

# NORTH/WEST PASSAGE



July 8, 2021

Transportation Pooled Fund Study TPF-5(376)

**FINAL Work Plan 16**



# North/West Passage

## TRANSPORTATION POOLED FUND STUDY TPF-5(376)

### BACKGROUND

Interstates 90 and 94 between Minnesota and Washington function as major corridors for commercial and recreational travel. Extreme winter weather conditions, prevalent in the northern states within this corridor, pose significant operational and travel-related challenges. Idaho, Minnesota, Montana, North Dakota, South Dakota, Washington, and Wyoming are predominantly rural and face similar transportation issues related to traffic management, traveler information, and commercial vehicle operations.

Recognizing the value of coordinated, cross-border collaboration for Intelligent Transportation System (ITS) deployment to address these issues, Minnesota initiated a meeting in 2002 with representatives from each of the states within the corridor. The group established itself as a Transportation Pooled Fund (TPF-5(093)) in 2003 through the Federal Highway Administration (FHWA). The TPF number was then changed to TPF-5 (190) when FHWA transitioned to a new reporting system. In 2019 TPF-5 (190) was closed out and a new number was assigned (TPF-5(376)).

The vision of the North/West Passage Corridor is to focus on developing effective methods for sharing, coordinating, and integrating traveler information and operational activities across state and provincial borders.

The North/West Passage Corridor has developed an ITS Integrated Strategic Plan and has successfully implemented fourteen work plans. Currently the group is completing its fifteenth work plan consisting of eight projects. Complete details on previous work plans and individual projects are available through the program web site at [www.nwpassage.info](http://www.nwpassage.info).

### ACCOMPLISHMENTS

The North/West Passage has completed a number of projects since its inception in 2003, the following bullets highlight some of accomplishments of the corridor:

- Conducted numerous webinars and peer exchanges on operations, maintenance and TSMO related topics.
- Conduct annual technician's forum.
- Documented and shared COVID-19 responses.
- Documented workforce practices.
- Examined crowdsourcing practices.
- Examined similarities, differences, and usage of state DOT traveler information website features.
- Best of ITS Rural Award recipient in 2010.
- Development of one proposal to hire a contractor to perform work in two states.
- Defined and agreed upon a set of consistent event description phrases to use across the I-90 and I-94 corridor.

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- Provided a forum for state patrol/police and DOT staff to discuss integration of systems.
- Held a workshop to create action plans for increased cross-border operation and maintenance collaboration.
- Participated in the USDOT Clarus initiative that developed a corridor Concept of Operations.
- Signed a Corridor-Wide MOU for coordination of traveler information.
- Created a benefit/cost spreadsheet tool for typical rural ITS projects.
- Researched freight funding opportunities, truck platooning and parking for the North/West Passage states.
- Documented how each state plans and prioritizes ITS deployments.
- Federal Grant: Multistate Corridor Operations and Management Program (MCOM) recipient.
- Hosted a North/West Passage Regional Operations Forum.
- Summarized North/West Passage winter performance measures practices and approaches for forecasting road conditions.
- Evaluated Rural 511 Phone Service.
- Documented current work zone practices of member states.

### FINANCIAL STATUS

North/West Passage members contribute \$25,000 or more annually to the pooled fund and are reimbursed for program travel. The North/West Passage member agencies are anticipated to contribute financially to the projects included in this work plan.

### PROJECTS

At the April 2021 North/West Passage Annual Meeting, held via webinar, the states reviewed the North/West Passage goals, objectives, and projects completed to-date in order to gauge interest in continuing to work as a pooled fund. The states all agreed that goals are being met and the work being done is of value to warrant continuation of the pooled fund. A list of prospective projects for Work Plan 16 was then discussed in detail. The prospective projects were based on member suggestions and the [ITS Integrated Strategic Plan](#). These projects were scored at the annual meeting based on anticipated benefits to the corridor, likelihood of success, compatibility with vision and strategic plan, and timeliness of the project.

The voting results are presented in Table 1.

**TABLE 1: VOTING RESULTS FOR WORK PLAN 16 PROJECTS**

Project Name	Total Points Voted	Rank by Points
Operations Task Force – Year 9	665	1
Freight Task Force – Year 6	660	2
Winter Performance Measures	605	3
Truck Parking Information Management Assessment	577	4
Oversize/Overweight Movement Assessment	559	5

Develop and Submit an Implementation Project Idea to NCHRP 20-44: Implementation Support Program	539	6
Worker Presence	533	7
Assessment of Potential Regional Megaprojects Funding Mechanism	531	8
Transportation Systems Management and Operations (TSMO) Practitioner Training	502	9
North/West Passage States Plans	466	10
Trend Analysis of Oil and Coal Commodity Movements	432	11
North/West Passage Operations Data: Sources, Uses, and Management	416	12

After discussing the voting results, the states agreed to fund the five highest ranked projects. The Worker Presence project will be incorporated into Project 1: Operations Task Force – Year 9 as a webinar. The focus of the Assessment of Potential Regional Megaprojects Funding Mechanism project will be discussed during monthly Steering Committee meetings.

Table 2 provides a funding plan for Work Plan 16 that includes several other expenses in addition to the projects selected through voting. Program administration support is as an overarching contractor task to support the Program Administrator and Chair with meeting preparations, writing conference papers, preparing presentations, maintaining progress reports, etc. The states are also planning their annual meeting in the coming year and the estimated cost noted below consists of associated travel expenses.

**TABLE 2: WORK PLAN 16 FUNDING PLAN**

Expense	Estimated Costs	Project Champion(s)
<b>Project Cost</b>		
Project 16.1 Operations Task Force – Year 9	\$25,000	Brandon Beise, NDDOT
Project 16.2 Freight Task Force – Year 6	\$15,000	Dave Huft, SDDOT
Project 16.3 Winter Performance Measures	\$20,000	Brandon Beise, NDDOT
Project 16.4 Truck Parking Information Management Assessment	\$40,000	Andrew Andrusko, MnDOT
Project 16.5 Oversize/Overweight Movement Assessment	\$40,000	Dave Huft, SDDOT/ Freight Task Force
<b>Total Project Cost</b>	<b>\$140,000</b>	
<b>Administrative Cost</b>		
Program Administration Support	\$ 30,000	
Program Website Maintenance ( <a href="http://www.nwpassage.info">www.nwpassage.info</a> )	\$ 5,000	
Member Travel Support	\$ 10,000	
<b>Total Administrative Cost</b>	<b>\$ 45,000</b>	
Revenue	Estimated Revenue	
State Contributions (7 states@ \$25,000/state)	\$ 175,000	
Work Plan 15 Travel (met via webinar)	\$10,000	
<b>Total (Revenue vs. Expenses)</b>	<b>\$ 185,000</b>	<b>\$ 185,000</b>

The member states will be directly involved with finalizing contractor cost estimates, scopes of work, and schedules for each of the projects to ensure concurrence with the final mix of projects contracted for Work Plan 16.

The details of projects 16.1 – 16.5 are included below. For each project, a title, description, and champion are provided, in addition to a prospective approach. Also provided are planning level cost estimates. This planning level information was used as the basis to develop this work plan and will be used to arrange contractor services to execute the individual projects.

<b>Project Title</b>	<b>16.1 Operations Task Force – Year 9</b>
<b>Project Champion</b>	Brandon Beise, North Dakota DOT
<b>Project Purpose</b>	To continue meeting as a task force for another year.
<b>Budget</b>	\$25,000
<b>Background</b>	<p>North/West Passage has supported an Operations Task Force for six years. Following are highlights from each year.</p> <ul style="list-style-type: none"> <li>• <u>Year 1</u> (October 2013 – August 2014) Provided more in-depth expertise on the states' individual operating procedures and on the approaches that North/West Passage could pursue to strengthen and maintain coordination among the states, particularly during major events.</li> <li>• <u>Year 2</u> (September 2014 – August 2015) Webinars focused on a variety of topics including ITS deployment plans, API use among states, approaches to 24/7 staffing and citizen reporting and other crowd sources. The Operations Task Force also hosted a Regional Operations Forum on May 13-15, 2015.</li> <li>• <u>Year 3</u> (September 2015 – August 2016) Explored third party data providers to better understand the data they provide, summarized ITS deployments for operations, and conducted a Technician's Forum.</li> <li>• <u>Year 4</u> (September 2016 – August 2017) Discussed color DMS use, working with law enforcement, interpreting DMS guidelines, ITS asset management, and conducted a Technician's Forum.</li> <li>• <u>Year 5</u> (September 2017 – August 2018) Conducted a Technician's Forum, hosted a peer exchange on camera placement, integration and maintenance experiences, and hosted a webinar on protest management experiences.</li> <li>• <u>Year 6</u> (September 2018 – August 2019) Conducted a Pathfinder Peer Exchange and Wyoming DOT provided an update on their connected vehicle pilot project.</li> <li>• <u>Year 7</u> (September 2019 – August 2020) Conducted webinars including plow hit experiences and traveler information experiences.</li> <li>• <u>Year 8</u> (September 2020 – August 2021) Conducted webinars on sunseting technologies, small cell deployments in the right-of-way, FCC rule making and reallocating the spectrum, and MnDOT's fiber planning exercise.</li> </ul> <p>The intent of the task force is to:</p> <ul style="list-style-type: none"> <li>• Establish relationships</li> <li>• Enhance the scope of operations-oriented projects</li> </ul>

	<ul style="list-style-type: none"> <li>• Support further implementation of project findings</li> <li>• Increase interaction among the states outside of major events.</li> </ul>
<b>Approach</b>	<ul style="list-style-type: none"> <li>• <b>Task Force Schedule:</b> Develop a webinar schedule that identifies operations oriented, TSMO, and maintenance operations topics. Schedule task force meetings for the year. Longer meetings will be scheduled as needed to facilitate more in-depth discussion about select topics. Topics to consider include:             <ul style="list-style-type: none"> <li>○ <i>Operations Workforce Needs: Project 14.3: North/West Passage Workforce Needs: Practices and Peer Exchange</i> suggested as a next step to continue exchanging information among the North/West Passage members related to workforce needs.</li> <li>○ <i>Worker Presence:</i> Highlight 2-3 emerging approaches for work presence practices.</li> <li>○ <i>Dynamic Message Sign (DMS) Guidelines:</i> Round robin format for each North/West Passage member to describe their use and approach of the 2021 DMS Guidelines issued by FHWA, describe any significant changes made based on the guidelines, and note any lessons learned.</li> <li>○ <i>Edge Computing:</i> Highlight 2-3 examples of DOTs using edge computing in their daily operations.</li> </ul> </li> <li>• <b>Conduct Webinars:</b> Prepare, gather information, facilitate, and conduct task force webinars.</li> </ul>

<b>Project Title</b>	<b>16.2 Freight Task Force – Year 6</b>
<b>Project Champion</b>	Dave Huft, South Dakota DOT
<b>Project Purpose</b>	To continue meeting as a task force for another year.
<b>Budget</b>	\$15,000
<b>Background</b>	<p>North/West Passage has supported a Freight Task Force for five years where the intent of the task force is to enhance North/West Passage activities with the freight community and efforts.</p> <ul style="list-style-type: none"> <li>• Year 1 – Provided a more in-depth expertise on the states’ individual freight issues and activities and on the approaches that North/West Passage could pursue to better understand and address freight needs in future projects.</li> <li>• Year 2 – Focused on supporting active engagement of Freight Task Force members, conducted best practice (and practical) research on project funding opportunities, helped refine the truck parking concept so that it best fits North/West Passage needs, and conducted exploratory research on truck platooning for the North/West Passage corridor.</li> </ul>

	<ul style="list-style-type: none"> <li>• Year 3 – Focusing on truck platooning regulations and virtual weigh stations.</li> <li>• Year 4 – Focused on supporting active engagement of Freight Task Force members and on taking steps to advance a multi-state truck platooning demonstration.</li> <li>• Year 5 – Focused on improving the commercial vehicle travel experience across state lines by streamlining the e-screening process and identifying information sharing needs and issues.</li> </ul>
<b>Approach</b>	<p><b>Ongoing Freight Task Force Support:</b></p> <ul style="list-style-type: none"> <li>• Maintain the task force memberships list with input from the project champion</li> <li>• Prepare, gather information, facilitate, and conduct task force meetings</li> <li>• Schedule task force meetings periodically throughout the year to provide an opportunity for task force members to guide and provide input to work plan projects</li> <li>• Other support, as needed</li> </ul>

<b>Project Title</b>	<b>16.3 Winter Performance Measures</b>
<b>Project Champion</b>	Brandon Beise, North Dakota DOT
<b>Project Purpose</b>	To assist North/West Passage members as they develop and/or refine internal performance measures for snow and ice control as well as to examine how commonalities in performance measures could benefit the overall NWP corridor.
<b>Budget</b>	\$20,000
<b>Background</b>	<p>North/West Passage completed a project (<a href="#">Project 10.5: Winter Performance Management Practices</a>) in August 2016 that documented North/West Passage member states' winter performance management practices and then identified commonalities and similarities.</p> <p><a href="#">NCHRP 14-34 Research Report 889: Performance Measures in Snow and Ice Control Operations</a>, published in 2019, provided recommendations for performance measures for snow and ice control that included:</p> <ul style="list-style-type: none"> <li>• Define and use a Weather Event as the Starting Point for Performance Measurement</li> <li>• Develop both a Storm Severity Index and a Seasonal Severity Index</li> <li>• Pick consistent Level of Service and Recovery criteria and how they are measured across the agency</li> <li>• Report Performance Information</li> </ul>

	<p>The report also provided a guide for performance measures for snow and ice control, including steps for the following:</p> <ul style="list-style-type: none"> <li>• Defining Performance Measures</li> <li>• Implementing Performance Measures</li> <li>• Using Performance Measures</li> <li>• Reinforcing Performance-Based Management</li> </ul> <p>New Hampshire DOT successfully submitted a snow and ice control performance measures proposal to <u>NCHRP 20-44: Implementation Support Program</u> for funding assistance.</p>
<p><b>Approach</b></p>	<ul style="list-style-type: none"> <li>• <b>Winter Performance Measures Project Team.</b> Identify representatives from each North/West Passage member state to participate on a Winter Performance Measures Project Team. The purpose of the project team will be to participate in project webinars and provide input for the duration of the project.</li> <li>• <b>NCHRP 20-44 Application.</b> <ul style="list-style-type: none"> <li>○ Convene a project team meeting to:           <ul style="list-style-type: none"> <li>▪ Confirm participation and lead state from North/West Passage members.</li> <li>▪ Review the New Hampshire DOT NCHRP 20-44 successful proposal on snow and ice control performance measures.</li> <li>▪ Discuss modification to the application, schedule, and budget applicable to the North/West Passage Corridor.</li> </ul> </li> <li>○ Prepare draft and final NCHRP 20-44 Application.</li> <li>○ Submit an application to NCHRP 20-44.</li> </ul> <p><i>NOTE: If funding is received from the North/West Passage NCHRP 20-44 Application the North/Passage Steering Committee to consider utilizing the remaining Project 16.3 budget for the next highest voted Work Plan 16 project (Develop and Submit an Implementation Project Idea to NCHRP 20-44: Implementation Support Program). If North/West Passage is unsuccessful the project budget will be utilized to conduct the following webinars and project summary:</i></p> <ul style="list-style-type: none"> <li>○ <b>Project Webinars.</b> A series of 3 project webinar will be held.           <ul style="list-style-type: none"> <li>▪ <i>Webinar 1: Project purpose and review of information gathered in Project 10.5. Round robin discussion of any changes or updates members have implemented since the North/West Passage Project 10.5 summarized activities of the states.</i></li> <li>▪ <i>Webinar 2: Highlight recommendations from NCHRP 14-34. Discussion on how each recommendation relates to each North/West</i></li> </ul> </li> </ul> </li> </ul>

	<p><i>Passage state, understand if each state agrees with the recommendation, and discuss if collaboration and information sharing across states could assist in performance management.</i></p> <ul style="list-style-type: none"> <li>▪ <i>Webinar 3: Highlight guidance from NCHRP 14-34. Discussion on how each guideline relates to each North/West Passage state, understand if each state agrees with the guidance, and discuss how the guidance could be applied corridor wide.</i></li> <li>○ <b>Project Summary.</b> <i>Develop a draft and final project summary (most likely updating the Project 10.5 summary report), highlights from the webinar discussions, decisions on what performance measures could be implemented within the North/West Passage Corridor, and what data may be lacking or needed to accomplish the performance measures.</i></li> </ul>
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<b>Project Title</b>	<b>16.4 Truck Parking Information Management Assessment</b>
<b>Project Champion</b>	Andrew Andrusko, MnDOT
<b>Project Purpose</b>	To review how states share truck parking information and to make a determination of interest in a regional truck parking information management system.
<b>Budget</b>	\$40,000
<b>Background</b>	<p>Long haul truck drivers rely on overnight truck parking facilities to take their mandated rest breaks in compliance with federal hour of service regulations. There is a shortage of truck parking spaces nationwide. As a result, drivers may resort to parking in undesignated and unsafe locations to take their mandated breaks.</p> <p>Truck parking information management systems use sensors to track available spaces at truck parking facilities. Sharing information on available capacity and utilization at truck parking facilities can help truck drivers plan their trips. This project reviews existing truck parking information sharing systems region-wide and helps make recommendations to support a systematic region-wide approach to truck parking information sharing and information management.</p>
<b>Approach</b>	<p><b>Develop and execute a task force work plan.</b> The focal points of the work plan will be on reviewing existing truck parking information sharing and information management:</p> <ul style="list-style-type: none"> <li>• Review existing truck parking information management systems in public facilities in states in the region</li> <li>• Gauge interest in pursuing a regional truck parking information management system</li> <li>• Highlight any regulatory limitations for the data collection</li> <li>• Conduct outreach to private operators to review private sector data collection efforts and opportunities for potential collaboration</li> </ul>

	<ul style="list-style-type: none"> <li>Identify opportunities for potential partnerships with 3<sup>rd</sup> party data providers</li> </ul> <p>This project will engage state trucking associations and other industry stakeholders to better understand truck parking information needs.</p>
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<b>Project Title</b>	<b>16.5 Oversize/Overweight Movement Assessment</b>
<b>Project Champion</b>	Dave Huft, SDDOT/Freight Task Force
<b>Project Purpose</b>	To identify issues and develop mitigation strategies to improve and streamline oversize/overweight (OS/OW) movements across state lines.
<b>Budget</b>	\$40,000
<b>Background</b>	<p>Intrastate and interstate OS/OW movements face challenges due to:</p> <ul style="list-style-type: none"> <li>Physical restrictions such as bridge weight limits and vertical and horizontal clearances requiring complicated routing</li> <li>Lack of coordination between states or localities on permitting</li> </ul> <p>This project seeks to increase the efficiency of these movements between states by reviewing current interstate routing options and researching design standards to streamline cross-state OS/OW movements.</p>
<b>Approach</b>	<p><b>Develop and execute a task force work plan.</b> The focal points of the work plan will be on an Oversize/Overweight Movement Assessment:</p> <ul style="list-style-type: none"> <li>Work with states to gain access to OS/OW routing along 4-5 key routes as designated by the Freight Task Force</li> <li>Identify key OS/OW permit routes between states that are “off interstate”</li> <li>Flag inconsistencies in design standards and opportunities for OS/OW routing standardization</li> <li>Develop a list of best practices for routing OS/OW movements</li> <li>Make recommendations to improve coordination for permitting OS/OW movements across multiple states</li> </ul>