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Connected Vehicle Infrastructure Market Forecasts to 2032 – Global Analysis By Component (Roadside Hardware, Edge & Cloud Software and Integration & Maintenance Services), Communication Type, Connectivity, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Connected Vehicle Infrastructure Market is accounted for $29.26 billion in 2025 and is expected to reach $107.30 billion by 2032 growing at a CAGR of 20.4% during the forecast period. Connected Vehicle Infrastructure (CVI) leverages cutting-edge communication systems, sensors, and data-driven tools to transform transportation networks. By enabling vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) interactions, it enhances traffic safety, operational efficiency, and environmental performance. Key elements include intelligent traffic management, real-time monitoring, and predictive maintenance, which help lower congestion and accident rates. CVI also supports autonomous and electric mobility, allowing smoother navigation and optimized energy use. Significant investments by governments and private companies are accelerating CVI deployment to modernize urban transport, improve logistics, and minimize emissions. Overall, CVI is a critical foundation for creating safer, smarter, and environmentally sustainable transport ecosystems worldwide.

According to data from the International Energy Agency (IEA), the number of public EV charging points worldwide reached 2.7 million by the end of 2022, with over 900,000 installed in that year alone—a 55% increase over 2021. This surge reflects growing infrastructure investment to support connected and electric mobility.

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Market Dynamics:

Driver:

Rising adoption of autonomous and electric vehicles

The CVI market growth is strongly propelled by the surge in autonomous and electric vehicle adoption. Self-driving vehicles depend on connected infrastructure for accurate navigation, accident prevention, and live traffic updates, while EVs utilize CVI for smart charging, energy efficiency, and optimized routing. This connectivity facilitates safe, coordinated, and efficient transport operations. Increased consumer interest in innovative mobility options, along with automakers' focus on intelligent and eco-friendly transportation, accelerates CVI deployment. Consequently, the widespread use of autonomous and electric vehicles drives the need for a robust, reliable, and integrated connected vehicle infrastructure that enhances safety, efficiency, and sustainability across global road networks.

Restraint:

High implementation costs

The expansion of the CVI market is hindered by the substantial expenses involved in deployment. Developing V2V and V2I systems demands heavy investment in cutting-edge communication networks, sensors, and data-processing platforms. Upgrading existing infrastructure to integrate connected vehicle technologies incurs additional high costs, alongside software development, cyber security and compliance requirements. These financial constraints can slow adoption, especially in emerging markets. Even though CVI promises enhanced traffic safety, efficiency, and environmental benefits, the considerable initial and operational expenses remain a significant barrier, restricting large-scale implementation and limiting the market growth potential for connected vehicle infrastructure across global transportation networks.

Opportunity:

Smart city development

Smart city initiatives offer substantial opportunities for the CVI market. Connected Vehicle Infrastructure supports real-time traffic monitoring, adaptive signaling, and integrated public transit, forming the backbone of intelligent urban mobility. By

leveraging data analytics, CVI improves safety, decreases congestion, and enhances energy efficiency. Growing government investments in IoT-based urban transport systems provide a conducive environment for CVI implementation. Incorporating connected vehicles into city planning promotes sustainable mobility, lowers emissions, and improves commuter experiences. Overall, the smart city movement enables innovation, collaboration, and broad adoption of CVI solutions, positioning connected vehicle infrastructure as a key enabler for futuristic, efficient, and eco-friendly urban transportation networks.

Threat:

Regulatory and compliance challenges

The CVI market is threatened by complex regulatory and compliance issues. Varying regional standards, privacy laws, and safety rules make it challenging for manufacturers and infrastructure developers to ensure interoperability. Navigating multiple regulations increases costs, operational difficulties, and deployment delays. Ambiguities in policies regarding autonomous vehicles, V2X communication, and data handling add uncertainty for industry stakeholders. Companies must balance compliance with innovation, safety, and user privacy, which may slow market adoption. Therefore, inconsistent legal frameworks and intricate compliance requirements remain a critical challenge, potentially limiting the global growth, scalability, and seamless integration of connected vehicle infrastructure solutions.

Covid-19 Impact:

The COVID-19 crisis affected the CVI market in both negative and positive ways. During lockdowns, reduced traffic and halted construction delayed infrastructure upgrades and slowed the deployment of connected vehicle technologies. Supply chain interruptions and resource reallocation toward healthcare limited investments in V2V and V2I systems. Conversely, the pandemic emphasized the importance of real-time traffic monitoring, contactless transportation, and intelligent mobility solutions, increasing long-term interest in CVI adoption. With gradual economic recovery, governments and private stakeholders are accelerating smart city programs and digital transport initiatives. Overall, COVID-19 underscored CVI’s role in enabling safer, more efficient, and sustainable urban mobility in a post-pandemic world.

The V2I (vehicle-to-infrastructure) segment is expected to be the largest during the forecast period

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The V2I (vehicle-to-infrastructure) segment is expected to account for the largest market share during the forecast period. By enabling communication between vehicles and infrastructure elements such as traffic lights, road sensors, and intelligent signage, V2I improves traffic flow and enhances safety. Its strong market position is fueled by smart city projects, government funding, and growing implementation of intelligent transportation systems. V2I facilitates congestion management, predictive maintenance, and supports autonomous and electric vehicle integration. Providing valuable real-time data to drivers, city authorities, and fleet managers makes V2I essential for connected mobility solutions. As a result, V2I remains the dominant segment, forming the core of global CVI adoption and innovation.

The cellular segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the cellular segment is predicted to witness the highest growth rate. Leveraging 4G LTE and advanced 5G networks, cellular technology enables high-speed, low-latency communication critical for V2V and V2I connectivity. Rapid adoption of autonomous and connected vehicles, coupled with smart city initiatives, fuels demand for scalable and dependable cellular infrastructure. These networks support real-time data sharing, remote system monitoring, predictive maintenance, and improved traffic flow. Their extensive coverage, adaptability, and integration with next-generation mobility solutions make cellular connectivity the most dynamic segment. Consequently, cellular networks are anticipated to lead growth rate, playing a pivotal role in advancing intelligent, connected transportation systems worldwide.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share. This dominance stems from early adoption of smart transportation solutions, robust government initiatives, and substantial investments in intelligent transport systems and smart city projects. Widespread implementation of V2V and V2I technologies, advanced communication networks, and regulatory support enables effective integration of connected vehicles. The region benefits from the presence of leading automakers, technology firms, and research centers, which drive CVI innovation. Growing awareness of road safety, along with increasing deployment of autonomous and electric vehicles, reinforces market growth. As a result, North America remains the largest regional market and a global leader in connected vehicle infrastructure.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR. Factors such as rapid urban expansion, increasing numbers of vehicles, and substantial investments in smart city initiatives contribute to the region's growth trajectory. Countries like China, Japan, and India are actively implementing intelligent transportation systems, V2X networks, and advanced mobility solutions. The surge in autonomous and electric vehicle adoption, along with government incentives for digital infrastructure, supports accelerated CVI deployment. Collaborations among automakers, tech companies, and research organizations further stimulate innovation. Overall, Asia Pacific is poised to witness robust rate growth, positioning it as a vital region for the expansion of connected vehicle infrastructure worldwide.

Key players in the market

Some of the key players in Connected Vehicle Infrastructure Market include Daimler AG, General Motors, Tesla, Continental AG, Audi AG, HARMAN International, BorgWarner Inc., Vodafone Group, AT&T, Airbiquity, Inc., NXP Semiconductors, Ford Motor Company, Robert Bosch GmbH, Morris Garage Motor India (MG Motor India) and Hyundai Motor Group.

Key Developments:

In June 2025, Daimler Truck and Japan's automotive giant Toyota have agreed to merge the truck businesses of their Japanese subsidiaries Mitsubishi Fuso and Hino as planned. The groups intend to each hold 25% of the shares in a new listed holding company set to launch in April 2026. The holding company will be listed on the Tokyo stock exchange and is set to employ over 40,000 people, led by Karl Deppen, head of Asia at Daimler Truck.

In May 2025, BorgWarner has announced that it has been awarded a contract to supply its 400-volt high-voltage coolant heater (HVCH) to a global vehicle manufacturer. The system will be integrated into a series of plug-in hybrid electric vehicle (PHEV) platforms, including mid-size pickup trucks, SUVs and minivans, with production scheduled to start in 2027.

In September 2024, General Motors and Hyundai Motor Company have signed an agreement to explore future collaboration across key strategic areas. GM and Hyundai will look for ways to leverage their complementary scale and strengths to reduce costs

and bring a wider range of vehicles and technologies to customers faster.

Components Covered:

- Roadside Hardware
- Edge & Cloud Software
- Integration & Maintenance Services

Communication Types Covered:

- V2I (Vehicle-to-Infrastructure)
- V2N (Vehicle-to-Network)
- V2P (Vehicle-to-Pedestrian via infrastructure)
- V2X Relay Services

Connectivities Covered:

- Cellular
- Dedicated Short Range Communication (DSRC)
- Wi-Fi & Mesh Networks
- Satellite & Hybrid Protocols

Applications Covered:

- Traffic Signal Optimization
- Road Safety & Hazard Alerts

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- Fleet Infrastructure Support
- Infrastructure-Enabled Telematics
- Location-Based Services (LBS)

End Users Covered:

- Public Sector
- Private Fleet Operators
- OEMs & Tier-1s

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe

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Asia Pacific

- Japan
- China
- India
- Australia
- New Zealand
- South Korea
- Rest of Asia Pacific

South America

- Argentina
- Brazil
- Chile
- Rest of South America

Middle East & Africa

- Saudi Arabia
- UAE
- Qatar
- South Africa
- Rest of Middle East & Africa

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What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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