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INDUSTRY OUTLOOK

ROADS AND HIGHWAYS INDUSTRY OF INDIA

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“The link between infrastructure and development is not a once for all affair. It is a continuous process; and progress in development has to be preceded, accompanied, and followed by progress in infrastructure, if we are to fulfil our declared objectives of self-accelerating process of economic development”. Dr. V.K.R.V. Rao. (1981)¹

Introduction

Infrastructure development has emerged as the core determinant of the strategy to provide the cutting edge of development globally. The genesis of the concept of infrastructure lies in the major role played by public investment in American economic development in the 19th century. Further, the fast-paced development of the “tiger-economies” of South-East Asia emanated largely from efficient infrastructure.



Infrastructure refers to all those activities and facilities, which help to generate, sustain, and enhance, directly or indirectly, the growth in production and income in the rest of the economy rather than production and income generation within the infrastructure enterprises themselves because of the multiplier effects of such investment.

More generally, it encompasses all institutional prerequisites of efficient working of competitive markets and expansion in production.

Infrastructure development could be demand-driven (e.g., bypasses, bridges) or supply-driven (e.g. expressways). The government promoted infrastructure because of its characteristics of inelastic demand, non-exclusive demand, long gestation period creating asset-liability mismatch for lenders, structural weaknesses of the laissez-faire mechanism and the natural features of many of the infrastructural services, such as, scale economies and high demand externalities. Infrastructural projects are contract-driven, subject to several approvals, susceptible to political will and are usually cash flow-based financing as compared to asset-based financing for other conventional projects. The dichotomy between social and private costs (and benefits) necessitates selection of projects not justified based on the conventional and extended cost-benefit techniques.

World Bank studies estimated that 1 % growth in infrastructure development translates into 1 % growth in the economy. Enhancing infrastructural investment is critical to attaining India's goal of an industrial growth of 10 % per annum and a sustainable GDP growth of 7 % per annum.

Some important infrastructure sectors in India, as indeed in most parts of the world, relate to transport, energy, water & sanitation, communication, and social and commercial infrastructure.

In India, road transport is the dominant mode of transport, both in terms of traffic share and contribution to the national economy. Road transport plays a key role in promoting equitable socio-economic development across regions of the country. The infrastructure sector is the prime mover of the economy which contributes to faster economic growth and development.

Road transport forms an integral part of the infrastructure system. Building a cost effective and indigenous road network has been the priority of the government. In this regard, Bharatmala Pariyojana, Parvatmala scheme and Sagarmala Programme by the government are vital programmes and hold immense potential to boost the growth of the transportation sector.

Investing in the roads and highways sector is crucial as it contributes to not only in the movement of people and goods from one place to another but also enhances the country's economic growth and development and progress of the nation. It is also one of the significant factors in the transition from a developing nation to a developed nation.

India with about 66.71 lakh km has the second largest road network in the world, this comprises National Highways, Expressways, State Highways, Major District Roads, Other District Roads, and Village Roads (see Table 1).²

Table 1: Distribution of Roads in India

Road	Length (in km)
National Highways	1,46,145
State Highways	1,79,535
Other Roads	63,45,403

Source: <https://pib.gov.in/PressReleasePage.aspx?PRID=1993425>

Budget Allocations and Expenditures

The Ministry of Road Transport and Highways has been allocated ₹ 278000 crores in the Interim Budget 2024-2025, which is higher than the revised estimates for 2023-2024.³

In budget 2023-2024, the government has allocated ₹ 270434.71 crore to the Ministry of Road Transport and Highways, which is higher than the revised estimates in 2022-2023. In the previous budget allocation ₹ 199107.71 crore had been allocated to the Ministry.

Average Annual Budgetary Allocation of the Ministry has increased by more than 940% from about ₹ 25,872 crore/year during 2009-14 to about ₹ 2,70,435 crore during 2023-24. Length of 4 lane plus National Highway (NH) network including High Speed Corridors has increased by more than 250% from about 18,371 km in March, 2014 to about 46,179 km so far. Length of less than 2 Lane NHs has decreased from about 27,517 km in March, 2014 to about 14,870 km which is now only about 10% of the NH network.⁴

Table 2: Budget Allocation for Ministry of Road Transport and Highways (In ₹ Crores)

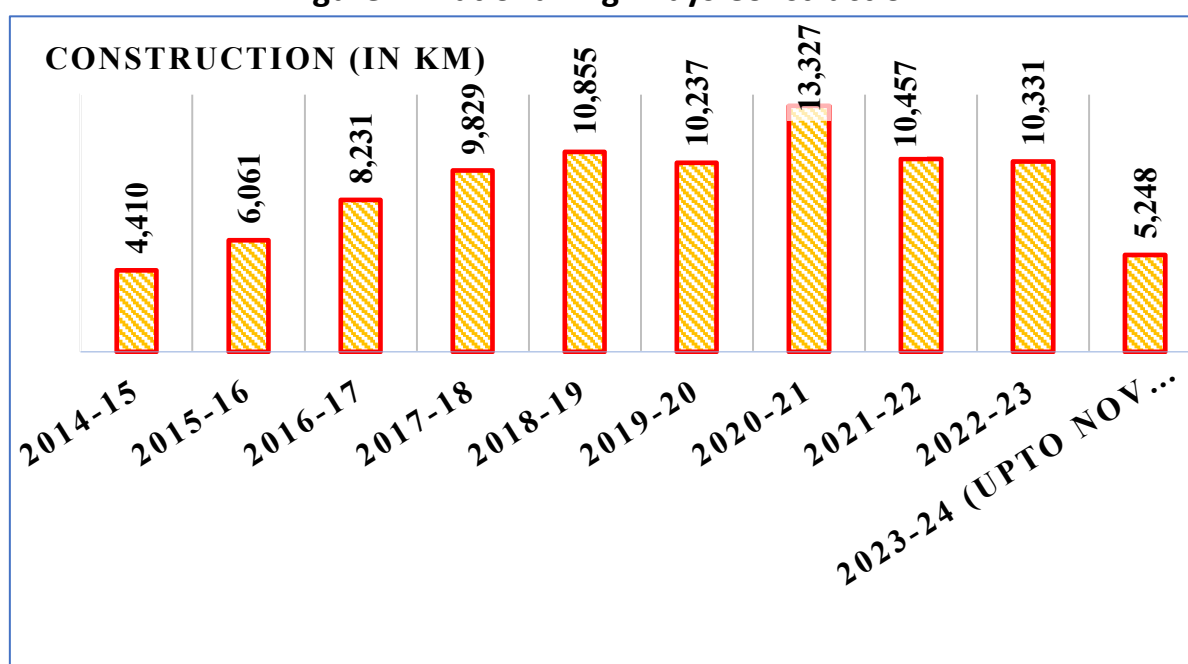
Financial Year	Budget Estimates	Revised Estimates	Budget Estimates
	2023-2024	2023-2024	2024-2025
Allocation	270434.71	276351.45	278000.00
Financial Year	2022-2023	2022-2023	2023-2024
Allocation	199107.71	217026.62	270434.71

Source: <https://www.indiabudget.gov.in/doc/eb/allsbef.pdf> ; pg. - 294,
<https://www.indiabudget.gov.in/budget2023-24/doc/eb/sbe86.pdf>

National Highways

The pace of construction of National Highways rose consistently between 2014-15 and 2023-24 due to the sustained thrust through corridor- based National Highway development approach. Ministry of Road Transport and Highways (MoRTH) constructed 5248 km of National Highways (Provisional figures).⁵ (Figure 1)

Figure 1: National Highways Construction



Source: <https://pib.gov.in/PressReleaseDetail.aspx?PRID=1993425>

Parties in Private Infrastructure

Parties in private infrastructure include:

- **Sponsors** (owners)
- **Contractors** - construct or operate the assets; sometimes form part of the sponsor group.
- **Financiers** - Banks and financial institutions.
- **Customers** - single customer (e.g. power supplied by IPP to an SEB) or many users (e.g. toll road)
- **Government** - Public private partnerships to private deals-government-regulator.
- **Facilitators** - Lawyers, financial analysts, engineers, and the credit rating institutions
- Huge fiscal deficit, long gestation lags necessitate long-term funds.
- Financial system is capable of mobilizing household savings & allocating them efficiently to meet equity & debt needs of expanding private corporate sector.
- Financial system consists of:
 - - Banks, NBFCs, Mutual funds
 - Insurance companies, pension funds,
 - Private equity firms, venture capital funds, angel investors and micro finance institutions.

Institutional Initiatives

Green Highways Policy, 2015

The Green Highways Policy was adopted in 2015 to develop eco-friendly National Highways with participation of the community, farmers, NGOs, private sector, institutions, government agencies and the Forest Department for economic growth and development in a sustainable manner.

Stakeholders: The contracts for greener highways will be given to NGOs, agencies, private companies, and government organizations. These stakeholders will be responsible for the survival and health of trees.

Monitoring Agency: Shall be responsible for monitoring the plantation status on a continuous basis by carrying out the site visit for field verification to check survival, growth and size of plantation and maintenance of the same.

Performance audit of executing agencies will be regularly conducted by the agency on an annual basis. New contracts will be awarded to the agencies based on their past performance audit.

The policy entails several **objectives** such as to reduce the impact of air pollution and dust by planting trees and shrubs along the National Highways which will act as natural sink for air pollutants and arrest soil erosion at the embankment slopes. ⁶

- evolve a policy framework for plantation along National Highways
- Reduce the impact of air pollution and dust as trees and shrubs are known to be natural sink for air pollutants.
- Provide much needed shade on glaring hot roads during summer.
- Reduce the impact of increasing noise pollution caused due to the increase in number of vehicles.
- Arrest soil erosion at the embankment slopes
- Prevent glare from the headlight of incoming vehicles.
- Moderate effect of wind and incoming radiation.
- Create employment opportunities for local people.⁷

Planting trees in any particular area will depend on the soil suitability and climatic conditions.

Policy Implication: The policy will strike a balance between highways development and environmental protection. It will also help in providing employment to 5 lakh people of the rural areas.⁸

Bharatmala Pariyojana

It was launched under the Ministry of Roads Transport and Highways with the primary focus of optimizing the efficiency of movement of goods and people across the country. The Bharatmala Pariyojana envisions development of about 26,000 km length of Economic Corridors, which along with Golden Quadrilateral (GQ) and North-South and East-West (NS-EW) Corridors are expected to carry majority of the freight traffic on roads.

Also, about 8000 km of Inter- corridors and about 7500 km of feeder routes have been identified for improving effectiveness of Economic Corridors, GQ, and NS-EW Corridors. The programme envisions development of ring roads, bypasses, and elevated corridors to decongest the traffic passing through cities and enhance logistic efficiency.

The need for this scheme arises because of the following reasons:

- Inadequate optimization of National Highway network & Road network due to resource constraints and absence of a national plan.
- The lack of integrated planning in the connectivity of major corridors and ports with hinterland.
- Due to the presence of congestion points, with multiple points of local congestion present even on already developed corridors.
- Lack of accident response infrastructure.

Features of the project:

The scheme focuses on enhanced effectiveness of already built infrastructure, multi modal integration, bridging infrastructure gaps for seamless movement and integrating National and Economic Corridors.

There are 6 key features of the programme:

- i. **Economic Corridors:** Integrating the economic corridors facilitates larger connectedness between economically important production and consumption centers.
- ii. **Inter- corridor and feeder routes:** This would ensure first mile and last mile connectivity.
- iii. **National Corridor Efficiency Improvement:** Through this, the greater actionable goal is to undertake lane expansion and decongestion of existing National Corridors.
- iv. **Border and International connectivity roads:** Better border road infrastructure would ensure greater maneuverability, while also boosting trade with neighboring countries.
- v. **Coastal and Port connectivity roads:** Port-led economic development is further boosted through connectivity to coastal areas, encouraging both tourism and industrial development.
- vi. **Green field Expressways:** Expressways have higher traffic configuration and choke points would benefit from green- field expressways.

Some of the major projects completed under the Bharatmala Pariyojana are the Eastern Peripheral Expressway, Delhi- Meerut Expressway, Narmada Bridge, Chenani-Nashri Tunnel and the Dhaula- Sadia Bridge. Uttar Pradesh, being home to the largest portion of population in the country, has been one of the core beneficiaries of Bharatmala Pariyojana. From National Highways to Expressways, the state is setting new standards in road connectivity.

The implementation of Pradhan Mantri Gram Sadak Yojana in Uttar Pradesh

There has been emphasis on building rural roads under the Pradhan Mantri Gram Sadak Yojana (PMGSY), besides initiating national and state highway projects. A total number of 20,540 road works have been cleared in Uttar Pradesh and 18,565 road works have been completed under PMGSY, as of December 09, 2021. The scheme was launched as a one-time special intervention, with the objective to provide rural connectivity, by way of a single all-weather road, to the eligible unconnected habitations of designated population size in the core network for uplifting the socio-economic condition of the rural population. The primary objective of the Scheme was to provide all-weather road connectivity to eligible unconnected habitations.

The salient features of PMGSY are:

- Standards and specifications as per Indian Road Congress (IRC) and Rural Roads Manual; decentralized and evidence-based planning.
- Dedicated implementation mechanism at central, state and district level, scrutiny of Detailed Project Reports (DPRs) at multiple levels.
- Three tier quality management system, strong IT backbone for monitoring and implementation of the programme, unbroken flow of funds, inbuilt mechanism for consultation with public representatives at planning, selection of roads and monitoring stages.⁹

Digital Initiatives

Bhoomi Rashi- Everyone will Benefit

It accelerates the process of publication of notifications for land acquisition. It has been useful in reducing the time taken for providing notification regarding approval and publication of land acquisition.¹⁰

Bhoomi Rashi has been designed as a single point platform by the Ministry of Road Transport and Highways for online processing of land acquisition notifications to accelerate highway infrastructure development projects in India. The portal was made

operational on 1st April 2018. This will fast track the process of land acquisition and result in greater benefits for all stakeholders. For the commencement and completion of construction of National Highways, land acquisition is critical, which begins once the alignment plan and land acquisition plan for a specific project, are approved.

Earlier challenges in Land Acquisition

The essential aspect of a National Highway construction project is the timely availability of land. In many cases, it has become a major bottleneck on account of slow procedures and delay in issuance of notifications.

The whole land acquisition process was time consuming and lacked transparency earlier, leading to unforeseen delays, which involved drafting and publication of multiple notifications, each of which would pass through several authorities for approval before its final publication.

The funds out of which compensation was to be paid for land acquired under the National Highways Act 1956, were placed solely at the disposal of the Competent Authority for Land Acquisition (CALA). For NHAI projects and National Highways Interconnectivity Improvement Projects (NHIIP), these funds were placed in a joint account held in the name of CALA and Project Director (PD). Funds were disbursed by CALA after declaration and finalization of land acquisition awards. As **Land Acquisition** involves huge amounts of Compensation and the whole process takes place over a prolonged period, these funds were unnecessarily parked in CALA's account for a long time, thereby resulting in delays in projects.

In the manual procedure of Land Acquisition, there were several bottlenecks:

- Mismatch or Errors in entries like Survey Numbers, Village Name, name of CALA, etc.
Parking of huge Government funds with CALAs.
- Physical movement of draft Notifications for their publication in the Gazette of India-Extra Ordinary, resulting in delay.
- Multiple Entries of Land Parties by CALA at every subsequent stage.
- Non transparency in determination and disbursal of compensation.

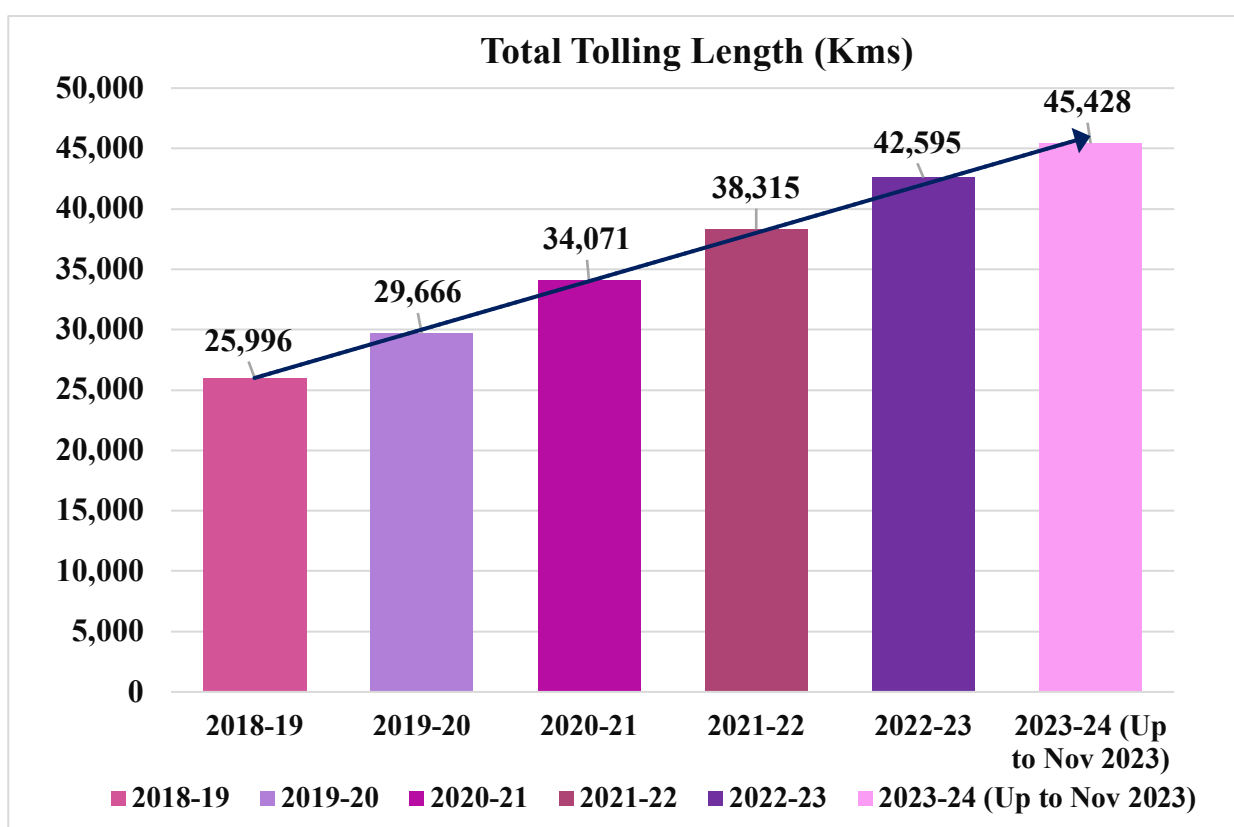
Therefore, the need of the hour was workflow-based automation of the present Land Acquisition process for National Highway (NH) projects. The solution was the development and operationalization of a comprehensive web-based portal. This portal would enhance the efficiency of the land acquisition process, ensure transparency and accountability and result in e-transfer of benefits directly to the

accounts of the beneficiaries. Its benefits would be faster process completion, transparent fund transfer to the landowners and reduction of procedural errors. ¹¹

E-tolling

To remove traffic bottlenecks at toll plazas and ensure seamless movement of vehicles and hassle-free collection of tolls, the Government has implemented a National Electronic Toll Collection (NETC) programme. It provides for electronic collection of tolls through FASTags. The National Payment Corporation of India is the Central Clearing House (CCH). ¹²

Figure 2: The Financial Year wise user fee collection on National Highways



Source: <https://pib.gov.in/PressReleaseDetail.aspx?PRID=1993425>

Policy Support

- 100% Foreign Direct Investment (FDI) is allowed under the automatic route in the road and highways sector, subject to applicable laws and regulation.
- In October 2021, the government issued a notice related to concessions under the Vehicle Scrapping Policy (effective from April 2022) to encourage

vehicle owners towards discarding old vehicles which have higher fuel consumption costs.

- The Finance Bill 2019 made certain changes to the Central Roads and Infrastructure Fund Act. The central Government will now be responsible for formulating criteria for any state road project.¹³

Gati Shakti Plan – National Master Plan

- The Indian government launched Gati Shakti- National Master Plan, which will help lead a holistic and integrated development of infrastructure generating immense employment opportunities in the country.
- The aim of the plan is to create a digital platform that would enable 16 ministries to collaborate on integrated planning and coordinated implementation of projects. The plan will also bring together departments such as railways, roads and highways and others and implementation will be done with the help of geo satellite imaging and Big Data, land, and logistics.
- India's Gati Shakti program has consolidated a list of 81 high impact projects, out of which road infrastructure projects were the top priority. The major highway projects include the Delhi- Mumbai Expressway (1350 kilometres), Amritsar- Jamnagar Expressway (1257 kilometres) and Saharanpur-Dehradun expressway (210 kilometres). The main aim of this program is a faster approval process, which can be done through the Gati Shakti portal and digitized the approval process completely.¹⁴

Based on PM Gati Shakti National Master Plan, India has planned around 8890 km of roads, 27,000 km of railway tracks and 920 km of petroleum and natural gas pipelines. This platform has led to a sharp reduction in time taken by the road transport and highways ministry to prepare the detailed project report (DPR). The time is reduced to about 15 days from six months.¹⁵

Going Green

The Ministry of Road Transport and Highways has firmed up a draft policy on the use of inert waste material that does not disintegrate naturally and has sought public comments. It is aimed at resolving the twin problems of disposal of urban solid waste and rising requirement of earth or soil for the construction of embankments as highway construction picks up pace. The Ministry said in an office memorandum that the inert material available from these sites can be potentially utilized in the construction of embankments for National Highways and state roads. The government has now decided to dovetail highways construction with Swachh Bharat Mission 2.0.

According to the draft guidelines, all projects, whether in the bidding stage or DPR (detailed project report), will be eligible to use inert material and an enabling provision may be made mandating use of inert soil in the construction of embankment of highway or roads, wherever it is provided on site by the local bodies.

The disposal of solid waste is a major environmental challenge that urban areas are facing. The first pilot project was carried out in Delhi-NCR on urban extension road and DND Sohna spur of Delhi – Mumbai Expressway while the second pilot project was on Ahmedabad-Dholera Expressway. Inert material, which is one of the major components of municipal solid waste, was used to make embankments, in both these cases.¹⁶

Green Cover Index

The National Highways Authority of India (NHAI) has entered a Memorandum of Understanding (MoU) with the National Remote Sensing Centre (NRSC) under the Indian Space Research Organization (ISRO) for a period of three years to develop and report a Green Cover Index for the extensive network of National Highways in India. The prioritization of greening Highway Corridors has been a focal point for the Ministry of Road Transport and Highways (MoRTH) and NHAI, since the initiation of the Green Highways Policy in 2015.¹⁷

Way Side Amenities

To improve the comfort and convenience of the Highway users, the Ministry of Road Transport and Highways has planned the development of state-of-the-art Wayside Amenities (WSA) at about every 40 kms along the National Highways on PPP mode. These facilities are aimed to provide multiple options of rest and refreshment for the highway commuters during their journey.

Some of the mandatory facilities being developed at each WSA are fuel stations, EV charging stations, food court / restaurants, dhabas, convenience stores, clean and hygienic toilet facilities, drinking water, first aid / medical room including childcare room, dedicated area for promoting local artisans, car/bus/truck parking, drone landing facilities / helipad etc.¹⁸

Clutch of Funds in Race for NIIF'S \$1.2 Billion Roads Portfolio

The portfolio consists of five road stretches totalling 230 kilometres across India, and is likely to fetch an enterprise value of \$1-1.2 billion. Global infrastructure majors signing the Non-Disclosure Agreement (NDA) include Spanish Company Abertis, French road developer VINCI Highways. PE fund KKR and two Canadian funds- CDPQ, Canada Pension Plan Investment Board (CPPIB). The NDA has also been signed by the

Edelweiss-owned Road operator Sekura Roads. This is the largest road portfolio available in the market and spread across the country. Major assets within this portfolio include two highways situated in Jammu & Kashmir, the 16.3-kilometre Qazigund Banihal Expressway and the 64.5-kilometre Jammu Udhampur Highway.¹⁹

Road Ministry to seek Technical Help from IITs

The Ministry of Road Transport and Highways will seek expert technical help from IITs. The Ministry will seek expert advice and technical guidance from IIT professors on new areas of development in the sector as well as scientific solutions to practical problems arising in highway construction and maintenance. The Ministry has entered a memorandum of understanding with IIT-Roorkee, IIT-BHU, IIT Madras and Jawaharlal Nehru Technological University, Anantpur to appoint chair professors in these institutes.²⁰

Faster Roads Ahead

In India, average travel speed on highways is a paltry 47 kmph. In US, it is over 100 kmph, in China, it is 90 kmph. Plans are afoot to push this figure up to 85 kmph on the National Highway (NH) network. The Ministry of road transport and Highways plans to construct and expand approximately 41,000 km of NHs, including 15,000 km of high-speed, access-controlled corridors, by the fiscal year 2031-32. Two critical aspects of the plan are, one, decongesting highways in and around cities; two, building high-speed corridors (HSCs). The increased speeds on NHs could bring down the logistics cost to 9-10% of GDP from 13-14%, other than making travel for all less time-consuming.²¹

Qualitative Reforms in Project Reports

The Union Road Transport and Highways minister Nitin Gadkari pitched for qualitative reforms in the detailed project reports (DPRs) being prepared for national highway projects, saying poor quality of DPRs results in accidents and deaths on highways every year.²²

Charging up Highways for e – mobility

The government has a plan afoot and is working on to build electric vehicle – ready highways on the Golden Quadrilateral in a major effort towards reducing fuel consumption and vehicular emissions through electrification of intercity public transport. It is planned over the next seven years to accelerate the adoption of e-mobility and support the deployment of e-buses across the country. These e-highways would be powered with green energy - enabled charging infrastructure.

The new e-highways are expected to infuse the development of charging infrastructure, spurring more people to buy electric cars for everyday commutes.

The Golden Quadrilateral (GQ) is the longest highway network in the country connecting the four metros of Delhi, Mumbai, Kolkata, Chennai- and along with them several industrial, agricultural, and cultural hubs. The development of e-highways on the GQ is likely to give a significant boost to the government's aim to reduce logistics costs and at the same time, curb emissions in line with COP 28 guidelines.²³

Reviving the Build-Operate-Transfer (BOT) model

Speaking at a conference Shri Nitin Gadkari said that *"we are committed to revive BOT model and make it investment friendly and attractive for private partnerships. This will not only strengthen the road infrastructure but will have a ripple effect that will help to strengthen the economy, increase the employment potential, and reduce the logistic cost."* The conference was organized by the Ministry of Road Transport and Highways (MoRTH) with industry stakeholders like Concessionaires/ Contractors, Highway Operators, Investment Trusts, Bankers/Financial Institutions, Technical & Financial Consultants from the road sector in New Delhi.²⁴

Ropeway Projects identified Under National Ropeways Development Programme "Parvatmala Pariyojana"

At the Ropeway: **Symposium-Cum-Exhibition held in New Delhi on January 23rd, 2024**, the Union Minister for Road Transport and Highways Shri Nitin Gadkari said more than 200 projects at a cost of ₹ 1.25 lakh crore have been identified in coming five years under National Ropeways Development Programme, "Parvatmala Pariyojana". Addressing the event, he said that our foremost priority should be to make ropeways economically viable by bringing down the overall project cost and encourage Public Private Partnership to develop the ropeway network in the country.

Shri Nitin Gadkari said apart from facilitating tourism in the hilly areas, the ropeway offers huge potential in the urban public transport as well. The focus should be in developing indigenous and cost-efficient solutions without comprising safety. Ropeways hold immense potential to positively impact tourism and job creation in the country. He also said priority is to bring standardization of existing policies & codes and transform the Ropeway industry by encouraging the manufacturing of Ropeway Components under the "Make in India" initiative.

The event day also marked the signing of MoU between NHLML and IIT Roorkee for creating a center of excellence for Ropeways and other innovative alternate mobility systems.

The Union Minister Shri Nitin Gadkari said 60% Construction Support is provided under Hybrid Annuity Mode (HAM for Ropeways) as compared to 40% support provided under National Highways to attract more private players for development of ropeways under Parvatmala Pariyojana. ²⁵

Collaboration of NHAH with GSI

NHAI has signed a Memorandum of Understanding (MoU) with Geological Survey of India (GSI) on 31st January, 2024, to provide services to NHAI for site specific geotechnical consultancy and assist in vetting of Detailed Project Reports (DPR) from geotechnical point of view. The MoU was signed in presence of NHAI Chairman Shri Santosh Kumar Yadav and Dr. Saibal Ghosh, Deputy Director General, Geological Survey of India along with other senior officials from NHAI and GSI.

As per the agreement between NHAI and GSI, Geological Survey of India will provide site specific geotechnical consultancy services related to preparation of geological map of the area providing detailed geological features, preparation of slope stability study of the road and providing necessary recommendations, identification of geologically weak zones at various sites/stretchers of National Highways , suggest site specific remedial measures, 3D geological logging of tunnels in the project and suggest necessary & relevant stabilization measures. GSI will also undertake detailed analysis of DPRs prepared by NHAI consultants.

This unique initiative of collaboration between two Government organizations to share best practices will go a long way in providing strong impetus to quality construction of National Highways. It will not only help in easier operations and maintenance of the highways but will also provide smooth and seamless travel experience to the National Highway users.²⁶

NHAI's Total Asset Monetization Program

National Highways Authority of India (NHAI) has raised the highest ever concession value of ₹ 15,624.90 crore through 'InvIT Round-3'. NHAI is adopting three modes for monetizing, i.e., Toll Operate Transfer (TOT), InvIT and Securitization. During this financial year, NHAI has already awarded four TOT Bundles and monetized value of ₹ 15,968 Crore.²⁷

Industry Risks and Challenges

The development of roads has been constrained, *inter-alia*, by delay in acquisition of land; delayed permission- railway over bridge; problems in rehabilitation and resettlement; non-availability of state support agreement; cost and time overrun resulting in delay in COD; delay in getting environment / forest department clearances; delay in shifting utilities, e.g., high tension electric lines and towers; changed plan of pedestrian crossing, agriculture vehicle underpass by local villagers, etc.

Road Accidents

In 2022, India witnessed a 9.4 % increase in fatalities due to road accidents, with 168,491 people losing their lives last year either due to reckless driving, speeding, drunken driving or non-compliance of traffic regulations, while the total number of accidents went up by 11.9% to 461,312, which translates into 19 deaths every hour and 53 accidents per hour last year. The number of injured was 15.3% higher compared to the previous year at 443,336.²⁸

There has been an increase in Road Accidents by 12%, increase in Road Accidents Deaths by 10%, resulting in socio-economic loss of 3.14% to GDP, 60% of deaths are in young age group of 18 to 35 years. He also said accident death is loss of bread-earner in a family, professional loss to employer & overall loss to the economy, said Shri Nitin Gadkari, the Union Minister for Road Transport and Highways.²⁹

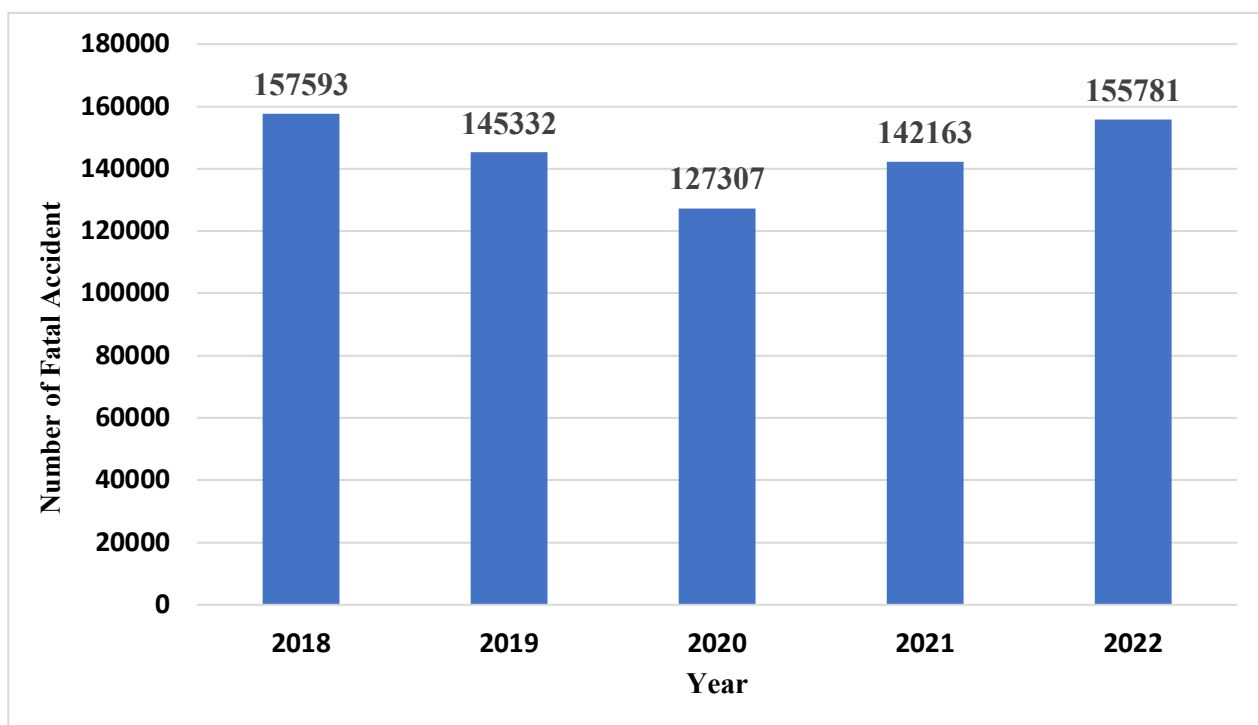
According to the report Road Accidents in India 2022, 151,000 (32.9%) of the total road accidents took place on the National Highways, including expressways, 106,000 (23.1%) on state highways and the remaining 202,000 (43.9%) on other roads.

Fatal road accident victims largely constituted young people in the productive age groups. “Young adults in the age group of 18-45 years accounted for 66.5% of victims during 2022,” the report mentioned, adding that people in the working age group of 18-60 years constituted 83.4% of total road accident fatalities.

The Ministry of Road Transport and Highways minister Nitin Gadkari has set a target to reduce the number of accidents and resulting deaths by half by 2024. Tamil Nadu recorded the highest number of road accidents on national highways in 2022, the number of persons killed in road accidents was the highest in Uttar Pradesh. 64,105 accidents (13.9%) were registered in Tamil Nadu, followed by Madhya Pradesh with 54,432 or 11.8%.

In 2022, under the category of traffic rule violations, over-speeding accounted for 71.2% of persons killed followed by driving on the wrong side (5.4%).³⁰

Chart 1: Trends in the number of Fatal Accidents: 2018-2022



Source: https://morth.nic.in/sites/default/files/RA_2022_30_Oct.pdf

Delay in Road Projects

Construction works on National Highways sometimes fall behind schedule due to various reasons like delay in land acquisition, delay in fulfilment of Government's condition precedent like various clearances, utility shifting, delays on the part of Contractors/Concessionaire including cash flow issues etc. Four NH projects passing through Dhenkanal district in the State of Odisha are delayed mainly due to delay in land acquisition, forest clearance and slow performance of contractor.³¹

As on August 1st, 2023, according to the Ministry of Statistics and Programme Implementation, nearly half of the country's 1646 infrastructure projects-from roads to railways to airports- are delayed by an average of 37 months and 388 projects reported a combined cost escalation of over ₹ 4.65 lakh crore till July. The delay was attributed to hurdles in land acquisition, forest or environmental clearance, lack of infrastructure support and linkages, supply of equipment, fund constraints, and geological surprises.³²

Cost Overrun of Projects

The cost overruns of infrastructure projects rose slightly to 17.5% in November compared to a nearly four year low of 17.4% achieved in October even as the number of projects running behind schedule declined to 46.1% from 46.6% as reported in the official data.

According to the Ministry of Statistics and Programme Implementation (MoSPI) that tracks infrastructure projects worth ₹150 crore and above, the average time overrun of these projects also improved last month. In the list, the number of central government projects rose to 1831 in November from 1788 in the previous month as it added 58 new projects last month, most of which belonged to the road sector.

Among the significant reasons for delays, the government counts delays in land acquisition, environmental clearances, lack of infrastructure support and linkages, and tie-ups for project financing.³³

The Way Forward

Promoting Bank Lending

- Use of corporate and public savings with appropriate instruments and pension funds.
- Tax free infrastructure bonds issued by banks
- SLR and CRR exemption to infrastructure bonds.
- Categorizing infra advances as part of sector lending
- Allowing banks to raise foreign currency bonds for infra lending.
- Deepening of secondary market.

Sustainable road infrastructure necessitates full-cost recovery, transparent, targeted, and measurable subsidy, cost savings through energy efficiency, reduction of leakages, manpower rationalization, full autonomy to local bodies to fix realistic tariffs, operation of escrow account, etc.

Public Private Partnership (PPP) Model

Private infrastructure investment remains crucial but public and government infrastructure funds remain by far the largest source of road financing. All these sources of funding must be maximized to properly address road financing needs; thus, the relevance of public-private partnerships in spending for both new investment and operations and maintenance on existing roads.

The three lessons of PPP model are:

- Carefully gauge the “readiness for implementation” to avoid initial start-up delays and ensure appropriateness.
- Regular monitoring.
- Involve project beneficiaries from inception.

Success in road financing requires synchronised action from government, private sector, industry, finance, banks, technology institutions, users, and stakeholders.

Promoting Growth of Private Sector

In view of the changed paradigm, severity of fiscal crisis, relative reduction of current and capital expenditures on infrastructure and social sectors, state-of-the-art-technology and efficient project management, a more holistic approach in streamlining road infrastructure with substantial private sector financing in a competitive environment to improve quality and enhance coverage is needed. Privatization helps to relax capital constraints, enhance efficiency, and increase investments.

This is attributable to the fact that (a) the placement of both residual control rights and residual cash flow rights in the hands of private shareholders (Boycko, Shleifer, and Vishny 1992, 1993³⁴; Sappington and Stiglitz 1987³⁵; Shapiro and Willig 1990³⁶) and (b) privatization is a way for the government to credibly position private information concerning enterprise costs that would be necessary for easy intervention and subsidization (Schmidt 1996³⁷; Shirley and Walsh 2000³⁸). The sustainability of urban road infrastructure necessitates full-cost recovery, transparent, targeted, and measurable subsidy, if necessary, cost savings through energy efficiency, reduction of leakages, manpower rationalization, full autonomy to local bodies to determine realistic tariffs, operation of escrow account, etc.

Broadening Development Partnerships

While the financing was always beset with difficulties, the resource crunch has exacerbated in recent years. There is a compelling need for determination of tariffs based on competitive bidding, mitigation of fuel supply risk, easy assignability in case of debt service default by original licensee and a revenue-sharing arrangement to protect against the downside of market risk.

Meeting road needs requires massive investment and much greater efficiency to ensure low costs and good quality service. Hence, a significantly increased role of banks and financial institutions (FIs) is imperative to meet emerging challenges. This approach provides a holistic long-term objective of strengthening the crucial link between growth of infrastructure, flow of investments and their role in influencing development. But there are differences about the collaborative strategy to be adopted for spawning, nurturing and sustaining innovations. Increased private sector participation within a competitive framework could reduce costs to the economy and enhance complementarity between public investment and private capital in developing and maintaining critical infrastructure.

Montek S. Ahluwalia (1998) ³⁹ stressed *“public recognition of the need for private investment in infrastructure (which helps to reduce perceptions of political risk), a structure of tariffs which can assure remunerative return for investors, clarity of government policy and transparency of procedures governing the interface between private investors and various public authorities to reduce uncertainty and finally, establishment of independent regulatory agencies charged with ensuring fair treatment for private investors”*.

Private participation in infrastructure development is basically influenced by risk profile of projects and source and modalities of finance, besides, the question of public guarantee and legalities. Despite broad consensus on the salubrious impact of the private sector on infrastructure financing, the modalities for working out long-term pricing mechanisms for natural monopolies, such as, water supply, transport, power, and irrigation without compromising on social and equity goals have yet to be worked out.

Requirements of different infrastructure sub-sectors need to be speedily addressed in different ways to reconcile various conflicting objectives. Success requires (a) creating incentives for productive efficiency and providing sufficient comfort to investors to ensure implementation of desirable projects and (b) promoting allocative efficiency in the face of distortionary, anti-competitive and non-transparent effects of cross-subsidization and avoiding heavy burden on the users, particularly vulnerable sections.

The need for calibrating the pace and character of integration with the world economy requires higher investment in economic infrastructure and a marked improvement both in the quality and the quantity of infrastructure services by ensuring realistic prices for infrastructural facilities through elimination or reduction of subsidies and a more active involvement of the private sector, including public-private participation in ownership of assets and provision of services. A coherent synchronized policy, regulatory and legal framework is required to logically address the concerns of both the government and the private sector to strengthen linkages and competitive advantage (Klein, So and Shin, 1996⁴⁰, Fishbein and Babbar, 1996⁴¹).

While the primary objectives of creating an incentive framework should be to benefit consumers, secondary objectives could relate to reduction in national debt, stimulation of domestic capital markets, reduction in capital and operating subsidies, increased range, and improved quality of services, etc. The pace and sequence of transfer of infrastructure components to the private sector depends on complexity of infrastructure sector, rate of growth in demand and competitiveness of marketing options for unbundling by function or geography, legal regime regarding ownership of land and other critical assets and capacity for economic regulation.

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