

MNDOT BROADBAND ANALYSIS FOR FUTURE CONNECTIVITY

BOLD IDEAS FOR A 21ST CENTURY INFRASTRUCTURE



PURPOSE OF THE REPORT

Traditional infrastructure includes roadways, bridges, airports, water and wastewater lines, and other utilities. The current administration understands that broadband communications, as well as data, are critical forms of infrastructure in which major connectivity gaps exist within the country's and MnDOT's infrastructure. These gaps include:

- Fiber to connect our traffic signals and transportation operations equipment (CCTV cameras and messages signs) that improve roadway efficiencies.
- Fiber that improves our connected/automated vehicle safety by connecting vehicle sensors to other vehicles, pedestrians, traffic signals and to our Traffic Management Centers (TMCs).
- Fiber that connects other state agencies, counties, schools, hospitals, as well as rural and under served communities.

MnDOT has the opportunity to leverage its rights-of-way assets to close these gaps using "dig once" and potential P4 (Public Private People Partnerships) arrangements to reduce the state's capital and maintenance costs of fiber and broadband infrastructure.

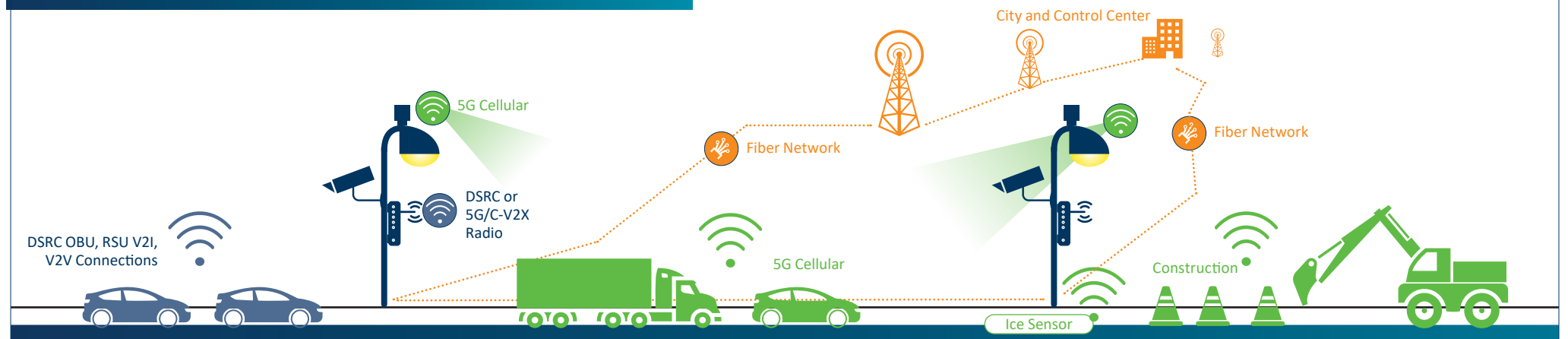
WHY IS MNDOT DOING THIS STUDY?

- Advance MnDOT traffic safety
- Increase ITS program efficiency for roadway operations and management
- Prepare the state for a future with connected and automated vehicles
- Connect state facilities with broadband
- Identify potential funding gaps
- Expand statewide telecommunication access along highway rights-of-way
- Identify opportunities to partner with private and public sectors to build-out broadband

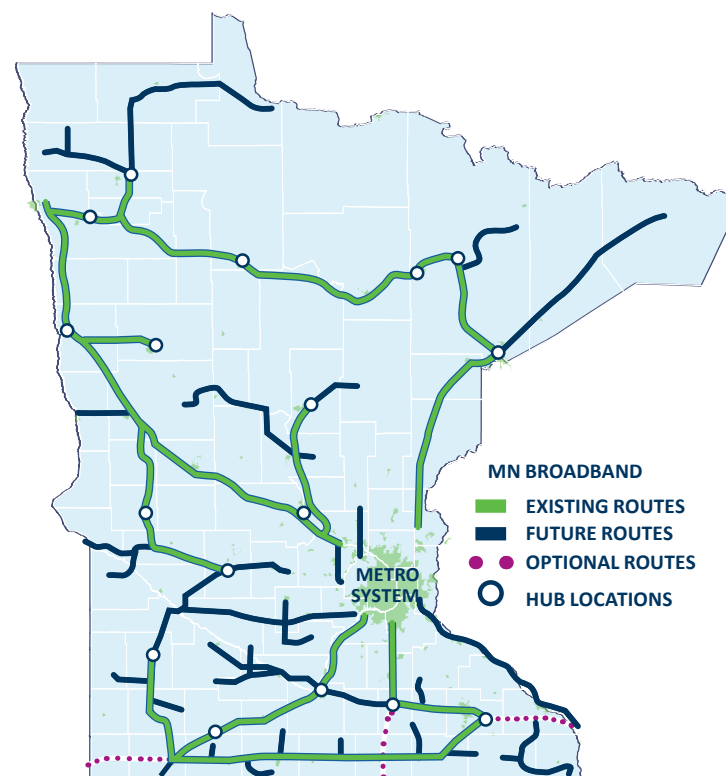
KEY PARTNERS

MNDOT	MINNESOTA COUNTIES, METROPOLITAN PLANNING ORGANIZATION (MET COUNCIL)
MINNESOTA IT SERVICES (MNIT)	MINNESOTA BROADBAND TASK FORCE
MINNESOTA DEPARTMENT OF EMPLOYMENT AND ECONOMIC DEVELOPMENT'S (DEED)	DEPARTMENT OF EDUCATION
OFFICE OF BROADBAND DEVELOPMENT (OBD)	OTHER STAKEHOLDERS

BROADBAND IMPROVES CONNECTIVITY: HOW IT WORKS



IMPROVING BROADBAND IN MINNESOTA



11,700
Highway Miles within 8 Districts

800
Current Miles of Fiber Connecting Edge Devices to TMCs

0
Current Number of Small Cells on MnDOT Roadways

Key Legislation / Grant Opportunities

- Minnesota GO P3 Legislation
- Rural Digital Opportunity Fund (RDOF) grants
- E-Rate Grants Program

KEY STUDY CORRIDORS

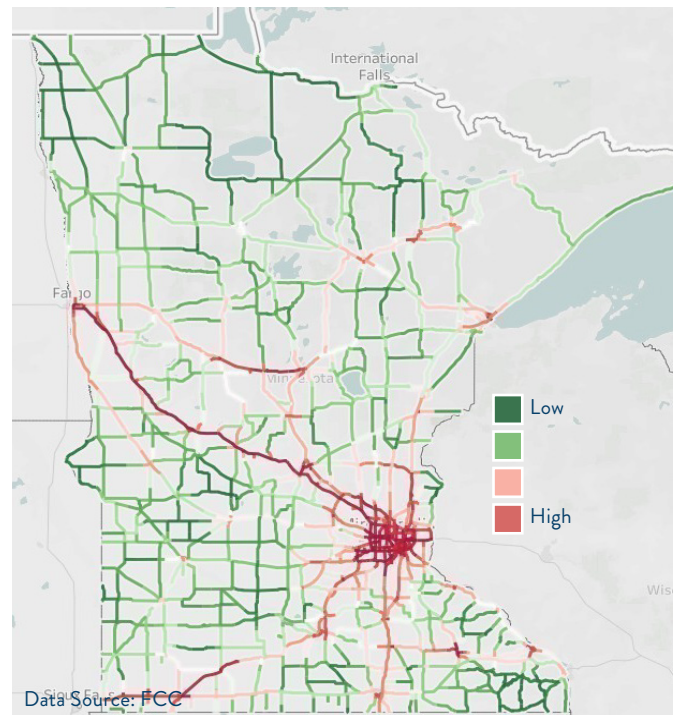
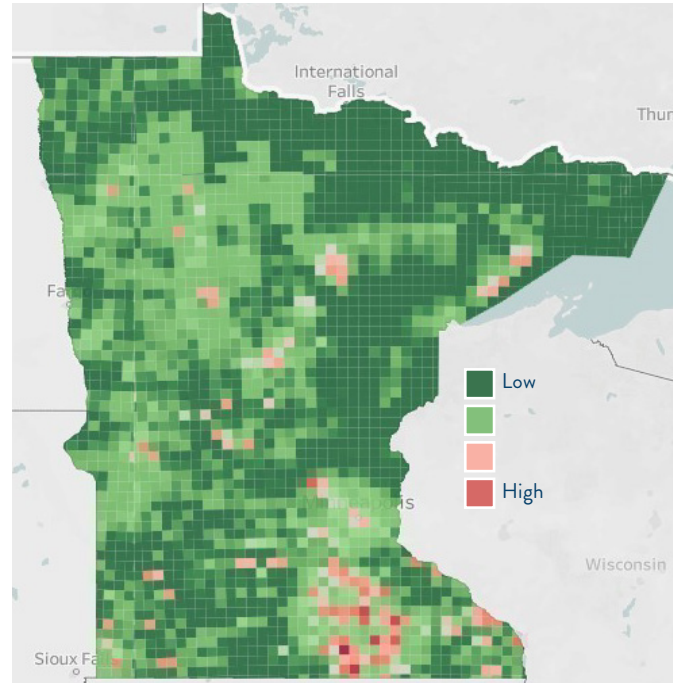
- 94** I94 through District 3 and District 4 utilizing the Connecting Minnesota Fiber
- 35** I35 from Metro District to Duluth
- 35** I35 completing the connection from District 6 to the Iowa border
- 90** I90 from the South Dakota border to Wisconsin border (utilizing private fiber where available)
- 10** Highway 10 through District 3 and District 4
- 10** Highway 10 through District 3 and District 4 as parallel route to Interstate 94
- 55** MN 55 through District 3 to Highway 29 as parallel route to I94 including Highway 29 into Alexandria for fiber redundancy
- 169** Highway 169 from Metro District to Mankato (utilizing private fiber where available)
- 60** MN 60 from Mankato to Interstate 90 as parallel route to Interstate

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EXISTING FIBER + BROADBAND COVERAGE: 2021



OUR PLAN



Short Term <2 Years



- Facilitate joint meetings with key Minnesota State stakeholders to develop and approve a coordinated and inclusive broadband plan.
- Review Rural Digital Opportunity Fund (RDOF) auction winners to coordinate additional resources to expand broadband.

- Apply for BUILD/RAISE and E-Rate grant opportunities that can be leveraged in "dig once" locations.
- Work with broadband legislation that permits revenue generation or shared services to expand existing facilities.
- Develop short term build-out locations.

- Fiber is installed along MnDOT's top 3 priority corridors within each geographic district to advance state transportation improvement and highway investment goals



Future 2+ Years

- Align broadband deployments with the State Transportation Improvement Program (STIP), MnDOT's Capital Highway Investment Plan, and MnDOT's 20-year Statewide Multimodal Transportation Plan and its Minnesota GO 50-year vision.

NEXT STEPS: PROJECT TIMELINE

Time	Task
2021 Fall	<ul style="list-style-type: none"> Meet with all MPOs and state agencies to discuss broadband needs. Determine MnDOT's and other state agencies fiber and wireless assets. Develop the statewide broadband vision for Minnesota.
2021-22 Winter	<ul style="list-style-type: none"> Facilitate meetings with key broadband developers to determine their statewide inventory. Meet with Rural Digital Opportunity Fund (RDOF) auction winners.
2022 Spring	<ul style="list-style-type: none"> Develop the frame work for an all Minnesota broadband deployment plan.

NEXT STEP PROJECT INIATIVES

CONVENE A CABINET/STATE FIBER GROUP

MORE FUNDING

UPDATE LAWS

PILOT FIBER PARTNERSHIPS

MORE OUTREACH & ENGAGEMENT WITH INDUSTRY

Frequently Used Acronyms

CCTV - Closed Circuit Television
C-V2X - Cellular Vehicle to Anything

DSRC - Dedicated Short-Range Communications
OBU - On-board Unit

RSU - Roadside Unit
V2I - Vehicle to Infrastructure