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

**IMPRESSING BROADBAND IN MINNESOTA**

- **11,700** Highway Miles within 8 Districts
- **800** Current Miles of Fiber Connecting Edge Devices to TMCs

**Key Legislation / Grant Opportunities**

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

**IMPROVING BROADBAND IN MINNESOTA**

- Expand statewide telecommunication access along highway rights-of-way
- Identify opportunities to partner with private and public sectors to build-out broadband

**BROADBAND IMPROVES CONNECTIVITY: HOW IT WORKS**

- **DSRC OBU, RSU V2I, V2V Connections**
- **5G Cellular**
- **Fiber Network**

**KEY STUDY CORRIDORS**

- I94 through District 3 and District 4 utilizing the Connecting Minnesota Fiber
- I29 from Metro District to Duluth
- I35 completing the connection from District 6 to the Iowa border
- I90 from the South Dakota border to Wisconsin border utilizing private fiber where available
- Highway 10 through District 3 and District 4

**REAL-TIME LOCATION STREAMS**

- 90
- 10
- 55
- 169
- 60
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

<table>
<thead>
<tr>
<th>Time</th>
<th>Task</th>
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<tbody>
<tr>
<td>2021 Fall</td>
<td>■ Meet with all MPOs and state agencies to discuss broadband needs.</td>
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<tr>
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<td>■ Determine MnDOT’s and other state agencies fiber and wireless assets.</td>
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<td>■ Develop the statewide broadband vision for Minnesota.</td>
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<tr>
<td>2021-22 Winter</td>
<td>■ Facilitate meetings with key broadband developers to determine their statewide inventory.</td>
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<tr>
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<td>■ Meet with Rural Digital Opportunity Fund (RDOF) auction winners.</td>
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<td>2022 Spring</td>
<td>■ Develop the frame work for an all Minnesota broadband deployment plan.</td>
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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

NEXT STEP PROJECT INITIATIVES

CONVENE A CABINET/STATE FIBER GROUP

UPDATE LAWS

PILOT FIBER PARTNERSHIPS

MORE FUNDING

MORE OUTREACH & ENGAGEMENT WITH INDUSTRY