Connected & Automated Vehicles and Smart Mobility

USING TECHNOLOGY AND DATA TO IMPROVE TRANSPORTATION FOR USERS OF ALL AGES AND EVERY WALK OF LIFE

Today, travelers receive real-time transportation updates from mobile devices, GPS units and infotainment systems. As our transportation systems become more connected, automated, complex and technology focused, HDR can help you address your mobility challenges while preparing for what's next.

The Infrastructure Investment and Jobs Act includes provisions to address the integration of new technologies, but to be successful in obtaining funding and implementing new technologies, agencies will need a thoughtful strategy and technical expertise to implement, operate and maintain these strategies in a cost effective manner.

Putting our transportation technology expertise to work for your unique needs, we consider your current challenges, your short- and long-term goals, and identify opportunities to create transportation plans that optimize existing infrastructure through improved integration, coordination and systematic implementation of key operational designs and strategies.

CAV and Smart Mobility Defined

Connected vehicles use specialized radio on-board unit (OBU) and roadside units (RSU) for low-latency vehicle-to-vehicle (V2V) and/or vehicle-to-Infrastructure (V2I) communications. Currently, the industry is transitioning from dedicated short range communications (a WiFi protocol) to cellular-based communications.

Automated vehicle technologies use vehicle-based sensors to interpret their environment, provide alerts to drivers and complete a range of driving tasks. These sensors often include a combination of LiDAR, ultrasonic, video and radar systems.

Smart mobility uses responsive, flexible and intelligent designs and operational strategies that integrate technology and data, such as weather sensors, emission monitoring, gunshot detection, vehicle detection, smart parking, curbside management, pedestrian monitoring and others to optimize the transportation system and make it safer, more accessible and more efficient for the traveling public and freight network.

KEY SERVICES

- Emerging Technology Strategic Planning
- Technology Alternatives Development and Impact Assessment
- Technology Advisory Services
- Transportation Systems Management & Operations, or "TSMO," Education, Planning Implementation and Transportation Technology Integration

Key Connected & Automated Vehicles and Smart Mobility Projects

Des Moines Area Integrated Corridor Management
Iowa Department of Transportation, Des Moines, IA

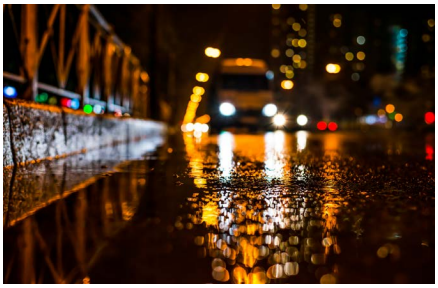
HDR is leading the ICM study and implementation. Covering more than 50 miles of freeway and more than 75 additional miles of highways and city streets, this $3.1 million project involves guiding Iowa DOT, cities, counties, transit providers, emergency services and other key partner agencies and stakeholder businesses through a collaborative visioning process to use a systematic approach to proactively manage and operate the regional transportation system.

Connected and Automated Vehicle General Engineering Services
Florida Department of Transportation, Statewide, FL

FDOT is aggressively integrating connected and automated vehicles into its existing and future transportation planning activities. HDR has been reselected to continue serving as the statewide CAV GEC, helping to guide Florida's CAV vision. As one of the first implementation-focused CAV contracts in the U.S., HDR is assisting with project identification, conceptual development, systems engineering and procurement. We will also help develop, implement, deploy and evaluate this strategic investment in CAV infrastructure.

Washoe County Advanced Mobility Plan
Regional Transportation Commission, Washoe County, NV

The RTC needed a broad, cohesive plan to advance mobility in the region through the effective application of innovative mobility solutions that included electric and automated vehicles as well as transit services. HDR was selected to gather stakeholders, assess current conditions and develop a holistic plan to enhance safety, efficiency, sustainability and equity in Washoe County. The plan includes strategic, phased and actionable items to implement now, with achievable outcomes to take immediate advantage of emerging technologies.



Dynamic Curbside Management Pilot
City of Bellevue, Bellevue, WA

HDR is supporting the overall program management, data collection equipment installation, roadside sensor tuning and performance evaluation of the deployed vendor technologies for Bellevue's Curbside Management Pilot. Using video-analytics-based ground truth data, we evaluated technology performance using multiple data attributes, including space availability, dwell time, vehicle activity type, location, and vehicle type and length. We are also using business intelligence and data analytics to analyze curbside usage data and develop strategies to help streamline the program.

Data-Driven Approach to Managing Traffic Signals
Port Authority of New York and New Jersey, New York, NY

PANYNJ wanted to reduce travel time and add capacity to accommodate increased traffic during peak times at busy transportation hubs. To improve the efficiency of traffic signal operations, reduce emissions and avoid costly and disruptive road-widening projects, HDR took a data-driven approach to manage traffic signals. We oversaw the introduction of automated signal performance measures and developed big data dashboards to provide better real-time data for the Traffic Engineering Operations department in the NY/NJ facilities.

Assessing Minnesota Highways for Truck Platooning Suitability
Minnesota Department of Transportation, Statewide, MN

New legislation allowing truck platooning in Minnesota required an evaluation and development of statewide pre-approved truck platooning routes. After a literature review, HDR worked with internal stakeholders to determine route criteria. Then we developed district and statewide draft maps and worked with stakeholders to refine routes. Our communications team developed public-facing frequently asked questions and educational materials. The end result was a statewide pre-approved truck platooning route map for the MnDOT website.