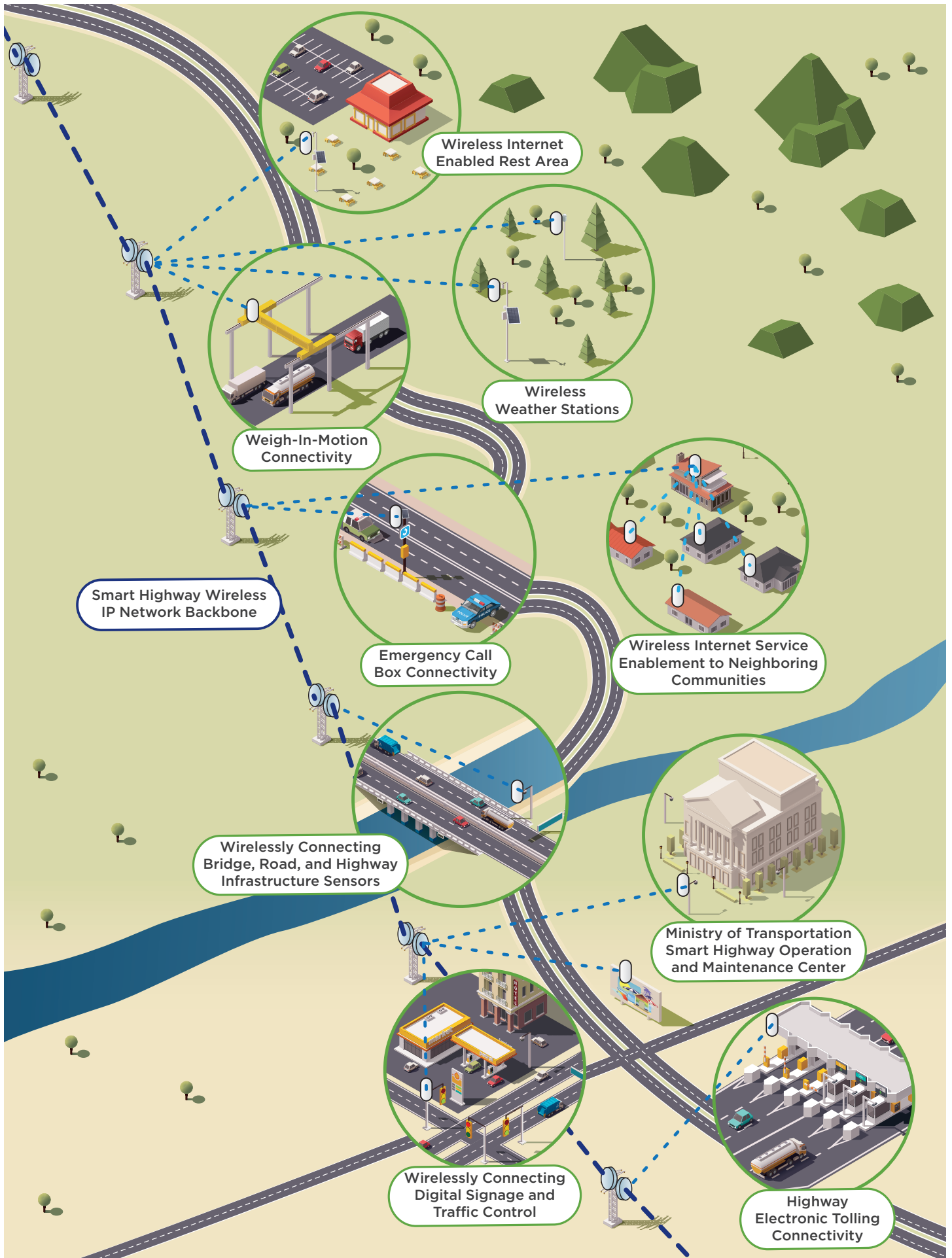




# Wireless Connectivity Solutions for Smart Highways





Wireless Internet Enabled Rest Area

Weigh-In-Motion Connectivity

Wireless Weather Stations

Smart Highway Wireless IP Network Backbone

Emergency Call Box Connectivity

Wireless Internet Service Enablement to Neighboring Communities

Wirelessly Connecting Bridge, Road, and Highway Infrastructure Sensors

Ministry of Transportation Smart Highway Operation and Maintenance Center

Wirelessly Connecting Digital Signage and Traffic Control

Highway Electronic Tolling Connectivity

## THE IP COMMUNICATIONS NETWORK REQUIRED TO SUPPORT THE LIFE CYCLE OF A NATIONAL SMART HIGHWAY SYSTEM CAN BE QUITE DIVERSE AND COMPLEX,

supporting critical information transmissions from diverse specialized use-cases, spread out across thousands of kilometers with varying terrain and climate attributes. Automation is the answer, and Internet of Things (IoT) and Intelligent Transportation Systems (ITS) depend on a reliable communications infrastructure to deliver their value.

There are many IP communications needs on the course of a highway system, including maintenance and rest facilities, communities, factories, businesses and communities. Just as the highway provides access to these locations, a wireless backbone networks can provide high-speed connectivity to the people and businesses along the route.

Wireless broadband technology from Cambium Networks is designed to provide the spectral efficiency, coverage and capacity to offer consistently reliable wireless connectivity for remote buildings, indoor and outdoor Wi-Fi access, events and monitoring of facilities.

### Applications:

The wireless network backbone provides the attachment point for all other wireless use-cases deployed throughout the National Highway System communications network. Applications include connecting and providing Wi-Fi at the following locations:

- Bridge infrastructure sensors
- Digital signage
- Emergency call boxes
- License Plate Recognition (LPR)
- Maintenance facilities
- Rest areas
- Road condition sensors
- Toll collection
- Traffic cameras
- Truck weighing sensors
- Wireless ISP for businesses and cities

### Benefits:

**Complete Coverage** – Connect the entire operation and remote locations with long range backhaul, wide area distribution, and Wi-Fi. Complete coverage from the operation center to the roadside emergency call box.

**High Capacity** – Deploy a single IP-based multipurpose network that can be leveraged to meet the needs of the department of transportation, plus the needs of businesses and communities along the route.

**IIoT and ITS integration** – Deploy narrowband solutions to connect sensors and controls, aggregate data with broadband, and connect control facilities.

**Secure** – 128/256 AES encryption allows highly secure networks.

**Reliable** – Wireless solutions designed for the harshest environments.

## Proven Solutions

### Wi-Fi access for field connectivity

- Outdoor hotspot and 802.11ac Wi-Fi networks for maintenance depots and work areas
- Wide-Area licensed and unlicensed narrowband connectivity for control and monitoring including: Wide-area process control and monitoring of IIoT critical infrastructure.
- Enterprise Indoor 802.11ac wave 2 Wi-Fi, and residential Wi-Fi

### Wide-Area Point-to-Multipoint for business and residential access

- Data transfer, voice and streaming video
- Video surveillance for physical security
- SCADA master aggregation and backhaul

### High capacity long range Point-to-Point backhaul

- Licensed microwave and unlicensed backhaul

### Single pane of glass network management

- Bird's eye view of field network
- Rapid on-boarding and provisioning of new nodes
- End-to-end performance and fault management
- Centralized password management and firmware updates

## The Cambium Difference

- **Scalability** – Connect up to thousands of individual locations with a synchronized network that enables RF frequencies to be re-used throughout the network to provide the highest level of connectivity in the least total amount of spectrum.
- **Reliability** – Deploy wireless broadband with confidence that it will work right the first time and continue to work 24/7 over the long haul.
- **Affordable Quality** – Minimize the total cost of network ownership with one IP-based wireless network comprised of licensed and unlicensed components that can be rapidly deployed and perform reliably with minimum maintenance cost.
- **Sustainability** – Solutions designed to operate for years – Solutions designed to operate for years from a supplier with a proven track record of stability and sustainable product evolution.
- **Spectral Efficiency** – Provide the highest amount of information transfer in the least amount of scarce spectrum with industry award winning throughput.

## ABOUT CAMBIUM NETWORKS

Cambium Networks is a leading global provider of wireless connectivity solutions that strengthen connections between people, places and things. Specializing in providing an end-to-end wireless fabric of reliable, scalable, secure, cloud-managed platforms that perform under demanding conditions, Cambium Networks empowers service providers and enterprise, industrial and government network operators to build intelligent edge connectivity. Cambium Networks' commitment to continuous innovation in wireless access is demonstrated in the millions of radios deployed in thousands of networks that benefit communities around the world. Team members also contribute to social responsibility activities to serve the communities in which they live. Headquartered outside Chicago and with R&D centers in the U.S., U.K. and India, Cambium Networks sells through a range of trusted global distributors.

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