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India Roads and Highways Market, By Road Type (National/Interstate Highways, State Highways, Other), By Components (Road, Bridges/Tunnels/Culverts, Marking & Signage, Safety Equipment, Traffic Management System, Others), By Process (Maintenance, Expansion) By Region, Competition, Forecast & Opportunities, 2020-2030F

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Abstracts

India Roads and Highways Market was valued at USD 152.16 Billion in 2024 and is expected to reach USD 266.60 Billion by 2030 with a CAGR of 9.63% during the forecast period.

Roads and highways are essential infrastructure that facilitate the movement of people, goods, and services. A road is a paved or unpaved route connecting different locations, typically used by vehicles, pedestrians, and cyclists. Roads vary in size and function, ranging from narrow rural paths to wide urban streets.

Highways, on the other hand, are major roads designed for high-speed travel and long-distance transportation. They often have multiple lanes, controlled access points, and higher safety standards to accommodate heavy traffic. Highways can be categorized into expressways, freeways, and motorways, depending on their design and regulations.

Both roads and highways are crucial for economic growth, social connectivity, and regional development. They support trade, tourism, and emergency services while also influencing urban planning and land use. Governments and transportation agencies are responsible for constructing, maintaining, and upgrading these networks to ensure

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safety and efficiency.

Advancements in technology have led to the development of smart roads and intelligent transportation systems, improving traffic management and sustainability. As urbanization increases, expanding and modernizing road networks remain a priority to enhance mobility and reduce congestion. Well-planned roads and highways contribute to a more connected and prosperous society.

For instance, Union Minister of Road Transport & Highways Mr. Nitin Gadkari has unveiled over 200 projects totaling USD 14.97 billion earmarked for the next five years under the National Ropeways Development Programme known as 'Parvatmala Pariyojana'.

The Government aims to construct 65,000 kms of national highways at a cost of USD 64.17 billion.

A network of 35 Multimodal Logistics Parks are planned to be developed as part of Bharatmala Pariyojana, with a total investment of about USD 5.55 billion, which can handle around 700 MMT of cargo.

Key Market Drivers

Rising Urbanization and Population Growth

India’s rapid urbanization and growing population have significantly increased the demand for well-developed roads and highways. The country's urban population is projected to reach 600 million by 2030, leading to higher vehicular movement, congestion, and the need for better road infrastructure.

Urban centers are expanding, and cities are integrating with surrounding suburban areas, necessitating improved connectivity. The rise of smart cities under the Smart Cities Mission has further fueled the demand for modern road networks, flyovers, and expressways to support efficient transportation.

With higher disposable incomes and increasing vehicle ownership, there is a surge in private and commercial vehicle traffic. This trend has led to congestion in existing roads, pushing authorities to construct multi-lane highways, bypasses, and ring roads. Additionally, increased industrialization and the expansion of logistics hubs require seamless road connectivity to transport goods efficiently. The demand for better

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infrastructure is particularly high in Tier-2 and Tier-3 cities, which are witnessing rapid development.

To address urban mobility challenges, the government and private players are investing in metro connectivity, bus rapid transit systems (BRTS), and expressway projects. These developments are essential to accommodate India’s expanding urban population while reducing congestion and travel time.

Growth of Logistics and E-Commerce Industry

The rise of India’s logistics and e-commerce sectors is a key driver for road and highway infrastructure development. With India emerging as a global trade hub, a well-connected road network is essential for the smooth transportation of goods across states and regions.

The logistics sector has witnessed significant growth due to increasing trade, industrial expansion, and government policies like GST (Goods and Services Tax), which has streamlined interstate movement. A robust road network ensures timely deliveries, reducing costs for businesses and boosting overall efficiency.

India's e-commerce boom, driven by platforms like Amazon, Flipkart, and Reliance JioMart, has increased the demand for efficient road connectivity. Faster delivery timelines and expanding consumer bases require better last-mile connectivity, pushing for better roads in urban and rural areas. Additionally, the rise of third-party logistics (3PL) providers and warehousing hubs has fueled the need for expressways and highways. Companies are now investing in strategic warehouse locations near major highway corridors to ensure seamless distribution.

The government's focus on developing dedicated freight corridors and multi-modal logistics parks is further strengthening the transportation ecosystem. Enhanced road connectivity reduces logistics costs and makes India more competitive in global trade, supporting economic growth.

Technological Advancements and Sustainability Measures

The adoption of technology and sustainable practices is shaping the future of India's roads and highways sector. With increasing concerns about environmental impact and traffic management, innovative solutions are being implemented to improve road infrastructure.

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One of the major developments is the introduction of smart highways equipped with intelligent traffic management systems (ITMS), digital toll collection (FASTag), and automated surveillance for better traffic regulation. These technologies help in reducing congestion, improving safety, and enhancing road user experience.

Sustainability is also a major focus, with the government promoting eco-friendly road construction materials and techniques. The use of recycled materials, plastic waste in road construction, and energy-efficient lighting systems is gaining traction. Several highway projects are now incorporating solar-powered streetlights and electric vehicle (EV) charging stations, aligning with India's green mobility goals. Additionally, the push for electric vehicles (EVs) and alternative fuel infrastructure is driving highway modernization. The National Highways Authority of India (NHAI) is planning to develop dedicated EV lanes and charging corridors to support the growing number of electric vehicles on the roads.

With the integration of Artificial Intelligence (AI), IoT (Internet of Things), and Geographic Information Systems (GIS), India's road infrastructure is becoming more efficient, sustainable, and future-ready. These advancements ensure better road safety, reduced travel time, and enhanced environmental conservation.

Key Market Challenges

Land Acquisition and Environmental Concerns

One of the most significant challenges in India's roads and highways sector is land acquisition, which often leads to project delays, cost overruns, and legal disputes. Acquiring land for road expansion or new highway construction involves negotiations with landowners, government agencies, and local communities. Many infrastructure projects face resistance from people unwilling to give up their land due to concerns over compensation, displacement, and loss of livelihood.

The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act (2013) has made the process more structured, but challenges persist. Landowners often demand higher compensation, leading to prolonged negotiations and legal battles. Additionally, encroachments and informal settlements on proposed project sites further complicate land acquisition.

Another major issue is environmental clearance. Many highway projects pass through

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ecologically sensitive areas, including forests, wildlife habitats, and agricultural lands. Obtaining environmental approvals from multiple regulatory bodies can be time-consuming, delaying the start of construction. Concerns about deforestation, water pollution, and disruption to local biodiversity often lead to public opposition and legal interventions.

To address these issues, the government has introduced policy reforms, including faster approvals, alternative land acquisition models, and compensation packages for displaced communities. Additionally, the use of elevated corridors, tunnels, and green highway initiatives is being encouraged to minimize environmental impact. However, balancing infrastructure development with ecological conservation remains a key challenge.

Poor Road Maintenance and Traffic Congestion

While India has made significant progress in building roads and highways, maintenance and upkeep remain a critical challenge. Many roads, especially in rural and semi-urban areas, suffer from poor quality due to inadequate maintenance, lack of proper drainage systems, and substandard construction materials. Potholes, uneven surfaces, and broken roads not only cause inconvenience but also increase vehicle operating costs and accident risks.

India’s road infrastructure faces an increasing burden due to rapid urbanization and rising vehicle numbers, leading to severe traffic congestion in cities and on highways. The number of registered vehicles has surged in recent years, but road expansion has not kept pace, resulting in traffic bottlenecks, longer commute times, and higher pollution levels. Major metropolitan cities like Delhi, Mumbai, Bengaluru, and Kolkata experience daily congestion, impacting productivity and fuel efficiency.

Another issue is inefficient traffic management and enforcement. Poorly designed road junctions, inadequate signage, and weak enforcement of traffic laws contribute to chaotic driving conditions. The lack of intelligent traffic systems (ITS), synchronized signals, and well-planned public transport alternatives exacerbates congestion problems.

To improve road maintenance, authorities are focusing on performance-based contracts, digital monitoring, and private sector participation. For congestion reduction, solutions such as expressways, dedicated freight corridors, metro expansions, and smart traffic management systems are being implemented. However, sustained efforts

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and investment in long-term infrastructure planning are necessary to overcome these challenges.

Key Market Trends

Expansion of Expressways and Greenfield Projects

India is witnessing a rapid expansion of expressways and greenfield highway projects to enhance connectivity, reduce congestion, and improve transportation efficiency. Expressways, which are high-speed, access-controlled roads, are becoming a key focus area due to rising vehicular traffic and increasing demand for faster travel.

One of the most ambitious projects is the Delhi-Mumbai Expressway, which spans over 1,300 km and aims to reduce travel time between the two major cities from 24 hours to 12 hours. Other major expressway projects include the Bengaluru-Chennai Expressway, Ganga Expressway, and Ahmedabad-Dholera Expressway, among others. These projects are designed with advanced features such as automated toll collection, emergency response systems, and dedicated corridors for electric vehicles.
Additionally, greenfield highway projects are gaining traction. Unlike traditional road expansion projects, greenfield highways are built on entirely new alignments, reducing construction disruptions and optimizing route efficiency. The Bharatmala Pariyojana is a prime example, as it focuses on constructing new highways and economic corridors to boost trade and logistics.

With the government promoting public-private partnerships (PPP) and hybrid annuity models (HAM), private investors are increasingly participating in expressway projects, making this trend a major driver of India’s road infrastructure growth.

Digitalization and Smart Road Technologies

The adoption of digital technologies and smart road systems is transforming the Indian roads and highways market. With rising concerns over traffic congestion, road safety, and infrastructure efficiency, the government and private players are investing in intelligent traffic management systems (ITMS), automated toll collection, and real-time road monitoring.

One of the major technological advancements is the FASTag system, which enables automatic toll payments and reduces waiting times at toll plazas. The government has made FASTag mandatory for all vehicles, leading to seamless travel and reduced fuel

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consumption.

Additionally, AI-based traffic management solutions are being deployed in urban areas to optimize signal timings, detect traffic violations, and manage congestion. Some cities are implementing adaptive traffic control systems (ATCS) that use real-time data to adjust signal operations dynamically.

Other smart road initiatives include the use of drones and IoT sensors for highway monitoring, automated emergency response systems, and solar-powered street lighting to enhance energy efficiency. The integration of these technologies is making Indian roads safer, more efficient, and future-ready.

Rising Investment in Road Infrastructure

India’s road and highway sector is attracting massive investments from both domestic and international sources. The government has allocated substantial funds under initiatives like Bharatmala Pariyojana, National Infrastructure Pipeline (NIP), and Pradhan Mantri Gram Sadak Yojana (PMGSY) to develop highways, expressways, and rural roads.

Additionally, foreign direct investment (FDI) in India’s roads and highways sector is increasing, with global infrastructure companies and private equity firms showing interest in public-private partnership (PPP) projects. International players are also collaborating with Indian construction firms to build world-class highways and smart road networks.

To further attract investment, the government has introduced monetization initiatives such as the National Monetization Pipeline (NMP), which allows private companies to lease existing highway assets and generate revenue. This move not only provides funds for new infrastructure projects but also improves asset utilization and efficiency.

Moreover, financial institutions like the National Highways Authority of India (NHAI) and Infrastructure Investment Trusts (InvITs) are playing a crucial role in financing large-scale road projects. With a combination of public and private investments, India is set to witness unprecedented growth in its road infrastructure over the next decade.

Segmental Insights

Road Type Insights

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National/Interstate Highways held the largest market share in 2024. National and Interstate Highways dominate India's roads and highways market due to their strategic importance, high traffic volume, and strong government investment.These highways form the backbone of the country’s transportation network, enabling seamless movement of goods, passengers, and economic activities across states.

Despite covering only 2% of India’s total road network, National Highways carry over 40% of total road traffic. They connect major cities, ports, industrial hubs, and logistics centers, making them essential for trade and commerce. The rapid growth of e-commerce, logistics, and freight movement has further increased reliance on National Highways for efficient transportation.

The Indian government prioritizes the expansion and modernization of National Highways through initiatives like Bharatmala Pariyojana, aimed at developing economic corridors, expressways, and border roads. Large-scale investments under the National Infrastructure Pipeline (NIP) and public-private partnerships (PPP) have accelerated highway construction. Additionally, the National Highway Development Project (NHDP) has played a key role in upgrading existing roads.

National Highways feature wider lanes, better pavement quality, digital toll collection (FASTag), and intelligent traffic management systems (ITMS). The government is also integrating electric vehicle (EV) charging stations, solar-powered lighting, and smart surveillance systems, making these highways more efficient and sustainable.

Regional Insights

South India held the largest market share in 2024. South India plays a crucial role in the country's roads and highways market due to a combination of strategic factors, including its strong economic growth, better infrastructure planning, and the region's importance as a logistics and industrial hub.

South India's robust economic performance has driven increased demand for efficient road and highway infrastructure. The region houses some of India's major commercial hubs, such as Chennai, Bengaluru, Hyderabad, and Kochi, which are vital to both domestic and international trade. These cities, with their expanding manufacturing and IT sectors, demand seamless connectivity to other states and ports, pushing the need for better road networks. The increasing focus on logistics, e-commerce, and industrial corridors further intensifies the requirement for high-quality highways.

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Strategic geographic positioning is a significant factor. South India is centrally located, with access to both domestic markets and international trade routes through ports like Chennai Port, Visakhapatnam Port, and Kochi Port. This positioning makes it a natural gateway for trade and transportation, with interstate and national highways connecting major cities and facilitating the smooth movement of goods. For example, the Chennai-Bangalore Expressway and Eastern Peripheral Expressway are crucial corridors that connect critical industrial zones.

The government's infrastructure investment in South India has been higher in recent years, driven by the Bharatmala Pariyojana and other national highway development schemes. South Indian states have actively participated in national projects, leading to the development of multi-lane expressways, bypasses, and regional highways. These efforts have improved the overall road quality, reducing congestion and promoting economic growth.

Key Market Players

Dilip Buildcon

Afcons Infrastructure Limited

Bechtel Corporation

Ferrovial SE

Vinci

Fluor Corporation

Skanska AB

Larsen & Toubro Limited

Report Scope:

In this report, the India Roads and Highways Market has been segmented into the following categories, in addition to the industry trends which have also been detailed

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below:

India Roads and Highways Market, By Road Type:

National/Interstate Highways

State Highways

Other

India Roads and Highways Market, By Components:

Road

Bridges/Tunnels/Culverts

Marking & Signage

Safety Equipment

Traffic Management System

Others

India Roads and Highways Market, By Process:

Maintenance

Expansion

India Roads and Highways Market, By Region:

South India

North India

West India

East India

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Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the India Roads and Highways Market.

Available Customizations:

India Roads and Highways Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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