

# NORTH/WEST PASSAGE



July 12, 2018

Transportation Pooled Fund Study TPF-5(190)

**FINAL Work Plan 13**

# North/West Passage

## TRANSPORTATION POOLED FUND STUDY TPF-5(190)

### 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.

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 eleven work plans. Currently the group is completing its twelfth 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:

- Best of ITS Rural Award recipient in 2010.
- Development of one proposal to hire a contractor to perform work in two states.
- Each state uses their own phrases to describe road events. North/West Passage defined and agreed upon a set of consistent event description phrases to use across the I-90 and I-94 corridors.
- 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 document.
- Wyoming DOT shared its citizen reporting efforts. Idaho and Minnesota have implemented a citizen reporting system.
- Signed a Corridor-Wide MOU for coordination of traveler information.
- Created a benefit/cost spreadsheet tool for typical rural ITS projects.

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- Researched freight funding opportunities, truck platooning and truck parking for the North/West Passage states.
- Evaluated traveler information tools and coordination among the states during major events.
- Documented how each state plans and prioritizes ITS deployments.
- Assessed each state’s conformance to SAFETEA-LU 1201 regarding real-time system management information program.
- Federal Grant: Multistate Corridor Operations and Management Program (MCOM) recipient.
- Held peer exchanges on the development of a concept for rural TMC/TOC operations, variable speed limits, DOT efficiencies, plow cameras, and protest management.
- Hosted a North/West Passage Regional Operations Forum.
- Summarized North/West Passage winter performance measures practices and approaches for forecasting road conditions.
- Evaluated 511 Rural 511 Phone Services.

**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 2018 North/West Passage Annual Meeting in Coeur d’Alene, Idaho 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 13 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 13 PROJECTS**

<b>Project Name</b>	<b>Total Points Voted</b>	<b>Rank by Points</b>
Freight Task Force – Year 4	551	1
Operations Task Force – Year 6	549	2
NWP Corridor Safety and Mobility Assessment and NWP Corridor Speed Limit Impact Study - Phase 2	521	3
Work Zone Alerts: NWP Work Zone Reporting Approach	491	4
Pathfinder	485	5
VSL in Construction Zones	483	6

Mobile Data Management Practices	432	7
TSMO Leadership Training	432	7
NWP Experiences with Initial National Performance Reporting	426	9
TSMO Practitioner Training	422	10
TIM CMF Workshop	362	11

After discussing the voting results, the states agreed to fund the six highest ranked projects and include the Pathfinder and VSL projects as efforts under the Operations Task Force.

Table 2 provides a funding plan for Work Plan 13 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 13 FUNDING PLAN**

Expense	Estimated Costs	Project Champion
<b>Project Cost</b>		
Project 13.1 Freight Task Force – Year 6	\$50,000	Tony Ernest and Jeff Marker
Project 13.2 Operations Task Force – Year 4 including: <ul style="list-style-type: none"> <li>Pathfinder Peer Exchange (Brandi Hamilton)</li> <li>VSL in Construction Zones (Vince Garcia)</li> </ul>	\$40,000	Brandon Beise
Project 13.3 NWP Corridor Safety and Mobility Assessment	\$50,000	Dave Huft
Project 13.4 Work Zone Alerts: NWP Work Zone Reporting Approach	\$40,000	Cory Johnson
<b>Total Project Cost</b>	<b>\$180,000</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>	
<b>Revenue</b>		<b>Estimated Revenue</b>
Carry Over Funds (WP 12 Contributions – MT and SD)		\$50,000
State Contributions (7 states@ \$25,000/state)		\$ 175,000
<b>Total (Revenue vs. Expenses)</b>	<b>\$ 225,000</b>	<b>\$ 225,000</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 13.

The details of projects 13.1 – 13.4 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>13.1 Freight Task Force – Year 4</b>
<b>Project Champion</b>	Tony Ernest and Jeff Marker, Idaho Transportation Department
<b>Project Purpose</b>	To continue meeting as a task force for another year.
<b>Budget</b>	\$50,000
<b>Background</b>	<p>North/West Passage has supported a Freight Task Force for three 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> <li>• Year 3 – Focusing on truck platooning regulations and virtual weigh stations.</li> </ul>
<b>Approach</b>	<ul style="list-style-type: none"> <li>• Maintain the task force memberships list with input from the project champions.</li> <li>• Develop and execute a task force work plan. The focal points of the work plan will be four efforts. <ul style="list-style-type: none"> <li>○ <b>e-clearance</b> using DSRC for weigh station bypass: Research the advantages/disadvantages of deploying DSRC communications versus the current transponder systems for commercial vehicle clearance approaching weigh stations. Provide a system architecture and high level concept of operations for deploying DSRC at weigh stations. Could a dual communications approach be feasible for eventual transition to DSRC?</li> <li>○ <b>Other V2I applications</b> that are specific to trucks, such as electronic hours of service logging and vehicle equipment status. Provide a list and description of possible applications and proposed message sets.</li> <li>○ Delivering the <b>chain-up message for trucks</b> approaching mountain passes via DSRC: develop a system architecture, high level concept of operations and proposed message set.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ Evaluate the regulatory impact of <b>autonomous trucks</b>: What changes are needed in the code for each state for both testing and operational status for autonomous trucks?</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>● Prepare, gather information, facilitate, and conduct task force meetings.</li> </ul>
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<b>Project Title</b>	<b>13.2 Operations Task Force – Year 6</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>	\$40,000
<b>Background</b>	<p>North/West Passage has supported an Operations Task Force for five years. The intent of the task force is to establish relationships, enhance the scope of operations-oriented projects, support further implementation of project findings, and increase interaction among the states outside of major events.</p> <p>This project would support continuation of the task force for another year.</p>
<b>Approach</b>	<ul style="list-style-type: none"> <li>● Develop and execute a task force work plan. The focal points of the work plan will be the following efforts. <ul style="list-style-type: none"> <li>○ Identify operations-oriented topics (e.g. technician’s forum, remote device monitoring, Wyoming DOT connective vehicle pilot project, travel alert processes, SPaT challenge approaches) to be discussed during task force webinars.</li> <li>○ Conduct a Pathfinder Peer Exchange during one of the monthly task force webinars. Pathfinder is a collaborative effort to share and translate weather forecasts into consistent transportation impact statements for the public. It benefits DOTs by improving collaboration for planning for major weather and sharing information with the public. It results in travelers having better information about weather that may impact travel and encourage better decisions. Washington State DOT, Idaho Transportation Department, and the Minnesota DOT have conducted Pathfinder Workshops. During the peer exchange webinar, member will share experiences, outcomes, and describe impacts that the Pathfinder workshops had on operations. In addition, information gathered prior to the peer exchange will include summarizing Pathfinder workshops outside of the North/West Passage states (e.g. Pennsylvania, Colorado) to highlight during the webinar.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ Facilitate a discussion during a monthly task force webinar to identify and classify variations in work zones and worker activity in zones that may necessitate different Variable Speed Limit (VSL) strategies and a discussion to document other research in the area of detecting worker presence and activity in work zones. Prior to the webinar, information gathering may include review of VSL policies/procedures for work zones in North/West Passage states and the current state of practice of varying speeds based on worker presence in work zones. Other research may include the documenting the experiences of VSL during inclement weather in Wyoming to understand technical and institutional topics that should be considered when exploring VSL in work zones. Based on the research and discussions with the Operations Task Force, this project will prepare a summary document and explore ideas for future North/West Passage projects.</li> <li>● Schedule task force meetings every month as well as prepare, gather information, facilitate, and conduct monthly task force meetings.</li> </ul>
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<b>Project Title</b>	<b>13.3 NWP Corridor Safety and Mobility Assessment</b>
<b>Project Champion</b>	Dave Huft
<b>Project Purpose</b>	To conduct an overall assessment of the safety and mobility issues and challenges along the corridor.
<b>Budget</b>	\$50,000
<b>Background</b>	<p>In Work Plan 10, a review of North/West Passage states that had increased their speed limits was conducted. However, the project did not include data from all member states and there were only a couple years of data available since speed limit changes were implemented. The project results were limited.</p> <p>This project would include additional review of crashes along the corridor and analysis of possible safety issues and contributing factors (e.g. location of where crashes occur, vertical alignment issues, seasonal factors, state to state variations) based on the data available. The data anticipated to be available from member states to the researchers is expected to include highway network information, location of speed limits, crash data (summaries and possibly individual records). The National Performance Management Research Data Set (NPMRDS) data may also be used to help understand which locations along the corridor are more prone to mobility issues (e.g. recurring or non-recurring delays).</p> <p>The analysis of the safety aspects of the corridor would be used to support North/West Passage project selection and prioritization in the coming years and allow member agencies the option to focus activities on those portions of the corridor where safety needs are the greatest. The analysis of safety impacts as they relate to speed limits would</p>

	be used to support North/West Passage member agencies as they consider speed limit adjustments within their respective states.
<b>Approach</b>	<ul style="list-style-type: none"> <li>• Develop a list of data needs for the project and distribute the list to the North/West Passage members to identify what type of data each state can provide.</li> <li>• Develop an analysis approach based on available data</li> <li>• Conduct analysis</li> <li>• Consolidate findings into a corridor-wide assessment of safety aspects and related speed limits.</li> <li>• Document findings in a report and PPT presentation.</li> </ul>

<b>Project Title</b>	<b>13.4 North/West Passage Traveler Information Work Zone Alerts: Feasibility Study</b>
<b>Project Champion</b>	Cory Johnson, Minnesota DOT
<b>Project Purpose</b>	To document the feasibility of enhancements to each North/West Passage states existing 511 system to provide work zone alerts to travelers.
<b>Budget</b>	\$40,000
<b>Background</b>	North/West Passage in Work Plan 12 developed a project idea to submit for an ATCMTD grant. The project idea was focused on enhancing each state’s 511 system to provide work zone alerts to travelers. However, it was agreed that initial planning was needed prior to submitting the project idea to understand the details of what changes are desired to existing 511 systems to accomplish the project.
<b>Approach</b>	<ul style="list-style-type: none"> <li>• Track efforts of the National Work Zone Data Initiative to understand key elements being defined for work zone alerts;</li> <li>• Document the current elements and reporting processes used by North/West Passage member states to report and disseminate work zone alerts;</li> <li>• Proceeding through a facilitated process to define agreed minimum elements to be included in a future North/West Passage work zone alert project; and</li> <li>• Explore the match requirements and options for member states to meet these requirements.</li> </ul>