

Minnesota Fiber Optic Feasibility & Partnership Study

Project Background

Connected and automated vehicle (CAV) technology is advancing rapidly. CAV can save lives and provide better access to transportation, jobs and health care, making communities safer, and more equitable. A major impediment to CAV deployment in our State is the lack of universal broadband and wireless coverage along many of our roads, due to the State's rural make-up. This makes it challenging for connected vehicles to operate.

The Minnesota CAV Challenge is a new, open and rolling procurement process that allows public and private entities to propose solutions to advance CAV in Minnesota, and correspondingly improve safety, efficiency, equity, outreach and mobility. Foreseeing significant private sector investment in communications infrastructure - including 5G technologies – Ernst & Young Infrastructure Advisors Group proposed a CAV Challenge project to review MnDOT's current right-of-way assets and create a framework to work with the telecommunications industry to collaboratively partner to build out communications infrastructure, including fiber optic. One such opportunity is to advance fiber optic pilots and create a public-private partnership.

Project Goals

1. Assess the potential commercial value of MnDOT ROW for broadband deployment along the trunk highway system.
2. Estimate the revenue raised by partnering with industry to construct broadband improvements.

How This Aligns with CAV Goals

Develop partnerships	<ul style="list-style-type: none"> • Create strategic partnerships with telecommunications industry and communications partners to advance CAV innovation
Modernize policy	<ul style="list-style-type: none"> • Modernize statewide and agency policies and laws to address CAV
Promote accessibility and mobility	<ul style="list-style-type: none"> • Expand transportation and telecommunications access across the state
Public engagement	<ul style="list-style-type: none"> • Build public trust in CAV through activities that engage key stakeholders and the public
Strategic infrastructure investment	<ul style="list-style-type: none"> • Support the state in strategic planning for CAV infrastructure, data, procurement, and implementation of public-private partnerships

Project Tasks

- Conduct a regulatory review of state and federal laws and agency policy to understand what laws may impact a public-private partnership
 - Map the state's current infrastructure assets
 - Conduct a market assessment to evaluate MnDOT right-of-way and partnership opportunities
 - Recommend fiber corridors and partnerships
 - Convene confidential market discussions with telecommunications providers to assess their interest in a Minnesota partnership
 - Prepare a final report including next steps
3. Screen and prioritize different ROW segments and develop commercial network scope along those portions of highways to identify corridors most feasible for fiber buildout.
 4. Develop a strategy to support the deployment of CAV technologies with broadband infrastructure and the telecommunications industry.

Milestone Schedule

August 2019

- Project Kick-off
- Regulatory review

Fall 2019

- Review and map current fiber optic network and CV assets
- Evaluate economic opportunities

January-May 2020

- Develop GIS tool
- Market assessment
- Competitive analysis and ROW valuation

Summer 2020

- District, stakeholder meetings
- Market sounding with telecommunications industry

Fall 2020

- Feasibility study report
- Partnership recommendations
- Corridor buildout recommendations

Project Team & Areas of Expertise

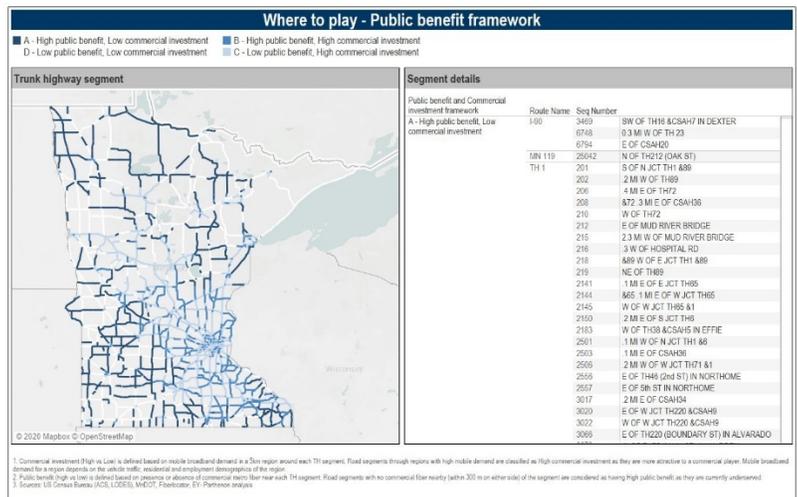
1. **Department of Employment and Economic Development Minnesota:** Office of Broadband Development, Telecommunications Management
2. **Minnesota IT:** Assistant Commissioner and CIO; Telecommunications and Network Management Leads
3. **MnDOT Chief Counsel:** Chief Counsel, Deputy Chief Counsel, Associate Legal Counsel
4. **MnDOT CAV Office:** Management, CAV And Intelligent Transportation System (ITS) Leads, Project Manager
5. **MnDOT Metro District:** Operations and Maintenance, Regional Transportation Management Center (RTMC) Traffic Operations, Freeway Management Systems Design, Traffic Operations
6. **MnDOT Office of Land Management:** Management, State Utility Engineer, Surveys and Mapping, Permits
7. **MnDOT Office of Traffic Engineering:** Management, Electrical Engineering, Traffic Safety
8. **MnDOT Office of Transportation System Management:** Transportation Data Analysis, Geographic Information Systems (GIS), Statewide Planning

Connected Vehicle Broadband Partnership Examples

To help identify the state’s telecommunication needs CAV-X hosted workshops with offices, districts, MnIT, DEED and other stakeholders.

This image shows an illustration of the tool that was developed with state data to help inform this process. This tool looks at traffic volumes, different facilities that need connection, and where the private industry plans to build out its fiber routes.

The study found that because of the commercial value of this right of way to telecom players, granting them to ability to commercialize can not only subsidize CAV infrastructure, it can also accelerate other ongoing Statewide projects, including ITS priorities and expanding broadband access to rural communities. The draft report shows these opportunities are significant, with several low-cost pilot projects being identified.



Contact Information

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