climate Change, for developing the corridor.

KARTARPUR CORRIDOR-
CORRIDOR OF INTERNATIONAL PEACE AND HARMONY

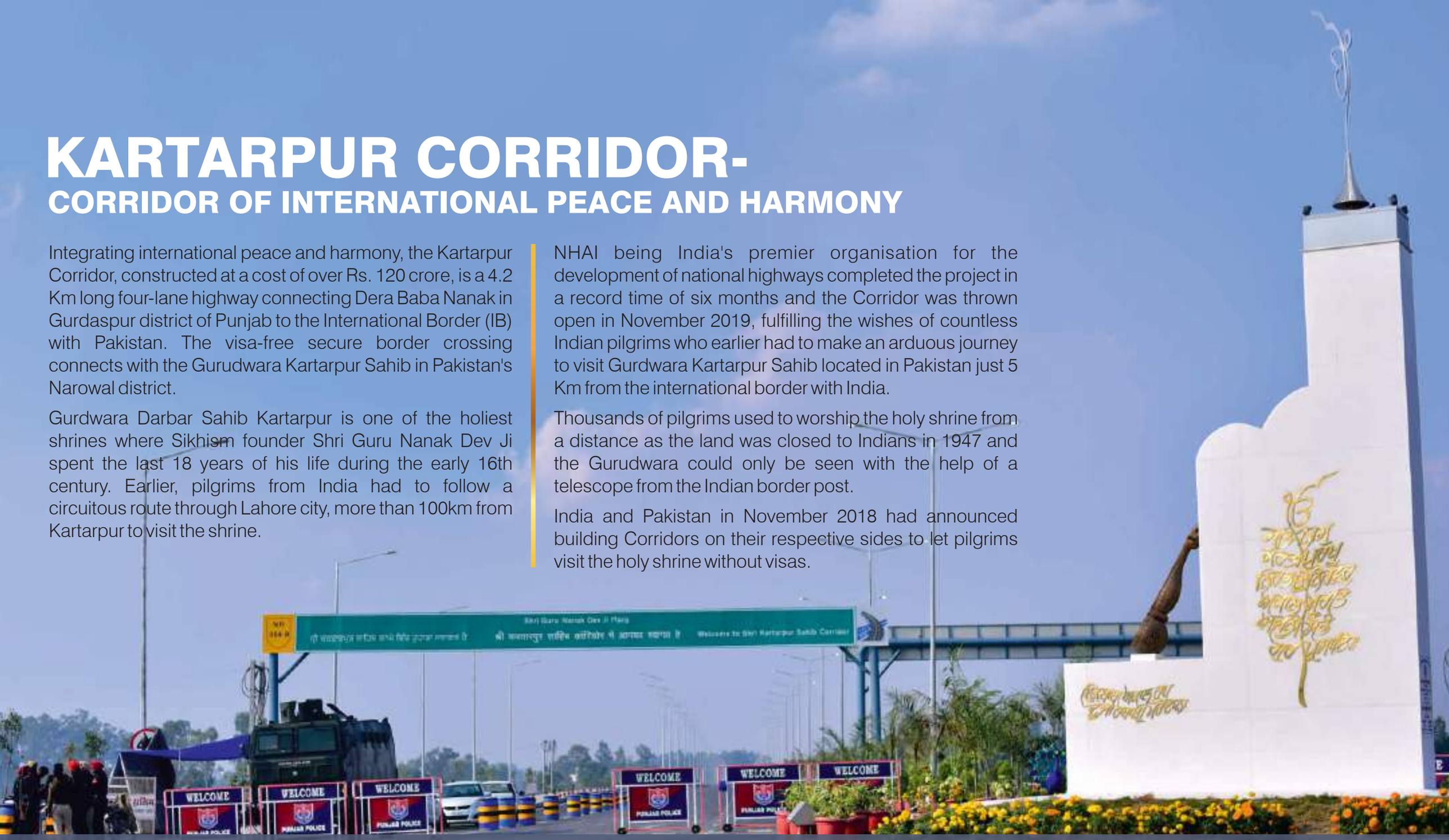
Integrating international peace and harmony, the Kartarpur Corridor, constructed at a cost of over Rs. 120 crore, is a 4.2 Km long four-lane highway connecting Dera Baba Nanak in Gurdaspur district of Punjab to the International Border (IB) with Pakistan. The visa-free secure border crossing connects with the Gurudwara Kartarpur Sahib in Pakistan's Narowal district.

Gurdwara Darbar Sahib Kartarpur is one of the holiest shrines where Sikhism founder Shri Guru Nanak Dev Ji spent the last 18 years of his life during the early 16th century. Earlier, pilgrims from India had to follow a circuitous route through Lahore city, more than 100km from Kartarpur to visit the shrine.

NHAI being India's premier organisation for the development of national highways completed the project in a record time of six months and the Corridor was thrown open in November 2019, fulfilling the wishes of countless Indian pilgrims who earlier had to make an arduous journey to visit Gurdwara Kartarpur Sahib located in Pakistan just 5 Km from the international border with India.

Thousands of pilgrims used to worship the holy shrine from a distance as the land was closed to Indians in 1947 and the Gurudwara could only be seen with the help of a telescope from the Indian border post.

India and Pakistan in November 2018 had announced building Corridors on their respective sides to let pilgrims visit the holy shrine without visas.



Background

A long-standing wish of the Indians, the talks of constructing the corridor was first officially raised by late Prime Minister Shri Atal Bihari Vajpayee with his Pakistani counterpart Nawaz Sharif in February 1999 during the historic Lahore bus journey.

In November 2018, the Union Cabinet passed a resolution for building the Corridor, to mark the occasion of the 550th birth anniversary of Shri Guru Nanak Dev Ji. Subsequently, India and Pakistan in October 2019 signed a bilateral agreement finalising the modalities for the operationalization of the Corridor at Zero Point, an international border.

Major Highlights

- Built with environmentally friendly technologies, the Corridor comprises a 3.60 km length of new alignment and 0.59 Km length of widening of an existing road.
- The structures built on it include a 60-metre ROW, 17 culverts, and one 108-metre long bridge at the international boundary.
- It has 5.5 m service roads on both sides with a provision of 3 m wide footpaths. The main connectivity to Integrated Check-Post is developed by Land Port Authority for India.

NEW NARMADA BRIDGE

The pride of Gujarat, India's largest Extradosed Bridge has been completed on Narmada River on NH 8 at Bharuch to give impetus to speed, safety and economic development of the area. This bridge enhanced the business activities and development in South Gujarat and Ahmedabad-Mumbai section of Golden Quadrilateral in particular.

The 1.4 km 'Extradose' cable stayed bridge is the longest in India and the second such bridge in the country after Nivedita Setu over Hooghly. The bridge is 20.8 metres wide, with 14.5 metre carriageway and 3 metre footpath. It is supported on 9 Pylons of 36 meter height on pile foundation of 1.5metre diameter. The bridge will be lit by more than 400 LED lights.

Built over river Narmada on NH-8 in Bharuch, Gujarat, the new Narmada Bridge is a 1.4 km long cable-stayed, extradosed bridge with Dyna-Link Anchor box stay cable system. It is a bridge with longest spans in India. With a total cost of Rs. 380 crores, the project was completed in 34 months and was opened to traffic in March 2017. The 4-lane bridge is part of six laning of Ahmedabad-Mumbai section of NH-8.

Key Highlights

- This bridge enhances the business activities and development in South Gujarat and Ahmedabad-Mumbai section of Golden Quadrilateral in particular.
- The bridge is 20.8 meters wide, with 14.5-meter carriageway and 3-meter footpaths. It is supported on 9 Pylons of 36-meter height on pile foundation of 1.5-meter diameter. The bridge has more than 400 LED lights.
- This section of NH-8 has State of the Art Highway Traffic Management System (HTMS), Variable Message Sign Boards, Median Plantation, Traffic Aid Post, Medical Aid Post, RFID and Smart Card Swapping enabled infrastructure at the Toll Plaza and Theme Lighting on the main bridge.

VARANASI RING ROAD

The 4 lane Varanasi Ring Road on NH-31 was aimed to address the problem of increasing traffic in the holy city of Varanasi. With the total length of around 60 km and cost of around Rs. 1,615 crores, the greenfield project was split into 3 packages.

- Phase-I of the project which involved the 4-laning of Varanasi bypass, with length of 16.55 km from Harhua to Sandaha was completed in February 2022.
- Package-I of Phase-II with the length of 16.98 km from Rajatalab to Harhua was completed in January 2022.
- Package-II of Phase-II which involves the 4-laning of the NH-29 bypass, with the length of 27.27 km from Sandaha to Revasa is expected to be completed by October 2023.

Salient Features:

- The project includes features such as Traffic Control devices/ Roadside Furniture, Pedestrian Facilities, Median Plantation, Landscaping and Tree Plantation.
- The project includes Ambulance, Traffic Aid Post, Medical Aid Post, Telecom system, & Vehicle Rescue Post.
- The project is also equipped with Rainwater Harvesting System.

Major Advantages:

- Vehicles plying from Madhya Pradesh, Bihar, Mirzapur, Sonbhadra & Chandauli and adjacent district of Bihar can pass to areas of Eastern UP such as Jaunpur, Ghazipur, Ballia & Azamgarh without entering the Varanasi City. Thus, congestion in Varanasi city has been reduced drastically.
- Also, heavy vehicles heading towards Lucknow, Ghazipur, Azamgarh and Gorakhpur can directly move through the Ring Road without having to enter the main city and thereby can considerably reduce traffic congestion in the Varanasi city.
- The project reduces travel time, fuel usage and pollution in the area. It will also provide easier and more convenient access to Sarnath, an important site for Buddhist pilgrimage.

BANIHAL-QUAZIGUND TUNNEL ON NH-44

The Quazigund – Banihal Tunnel located in Pir Panjal range of Jammu and Kashmir connects Banihal in Jammu region with Quazigund in Kashmir valley. The existing Jawahar Tunnel, commissioned in 1956, has been a bottleneck on the road due to its high elevation of 2194m (7198 ft) and remains closed for weeks in winters due to snow avalanches. Therefore, Quazigund – Banihal Tunnel construction on NH-44 (Old NH-1A) was undertaken as a part of 4 laning of North – South corridor under NHDP Phase – II to provide a sustainable solution.

The new tunnel of 8.45 km length is at an average elevation of 1790 m (5870 ft) i.e., 400 m lower than the existing Jawahar tunnel in elevation, which makes it less prone to avalanches. With the total project length of 16.2 km and the total cost of Rs. 2026.8 crores, the 4 laning project was completed in July 2021.

Key Highlights and Benefits

- The tunnel has reduced the road distance between Banihal and Quazigund by 16 km thereby resulting in saving of fuel and time.
- The twin tubes of tunnel are interconnected by a cross passage every 500 m for maintenance and emergency evacuation. The tunnel also has ventilation for extracting smoke, stale air and infusing fresh air installing different type of dampers.
- This tunnel has state of the art monitoring and control systems for security.
- Considering the challenges of complex geology, difficult terrain condition, thrust zone, ingress of water and a high level of seismicity, New Austrian Tunneling Method (NATM) of sequential excavation and support system was adopted.
- Apart from reducing journey time by approx. 1 Hr and travel distance by approx. 15 km, it will also connect strategic border areas in the UT of J&K. Moreover, implementation of the project would result in development of basic infrastructure in the region which would ultimately lead to overall economic development of the region.

EASTERN PERIPHERAL EXPRESSWAY

India's first smart Expressway Eastern Peripheral Expressway (EPE) is a 135 km long, six-lane expressway passing through the states of Haryana and Uttar Pradesh.

It was built in a record of 500 days at Rs 11,000 crore. The EPE was dedicated to the nation by Hon'ble Prime Minister Shri Narendra Modi on 27th May 2018.

Diverting a significant number of trucks away from Delhi, the EPE is designed to reduce vehicular pollution by 27% ensuring a green, smart, safe and efficient drive for lakhs of commuters.

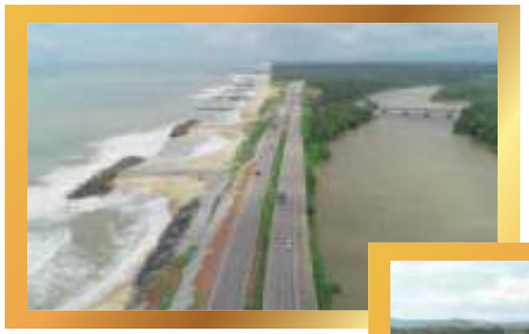
EPE is a fully access-controlled expressway, with its entry and exit through designated toll plazas that are equipped with an electronic toll collection system.

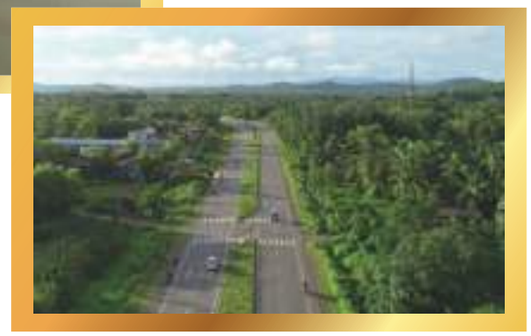
Major Highlights

- Designed as a part of environment friendly and sustainable ecosystem, 2.5 lakh trees planted along the expressway with drip irrigation.
- Rainwater harvesting is provided at every 500-meter on either side.
- Solar-powered lighting all along the corridor.
- It has 406 structures including 50 major and minor bridges.
- The smart expressway features include a proposed highway traffic management system comprising CCTVs, emergency call box, speed sentry warning devices and pavement management.
- As much as 11 lakh tonnes of cement, 1 lakh tonnes of steel, 3.6 crore cum of earthwork out of which 1.2 crore cum of fly-ash was used to construct it.
- Nearly 10,000 people were deployed, and employment opportunities generated was about 50 lakh man-days.
- Weigh-in motion sensors for trucks carrying heavy loads.

GOA/KARNATAKA BORDER TO KUNDAPUR

To upgrade the existing National Highway, NHAI widened the two-lane NH 66 stretch starting from the Goa/ Karnataka border to Kundapur in Karnataka to four-lanes, enabling swift movement of traffic. It is a major highway link for the state connecting Panvel, Maharashtra with Kanyakumari, Tamil Nadu.





Major Links, Major Advantages for the City

- Traversing Karnataka, NH 66 passes through the popular tourist destination of Karwar, Kumta - an important railway station along the Konkan Railway, the port town of Honavar, the commercial centre of Udupi and Mangaluru, a major port city.
- The project alignment is joined by NH 63 from Gooty near Ankola and NH 206 from Tumkur at Honavar.

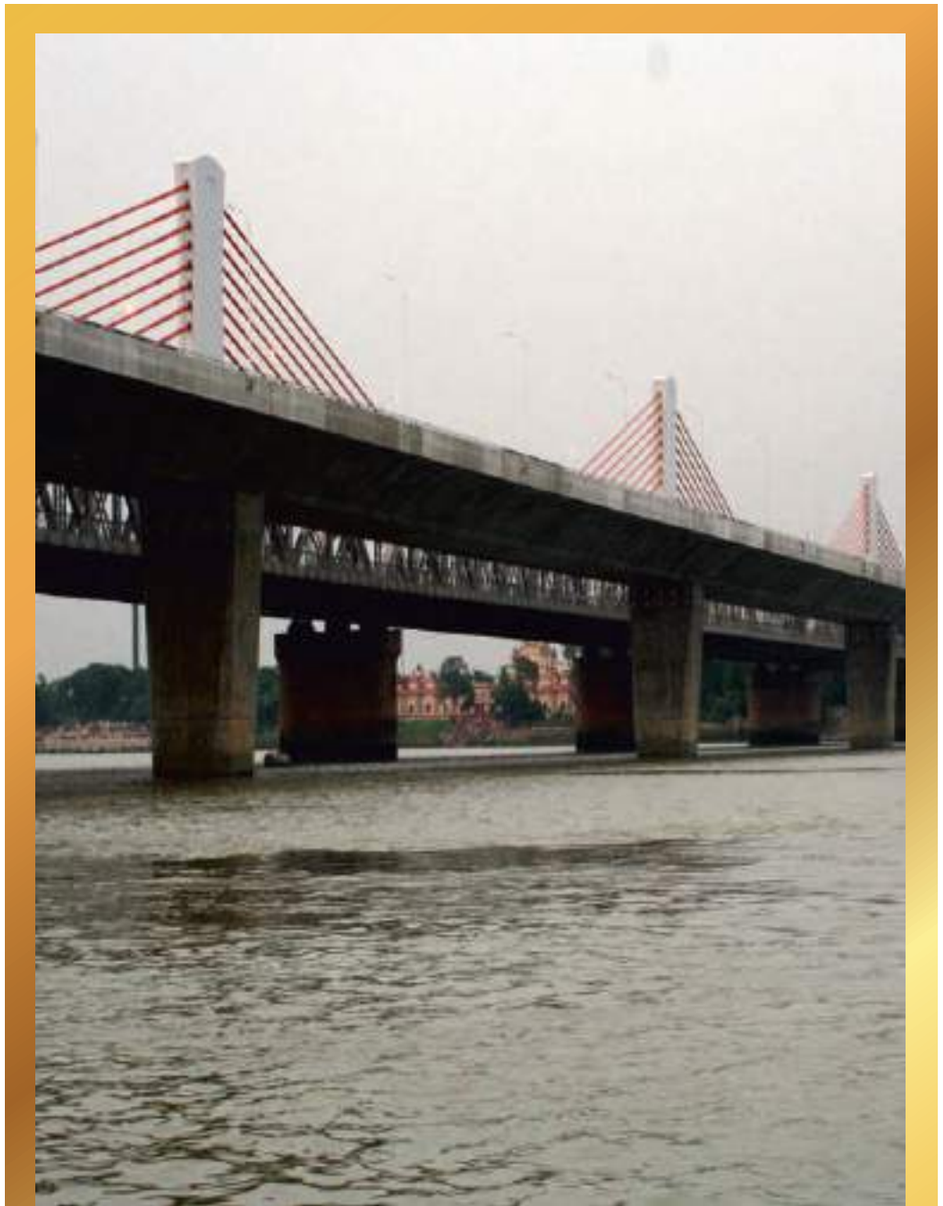
Major Highlights

- The 187 km long 4 lane divided carriageway with 1.5 metre paved, 2 metre earthen shoulders and service road has been upgraded at a cost of around Rs.2639 crore.
- It has 28 major bridges, 59 minor bridges, 644 culverts and 2 roads over bridges.
- It also has one vehicular underpass, 5 light vehicular, 5 cattle and 8 pedestrian underpasses.
- There are also 3 rest areas and 49 bus shelters.

NIVEDITA SETU-
SEAMLESSLY CONNECTING KOLKATA TO HOWRAH

Nivedita Setu over Hooghly River is the first multi-span, single-plane cable supported extra-dosed bridge of India. Completed in 2007, 880 m long six lane with a 2 m shoulder on each side supported by a single plane of stay cables along the median connects Howrah with Kolkata and acts as a gateway to the capital city of Kolkata.

Named after the sister Nivedita, Irish social activist and disciple of Swami Vivekananda, the bridge is an engineering marvel and runs parallel to and around 50 m downstream of the old Vivekananda Setu opened in 1932. The bridge was conferred with 'Award of Excellence' by American Segmental Bridge Institute (ASBI) in 2007 for the technically advanced first ever Bridge built in India.



Major Highlights

- Provides connectivity to Kolkata port from the Golden Quadrangle.
- Reduces travel time between northern metropolitan areas and the western bank of Hooghly.
- Does not hinder the view of one of the most revered religious centers of Kolkata, Dakshineswar Kali Temple.
- The Highway Traffic Management Services (HTMS) of the Setu ensures a safe, smooth, and comfortable journey.
- Four gantry boards display the current traffic condition and other information to the users.
- 12 emergency call boxes provide necessary assistance to the commuters.
- The toll way under the CCTV Surveillance system is patrolled by special HTMS vehicles.

DELHI-GURGAON EXPRESSWAY ON NH-8- MILES IN MINUTES

NHAI developed a section of NH-8 connecting Delhi and Gurgaon into an access controlled eight/six lane highway, to decongest the traffic moving between national capital Delhi and Gurgaon, Haryana. The project is a part of the Golden Quadrangle and was completed in August 2009. It was designed to enable an uninterrupted traffic by elevating the access-controlled lanes at major intersections.

Major Highlights

The 27.7 km expressway project was implemented on Build, Operate and Transfer (BOT) basis with a negative grant of Rs 61.06 Cr to NHAI and was taken up in the year 2002.

Salient Features:

- Project included construction of 9 flyovers, 4 pedestrian underpasses, 8 Foot Over Bridges.
- To provide further convenience, construction of a Flyover and an Underpass was taken up at Hero Honda Chowk in October 2014.
- To provide more relief to commuters traveling on NH-8 as well as to decongest Delhi-Gurgaon Expressway, NHAI had taken up improvement of junctions at IFFCO Chowk, Signature Tower, and Rajeev Chowk, on NH-8 (new NH-48), which involved construction of Underpasses at Signature Tower, Rajeev Chowk, and Medanta Road.
- Going further to ease the traffic movement, improvement of junction at Dhaula Kuan was taken up which involved the construction of 2 Underpasses, 2 Flyovers, and 1 FOB.
- Construction of Grade Separated 4-lane U-Turn on NH-8 near Ambience Mall and Grade Separated 3-lane U-Turn near DLF Phase II in Gurugram was undertaken in 2018.
- NH-48 has been catering to the intra city as well as inter city traffic of Delhi NCR Region with new infrastructure facilities commissioned such as Medanta Underpass, Maharana Pratap Flyover in 2019, U-turn at DLF Phase II in 2020 & U-turn at Ambience mall in 2022.
- The project at present includes 12 flyovers, 6 Underpasses, 13 FOBs, 3 Subways, 2 Non-motorized Transport (NMT) Underpasses, 2 Pedestrian Underpasses and 6 refreshment kiosks near FOBs.

CONTRIBUTING TO INDIA'S DEFENCE CAPABILITIES WITH EMERGENCY LANDING FACILITY

A 3 km long Emergency Landing Facility (ELF) has been specially developed as a part newly constructed Gagariya-Bakhasar and Satta-Gandhav section in the state of Rajasthan having total length of 196.97 km and costing of Rs. 765.52 crore. The facility is suitable for the landing of all types of aircraft.

Despite COVID-19 restrictions, NHAI constructed the landing facility in record 19 months. The work commenced in July 2019 was completed in January 2021.

Features of Emergency Landing Facility (ELF)

- The facility will assist the defence forces Army in vigilance and strengthen the infrastructure and will act as an auxiliary base to the regular airbases.
- During normal times, the ELF will be used for the smooth flow of road traffic.
- Apart from the Emergency Landing Facility, three helipads have been constructed as per the requirements of the Armed Forces.
- The ELF has been described as a 'force multiplier' and the government has announced developing more such facilities across the country.
- ELFs will provide a strategic advantage to the defence forces as they can serve as additional airbases during emergencies allowing fighter aircraft to land and take off at a short notice.

FOUR LANE

NH CONNECTIVITY TO INTERNATIONAL CONTAINER TRANSHIPMENT TERMINAL (ICTT) POINT AT VALLARPADAM

To build an ICTT point at Vallarpadam, the Cochin Port Trust entered into an agreement with Dubai Port. As per the agreement, road and rail connectivity were to be provided to the ICTT. Later the road was declared as NH-47C (New NH-966A) and was entrusted to NHAI by the Government of India.

The Kalamassery-Vallarpadam road is entirely a new road of length 17.1 km, starting from NH-47 (New No. 544) at Kalamassery and ending at ICTT Vallarpadam. This is a major road connecting NH-544 (Old NH 47) and NH-66 to the International Container Transship Terminal (ICTT) at Vallarpadam.

The road passes through land area for a length of 8.4 km and then through the back waters of Cochin in reclaimed land for a length of 8.7 km.

Key Highlights

- The project includes the construction of 11 major bridges, 1 minor bridge, 1 toll plaza, 2 flyover, 5 pedestrian underpasses and a 4-lane divided carriage way with flexible pavement on the entire project highway (except toll plaza length and junctions).

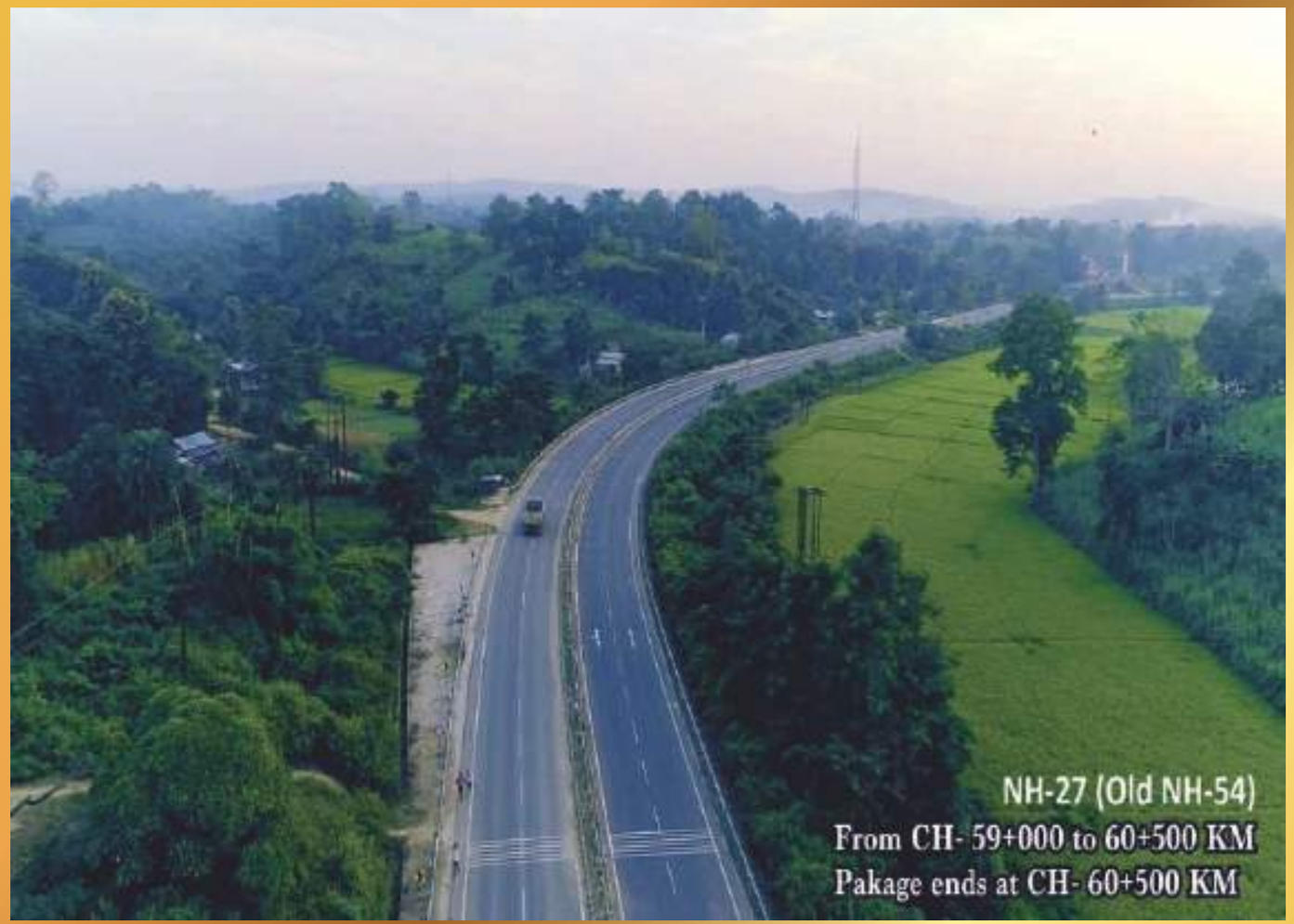
Benefits

This project uplifts all commercial and economical activities in Kochi, the commercial capital of Kerala which suffered earlier due to heavy water logging and disrupting businesses for a prolonged period.

UDALI-LUMDING
NATIONAL HIGHWAY
PRESERVING THE WILDLIFE.
PROTECTING THE NATURE.

The 4-lane National Highway from Udali to Lumding in Assam is a sparkling example of NHAI's commitment towards protecting the environment and wildlife, particularly the elephant. Built on difficult terrain, it is also a testament to NHAI's engineering prowess.

Starting from Udali, the highway stretch ends at Harangajao passing through hilly terrain and reserve forests that includes the Lungting Mopa Reserve Forest, the Hatikhali Reserve Forest and bisects the Lumding Reserve Forest which is a part of the Dhansiri Lumding Elephant Reserve. Udali-Lumding section has been developed under the National Highways Development Project (NHDP) Phase II. Being part of the East-West Corridor connecting Porbandar in west India with Silchar in the northeast, the 20.500 km long project was completed in 2019 at a cost of Rs. 198.68 Cr.



Helping Humans and Wildlife Alike –

- Facilitates the free movement of elephants to and from the elephant corridor.
- As mitigation measure, to avoid animal-human clash, three major bridges cum underpasses of 480 mtr. length were made exclusively for the elephants.
- Two additional spans of 6 meter each on either side of the 10 meter structure with a vertical clearance of 6 meter have also been provided to facilitate the movement of wild animals.
- Includes 1.5-meter-high opaque barricades from the finished road level for the prevention of light during night-time in the viaduct.
- The strategically significant highway has connectivity with the neighboring states of Mizoram, Nagaland, Tripura, Manipur & Meghalaya.
- Reduces the travel time and facilitates an increase in traffic volumes.

FOUR LANING OF GUNA-BIAORA SECTION

The Rs. 1,012.90 crore project with a total length of 93.5 km in the state of Madhya Pradesh on NH 3 provides connectivity from Mumbai to New Delhi through NH-46.

Major Highlights

- The project expedited the improvement of infrastructure in Madhya Pradesh and reduced the time and cost of travel for heavy traffic, plying between Guna-Biaora section which are major cities of Madhya Pradesh.
- The project has contributed in uplifting the socio-economic condition of the local populace of the state and has increased the employment potential for local people of the region.

SIX LANE

ACCESS CONTROLLED GREENFIELD PROJECT BETWEEN ISMAILABAD (GANGHERI) AND NARNAUL ON NH-152D

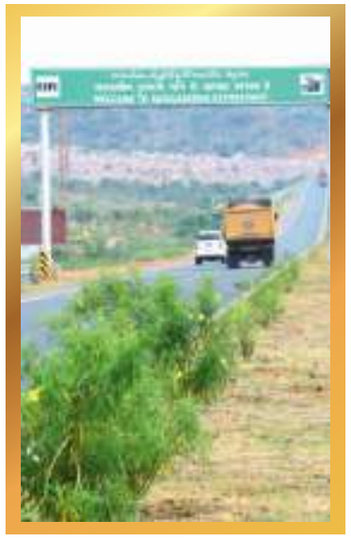
The 227 km long project includes the development of 6-lane access control Greenfield Highway on NH-152D between Ismailabad (Gangheri) and Narnaul in the state of Haryana. The project is a part of Ambala-Kotputli Economic Corridor passing through 8 different districts in Haryana State. It is further connected with Narnaul bypass and then to NH-148B, meeting Delhi-Jaipur Expressway at Paniyala near Kotputli. The project was completed in 8 packages at a cost of around Rs. 9473 crores in May 2022.

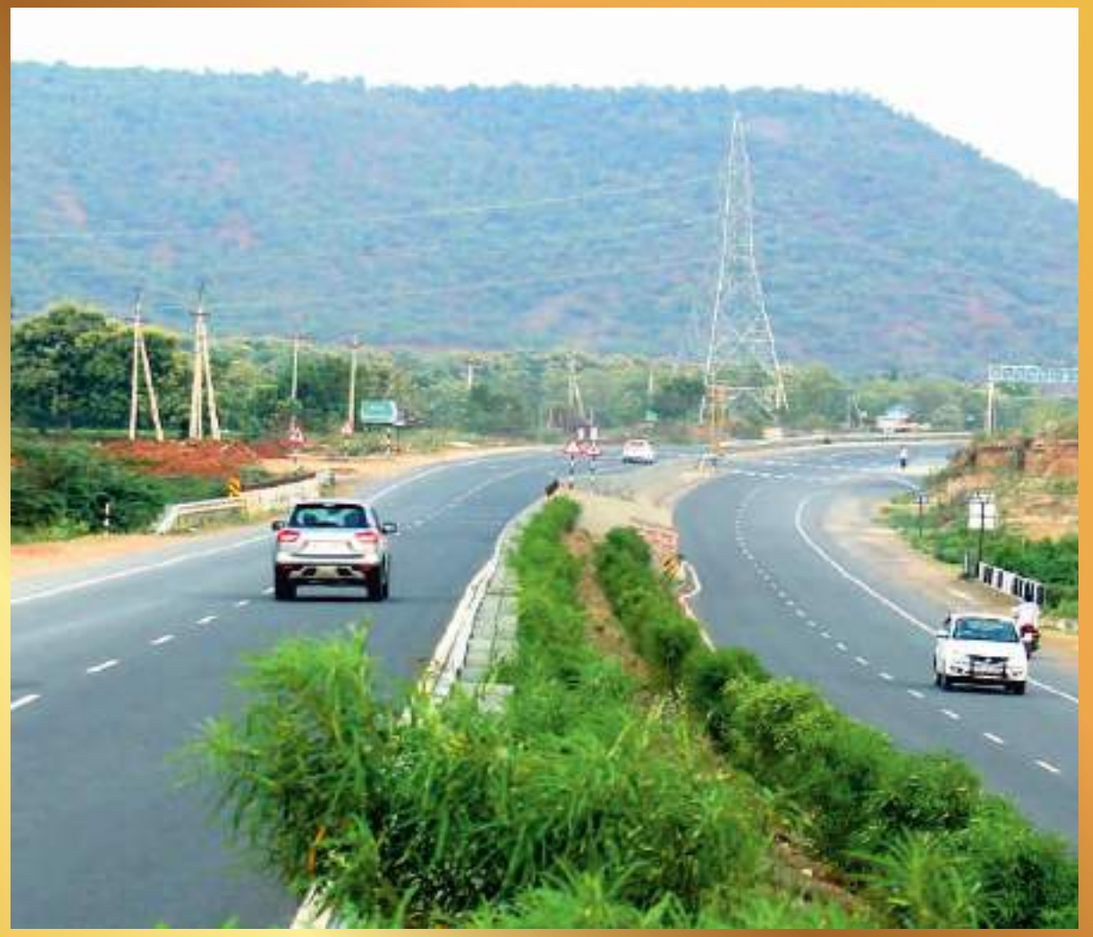
Major Highlights

- It has reduced distance between Ambala and Kotputli by about 50 km and has reduced the travel time by 4 to 5 hours leading to pollution reduction.
- Provides seamless connectivity between Chandigarh and Northern part of India to Southern districts of Haryana and to Rajasthan, Gujarat, and Maharashtra.
- The construction of NH-152D has reduced the traffic load on NH-1 and NH-8 and its connectivity to various multimodal nodal points identified under PM Gatishakti viz. Ambala Rohtak, Rewari, Neemrana Industrial Hub and Logistics Park constructed at Nangal Chaudhary paves the way for holistic development of the entire region.
- Further, the connectivity with Delhi-Vadodara Expressway has also been provided through Paniyala-Alwar-Barodameo inter-corridor Greenfield Connectivity.
- 6 world class Way Side Amenities are aimed to be developed on NH-152D with facilities like restaurants and dhabas, trauma centers, children parks, toilet block, fuel station, truck and trailer parking etc.
- Equipped with Advance Traffic Management System, digital surveillance and incidence reporting and monitoring through Traffic Monitoring Camera System (provided at every kilometer), Video Incident Detection System (provided at every entry/exit point), and Radar based Vehicle Speed Detection System (provided at every 10 km interval).
- Since the terrain primarily consist of sandy loam or similar soils in embankment, which is prone to erosion, special nature friendly Slope Protections Measures with use of combinations of Vetiver & Bermuda Grass, coir matting and seedings and Geo-cell concreting have been adopted.
- 16 Major Interchanges with landscaping
- A Steel Truss Bridge has been constructed over Rajound Distributary with aesthetically appealing look and fast construction methodology
- Rainwater Harvesting structures constructed at every 500 m to recharge the ground water.

KADAPA KURNOOL
NATIONAL HIGHWAY
A MAJOR LINK FOR ANDHRA PRADESH

The 189 km long 4-lane Kadapa-Kurnool National Highway is an important link for Andhra Pradesh connecting the two major districts of Kadapa and Kurnool. Developed at a cost of Rs. 1,585 crore, the National Highway is a part of National Highway Development Project.





Salient Features

- The highway connects Kadapa, an industrial and mining district with Kurnool- considered the "Gateway of Rayalaseema" that comprises the four southern districts of Anantapur, Chittoor, Kadapa and Kurnool in Andhra Pradesh.
- Part of National Highway 40, it also links Tirupati and Telangana, Maharashtra and the rest of India through the North-South Corridor. The road meets the North-South corridor at Kurnool. National Highway 40 originated at Kurnool and passes through Kadapa and Chittoor terminating at Ranipet in Tamil Nadu.
- The project comprises 5 major bridges, 4 toll plazas and 9 different bypasses of varied lengths.

Promoting Tourism and Local Economy

Kadapa is rich in minerals and is an important economic and agricultural centre in Andhra Pradesh. it is also a tourism centre known for famous tourist attractions like the Kodanda Ramaswamy Temple and Nandalur- the Buddhist centre in Rayalaseema. It is also home to the Sidhout Fort and Gandikota Fort.

Kurnool is also an important economic and tourism centre. Among the major attractions are the Srisailam temple and the Mahanandiswara temple in Mahanandi mandal.

HAZARIBAGH-RANCHI EXPRESSWAY

Known as Jharkhand's Lifeline, the 4-lane Hazaribagh-Ranchi section of National Highway 33 was developed under the National Highways Development Project (NHDP), Phase III in the state of Jharkhand.

The section starts from the mineral-rich city of Hazaribagh extending up to state capital Ranchi while passing through the important towns of Ramgarh, Kujju, Mandu and Ormanhji. It is part of 352 km long National Highway 33 which traverses the length of Jharkhand connecting Bihar via Ranchi and the industrial town of Jamshedpur.

The National Highway is bound to the north by NH-2, which provides connectivity to New Delhi and Kolkata, and the south by NH-6 which provides connectivity to Raipur, Nagpur, and Surat.

Major Highlights

- Connecting the three neighbouring states of West Bengal, Bihar and Odisha,
- The highway is a fulcrum of goods movement from the state.
- Besides coal, the highway ensures rapid transport of other minerals including mica and copper thereby playing an important role in the economic development of Jharkhand.
- Besides the economic importance, the highway enabling linkage to backward areas also contributes towards social development.
- Ensuring easy access to urban centres, the highway has resulted in uplifting the rural economy.
- Majorly contributes towards tourism in the state. It passes through Rajrappa which is a Hindu pilgrimage centre attracting thousands of pilgrims annually. It is home to the Chhinnamasta temple dedicated to Goddess Chinnamasta, the headless deity who is a form of Goddess Durga. It is one of the Shakti Peeth temples in the country.
- Another attraction is the Rajrappa waterfalls which is at the confluence of the Bhairavi and Damodar rivers.

PARWANOO–SOLAN STRETCH

The 39.2 km long stretch on NH 5 between two important economic centres of Parwanoo, and Solan in Himachal Pradesh has been upgraded to 4 lane at a cost of around Rs 1,287 crore. Passing through treacherous Himalayan terrain prone to heavy rains and landslides, it has been a challenging project to develop.

Environment, Economy, Society - Threefold Benefit for People –

- Holds immense significance for the local economy through faster transportation of agricultural produce especially for apple cultivation and improved connectivity to neighboring states.
- Reduces travel time between Chandigarh and Shimla by 1 hour 20 minutes facilitating free flow of traffic and reduction in road accidents
- Boost to tourism in Kufri, Shimla, Fagu, Mashobra regions
- Substantially reduces environmental pollution.

Salient Features

- Originating from Ambala, National Highway 5 hold immense economic importance for Haryana, linking it with Punjab and Himachal Pradesh.
- Besides being the main connectivity for apple transportation in the state, it is also a major link to the Indo-Tibet Border.

FOUR LANING OF
BINJABAHAL TO TELEBANI SECTION IN ODHISA

The four laning of 78.3 km long Bijabahal to Telebani stretch on NH 49 in Odisha was completed in May 2022 at a cost of around Rs. 1,161 crore under NHADP Phase IV.

The project included development of existing two-lane highway to four lane configuration. 7 major bridges, 30 minor bridges, 5 flyovers and 1 rest area were developed as a part of the project. The construction of one of the major bridge was a challenge as the location of the Bridge was over back water of Brahmani River.

The main objective of the project was to increase the connectivity of the Project area to the surrounding region and the rest of the country, thereby facilitating an increased market access, locally and nationally. The upgraded stretch will also open up new economic and employment opportunities for the people in the region.

JADCHERLA – KOTHAKOTA – KURNOOL SECTION OF NH-44

National Highway Authority of India is steering ahead with a vision to upgrade and widen the existing national highways to a benchmark for a safer, comfortable and faster journey on the national highway network. One of such landmark project is the Jadcherla – Kothakota – Kurnool section of National Highway-44 (Old NH-7) in Telangana and Andhra Pradesh.

The project has been developed under the National Highways Development Project (NHDP) Phase II and is part of the North-South Corridor which connects Srinagar in Jammu & Kashmir to Kanyakumari in Tamil Nadu including Salem to Cochin (Kerala) spur.

With a length of 2,369 km, the National Highway 44 originates at Varanasi in Uttar Pradesh and terminates at Kanyakumari in Tamil Nadu, connecting important cities of Jabalpur, Nagpur, Hyderabad, Bangalore, Salem and Madhurai. The 55.7 km stretch connects Jadcherla in Mahbubnagar district with Kothakota in Wanaparthy district in the state of Telangana.

With the total cost of Rs..... crores, the section was completed in.....

Major Highlights

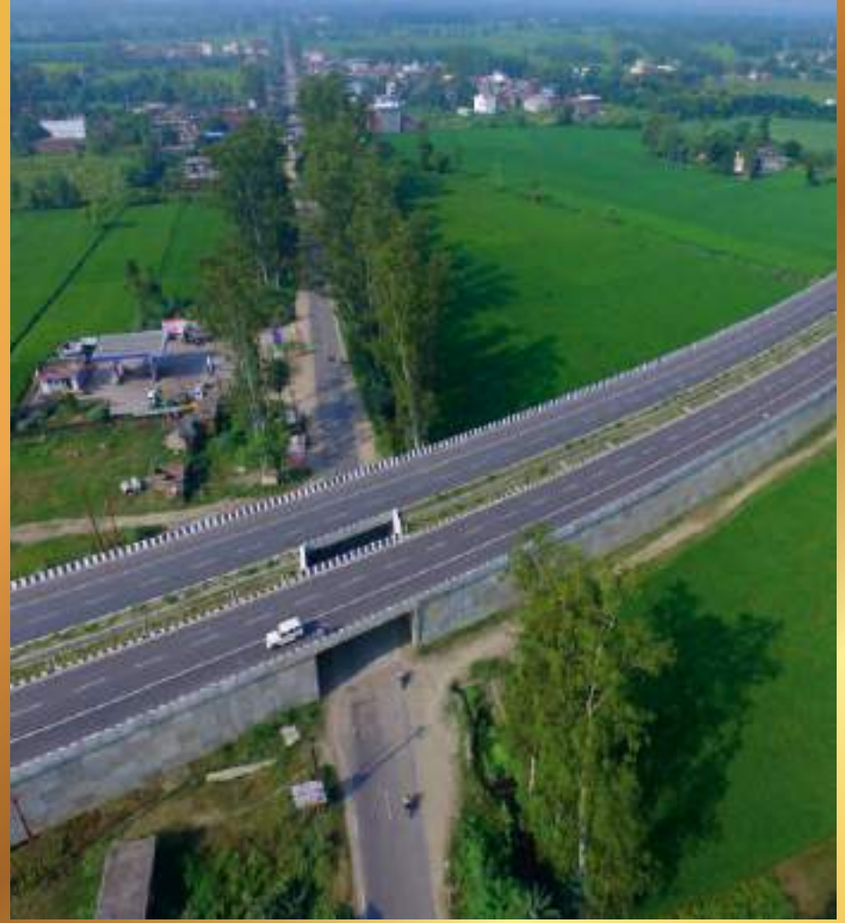
- Comprises 22 minor bridges 5 major bridges, 9 underpasses and 2 flyovers.
- Equipped with Highway Traffic Management Systems that consists of 50 emergency call boxes, CCTV cameras, Messaging Systems and a Radio Communication System.
- Connects Kothakota with Kurnool which is an important economic and tourism center of Andhra Pradesh.
- The project carriageway has a width of 7 m with a design speed of 100kmp and consists of 3 major bridges, 37 minor bridges, nearly 150 culverts., 47 bus shelters and 4 truck lay byes.

KASHIPUR-SITARGANJ HIGHWAY

The Kashipur- Sitarganj section of National Highway 74 (NH74) is of immense value for Uttarakhand, connecting two important cities Kashipur- Sitarganj in the hilly state of North India. The 333 Km long NH 74 connects the holy city of Haridwar in Uttarakhand with the historically important city of Bareilly in Uttar Pradesh.

Developed by National Highways Authority of India (NHAI) under NHDP Phase IV, the four-laned Kashipur- Sitarganj section is critical to the state's economy. Situated in Udham Singh Nagar district, both Kashipur- Sitarganj are important industrial centres of the state. The widening of the highway has sped up the movement of goods between the two cities besides creating an important link to other agriculturally important places like Doraha, Kelakhera, Gadarpur, and Rudrapur.

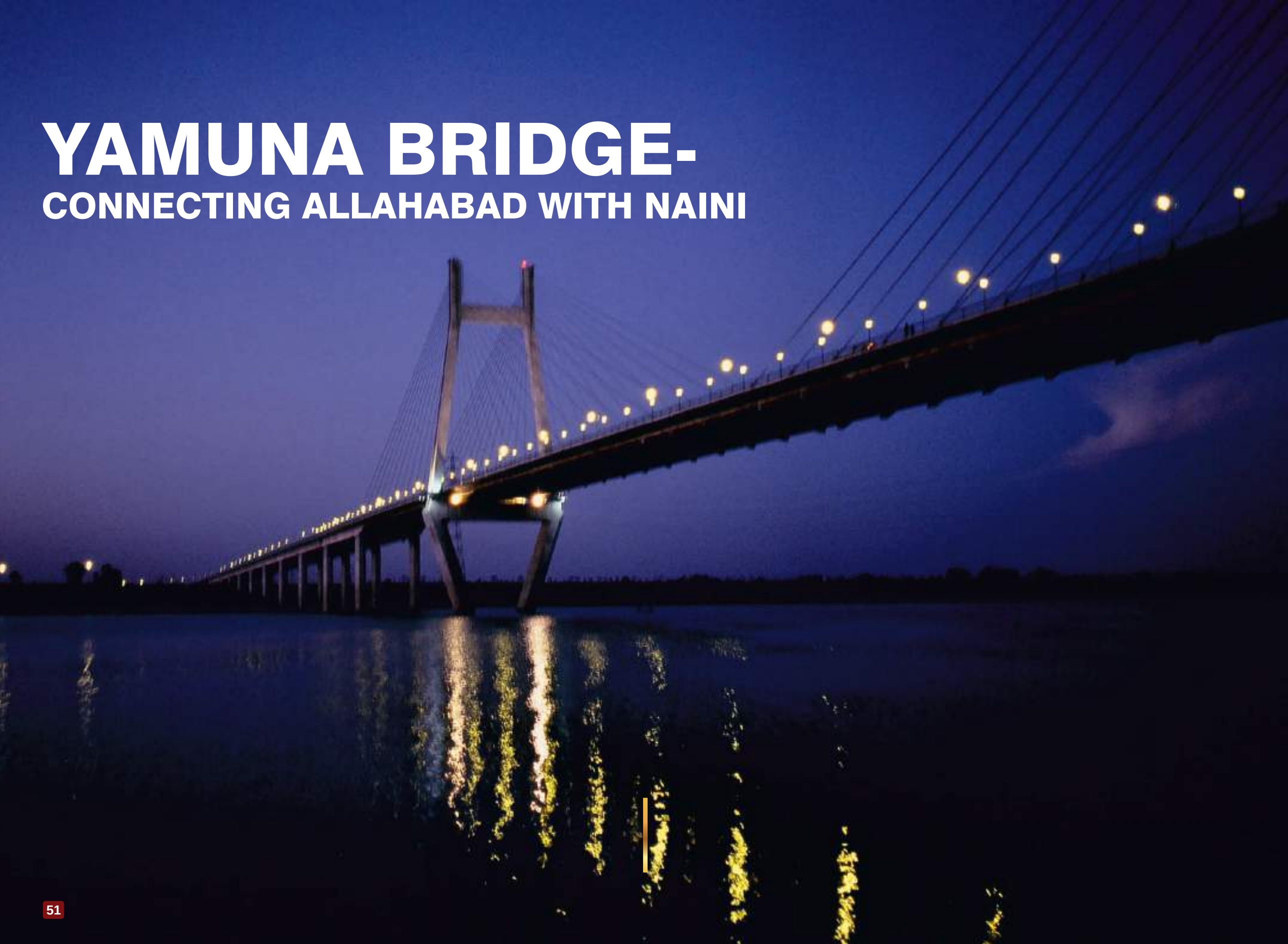
Built at a cost of over Rs 600 crore, the 82 Km long stretch is greatly contributing to the social and economic development of the region. With at least 3 industrial estates and nearly 1000 big and small industrial units within its limits, Kashipur is an important commercial centre for the state. Blessed with fertile and availability of water, it is also agriculturally significant. Apart from rice and wheat, major produce in the region are sugarcane, mango, guava, and litchi.



Major Highlights

- The Kashipur and Sitarganj region accounts for almost 50 % of the medium and large-scale industries in the district with some of the famous corporate having set up their industrial units.
- Facilitated the employment of the unskilled, semi-skilled & skilled manpower of this region and contributed towards enhanced community development.
- Improved the connectivity of this region with Tanakpur-Pithoragarh leading to the Nepal border.
- The highway stretch is also important from a tourism point of view, specially Kashipur, which was part of the ancient city of Govisana. Besides being home to the ruins of Govisana, Kashipur has several tourist attractions including the Drona Sagar Lake, Moteshwar Mahadev Mandir and Gurudwara Shri Nankana Sahib.

YAMUNA BRIDGE-
CONNECTING ALLAHABAD WITH NAINI



The old Naini bridge, constructed in the 19th century in the Prayagraj district was ageing. To improve movement of people and provide relief from chronic congestion, the New Yamuna 4 Lane Bridge was designed. Amongst India's longest cable-stayed bridges built over Yamuna River, it connects the holy city of Sangam, Prayagraj with its twin city Naini. An engineering marvel, the New Yamuna Bridge was constructed in 2004 and reduced the travel time from Prayagraj to Naini, a distance of 4.7 km to just 5 minutes.

Major Highlights

- The 1,510-meter-long bridge has an approach road of about 3.8 km.
- The bridge is located on the National Highway 19, which is a part of the Golden Quadrilateral - backbone of India's Highway Infrastructure.
- The slender cable-stayed deck and the high pylons lend inherent aesthetic excellence.
- Weather observation devices are set at 7 positions on the bridge and are monitored 24 hours from the observation equipment control room in the toll booth control building.

JAMMU-UDHAMPUR STRETCH OF NH 44

Passing through the lofty mountain terrains, the 64 km long 4-lane Jammu Udhampur Highway is a part of NH–44 that connects the cities of Jammu and Udhampur. Project was completed in 2019 at a cost of Rs. 1973.50 crore.

By introduction of 04 tunnels and 22 Viaducts for curve improvements, travel time between Jammu to Udhampur reduced from 3 hours to 1 hour ensuring safer travel and reduction in accidents/fatalities.

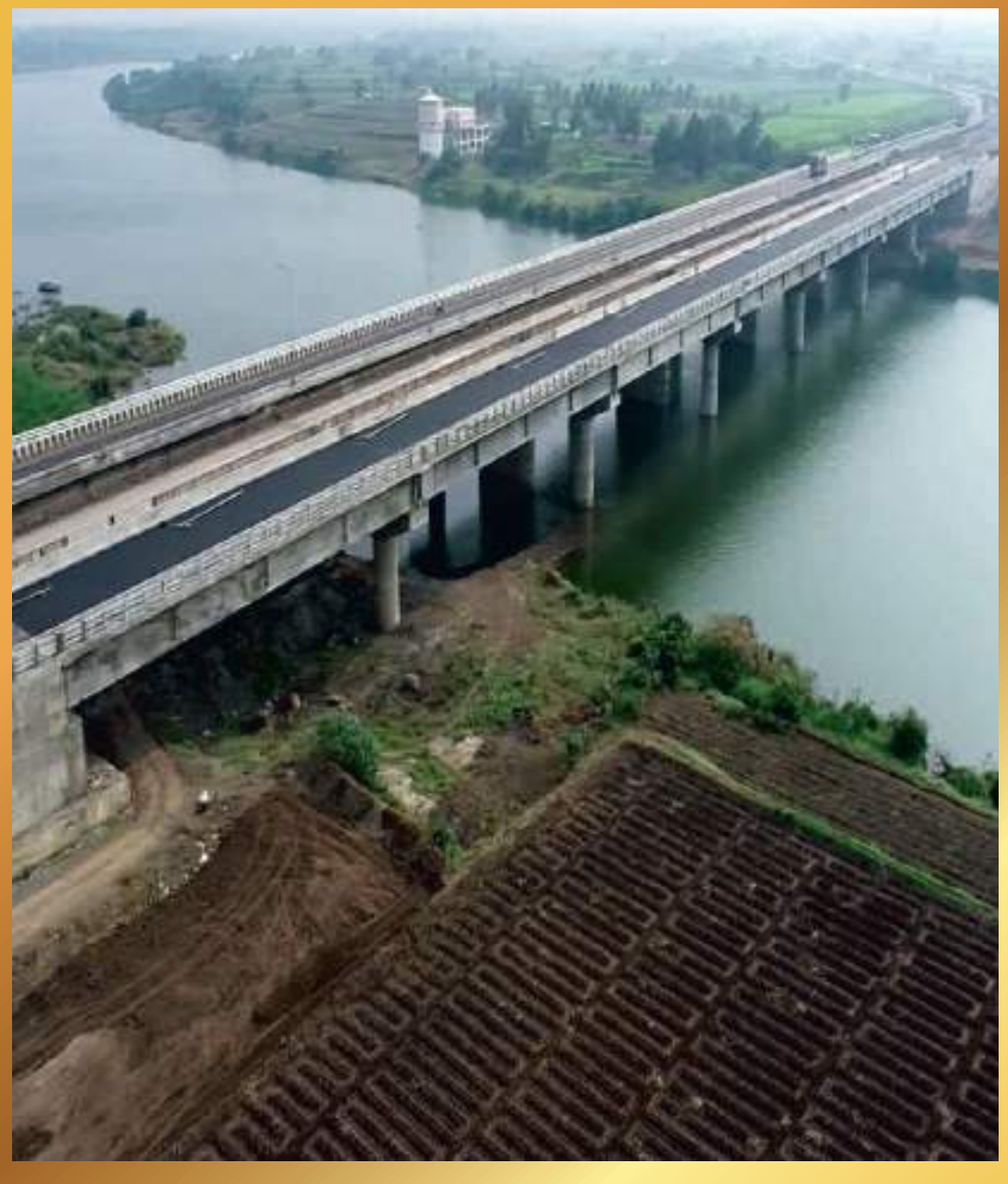
Connectivity and Ease for People

- Traversing through Jammu and Udhampur, the project provides benefits to not only the people of these two cities but those of adjoining areas too.
- The highway connects to one of the major holy centers, Mata Vaishno Devi Shrine.
- It also provides faster and improved connectivity to strategic Northern Command of Indian Army stationed at Udhampur.

FOUR LANING OF SOLAPUR TO BIJAPUR SECTION OF NH-13

The 109 km long four laning of Solapur to Bijapur section of NH-13, which connects the districts of Solapur in Maharashtra and Bijapur in Karnataka. The project has been developed at a cost of Rs.1,576.79 Cr. And completed in April 2022. The project focused on expediting improvement of infrastructure in the two states, reduced the travel time and made travel more economical by saving fuel on the Solapur-Bijapur sector.

The development of this stretch helped in uplifting the socio-economic condition of the concerned regions in the states and increased the employment opportunities for the people of the region.



Featured in the **"LIMCA Book of Records"** and the **"Asia Book of Records"** project came in the news when the record-breaking laying of bituminous concrete for an equivalent length of 26.82 km lane was completed in 20 hours. The achievement not only entered the "LIMCA Book of Records" but transcribed the project name in the "Asia Book of Records" too.

State-of-the-art Infrastructure

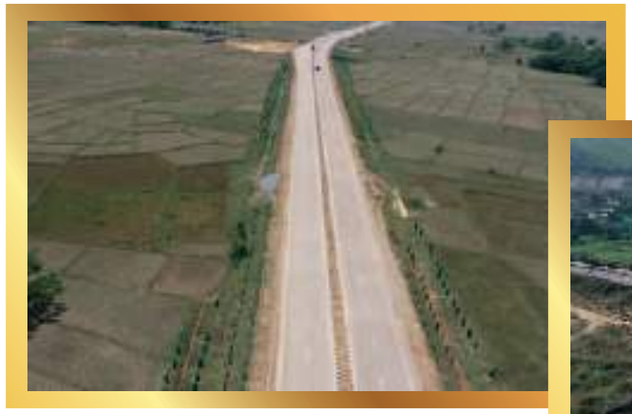
- Construction of Railway Over Bridge at Solapur Bypass with the longest span of 60 meter steel I-girders under the central railways.
- A unique design of trumpet interchange with integration of 4 roundabouts to seamlessly channelize service road traffic and main carriageway between NH-65 and NH-52.
- Project involved construction of 4 major bridges, 35 minor bridges, 6 inter changes/flyovers, 2 Rail Over Bridges, 10 vehicular underpasses and 21 km long Solapur Bypass.

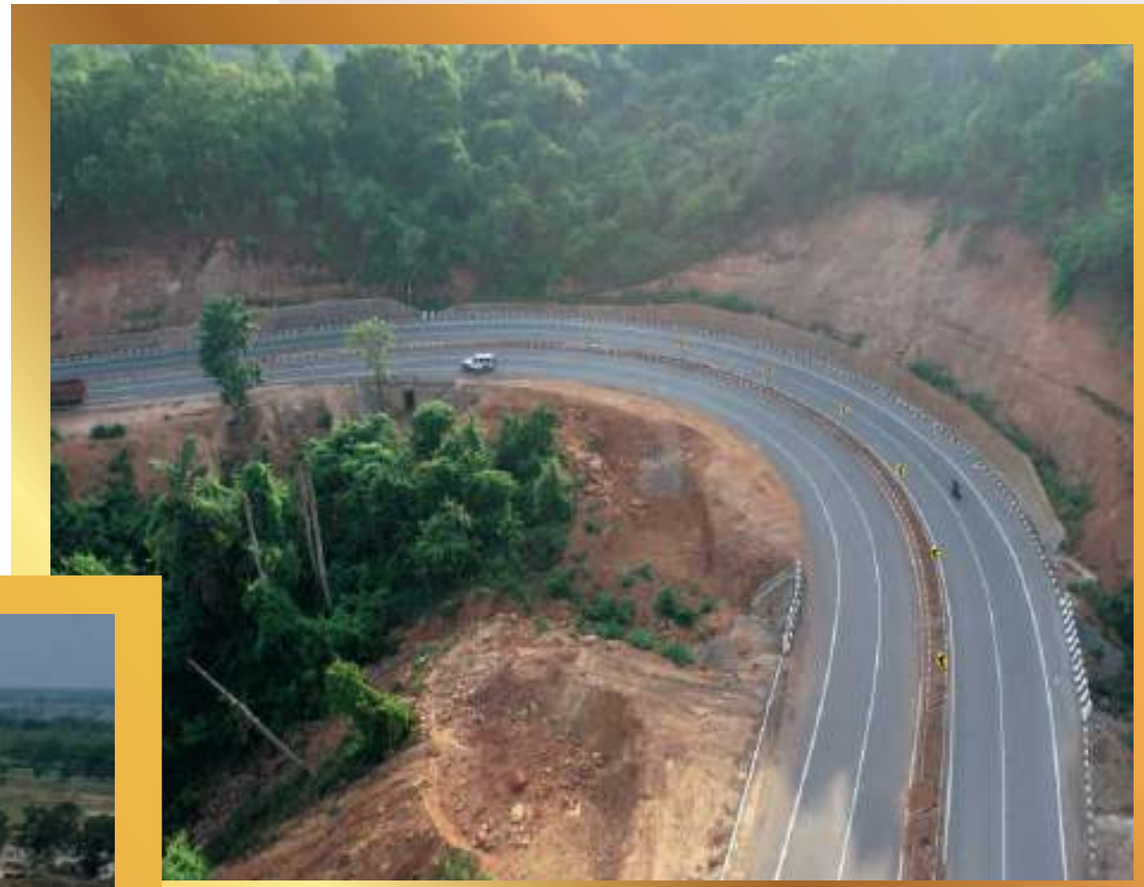
FOUR LANING OF SINGHARA - BINJHABAHAL SECTION IN ODISHA

The four laning of 101.7 km long Singhara- Binjhabahal Section of NH-49 in Odisha was completed in April 2022 at a cost of Rs. 1,405 crore.

The upgradation of the stretch consists of major structures like 4 bridges, 13 minor bridges, 1 Rail Over B, viaduct, 1 VUP, 1 flyover along with two ghat sections namely Kanjipani and Judia.

Out of these structures, construction of one major bridge Baitarani was of prime importance as it is main route of connectivity between the two districts of Keonjhar and Mayrubhanj.





The Major Challenge

Construction of Baitarani bridge was a challenging task as the bridge required construction of 81 Pile and construction was difficult considering the prevailing Hard rock Profile & continuous rainfall during the monsoon in this region.

Resolved the Frequent Hinderances

By successfully completing this bridge, the frequent problem of overflow of water over the existing bridge during heavy rainfalls as well as heavy traffic blockage on both sides due to narrow bridge has been resolved. This has resulted in enhanced connectivity between two major districts of Keonjhar and Mayurbhanj.

FOUR LANING OF
SANGAREDDY – NANDED – AKOLA (SNA)
SECTION OF NH-161

4-laning of 135km long Sangareddy – Nanded – Akola (SNA) section of NH-161 as part of Indore – Hyderabad Economic Corridor under Bharatmala Pariyojana in the state of Telangana has been taken-up in 3 packages.

Out of this, 2 packages constituting 96 km length worth Rs.2,926 crores have been completed in 2021,which will stimulate Socio-Economic development of the region covered under Sangareddy, Medak and Kamareddy districts of Telangana State. The project apart from providing seamless, faster freight transport between Telangana and Maharashtra states to further economic activities.

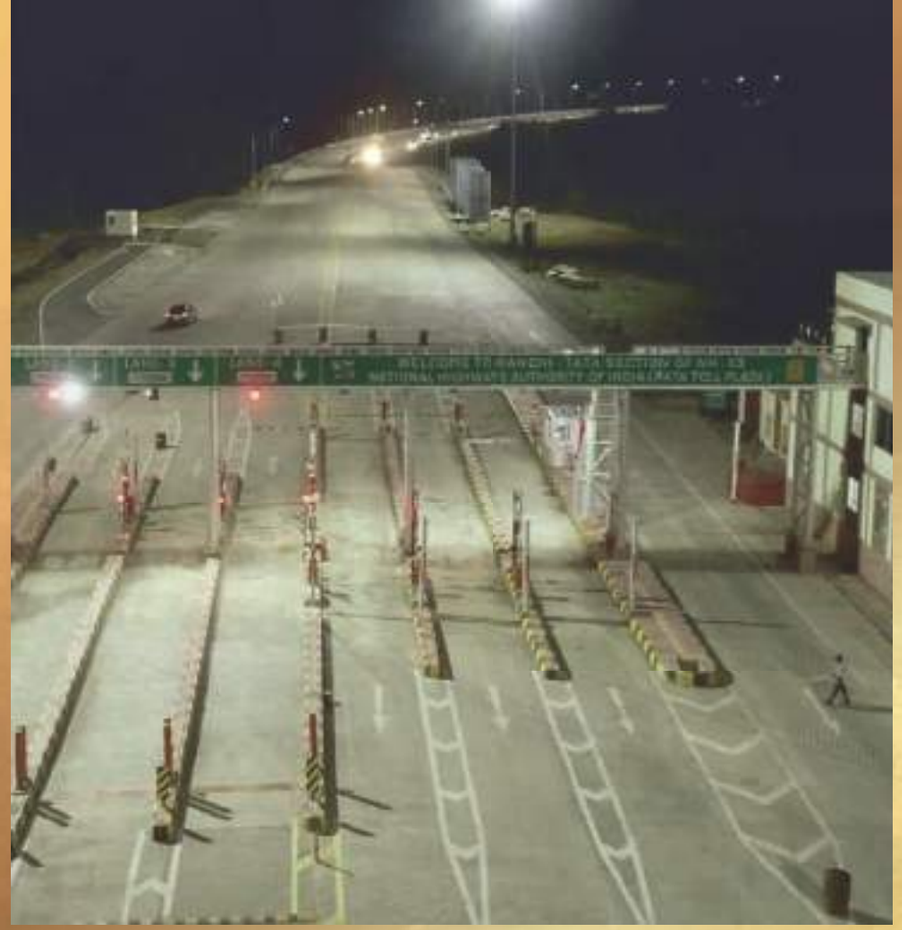
Ranchi-Mahulia Section of NH-33

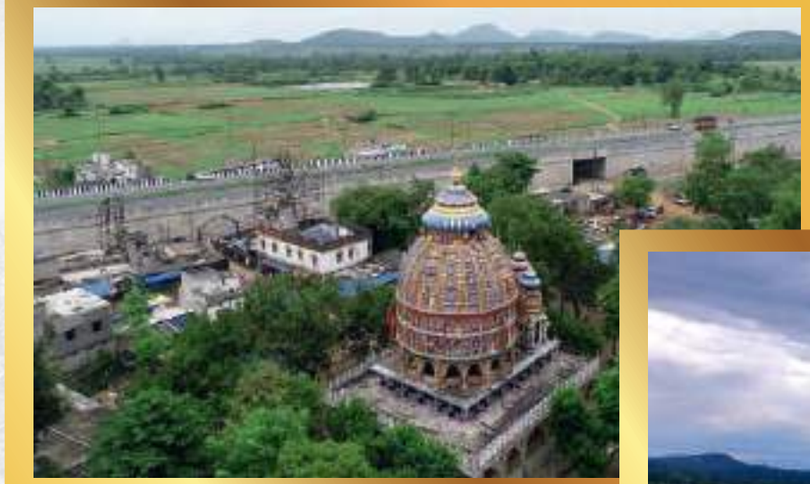
The 163.5 kms four-lane widening of Ranchi to Mahulia section of NH 33 in Jharkhand is developed at a total cost is about Rs. 1,800 crore under Bharatmala Pariyojna and NHDP Phase-III.

The project commenced in December 2012 on BOT Annuity basis and due to delay in implementation, it was terminated. It was decided to carry out the construction work in EPC mode by dividing the project into four packages. Package-II, III has been completed & Package-IV is on the verge of completion.

The project involves construction of 233 culverts, 43 minor bridge, 5 major bridge, 05 Elephant under pass, 13 vehicle under pass, 3 railway over bridge and around 20 kms drains.

A wall bridge has been constructed on the Swarnarekha river, which is called the lifeline of Jharkhand, and will make the travelling to Dalma Wildlife Sanctuary and Chandil Dam even more convenient.





Enhancing Connectivity:

- This highway provides connectivity of industrial city of Jamshedpur with Ranchi.
- It also provides connectivity of Ranchi to Odisha and West Bengal. This stretch is an important link in providing interconnectivity between NH-02 (Delhi-Kolkata) Corridor and NH-06 (Mumbai-Kolkata).
- Four laning of the stretch will reduce the travel time between Ranchi and Jamshedpur substantially and thereby reduce the travel time between many important industrial and commercial areas of Jharkhand and Odisha State.

PORBANDAR TO DWARKA: ACCELERATING PROGRESS WITH A WORLD-CLASS NATIONAL HIGHWAY

Spanning 118 km, the 4-lane all-concrete Porbandar-Dwarka stretch of NH 51 runs parallel to the Arabian Sea and is a strategically important highway. Built with a cost of around Rs.1,958.88 crore under NHDP Phase IV, the highway is a vital road link for Gujarat that connects Dwarka with Porbandar.

Dwarka is one of four sacred Hindu pilgrimage sites. it is also considered to be the ancient kingdom associated with Lord Krishna and home to prominent temples including the Dwarakadhisa Temple.

Whereas Porbandar is the birthplace of Mahatma Gandhi, and home to some famous temples and places of historical importance. It attracts many tourists annually.

The picturesque Porbandar-Dwarka section is part of 551 km long National Highway 51, which runs through Gujarat originating in Narka and connecting Porbandar, Somnath, Una, Bhavnagar, Dharangadhara and ending in Kuda.

Advantages to the Region:

- The project is designed to reduce the time and cost of travel for traffic, logistics, and heavy vehicles between the Porbandar-Dwarka section.
- The development will also help in uplifting the socio-economic condition of this region in the state.
- It shall also help to increase employment opportunities besides boosting tourism and other economic activities.

KAMAKHYANAGAR BYPASS TO DUBURI IN ODISHA

The 51 km long Kamakhyanagar Bypass to Duburi section of NH 53 in Odisha was constructed at a cost of around Rs. 479.27 crore under NHDP Phase III. The highway was upgraded from two lane to four lane with paved shoulder and was dedicated to the nation in October 2021.

The project includes two major bridges, 11 minor bridges, two major intersections, six vehicular underpass and two animal underpasses.

Advantage to the region

The project connects two major industrial areas i.e., Duburi and Talcher. Steel plants and cement factories are present at Duburi. Also, coal mines and thermal power plants are present at Talcher which is located 45 km distant from Kamakhyanagar. Further, the highway is also a part of NH-53 which connects to Paradip Port. A 1.73 km bypass is also constructed to avoid the heavy market area and traffic congestion at Bhuban. By avoiding the market area, traffic congestion has been minimized and safety of the highway users have been enhanced.

Conservating Nature and wildlife

Two Animal Underpass of size 160m (8X20m span) & 80m (4X20m span) have been constructed with an objective to protect wildlife in general and endangered species. The underpasses will help in avoiding man-animal conflict by ensuring smooth highway crossings for animals and will also help in prevention of wildlife related crimes.

For environment conservation, plastic waste has been used to construct 3 km of Service Road. Also, approximately nine Lakhs cubic meter of Fly-ash/Pond ash has been used for construction of embankment of Project Highway.

FOUR LANING OF
BAR-BILARA-JODHPUR SECTION IN RAJASTHAN

The 110 km long four laning with paved shoulder of Bar-Bilara-Jodhpur Section of NH-112 in Rajasthan was completed in May 2022 at a cost of around Rs. 649 Crore. The section starts from Bar village (near Beawar) and ends at Banar, Jodhpur city connecting western Rajasthan and border areas (Jodhpur-Jaisalmer-Barmer) to eastern part of Rajasthan i.e., Ajmer and Jaipur.

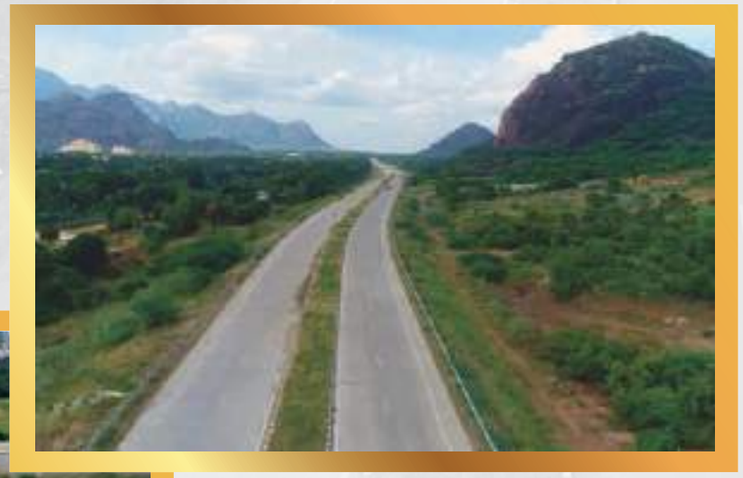
This is a major strategic route connecting Jodhpur, which has major military establishments, as an important feeder route during war times.

Providing Smooth Connectivity:

- Four laning of the section facilitates smooth flow of military traffic as well as heavy commercial and domestic traffic.
- It also facilitates transportation of mining and agricultural products.
- Minimization of expansion joints at major Bridges on the stretch has ensured the achievement of excellent riding quality.

FOUR LANING OF NAGERCOIL TO KAVALKINARU SECTION OF NH-944

The four laning of Nagercoil to Kavalkinaru section of NH-944 in the state of Tamil Nadu, was completed in March 2022. The 16.276 km greenfield stretch built at a cost of around Rs 533 crore comes under NHDP Phase-III. Considering the climatic condition of the region, the project is 4-lane with rigid pavement throughout the stretch. The section consists of various structures crossing lakes and rivers i.e., Major bridge, Minor Bridge, Vehicular Under Pass, Pedestrian Under Pass, Vehicular Over Pass.



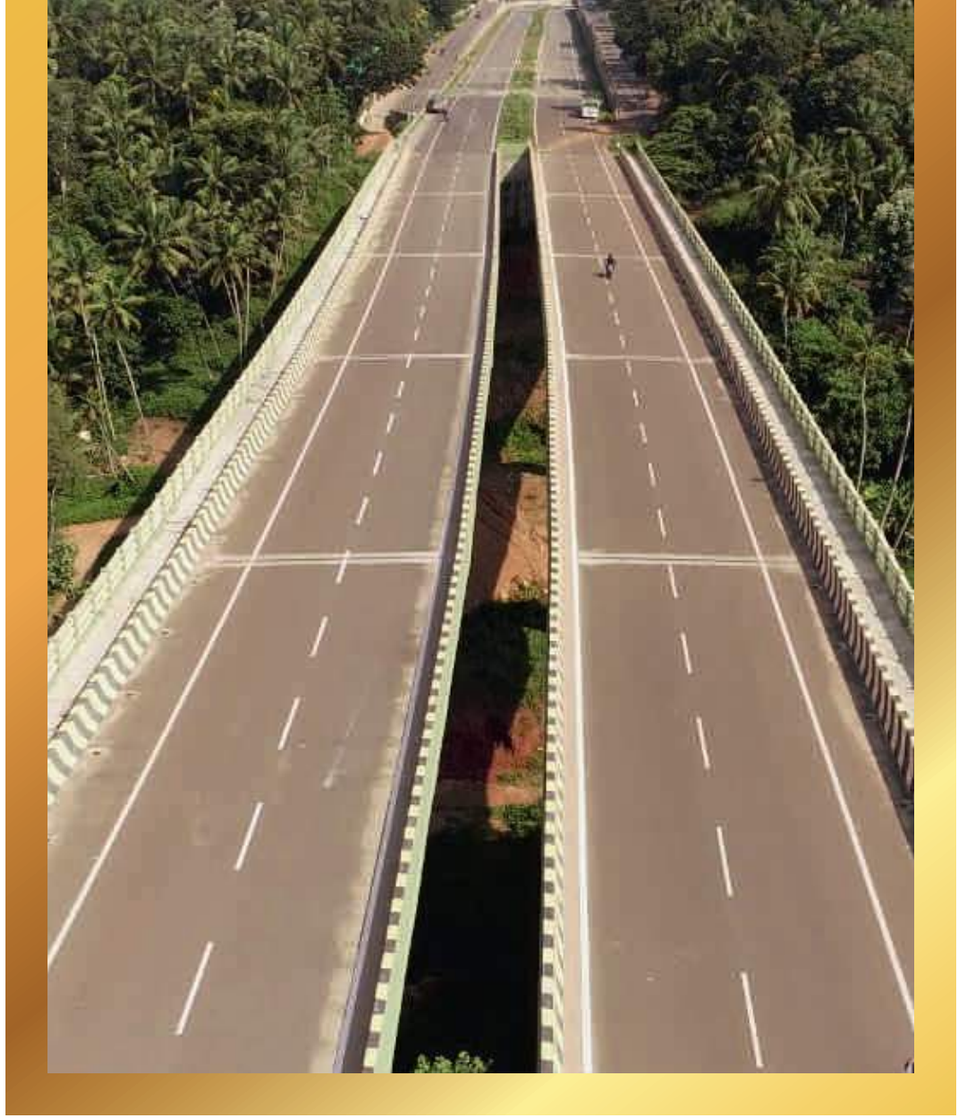
Major Highlights

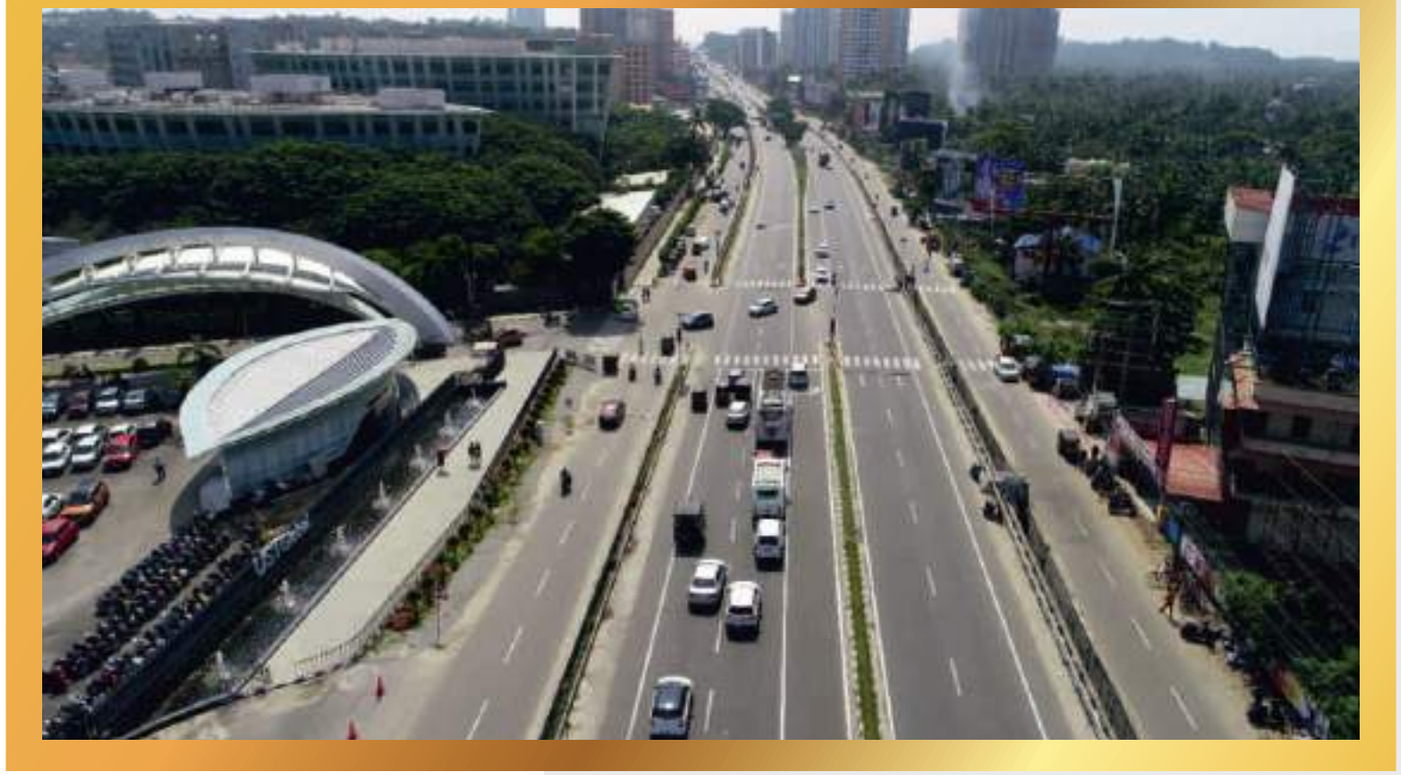
- 1.24 Km length of service road is constructed by using plastic wastes (wearing course) in order to reduce unwanted disposal of plastic waste in the region.
- The project provides inter-state connectivity, between Tamilnadu and Kerala, providing speedy and safe road connectivity for the pilgrims and tourists visiting religious and tourist places of Thiruvanathapuram, Kanyakumari, Tirunelveli and Madurai.
- The earlier road of NH-47B passing through heavily built-up areas due to which considerable time was taken to travel from Nagercoil town to Kavalkinaru section.
- The new four lane alignment NH-944 reduces travel time and vehicle operating cost. Further, it has facilitated the agricultural, industrial, educational, and economic advancement of the Region.

THIRUVANANTHAPURAM BYPASS OF NH66 - LINKING KERALA'S ECONOMIC & TOURIST CENTERS

The 4-lane Thiruvananthapuram bypass stretches from Kazhakoottam to Mukkola and up to Kerala/Tamil Nadu Border on NH-66. It is an important link for Kerala connecting important economic and tourist centers. The stretch originates from the bypass stretch and traverses through Kerala & Tamil Nadu bypassing Chungankadai, Nagercoil and Suchindram and rejoins the existing National Highway 47.

The Kazhakoottam-Mukola section is crucial for the transport development of Thiruvananthapuram district and has been developed at Rs 669.06 crore with an additional cost of Rs 237.7 crore for several grade separators including a flyover linking the Thiruvananthapuram International Airport.





Major Highlights

- The stretch offers hassle-free connectivity to Thiruvananthapuram airport, Technopark, Kovalam, Akkulam tourist village and Shanghumughom.
- Provides better connectivity to major tourist destinations like Kovalam beach, Veli lake Tourist Village and Shangumugham.
- Devotional centres like Sree Padmanabhaswamy Temple, Attukal Bhagavathy temple, Beemapally dargah shereef and Vettucaud Church are also well connected to the stretch.
- The 4-lane section from Mukkola Junction to Kerala-Tamil Nadu border passes through a mix of plain and rolling terrain through hillocks and deep valleys. This section of the project is developed at a cost of around Rs. 497.08 crore.

JAIPUR-KISHANGARH SECTION OF NH-48

The Jaipur-Kishangarh section, part of the prestigious Delhi-Mumbai Corridor of the Golden Quadrilateral connects important major industrial, agricultural, and cultural centers. Built with a cost of around Rs. 614 crores, the Jaipur-Kishangarh section was completed in a record time of 24 months, which was six months ahead of schedule and was opened to traffic in May 2005.

Major Highlights

- The 90 km long six-lane Jaipur- Kishangarh stretch has a network of service roads and has three major bridges, five grade separators/flyovers, 16 minor bridges, 68 culverts, and nine cattle crossings. There are two toll plazas – one at Jaipur and the other at Kishangarh.
- For the convenience of commuters, the Jaipur-Kishangarh section has been equipped with highway lighting at all the major intersections in urban areas, grade separators and toll plazas. Environment mitigation and landscaping measures were also taken during the construction of the expressway.
- A state-of-the-art Highway Traffic Management System (HTMS) have also been deployed which facilitate smooth commute all along the expressway.
- Some of the advanced features included as part of this system are – Emergency & Mobile Communication System, Variable Message Sign System, Meteorological Data System for weather forecasting, Automatic Traffic Counter-cum-Classifier System, CCTV Surveillance and Power Supply System.
- The project also rehabilitated a 'Kos Minar' on the stretch.

SIX LANING
PROJECT OF AGRA-ETAWAH BYPASS ON NH-19

The Agra – Etawah Bypass six laning project is a part of Delhi – Kolkata Section of NH-19 (Old NH-2), which connects various major cities of the country like Agra, Firozabad, Etawah, Kanpur, Allahabad, Varanasi, Kolkata etc.

The 124 km long project starts from Yamuna Bridge, Agra and ends at village Mohanpur Manik, Etawah on NH 19. Built with a cost of around Rs. 1650 Crore, the project was completed in November 2020. It has made it convenient for the tourists coming to Agra from all over the world to see the world heritage monument - Taj Mahal.

Major Highlights

- The project has a 20 km long bypass at Firozabad town which has been decongested from heavy vehicles after the construction.
- It has become more convenient for the people residing along Firozabad Bypass section to travel to Delhi – Agra – Etawah – Kanpur – Lucknow – Allahabad – Varanasi – Kolkata.
- It has facilitated trading of bangles & other glass products manufactured in Firozabad, also known as “Suhag Nagri”.
- The pollution level in Agra, Firozabad and Etawah districts has decreased after the completion of this project.
- After construction of this section, fuel consumption of vehicles has reduced resulting in saving of travel time, money, and reduction of pollution as well.

ELEVATED CORRIDOR - PANIPAT CITY

The 10 km long access controlled six lane corridor in Panipat worth around Rs. 325 crore and with 3.4 km elevated stretch, provides an important and seamless link for highway commuters on NH 1 (present NH 44). Developed as a part of North-South Corridor the project was dedicated to the nation in July 2008. The project was completed about six months ahead of schedule. The 3.4 km long elevated structure crosses Gohana road crossing, Sanauli road crossing, Assandh road crossing, bus stand, and ends at Skylark tourist complex.

- The corridor also has a separate two-lane peripheral road with paved shoulders on either side for local traffic.
- Three underpasses with 5.5-meter vertical clearance and 20-meter span can accommodate 4 lane divided carriageway. Construction, reconstruction and widening of culverts, drains ducts were also undertaken for the project.
- 2x10 lane toll plaza, lighting at toll plaza, lighting of access-controlled road and peripheral roads, traffic safety features, road furniture, and road markings was also created as a part of the project.
- As Panipat is known for its textiles industry, the construction of this corridor has provided relief to the city commuters and has eased the traffic congestion in the city.
- It helps in the decongestion of traffic that plies between Delhi and the states of Punjab, Himachal Pradesh, or Haryana.

TRICHY-CHIDAMBARAM SECTION OF NH 227 (NEW NH-81)

The 130 km long stretch was divided into three packages for better implementation:

i) Trichy- Kallagam (Package-I)

With a length of 38.70 km, this project was conceived with an aim to provide a network of good quality highways in India. The upgradation of this highway to 4-lane facility ensures smooth and safe traffic flow. This highway connects major districts of Trichy and Ariyalur to the main corridor of NH-45.

ii) Kallagam to Meensurutti (Package - II)

With a length of 59.7 km, the highway was upgraded to 4-lane and 2-lane with paved shoulder. This has benefited the cement and allied industries existing in Ariyalur district and has contributed towards the economic development of the region. The highway also connects the historical monuments located at Gangaikonda Cholapuram.

iii) Meensurutti to Chidambaram (Package - III)

With a length of 31.5 km, the highway was upgraded to 2-lane with paved shoulders. The stretch connects to NH 45C (Vikravandi to Thanjavur), NH 45A (Puducherry to Nagapattinam) and connects historical monuments located at Gangaikonda Cholapuram.

The widening has helped the town and villages along the National Highway by enabling easy movement of sugarcane, paddy and other agricultural products from the region. The stretch also connects many pilgrim centers including Chidambaram Natarajar temple.

Key Benefits:

- The project has helped to reduce Vehicle Operating Cost (VOC), reduced travel time and has contributed towards economic development of the region.
- Major length of the Project corridor runs through the Cauvery Basin; huge quantities of paddy and sugar cane is produced throughout the year in this region. Improvement of Trichy-Chidambaram Section of NH 227 has facilitated transportation of these agricultural products to other parts of the State and Country.

The project has also improved connectivity to religious places & major cities like Thanjavur, Kumbakonam, Puducherry.

FOUR LANING OF
YADGIRI – WARANGAL STRETCH

To facilitate the faster connectivity between the capital city of Hyderabad and the historic city of Warangal, the 99 km long stretch on NH 163 was built in the state of Telangana at a cost of Rs.1,890 crores and was opened to traffic in September 2020, under NHDP Phase IV.

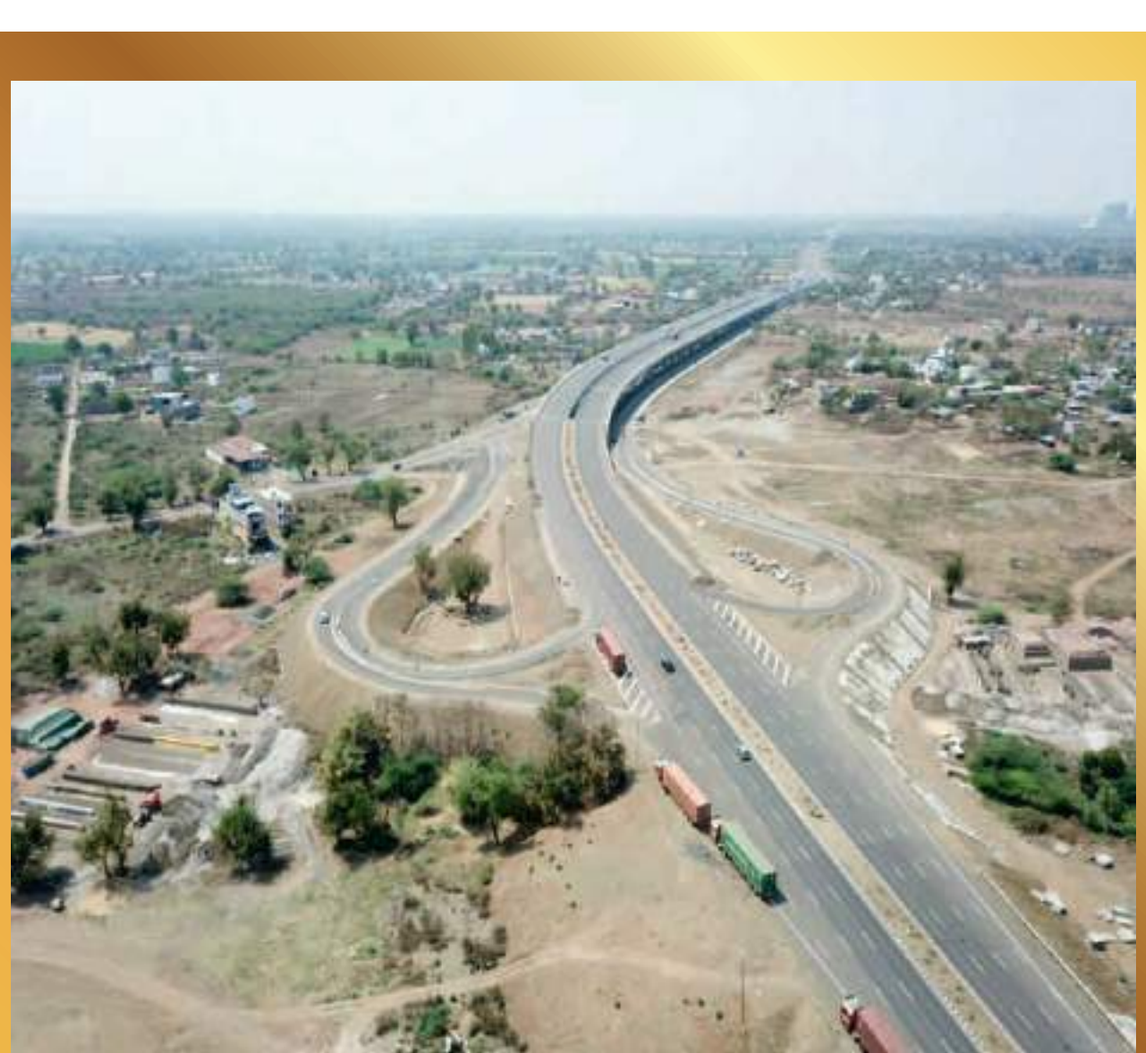
Major Highlights

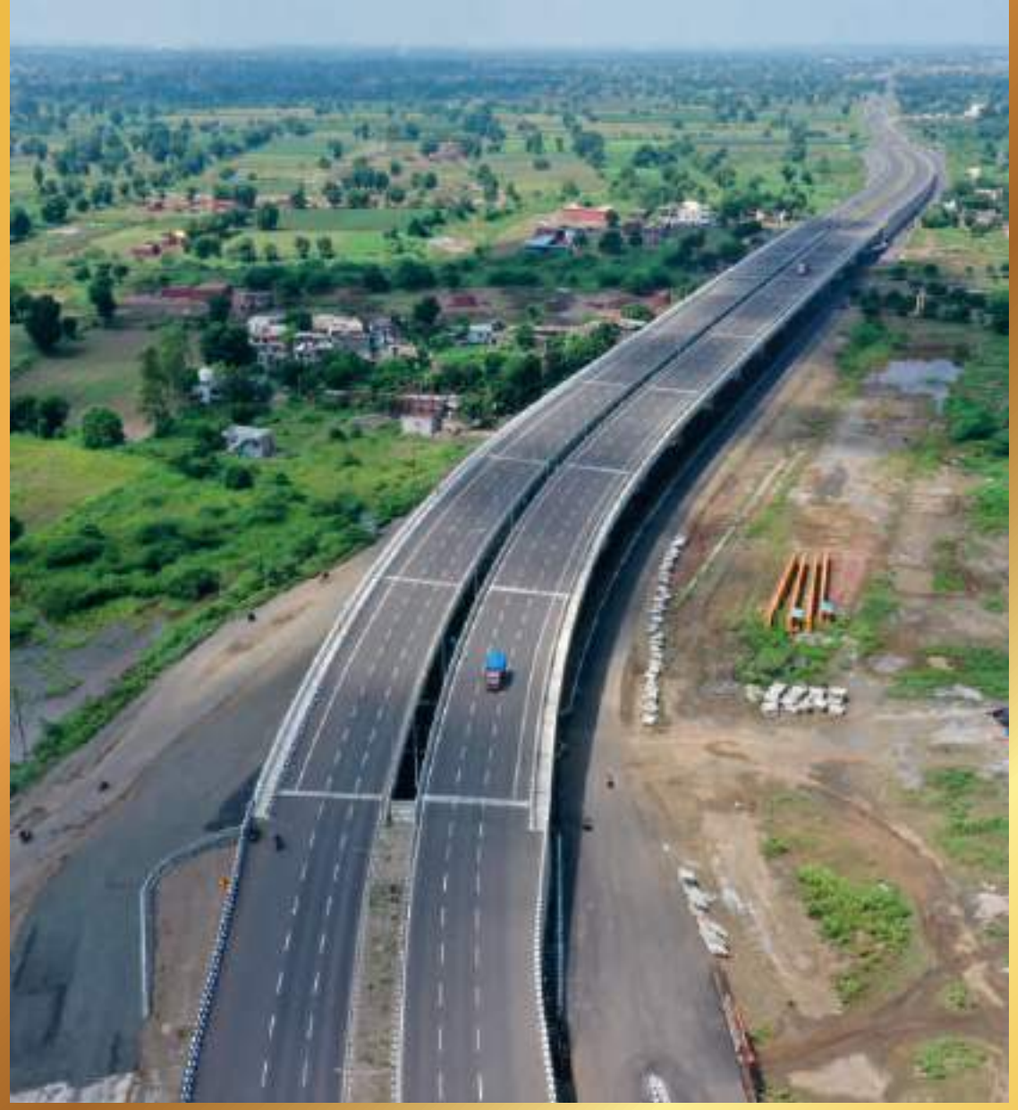
- The project has provided multiple benefits which include easing of traffic congestion and boosting tourism in Telangana.
- Apart from providing hassle-free connectivity to UNESCO World Heritage Site the Ramappa Temple, this stretch has also improved connectivity to other sites of tourism such as the historic “1000 Pillar Hindu Temple” and “Warangal Fort”.

CHIKHALI - TARSOD
HIGHWAY ON NH-53

The 4 lane, 62.7 km long stretch from Chikhli to Tarsod in Maharashtra was built at a cost of around Rs. 1,048 crores. The project reworked the existing structure to enhance efficiency, speed, and safety on the stretch.

The project includes the construction of 4 rail over bridges, 3 major bridges, 18 minor bridges, 23 vehicle and pedestrian underpasses, about 68 km of service roads, 6 major junctions, 67 minor junctions, 3.6 km long Varangaon bypass and has adequate safety features.





The project was completed in August 2021.

- The travel time between the two has now become less than 1 hour from 3.5 hours earlier. This has positively impacted the connectivity between Nagpur and Surat.
- During the course of the project, the project team extracted around 13 lacs cubic meters of earth from local rivers and ponds and used it in the construction of national highways, which in turn increased the storage capacities of these water bodies by 130 lac litres.
- The project also made interesting use of pond ash, a waste by-product of a thermal power plant nearby in Bhusawal to create the reinforced wall along the highway.
- The route also has several rainwater storages structures to serve the needs of the region.

RAIL OVER BRIDGE CUM FLYOVER AT RANICHAK

Haldia Dock complex (HDC) in West Bengal is the main gateway for import- export of cargo from North-Eastern part of the Country as well as land locked countries like Nepal and Bhutan. About 50 million tons of cargo is being handled by HDC, which is projected to grow substantially in the future.

However, two railway crossings and one at-grade rotary at Ranichak created serious traffic congestion. Approx 18 trains pass through the railway lines every day and 35,000 vehicles pass through the junction. The vehicles had to wait for hours at the level crossing.

To remove the hassle, construction of 1.4 km long 'Railway Over Bridge Cum Flyover' at Ranichak, built at a cost of around Rs. 190 crores was completed in December 2020 and was opened for traffic from NH 41 to Haldia Dock Complex main gate and vice-versa. The ramps provide uninterrupted flow of traffic for the Port bound traffic from Haldia Township and Durgachak to port.

- The project includes 642 m service road, 1460 approach road, one 718 m long upward ramp, two 651 m downward ramps.
- The project has not only improved the traffic flow in the surrounding areas but in turn has also attract more industries and developed Haldia as a whole.

CITY'S LIFELINE: BANGALORE-HOSUR SECTION

The Bangalore-Hosur section of NH 7 in Karnataka is an integral part of the industrial and commercial area in the state, particularly the IT industry. It is also one of the busiest sections in the state.

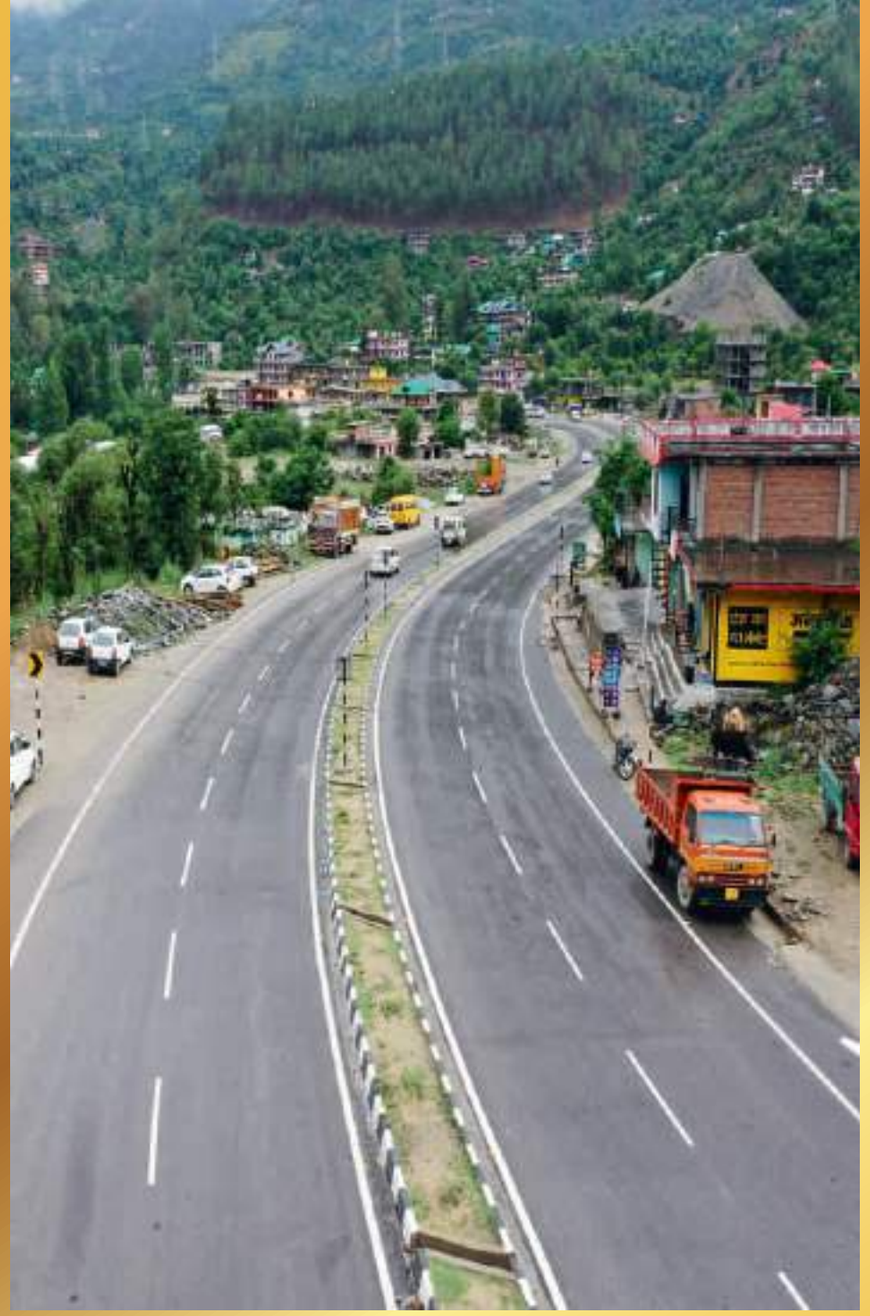
To address the growing traffic and solve the traffic bottleneck on this stretch, NHAI implemented this 10 km long project and upgraded this section at a total project cost of Rs. 450 crore.

Key Components

- The upgraded section consists of the widened 4-lane highways on the ground level.
- A new four-lane divided elevated structure was constructed on the existing section of the road which was supported on a single row of piers in the central median.
- The stretch also consists of two vehicular underpasses, four pedestrian underpasses and two toll plazas.
- It is also equipped with lighting on elevated Highway, ground level and service roads for commuter convenience.

TAKOLI TO KULLU HIGHWAY

The Section from Takoli to Kullu has been widened from existing 2-Lane to 4-Lane Highway. A few congested areas like Nagwain, Bajuara, Bhuntar and Jia have been By-Passed to ensure smooth flow of traffic on this Highway. This highway crosses two rivers i.e. Beas and Parvati at Bajuara and Jia respectively.

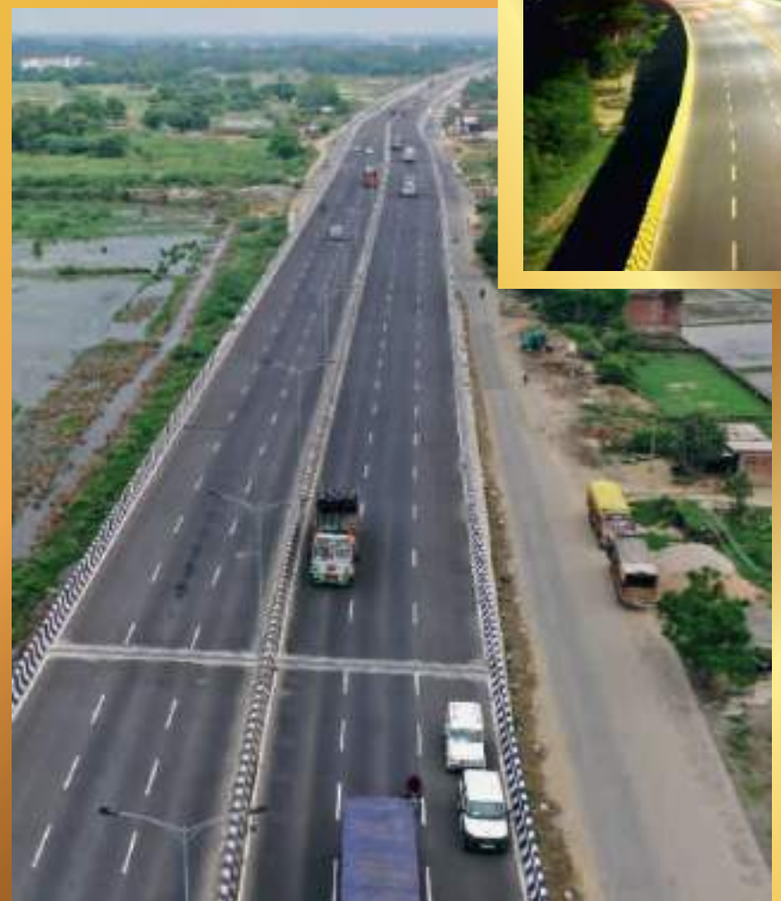


To avoid any piers in the river, specialized construction technique has been adopted for both the bridges. A 72 m river span at Bajaura and 95 m river span at Jia have been constructed using Balance Cantilever Construction Technique involving intricate design and construction methodology. The highway not only provide smooth traffic flow on 4-Lane highway but also is surrounded by scenic beauty of river and hills.

SIX LANING OF HANDIA -VARANASI SECTION

The six laning of 73 km long Handia – Varanasi Section of NH 2 in the state of Uttar Pradesh was completed at a cost of Rs. 2,447 crore under the NHDP Phase V. The project was dedicated to the nation by Hon'ble Prime Minister on 30.11.2020.

This highway is also a major part of Delhi – Calcutta section of Golden Quadrilateral and Asian Highway-1. It passes through the major districts of Eastern Uttar Pradesh i.e. Prayagraj, Bhadohi, Mirzapur, and Varanasi. Due to development of this highway the travel time between Prayagraj and Varanasi has been reduced to 1.5- 02 hours only, from 03-04 hours previously.



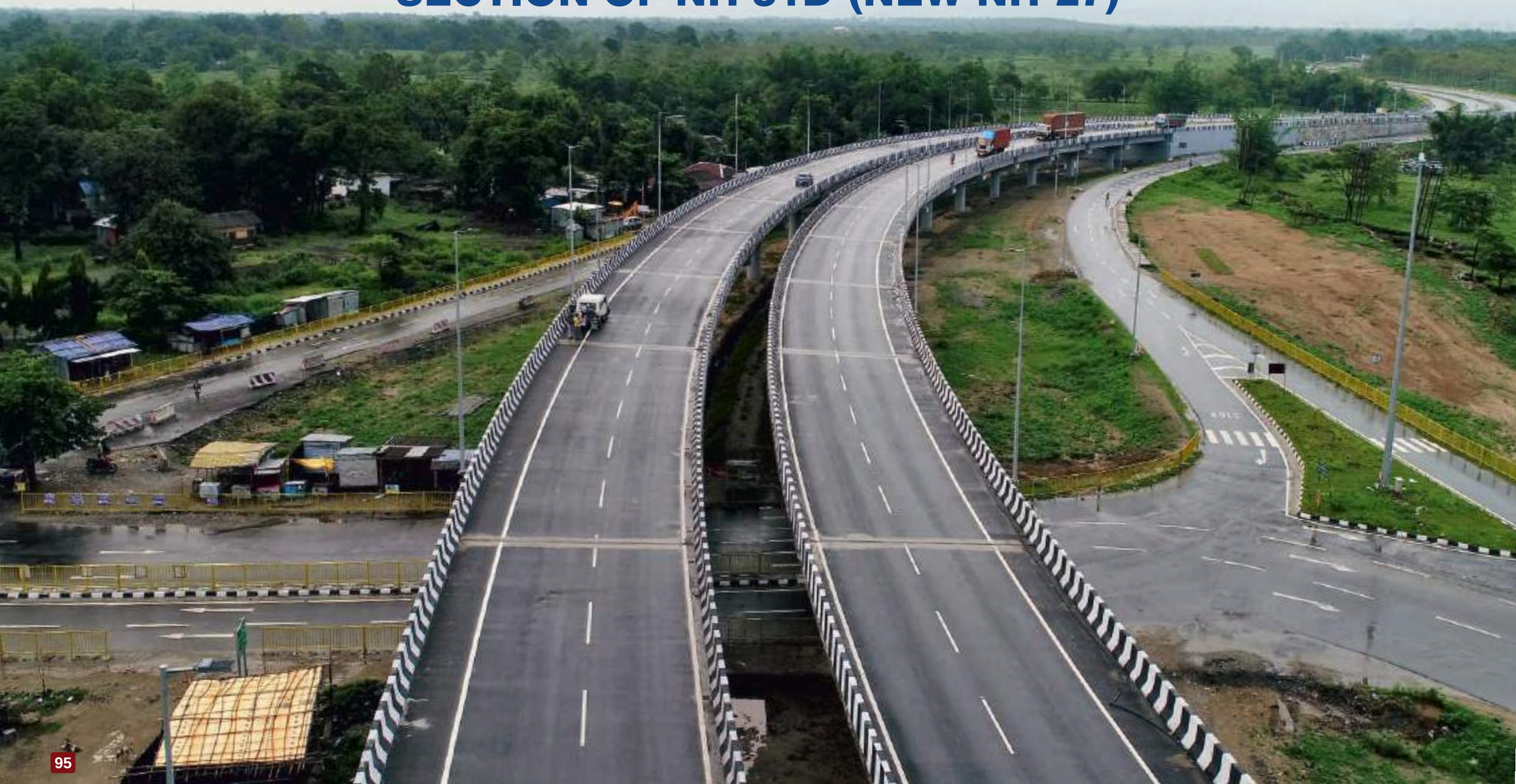
Benefits to the region:

- Economic development due to better connectivity between Allahabad and Varanasi and other areas of Uttar Pradesh.
- Employment opportunities to locals during construction and operation phases.
- Road safety due to proposed improvement of the road project, reduction in vehicle operating costs.
- Environmental benefits such as reduction in emissions and noise levels due to smooth traffic flow on the improved road.
- Improvement in existing cross drainage structures leading to avoidance of water logging along the road.
- Opened new doors of accessibility for national and international tourists and devotees.

TWO LANING OF SHILLONG BY-PASS

The 48.76 km long two-lane Shillong bypass connecting NH-40 and NH-44 was completed at a cost of Rs. 226 crore and was opened to traffic eleven months ahead of schedule in March 2013. The project included 2 major bridges, 5 minor bridges, 241 Culverts and one underpass. The by- pass was developed with an aim to ease traffic congestion in the Shillong city, boost local economy and generate employment opportunities.

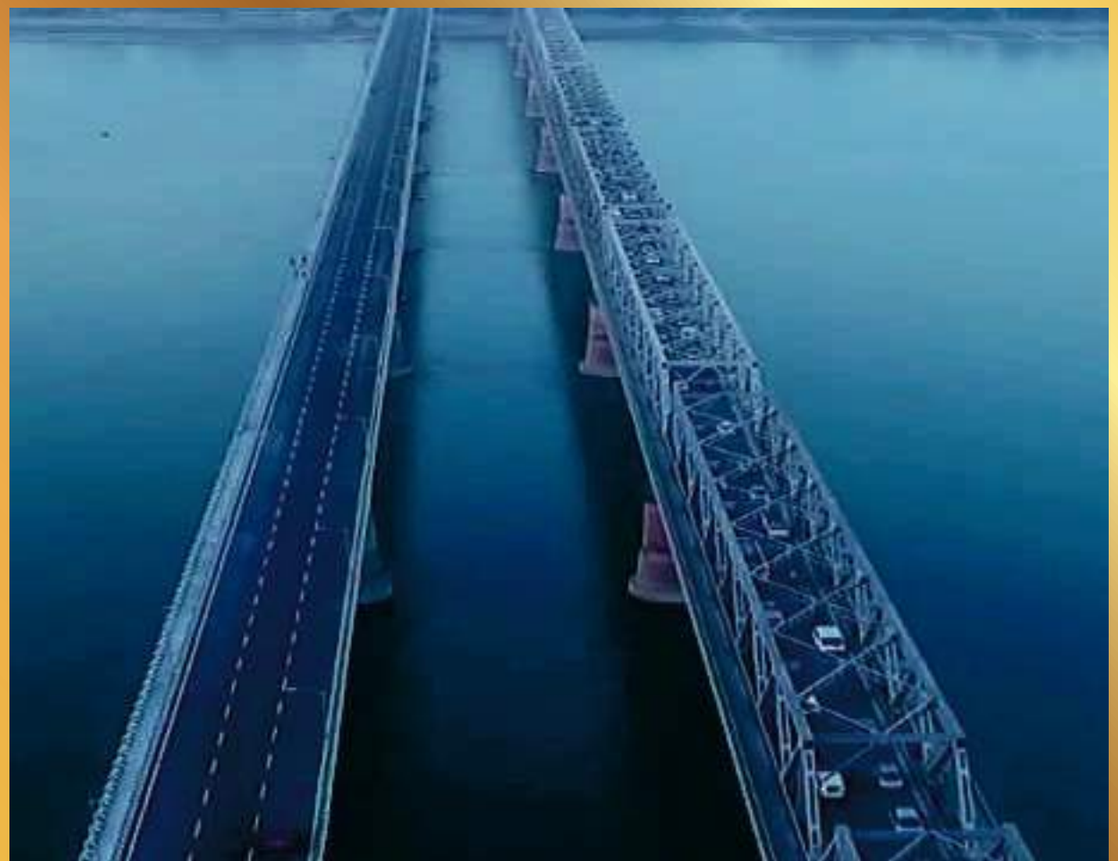
FOUR LANING OF
GHOSHPUKUR – DHUPGURI
SECTION OF NH 31D (NEW NH-27)



The 83 km long Ghoshpukur – Dhupguri is a four lane stretch on NH-31D (New NH-27). It starts at Ghoshpukur, passes through Jalpaiguri, Maynaguri and ends at Dhupguri, reducing the travel time by 2 hours. This road is a part of East-West Corridor (National Corridor) connecting Silchar, Assam in the east, to Porbandar, Gujrat in the western part of India. The project was completed in July 2022.

The highway increases the connectivity to the North-Eastern states having strategic and socio-economic importance and connects trade routes with the neighboring countries Bangladesh, Nepal, Bhutan and China.

NEW
BRAHMAPUTRA BRIDGE – CONNECTING NORTHEASTERN STATES TO THE REST OF INDIA



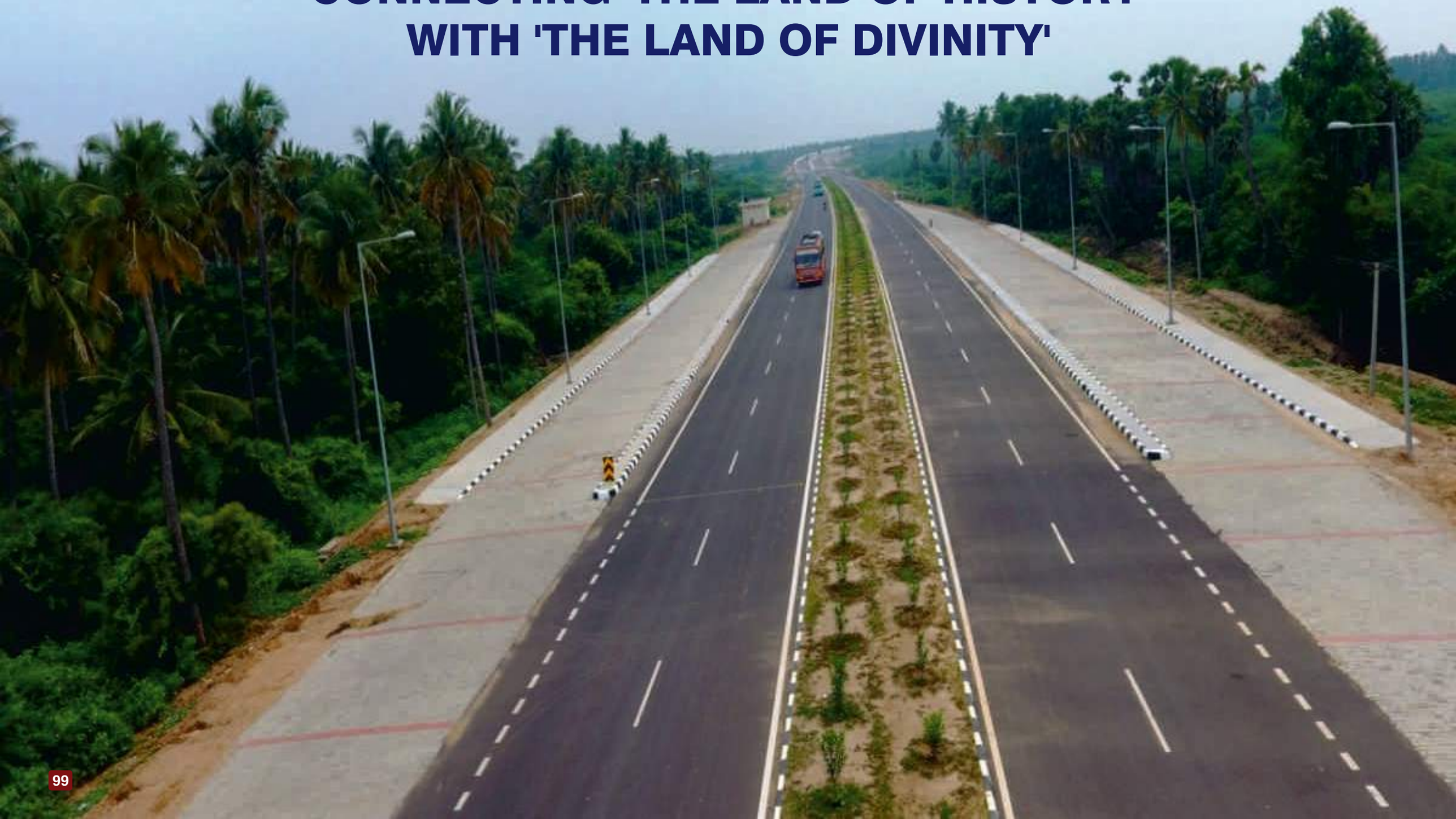
New Brahmaputra bridge, the 1.4 km long new 3 lane bridge over river Brahmaputra is the most important link between the Northeastern states to the rest of India. With an investment of Rs.360.8 crores, the bridge was completed and opened to traffic in January 2017.

Key Features

- One of the important features to this project is that it includes a grade separator of 244.00 m length at Jalukbari junction which provides seamless connectivity to Guwahati city, airport, and Brahmaputra River bridge.
- It is the first rail-cum-road bridge over the Brahmaputra near Guwahati in Assam.

THE MADURAI - RAMANATHAPURAM SECTION ON NH-49 -

CONNECTING 'THE LAND OF HISTORY' WITH 'THE LAND OF DIVINITY'



The four laning of Madurai - Ramanathapuram section of NH-49 (New NH- 85 and 87) in the state of Tamil Nadu, with total length of 115.484 km and total cost of around Rs. 1387.11 Crores was successfully completed in July 2019.

The highway traverses through Madurai, Sivagangai, and Ramanathapuram district, connecting East Coastal Area and important tourist and historical places viz., Uthirakosamangai, Thiruppullani, Devipattinam, Pamban Bridge, and Dr. A.P.J. Abdul Kalam Memorial.

The section connects one of the major historical cities, Madurai, with Ramanathapuram, a place with one of the holiest shrines of the country, Rameswaram.

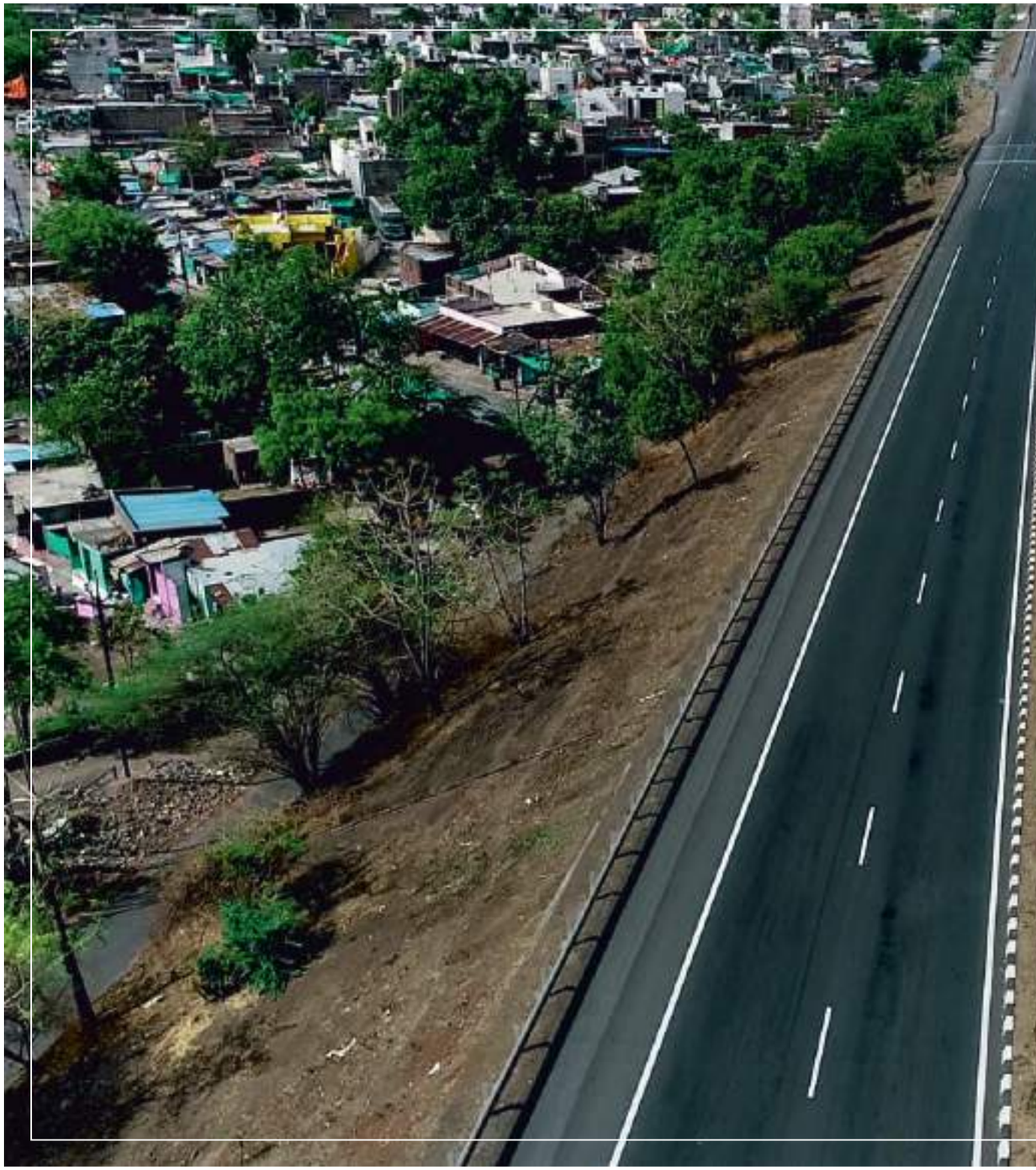
Salient Features

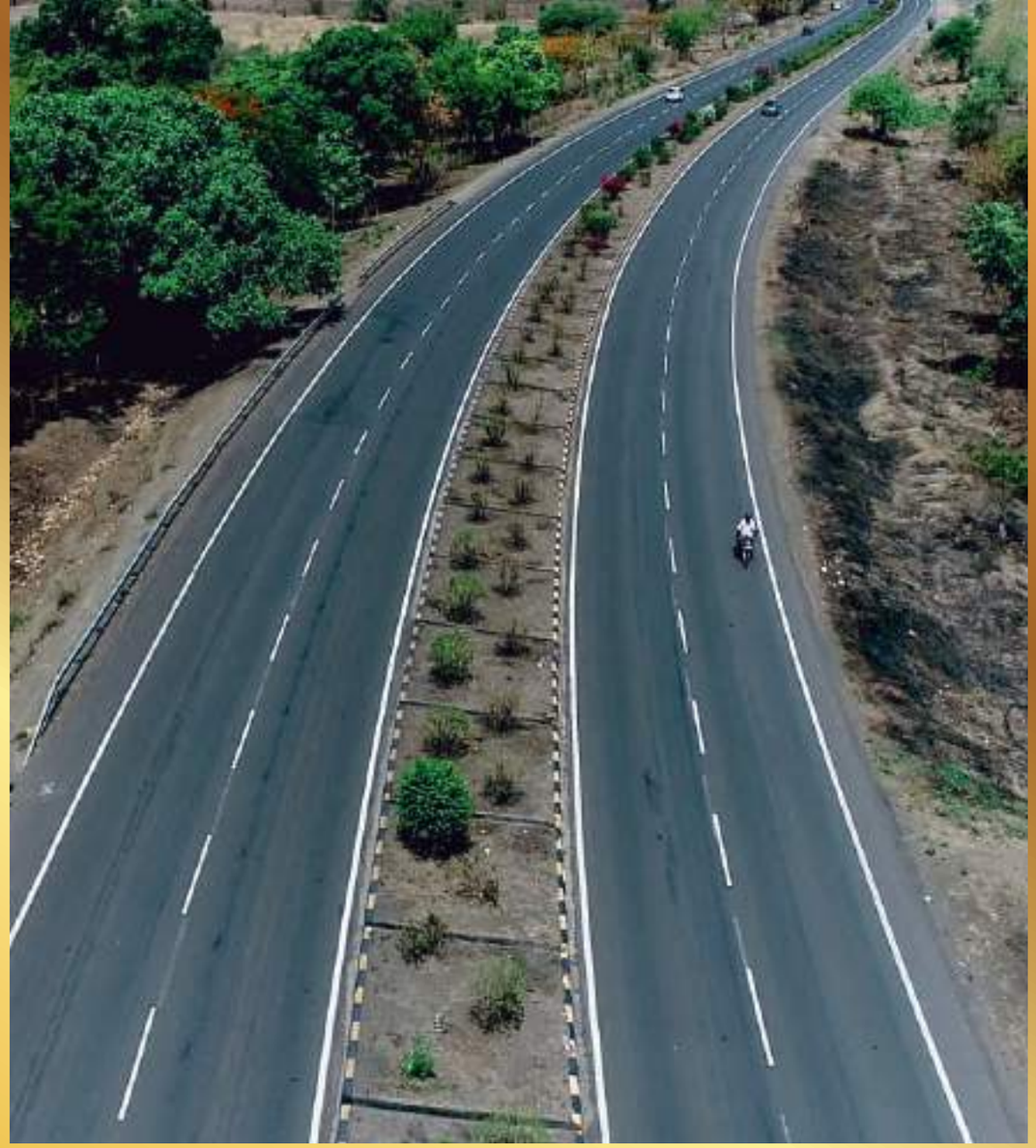
- The project has reduced the travel time between Madurai and Ramanathapuram from 3 Hrs. to 1 ½ Hrs.
- This road leads to Dhanushkodi, Rameswaram Island, which is a southern end point of India.
- Pilgrims coming to Rameswaram temple from all over India will be benefitted by this project as it eases the movement.

NAGPUR - AMRAVATI SECTION OF NH 53- CONNECTING MAJOR CITIES

The NH-53 section from Nagpur to Amravati had been developed as a 4-lane road. With the total length of 157.525 km, the stretch was divided into 3 packages from Nagpur to Kondhali, Kondhali to Talegaon, and Talegaon to Amravati.

The 4 laning work in 3 packages was completed in September 2011, March 2008, and April 2013 respectively, and is under operation and maintenance. The section passes through main cities like Nagpur, Kondhali, Karanja, Tiwasa, Mozari, and Amravati and is a major link connecting East-West Corridor.

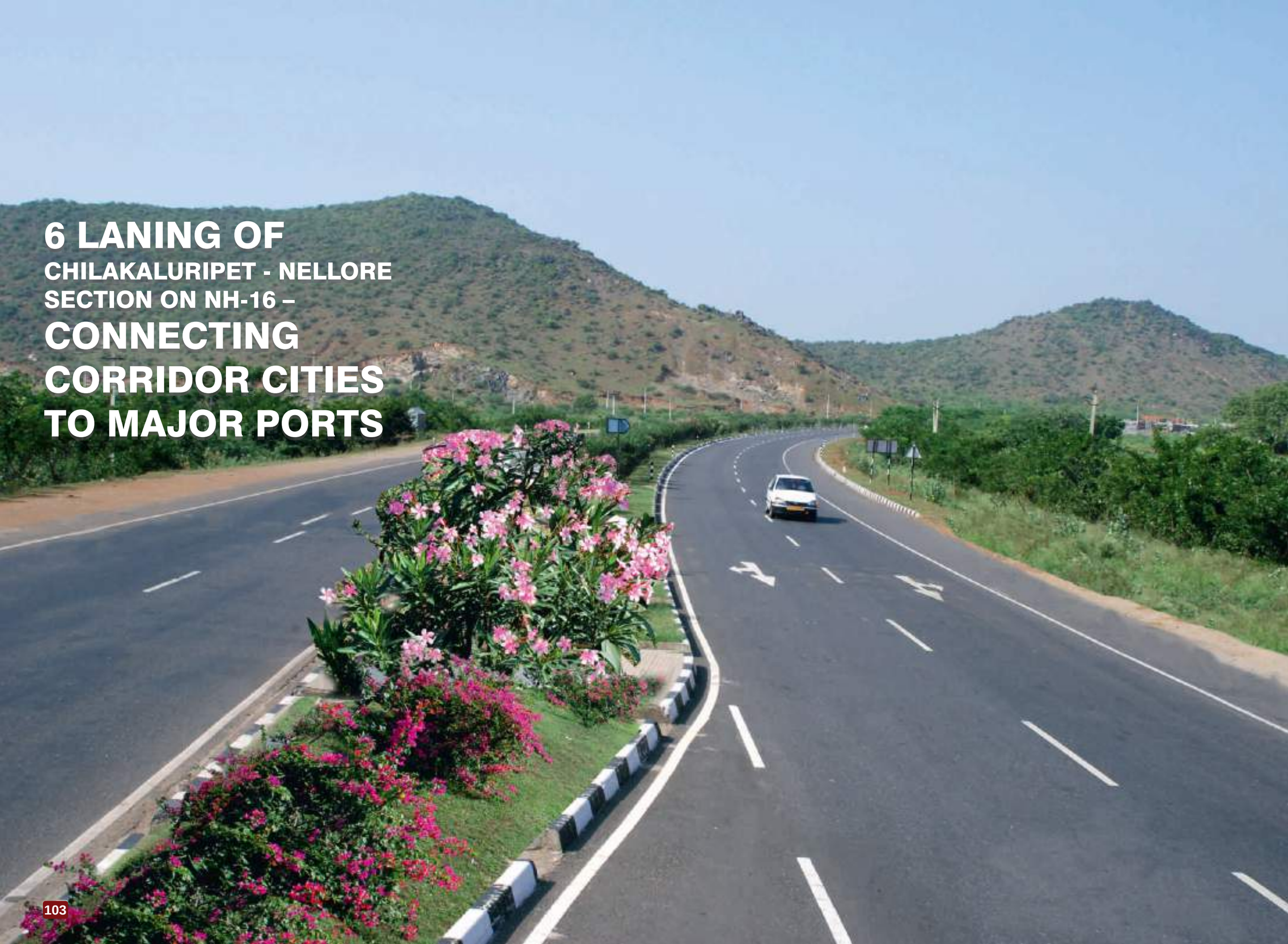




The details of development done as a part of the 4 laning work are:

- Four laning of Nagpur-Kondhali Section from Km 9.200 to Km 50.000 section of NH-53
- Four laning of Kondhali-Talegaon Section from Km 50.000 to Km 100.000 section of NH-53
- Four laning of Talegaon-Amravati Section from Km 100.000 to Km 166.72500 section of NH-53

6 LANING OF
CHILAKALURIPET - NELLORE SECTION ON NH-16 –
CONNECTING CORRIDOR CITIES TO MAJOR PORTS



The National Highway 16 (Old NH-5) is a major National Highway, a part of the Chennai – Kolkata section of the Golden Quadrilateral that runs along India's East Coast through the States of Orissa, Andhra Pradesh and Tamil Nadu connecting Corridor Cities to the major ports of Krishnapatnam, Chennai, Visakhapatnam, Paradip and Haldia.

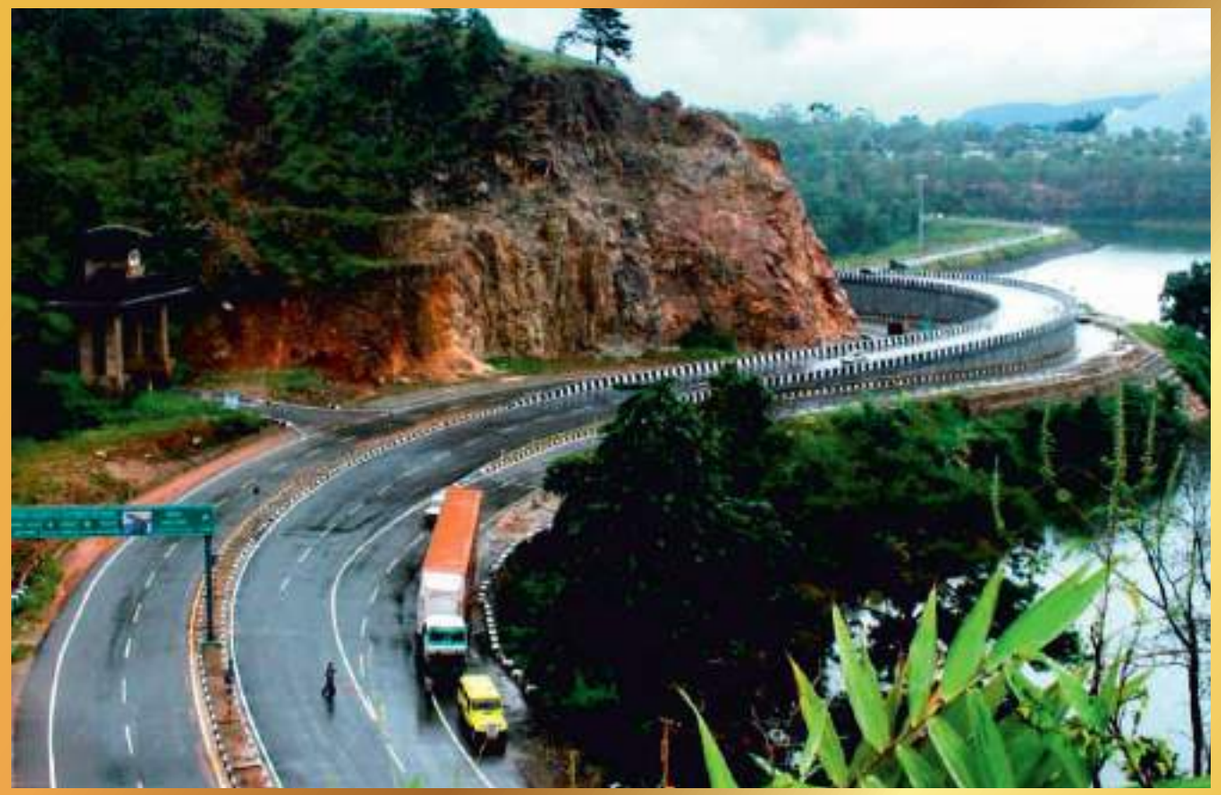
With total length of 184 km and cost of around Rs. 2550 crores, the 6-laning of the Chilakaluripet – Nellore section on the above-mentioned National Highway 16 was completed in November 2017.

Key Highlights

- The project highway connects to pilgrimage city Tirupati, India's Rocket launching station Satish Dhawan Space Centre (SDSC-SHAR) in Srihari Kota, and Special Economic Zone (SEZ), Sri City in the state of Andhra Pradesh.
- The project includes the construction of 12 major bridges, 56 minor bridges, 5 rail over bridges (ROBs), culverts, underpasses, major and minor intersections, bus bays and bus shelters, and toll plazas.

FOUR LANING OF JORABAT-SHILLONG ON NH-40 (NEW NH-6)

The Jorabat-Shillong (Barapani) section of NH-40 (new NH-6) connects the capital cities i.e Guwahati and Shillong of the two northeastern states respectively in Assam and Meghalaya. The four laning of this 61.80 km section was successfully completed in January 2016 at a cost of around Rs. 536 crores.



The curly roads, gentle elevation, and serenity of the hills make it a great experience for the tourists going to Shillong and Cherapunjee.

Key Highlights

- The road provides a gateway to connect to other northeastern states which are Tripura and Nagaland.
- It includes the construction of 1 Major Bridge, 13 Minor Bridges, 1 Grade Separator, 1 Vehicular Under Pass, 305 Pipe Culverts, 86 Culverts and 10 Bus Shelters.

FOUR LANING OF
MADURAI – KANYAKUMARI SECTION OF NH 44 –
CONNECTING NORTH TO SOUTH

The project work of 4 laning of Madurai – Kanyakumari section of NH-44 (Old NH-7) with total length 243.470 km and total investment of around Rs. 1,338 crores was completed in May 2011. The four-lane project highway starts in Madurai and ends at in Kanyakumari of NH-7. The present project corridor is part of Old NH7, which connects Varanasi in Uttar Pradesh to Kanyakumari in Tamil Nadu. Now, the highway is part of North-South Corridor which is numbered as NH-44 connecting Srinagar in Jammu & Kashmir in the north to Kanyakumari in Tamil Nadu, the southern tip of Indian subcontinent.

Salient Features

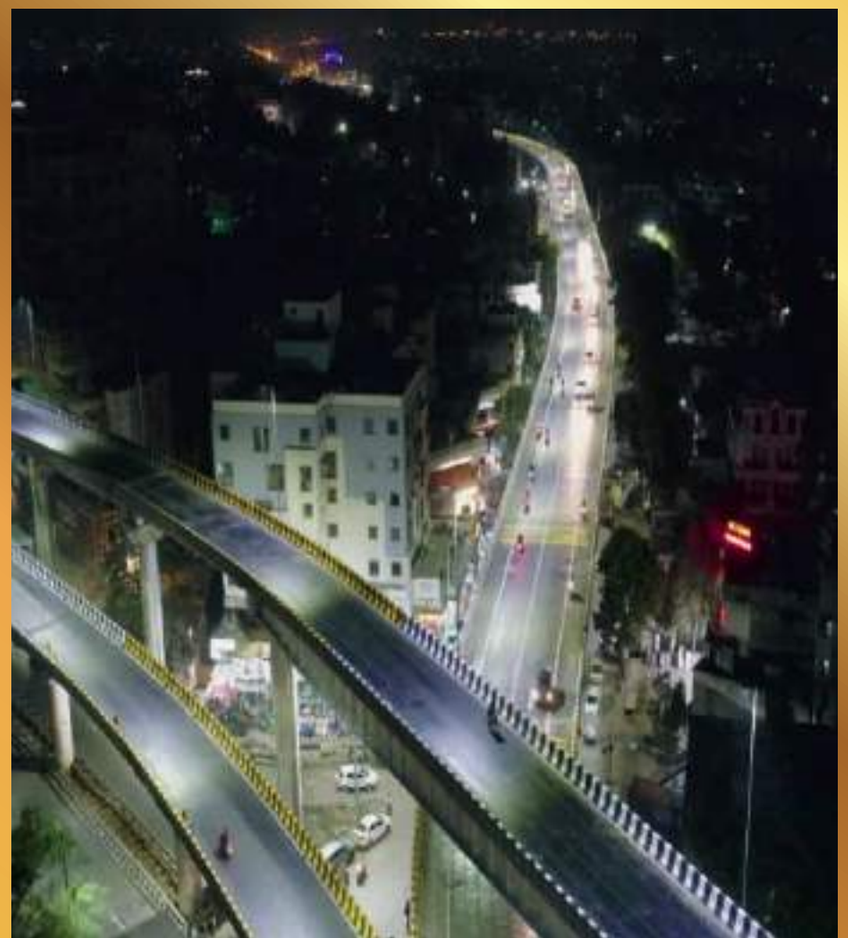
- The project includes construction of various structures i.e., major bridge, minor bridge, culvert, ROB, flyover, vehicular under pass, pedestrian under pass etc.
- Incident Management i.e., ambulance, route patrol vehicle, crane are available (24 x 7)
- Advanced Traffic Management System (ATMS) i.e., CCTV, variable actuated speed display (VASD), variable message sign (VMS) is being implemented.
- As part of Green Highway initiative, plantation of 29,000 trees has been implemented.
- 45m high flagpole for hoisting the National Flag exists in this highway section.

ELEVATED FLYOVER

FROM LIBERTY CINEMA TO MENTAL HOSPITAL ON NH-47

The construction of 4.55 km Elevated Flyover from Liberty Cinema to Mental Hospital on Nagpur-Obedullaganj Road on NH-47 in Maharashtra connects RBI Square to Mankapur Square and Old Katol Naka, thereby, ensuring de-congestion in Sadar area. The project with total cost of around Rs. 293 crores enables conflict free movement at elevated Chhaoni Junction by providing level-2 arm from Katol Naka to Tukaram Square.

With the project, through traffic from NH-47 and NH 353-J to Zero Miles is possible and it eases travel for the commuters of Sadar Bazar, the busiest marketplace of Nagpur.



Beautification and Coloring of Liberty Flyover:

- Coloring of flyover along with special coloring and beautification of selected piers.
- Illumination of Steel Girder with LED lights and dynamic lighting.
- Theme-based installation of sculptures and painting at junctions and prominent locations are envisaged keeping in view adjacent land use.
- Portraits of prominent local personalities are installed for wider knowledge of common public and as a token of respect.
- Landscaping by plantation of shrubbery has been done at locations with wider median width.

Benefits of the Work:

The work of beautification is 1st of its kind in the Nagpur city and will be soothing to common public to a large extent apart from enhancing the aesthetic of the flyover passing through the congested market area.

6 LANING OF

HAPUR BYPASS - MORADABAD SECTION OF NH-24

Six laning of 99.8 km long Hapur Bypass to Moradabad section on NH-24 in Uttar Pradesh and was completed in July 2022 at a cost of Rs. 2,140.9 crore. The upgraded stretch will play an important role in economic development of the region and will reduce commute time between Moradabad and Delhi along with connecting sectors like Nainital in Uttaranchal. This will help to boost the local business of dairy products, vegetable markets, along with the local manufacturing units such as brass industry in Moradabad.

The Project stretch passes through districts of Hapur, Amroha and Moradabad and also traverses through important Villages/towns like Babugarh, Garhmukteshwar, Kucheher road, Simbhawali, Gajraula, Rajabpur, Joya, Sheonali, Neeli kheri, Buhanpur and Pakbara in the state of Uttar Pradesh.

SIX LANING OF
GORHAR – BARWA ADDA SECTION - CONNECTING DELHI AND KOLKATA

The six lane Gorhar – Khairatunda – Barwa Adda section in Jharkhand, with the total length of 80 km costing about Rs 3100 crores, is a part of NH-02 connecting Delhi with Kolkata (Golden Quadrilateral).

It is not only one of the busiest but also 'strategically cum economically', one of the most important highways in the country.

Key Highlights

- The section links important commercial, industrial, educational, religious and tourist hubs.
- Development of Bagodar Bypass and Rajganj (Dhanbad) bypass has resulted in unhindered flow of NH traffic and has also decongested the city traffic.
- 6 laning of this stretch has improved the level of service and mobility cum transportation of men and material, ushering higher economic growth.
- The development work includes 242 culverts, 38 minor bridges, 4 major bridges, 22 underpasses, and 1 road over bridge (ROB).

FOUR LANING OF
REWA-LAKHNADON SECTION ON NH-7

The project work of four laning starts from Rewa and meets NH-44 in Lakhnadon via Maihar, Katni, Jabalpur following the old NH-7 (new NH-30 and 34). The project with worth around Rs. 4345 crores and total length of approx. 288 km was completed in August 2020 and the entire section falls in the state of Madhya Pradesh.

The section passes through 5 major districts in the state of Madhya Pradesh namely Rewa, Satna, Katni, Jabalpur, and Seoni. The project highway includes construction of 7 flyovers, 4 ROBs, 5 major and 82 minor bridges, 11 vehicular underpasses (VUPs), 31 pedestrian underpasses (PUPs), 3 animal underpasses in wildlife area, and box culverts.

Advantages to People

- Resulted in elimination of 13 black spots with reduction of about 25% in the accidents at the project highway.
- Opened new avenues for economic growth by providing improved connectivity to UP and Maharashtra; reduced cost of operation of vehicle has resulted in higher earnings to the transporters.
- Due to better road geometrics and riding quality, the travel time between major districts of Madhya Pradesh has been reduced to 1/4th of the original time. It has also resulted in better connectivity to religious and tourist places such as Maa Sharda Mandir in Maihar, UNESCO world Heritage Bhedaghat in Jabalpur etc.

FOUR LANING OF
NAGPUR-SAONER-BETUL SECTION OF NH – 69
AIMING HIGH, ACHIEVING HIGHER

This project aimed at the four laning of Nagpur-Saoner-Betul section of NH-69. The project with a total length of around 174 km and cost of about Rs. 2498 crores was completed in February 2015. The project lies in the districts of Betul and Chhindwara in Madhya Pradesh and Nagpur district of Maharashtra.

The construction of the project included developing the existing two-lane carriageway to four lane configurations of which 118 km falls in the state of Madhya Pradesh and 56 km of the stretch in Maharashtra.

Key Features

- The project included the construction of 7 flyovers, 10 major and 54 minor bridges, 2 wayside amenities, 6 ROBs, 1 RUB, and 3 toll plazas apart from other particulars.

FOUR LANING OF
BHATINDA-MALOUT SECTION OF NH-7

The four laning and upgradation work of Bathinda-Malout section of NH-07 having length of 38.6 km and cost of 278.6 crores was completed in February 2022.

The section which is a Feeder Corridor under Bharatmala Pariyojana connects to Mandi Dabwali town of Haryana, and also connects to Abohar town which further connects to Sri Ganga Nagar district of Rajasthan.

Importance and Basic Benefits

- This section helps in overall improvement of the existing highway, ensuring smooth and safe traffic flow, substantial reduction in travel time and in ensuring reduced Vehicle Operating Cost (VOC).
- Moreover, implementation of the project improved the basic infrastructure in the region, which lead to overall economic development of the region.

SIX-LANING OF KRISHNAGIRI TO WALAJAHPET SECTION OF NH-48 - FACILITATING THE ADVANCEMENT

The existing stretch of Krishnagiri to Walajahpet section of NH-48 was developed to 4-lanes as a part of Golden Quadrilateral and was subsequently augmented to 6-lanes, considering the traffic. The above stretch is an important national highway connecting Chennai, capital of Tamil Nadu and Bengaluru, capital of Karnataka and provides the inter-state connectivity. The project highway traverses through 4 districts namely, Krishnagiri, Tirupattur, Vellore and Ranipet in Tamil Nadu.

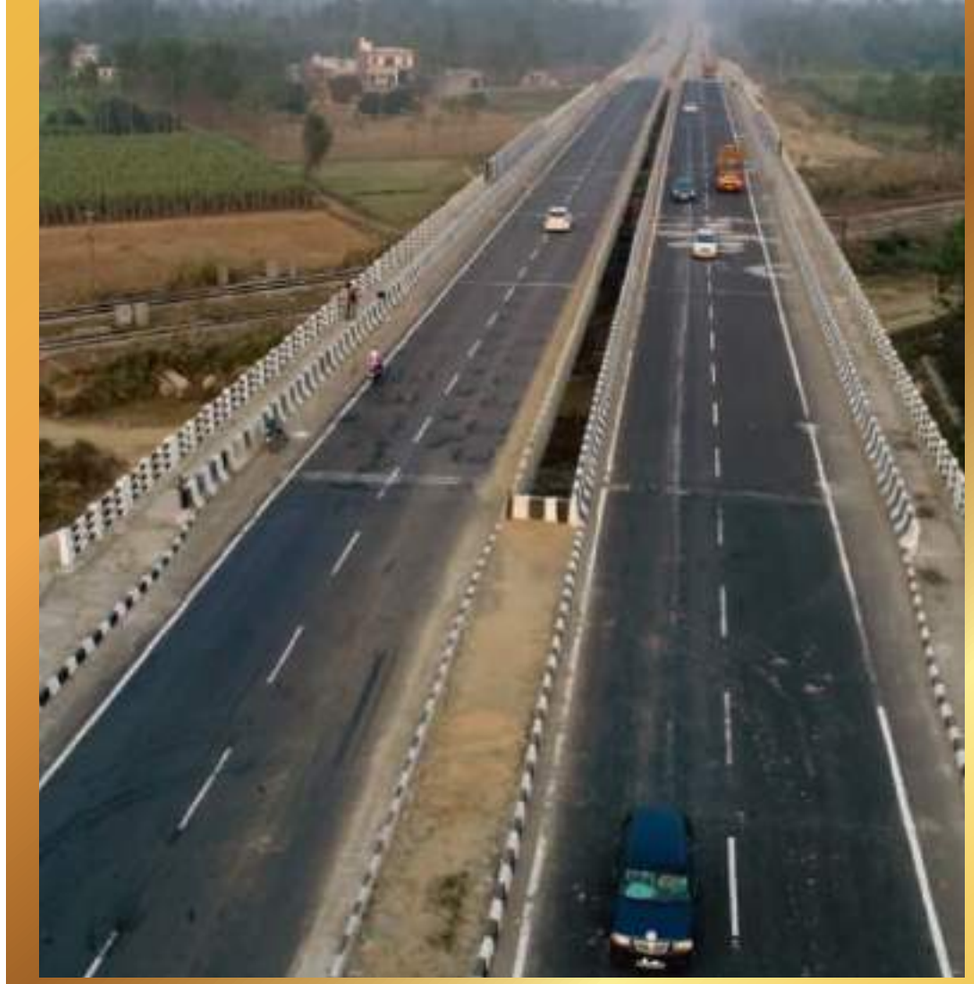
The above road provides connectivity to both the state capitals with the religious and tourist places like Yelagiri Hills, Vellore Fort, Vellore Golden Temple, Rathanagiri etc.

With the length of around 148 km and total cost of around Rs. 1250 crores, the project was completed in the year 2006. The project consists of 4 flyovers, 1 subway, 31 vehicle under passes, 1 foot over bridge, 13 pedestrian underpasses, 1 truck lay bye and 83 bus bays to provide safe crossing facilities.

Advantages For Locals and Travelers

- Considering the traffic, bypasses to important towns such as Krishnagiri, Bargur, Vaniyambadi, Tirupattur and Ranipet have been provided for ease of movement.
- Service road for a length of 69.450 BHS has also been provided for segregation of local traffic from the main highway traffic.
- Provides speedy and safe road connectivity for the pilgrims and tourists visiting these places through NH-48 and reduces travel time and vehicle operating cost.
- Further, it will facilitate the agricultural, industrial, educational, and economical advancement of the region.

FOUR LANING OF GAGALHERI-SAHARANPUR-YAMUNANAGAR SECTION OF NH-73 - PROMISING WITH NEW PROSPECTS

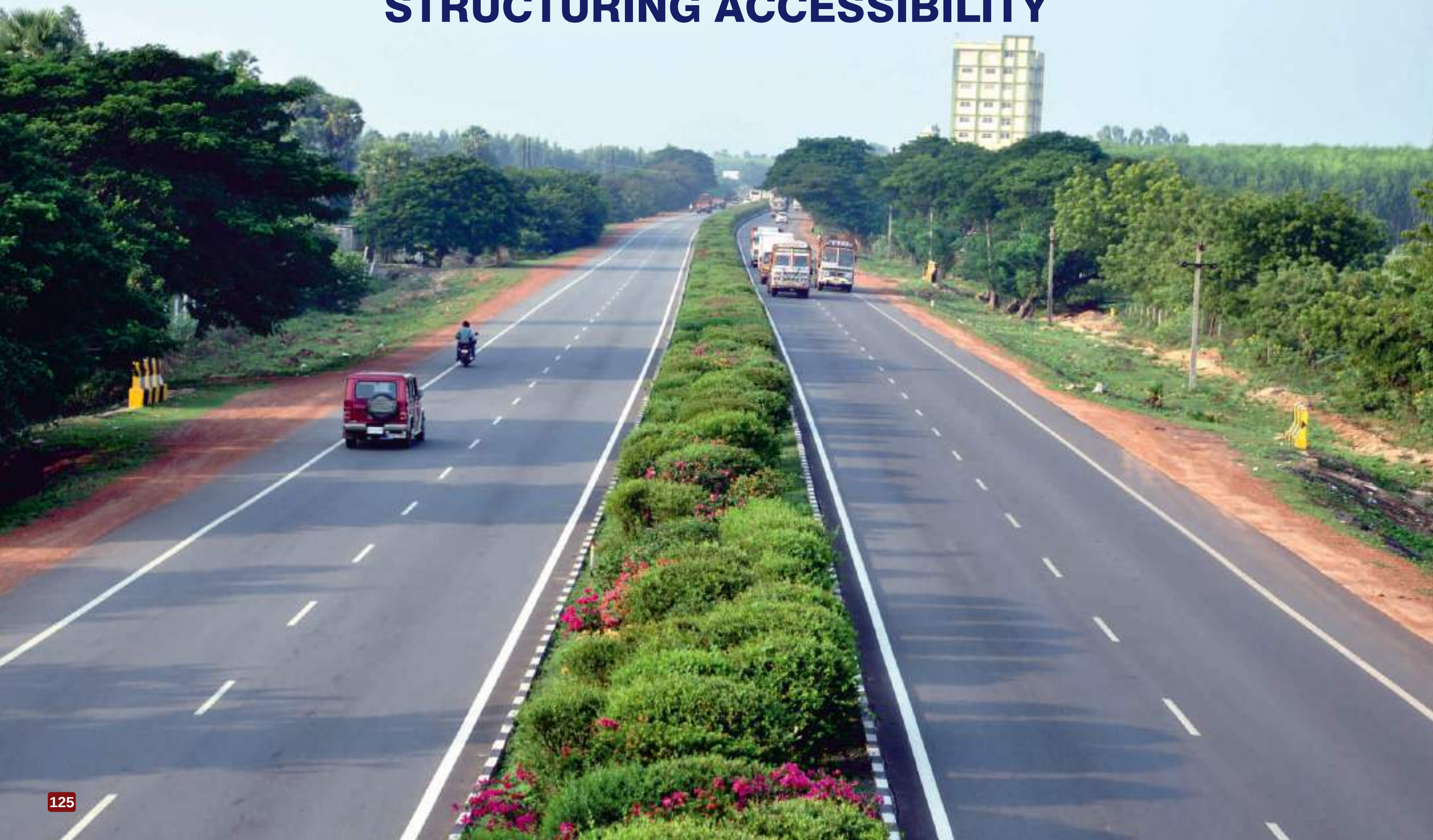


This project is structured in the states of Uttarakhand and Uttar Pradesh. The existing alignment of the project road section on NH-73 is 51.4 km long and passes through the towns of Gagalheri, Saharanpur, Sarsawa, and ends at the Yamuna River at UP-Haryana Border. A 43 km long Saharanpur bypass was also developed under this project. The project cost was around Rs. 1,184 crores and it was completed in October 2020.

Key Highlights:

- The project includes the construction of 3 major bridges, 7 minor bridges, 10 vehicle underpasses, 3 ROBs, 1 flyover, 6 cattle underpasses/ pedestrian underpasses, 10 light vehicle underpasses amongst other particulars.

FOUR LANING OF
TADA – NELLORE SECTION ON NH-16-
STRUCTURING ACCESSIBILITY



The National Highway 16 (Old NH-5) is a major National Highway, a part of the Chennai – Kolkata section of the Golden Quadrilateral that runs along India's East Coast through the States of Orissa, Andhra Pradesh and Tamil Nadu connecting Corridor Cities to the major ports of Krishnapatnam, Chennai, Visakhapatnam, Paradip and Haldia.

With the total length of 110.800 km and an investment of around Rs. 759.871 crores, the 4 laning of the Tada -Nellore section on the above-mentioned National Highway 16 was completed in October 2005.

Major Highlights

- The project highway connects to pilgrimage city Tirupati, India's Rocket launching station Satish Dhawan Space Centre (SDSC-SHAR) in Srihari Kota, and Special Economic Zone (SEZ), Sri City in the state of Andhra Pradesh.
- The project included the construction of 14 major bridges, 24 minor bridges, 8 underpasses, 78 bus stops, 9 major intersections, 99 Minor intersections, 3 truck lay-bye and 3 toll plazas.

ELEPHANT UNDERPASSES (EUPS)
CONSTRUCTED AT NH-7

The National Highway from Dehradun to Haridwar (NH-07) passes through Rajaji Tiger Reserve National Park and lot of wildlife especially Elephants cross the highway which leads to human-wildlife conflict. Therefore, total 3 locations were identified with the help of Wildlife Institute of India and Forest Department where crossing/movement of elephants were frequent.

As a result, highway has been constructed as elevated section (Elephant Underpasses) at these locations to facilitate Elephants' free movement across the highway, which were opened for traffic in January 2021. These Elephant underpasses have vertical clearance of more than 6 m. The length of these three Elephant Underpasses (EUPs) are:-

(i) EUP Motichur at NH-07 of Length 736m

(ii) EUP Teenpani at NH-07 of Length 400m

(iii) EUP Laltappar at NH-07 of Length 500m

Key Highlights

- The EUPs have also facilitated the free movement of other wild animals like Indian Leopard, Jungle Cat, Sambhar, Barking Deer etc. It has reduced human-wildlife conflict and escalated their breeding process.
- Accidents of high moving vehicles with animals which used to occur earlier, before the construction of these EUPs, has also been eliminated.

JNPT PORT ROAD CONNECTIVITY PROJECT ON NH-348, NH-348A & AMRA MARG AND NH-548

The 4-lane connectivity to JNPT was executed by NHAI under Port Connectivity program on NH-348, SH-54 (New NH-348A) & Amra Marg and NH-548.

The project was split into 4 packages:

- Package-I of 4.5 km involved the construction of 8 lane Karal Phata interchange.
- Package-II of 18.2 km involved the construction of 8 lane Gavan Phata interchange.
- Package-III of 11 km involved the construction of NH 348A and Amra Marg.
- Package-IV of 10.5 km involved the construction of NH-4B.

Package I, II, and III were completed in 2022 and package-IV was completed in November 2020.

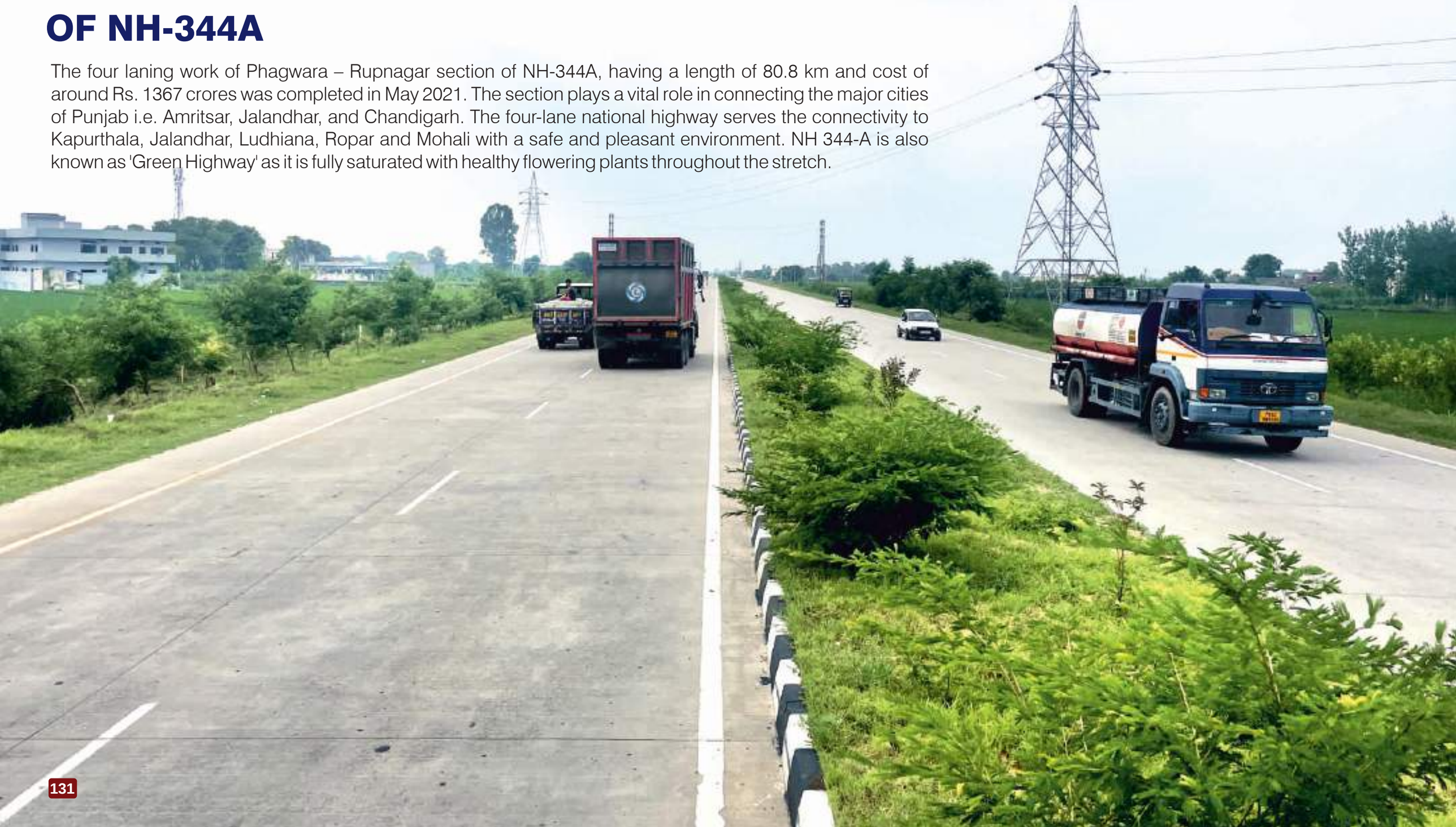
The project with total length of around 44 km and total cost of over Rs. 2,000 crores includes the construction of 3 Major Bridges, 12 Minor Bridges, 8 ROBs, 7 Flyovers, 139 Culverts, and 1 Elevated Corridor.

Major Highlights

- Saves Travel Time: The port connectivity reduces the commute time from island city to Navi Mumbai by 20 to 25 minutes. Also, it provides faster and cheaper commute.
- Accelerates Country's Economic Growth: JNPT is one of India's largest container ports that handles cargo traffic originating from or destined for multiple Indian states and plays a significant role in India's import and export operations. Since the project facilitates improved and better connectivity to JNPT, it escalates seamless movement of import and export operations, and contributes to country's economy.
- Vehicle Operating Cost and Fuel Savings: The project enables the decline in road congestion, thus bringing down the operating cost of vehicles.

FOUR LANING OF PHAGWARA – RUPNAGAR SECTION OF NH-344A

The four laning work of Phagwara – Rupnagar section of NH-344A, having a length of 80.8 km and cost of around Rs. 1367 crores was completed in May 2021. The section plays a vital role in connecting the major cities of Punjab i.e. Amritsar, Jalandhar, and Chandigarh. The four-lane national highway serves the connectivity to Kapurthala, Jalandhar, Ludhiana, Ropar and Mohali with a safe and pleasant environment. NH 344-A is also known as 'Green Highway' as it is fully saturated with healthy flowering plants throughout the stretch.



The Green Highway – Progress with Advantages:

- Allows businesses to hold less inventory with a well - functioning highway system.
- Allows just-in-time inventory procedures, greater locational choice, and a change in distribution or production pattern.
- Reduced transportation costs can generate savings in the overall cost of production.
- Helps to form big networks and quicker connectivity among places.
- Considered to be one of the safest highways of Punjab.
- The NH-344A project has reduced the travel time to almost half.
- It also provides a safe and direct travel to Khatkar Kalan, a village which has the ancestral home of Shaheed Bhagat Singh.

FOUR LANING OF UP/HARYANA BORDER TO ROHNA SECTION OF NH 334-B

The project of four laning of section of NH 334B having a length 40.2 km and cost of Rs. 1020 crores from UP border to Rohna Jhajjar section has an arterial road connecting Baghpat in Uttar Pradesh to Haryana via Sonipat. The project was completed in April 2022 and provides connectivity to neighboring towns, villages, and industries to NH-44, Eastern, and Western Peripheral Expressway.

Key Advantages

- Sonipat and Kharkhonda are major industrial hubs, and this road provides smooth, economic, safe and fast movement of raw and finished products to different parts of state and country as well.
- Large amount of tree plantation makes the project ecofriendly and gives road users a pleasant driving.
- A 45 km long service road has been provided for locals to travel safely.
- Improved geometric and modern safety provisions have been made to make the highway safe for road users.
- Plastic waste has been used in wearing course. Similarly, fly ash has been used in embankment construction.

FOUR LANING OF
ALIGARH-KANPUR SECTION OF NH-91

The 45 km long project includes 4 laning of Aligarh-Kanpur section of NH-91 in the state of Uttar Pradesh. The project with the total cost of Rs. 3091.2 crores received the certificate of completion in January 2022.

Key Features

- While the four-lane length of the section is 25.2 km, the six-lane length is 19.8 km.
- The length of service road is 17 km
- It also includes the construction of bypasses, 1 major bridge, 11 minor bridges, 22 vehicular underpasses, 2 truck lay bay, 3 bus lay bay, 1 foot over bridge, and 27 minor junctions.

IMPROVEMENT OF FOUR LANE
NELLORE BYPASS SECTION ON NH-16 –
REACHING OUT TO PERFECTION

The project includes operation and maintenance, including management of 4 lane of Nellore Bypass Section of NH-16 in Andhra Pradesh. The National Highway 16 (Old NH-5) is a major National Highway, a part of the Chennai – Kolkata section of the Golden Quadrilateral that runs along India's East Coast through the States of Orissa, Andhra Pradesh and Tamil Nadu connecting Corridor Cities to the major ports of Krishnapatnam, Chennai, Visakhapatnam, Paradip and Haldia. NH-16 is a part of the Golden Quadrilateral Project undertaken by National Highways Development Project.

With the total length of 17.1 km and cost of around Rs. 391.4 crores, the project was completed in Oct 2019.

Major Highlights

- The project highway connects to pilgrimage city Tirupati, India's Rocket launching station Satish Dhawan Space Centre (SDSH-SHAR) in Srihari Kota, and Special Economic Zone (SEZ), Sri City in the state of Andhra Pradesh.
- The project included the construction of 6 major intersections, 1 major and 5 minor bridges, 1 ROB, 36 box culverts, 31 HP culverts and 7 cattle underpasses.

MUNGER RAIL-CUM-ROAD BRIDGE ON NH-333B IN BIHAR

Also known as 'Krishna Setu', to honor the freedom fighter and first Chief Minister of Bihar, Late Sri Krishna Sinha, the Munger bridge is around 3.9 km bridge on NH-333B, a highway which stretches from Munger on NH-33 and merges into NH-31.

Initially, Indian Railways completed the rail bridge and rail access road (rail pahunch path) but due to unavailability of land for the approach road, the project was handed over to the Ministry of Road Transport and Highways of India, which was then completed by the National Highways Authority of India with a cost of Rs. 696 crores.

With the total length of 14.5 km and cost of Rs. 696 crores, the project was completed in December 2021.

Key Highlights

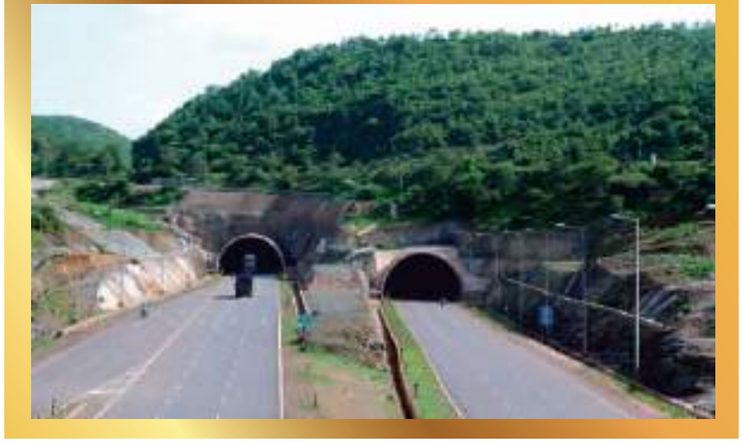
- The bridge reduces the travel time between Munger to Khagaria and Munger to Begusarai, to a great extent.
- The rail-cum-road bridge has been designed to reduce the traffic jams, save fuel, and enable rapid transportation.
- The bridge helps boost the tourism, industries, agriculture, and businesses, which further increases the employment opportunities in the region.
- The project will bring prosperity and advancement in the region which will prove to be utmost beneficial for the development of Bihar and the country.

WIDENING OF HUNGUND-HOSPET SECTION IN KARNATAKA

The 98 km long project includes widening of 2 lane portion of Hungund-Hospet section on NH-13 to 4/6 lanes, in the state of Karnataka. The project ensued under NHDP Phase III. The project corridor traverses through plain and rolling terrain in most of the length. The project was completed in May 2014.

Key Highlights

- The project includes the construction of service road, 8 major bridges, 45 minor bridges, 13 major and 83 minor intersections/junctions and 14 vehicle underpasses/ pedestrian underpasses.
- It also includes 3 toll plazas, 4 truck lay bays, 18 bus bays, and 2 rest areas.



CONSTRUCTION AND IMPROVEMENT OF KRISHNAGIRI-THUMBIPADI SECTION ON NH-44

With the total length of 86 km and total project cost of Rs. 521.5 crores, the project included work on Krishnagiri-Thumbipadi section on NH-44 (Old NH-7) in the state of Tamil Nadu and was completed in February 2009.

Key Highlights

- This project has reduced travel time from Salem to Krishnagiri.
- The section of NH-44 connects the districts of Salem, Dharmapuri and Krishnagiri. This section plays a vital role in connecting the steel city of Salem and electronic city of Bengaluru.
- The road stretch travels through the Ghat section of Thoppur and widening of this ghat section eased the traffic congestion.
- People travelling to the IT hub of Bengaluru get benefitted by formation of this section as it reduces the travelling time between the important cities.
- The section also connects to famous tourist locations of Yercaud in Salem district.

FOUR LANING OF

ROORKEE-CHHUTMALPUR-GAGALHERI SECTION OF NH-73 AND CHHUTMALPUR-GANESHPUR SECTION OF NH-72 A

The 4 laning of -Gagalheri section of NH-73 and Chhutmalpur-Ganeshpur section of NH-72A, having a length of around 53.3 km, passes through the districts of Haridwar in Uttarakhand and Saharanpur in Uttar Pradesh. The project worth of around Rs. 942 crores. The project also involves 11 km long Roorkee bypass and 10 km Chhutmalpur bypass.

Key Highlights

- The existing alignment of the project road section on NH-72A starts from the junction with NH-73 at Chhutmalpur and ends at Ganeshpur on NH-72A
- The project section on NH-73 starts at Roorkee, runs through the towns like Bhagwanpur, Chutmalpur
- The project includes the construction of 17 underpasses, 8 minor bridges, 3 major bridges (1 is under construction), 1 flyover, and 1 rail over bridge.

KUTHIRAN TUNNEL
ON NH-544 –
A TESTIMONY OF ENGINEERING PROWESS

Kuthiran Tunnel, Kerala's first-ever road tunnel is a path-breaking project in the Thrissur district of Kerala. The 1.6 km long twin-tube tunnel is southern India's longest 6-lane road tunnel. The tunnel is constructed along the Vadakkanchery-Thrissur section of National Highway 544 near the Kuthiran hills and is situated in the western part of Anaimalai Hills which are a part of the Peechi-Vazahani wildlife sanctuary. It is south India's first-ever 6-lane road tunnel. The left tunnel towards the Thrissur side was open to traffic in July 2021 and the other side of the tunnel was opened in January 2022.

Key Features:

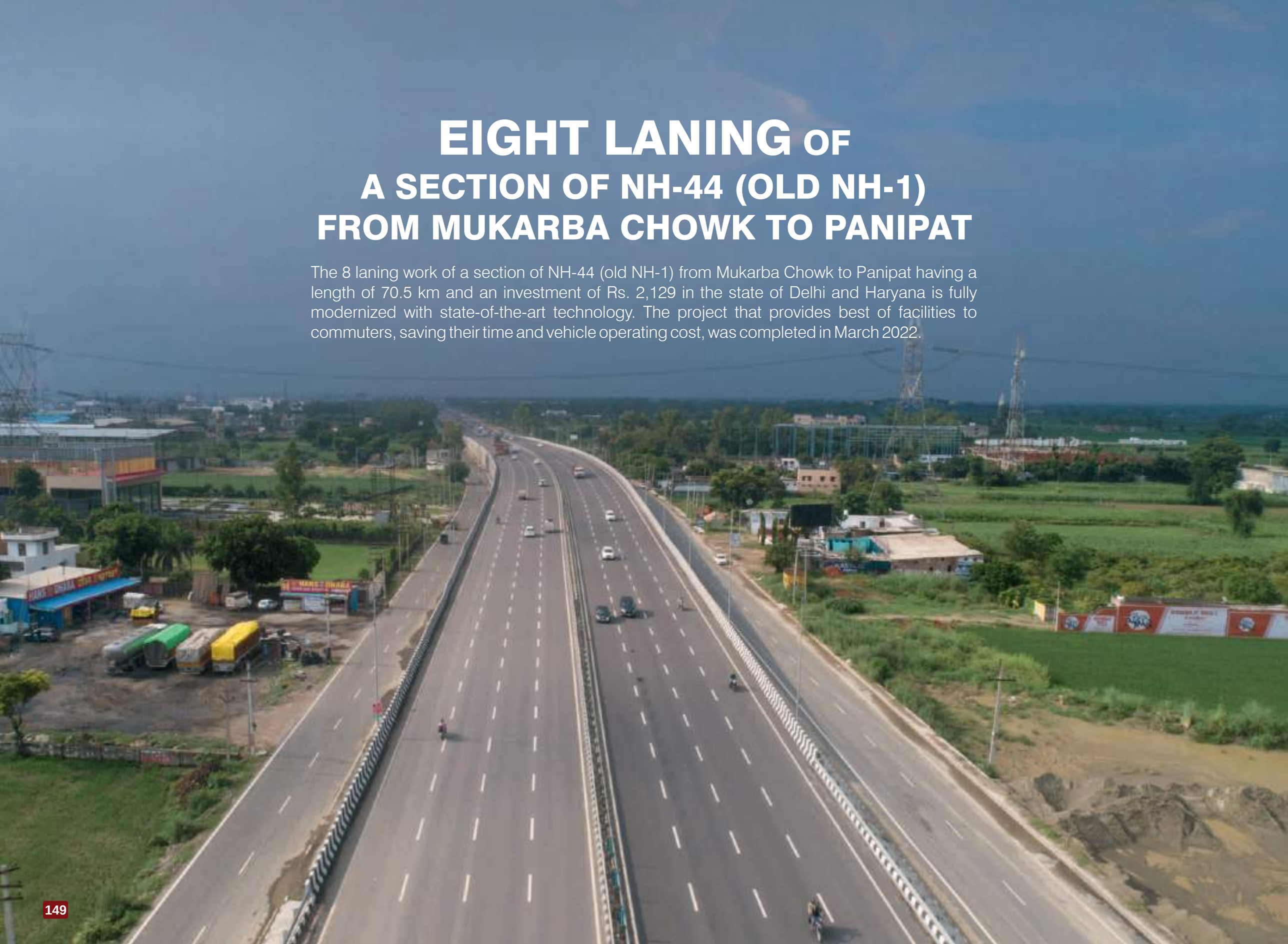
- 6 Lane Twin Tube Road Tunnel
- 1.6 km long tunnel designed through Peechi-Vazahani wildlife sanctuary
- 944 m Right Tube
- 955 m Left Tube
- Lighting and Ventilation

Key Benefits:

- Reduced road accidents
- Reduced travel time to Cochin Port
- Ensures safer and faster connectivity
- Boosts industrial growth and economy
- Greater access to places like Guruvayur, Munnar, Sabarimala etc
- Provides seamless connectivity of Kerala with Karnataka and Tamil Nadu
- Facilitates large scale infrastructure development in Kerala
- Improves connectivity to important ports and towns in North-South Corridor without endangering wildlife

EIGHT LANING OF
A SECTION OF NH-44 (OLD NH-1) FROM MUKARBA CHOWK TO PANIPAT

The 8 laning work of a section of NH-44 (old NH-1) from Mukarba Chowk to Panipat having a length of 70.5 km and an investment of Rs. 2,129 in the state of Delhi and Haryana is fully modernized with state-of-the-art technology. The project that provides best of facilities to commuters, saving their time and vehicle operating cost, was completed in March 2022.



Key Features:

- The Project Equipped with Cutting-edge Technology Includes Following Features
- Fully Access Controlled 8-lane Corridor - Access controlled corridor improves user experience, safety, and tolling efficiency. CCTV cameras are deployed across the stretch for better passenger safety and real-time monitoring. Closed ETC-enabled Toll System Closed tolling enables faster toll collection and uninterrupted travel experience.
- Technology Enabled Construction and Pre-construction Adoption of advanced technologies such as drone surveys, satellite imaging, lidar and ground penetration radar, automatic traffic counter and classifier (ATCC) for accelerated project implementation.

NEW KOILWAR BRIDGE ON NH-30

Built under the PM package, the 1.5 km 3 lane Koilwar bridge on NH-30 has been constructed at the cost of Rs. 270 crores and was completed in the year 2020.

To relieve the people from the congestion on the old Koilwar bridge built over Son River the new bridge is 500 meters away from the old rail cum road bridge. As planned, this new Koilwar bridge will pave new ways for the progress of Bihar.

Key Highlights

- The new Koilwar bridge enables smooth traffic movement from Patna to Bhojpur, Buxar, Chhapra and the Purvanchal Expressway.
- It allows easy movement of both heavy and light vehicles, saves time, reduces accidents, decongests the traffic, and boosts the employment opportunities for local population of the region.
- It also helps to improves the economic state of the farmers.

सत्यमेव जयते

National Highways Authority of India

Ministry of Road Transport & Highways

Government of India

भा रा रा प्रा
NHAI

BUILDING A NATION, NOT JUST ROADS