North/West Passage Pooled Fund Study

TPF-5(190)

Work Plan 8



FINAL

June 25, 2013



Background

Interstates 90 and 94 between Wisconsin 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, Wisconsin, 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 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 six work plans containing 32 projects including development of a corridor-wide traveler information website (www.i90i94travelinfo.com). Currently the group is completing its seventh work plan consisting of 6 projects. Complete details on previous work plans and individual projects are available through the program web site at www.nwpassage.info.

At the Opening Session of the 2010 National Rural ITS Conference, the North/West Passage Program was recognized as the winner of the 2010 Best of ITS Rural Award. The Best of ITS Rural Awards is the only program in the world that recognizes the best and brightest of the rural ITS community.

Accomplishments

Some accomplishments of the corridor include:

- North and South Dakota 511 callers can select to receive information on Minnesota's highways.
- Development of one proposal to hire a contractor to perform work in two bordering states.
- Each state uses their own phrases to describe road events. The NWP defined and agreed upon a set of consistent event description phrases to use across the I-90 and I-94 corridor.
- 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 O&M collaboration.
- Participated in the USDOT Clarus initiative. The result of the project was an example of all NWP states working together to develop a corridor Concept of Operations document.

- Shared the details of Wyoming's Enhanced Citizen Assisted Reporting Program for expansion to additional states. Idaho has implemented a citizen assisted reporting system.
- Signed a Corridor-Wide MOU for corridor wide coordination of traveler information.
- Created a benefit/cost spreadsheet tool for typical rural ITS projects.
- Held a webinar to open a dialogue with the freight industry.
- Evaluated coordination during major events of traveler information tools.
- 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.

Financial Status

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

Projects

At the May 15 and 16, 2013 North/West Passage Annual Meeting in Milwaukee, Wisconsin 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 8 was then discussed in detail. The prospective projects were based on member suggestions and the Strategic Plan. These projects were scored at the Annual Meeting based on anticipated benefits to the corridor, likelihood of success, compatibility with vision and ConOps, and timeliness of the project.

The voting results are presented in Table 1.

Table 1: Voting Results for Work Plan 8 Projects

Project Name	Total Points Voted	Rank by Points
Operation Task Force	653	1
Concept for Rural TMC/TOC Operations	642	2
Freight Task Force	626	3
Winter Road Condition Map Aggregation	590	4
Member Outreach Support	561	5
Major Event Operations Coordination Support	533	6
Corridor-wide Commercial Vehicle Portal Feasibility Study	533	6
Corridor Wide Hands-free Voice Travel Alerts	457	7
Benefit/Cost Tool Application and Outreach	433	8
Operations Academy Exchange	417	9
ConOps for Connected Commercial Vehicles	260	10
ITS Training and Education of DOT Staff	220	11
Canada NWP Cross Border Traveler Information	152	12
Rest Areas - Increasing Efficiency and Effectiveness	93	13
Next Generation of Traveler Info Services and Products	82	14

After discussing the voting results the states agreed to pursue as many of the projects listed in Table 2 as could be accomplished with available funding. Full project details are included at the end of this work plan.

Several other expenses are estimated in addition to the projects. Program administration support is as an overarching contractor task to support the Program Administrator with meeting preparations, writing conference papers, preparing presentations, etc. The states are also planning their annual meeting in the coming year and the estimated cost consists of associated travel expenses.

Table 2: Work Plan 8 Funding Plan

Expense	Estimated Costs	
Project Cost	•	
Project 8.1 Operations Task Force	\$20,000	
Project 8.2 Concept for Rural TMC/TOC Operations	\$20,000	
Project 8.3 Freight Task Force	\$40,000	
Project 8.4 Winter Road Condition Map Aggregation	\$20,000	
Project 8.5 Member Outreach Support*	\$26,000	
Project 8.6 Major Event Operations Coordination Support	\$25,000	
Project 8.7 Corridor-wide Commercial Vehicle Portal Feasibility Study	\$25,000	
Total Work Plan 8 Cost	\$ 176,000	
Administrative Cost	-	1
Program Administration Support	\$ 30,000	
Program Website Maintenance (<u>www.nwpassage.info</u>)	\$ 5,000	
Member Travel Support (one in person meeting)	\$ 10,000	
Total Administrative Cost	\$ 45,000	
Revenue		Estimated Revenue
Project 7.4 Carryover*		\$ 25,000
State Contributions (8 states@ \$25,000/state)		\$ 200,000
Total (Revenue vs. Expenses)	\$ 221,000	\$ 225,000

^{*}A limited amount of funds will be contracted to the program support consultant to assist with materials preparation and coordination. The majority of funds are to be dedicated towards member travel.

The 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 8.

The details of projects 8.1 - 8.7 are included on the following pages. For each project, a title, description, and recommended 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.

^{**}It was approved at the May 2013 Annual Meeting to transfer funds from Project 7.4: Regional Permitting Phase 4 to Work Plan 8 to go towards funding Project 8.3: Freight Task Force.

Project Title	8.1 Operations Task Force	
Project Champion	Bill Legg, Washington State DOT	
Project Purpose	Establish an Operations task force from Summer 2013 through Spring 2014 designed to assess the value of an ongoing, dedicated group focused on North/West Passage traveler information, Operations and Travel Information Integration (OTIIS) Multistate Corridor Operations and Management (MCOM) and operational coordination activities and projects.	
Budget	\$20,000	
Background / Current Status	Traveler information and operations staff have been engaged in North/West Passage activities on a somewhat limited basis as the steering committee members often have indirect responsibility for or involvement in one or both functions. The desire to strengthen coordination among the states, particularly during major events, makes routine interaction among this staff even more important. It is anticipated that by engaging these individuals directly on specific projects, it will enhance the scope of individual projects, support further implementation of project findings, establish relationships and increase interaction among the states outside of major events. The task force would provide 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. Toward the end of the Spring2014, the task force participants and steering committee members will be surveyed regarding their perceptions of the value of extending the task force or transitioning it to a more permanent role.	
Approach	 Each member state will determine representation on the task force and identify at least one individual to represent traveler information and Traffic Management Center (TMC)/Traffic Operations Center (TOC) operations. The task force will meet by webinar/teleconference once each month for a half an hour. During this temporary trial period, the task force will: Define a work plan for the task force. Serve as primary coordination points for coordination during major events along I-90 and I-94. Develop a roadmap for coordinated traveler information for the North/West Passage program within the corridors. Provide input, comment and review to the North/West Passage OTIIS MCOM project. Review the primary areas of improvement and corresponding recommendations from Projects 6.1/7.2: Corridor-Wide Traveler Information Coordination-Operational Test and provide guidance on implementing the recommendations. 	

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8.1 Operations Task Force

- 6. Provide guidance and insight to the following coordination projects selected for Work Plan 8:
 - Project 8.2 Concept for Rural TMC/TOC Operations
 - Project 8.6: Major Event Operations Coordination Support
- 7. Provide input, including support and scoping on future project ideas to support operational coordination, travel information and the MCOM effort. Some examples identified in Project 7.1 include:
 - TMC/TOC Coordination Web Page Develop a password protected website to facilitate traveler information and operations coordination among the states.
 - TMC/TOC Staff Awareness Effort Increase awareness of the North/West Passage coordination tasks and tools among TMC/TOC operations staff within the states.
 - Integration of Operational Guidelines for Coordinating Traveler Information – Assist each state with integrating and expanding upon where necessary, the Operations Guidelines for Coordinating Traveler Information with other states along I-90/I-94 into their individual operating procedures for managing major events.
- 8. Determine the need for and participate in a corridor wide seasonal coordination webinar (Winter 2013-14).
- 9. Identify what, if any, other activities the task force would oversee on a continued basis.

Goals Addressed

This project will further enhance the states' efforts to develop and promote cross-jurisdictional coordination of operations (Goal 2) and traveler information (Goal 1) for the North/West Passage.

Implementation

- Survey the task force participants and steering committee members regarding their perceptions of the value and willingness to continue.
- Prepare a final assessment of the value of the task force and recommend if it should continue and if so, how lit should operate, and identify other activities the group could potentially oversee on a continued basis. This assessment will be presented to the steering committee during their 2014 annual meeting for further action.

Project Title	8.2 Concept for Rural TMC/TOC Operations
Project Champion	Dave Huft, South Dakota DOT
Project Purpose	Support a peer exchange among the North/West Passage states on the development of a concept for rural Traffic Management Center (TMC)/Traffic Operations Center (TOC) operations.
Budget	\$20,000
Background / Current Status	The I-90/I-94 corridor between Washington and Wisconsin is predominantly rural with some large urban centers in Washington, Minnesota and Wisconsin. There is also a range of transportation management approaches used throughout the corridor. Those states with large urban centers have developed extensive TMC facilities to manage congestion and mobility. Some of the states have statewide-oriented TOC facilities to manage activities that tend to be oriented toward a mix of mobility and safety. Still other states have no formal TMC/TOC facilities and manage statewide operational functions from a coordinated point. With this range of management approaches, there are inherent challenges for coordinating traveler information and operations activities along the I-90/I-94 corridor.
	There is a significant amount of guidance on and models for urban TMC/TOC operations but very little for rural facilities. The purpose of this project is to better define the unique needs of a rural TMC/TOC operational concept and to determine what existing guidance or models could be modified to support the enhancement of TMC/TOC operations among the North/West Passage states.
	The research and peer exchange approach that will be used in this project include:
	 Identify unique needs and develop a concept for rural TMC/TOC operations,
Approach	 Research and summarize existing TMC/TOC operational guidance and models for potential rural application,
	 Facilitate peer exchange webinar to present research findings and discuss key practices among rural states,
	 Identify how existing guidance or models could be modified to support rural TMC/TOC operational concept, and
Goals Addressed	This project will further enhance the states' efforts to develop and promote cross-jurisdictional coordination of operations (Goal 2) and traveler information (Goal 1) for the North/West Passage.
Implementation	Develop a summary report with recommendations for further collaboration with FHWA, the TMC Pooled Fund or other groups identified during the project.

Project Title	8.3 Freight Task Force	
Project Champion	Bob Koeberlein, Idaho Transportation Department	
Project Purpose	Establish a freight task force for from Summer 2013 through Spring 2014 designed to assess the value of an ongoing, dedicated group focused on North/West Passage freight related activities and projects.	
Budget	\$40,000	
Background / Current Status	The freight community and DOT freight staff have been engaged in North/West Passage activities on a somewhat limited basis. As such, the steering committee has a somewhat limited understanding of commercial vehicle travelers' needs and operational challenges along I-90/I-94. Many of the North/West Passage member agencies have offices responsible for all freight movement — by rail, highway and waterway. The staff sought for this task force should be focused on movement by highway and may be involved in freight planning or permitting activities. The task force would provide 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. Toward the end of Spring 2014, the task force participants and steering committee members will be surveyed regarding their perceptions of the value of extending the task force, transitioning it to a more permanent role.	
Approach	 Each member state will determine representation on the task force and identify at least one individual to represent freight planning and permitting activities. Note that a North/West Passage Project Team that has guided the previous regional permitting projects could be extended to serve in this capacity. The task force will meet by webinar/teleconference once every other month for a half an hour. During this temporary trial period, the subcommittee will: Define a work plan for the task force. Provide insight to Project 7.3: Truck Parking Projects and Evaluation of Third Party Data for Truck Parking Availability Provide guidance and insight to Project 8.7: Corridor-Wide Commercial Vehicle Portal. Provide input on future project ideas to maintain North/West Passage understanding of freight issues and support freight movement along I-90/I-94 (e.g. develop a website listing permit requirements rather than going to each individual state website, revisit the trucking industry survey conducted previously and determine if it is still valid, discuss coordinating clearances and inspections along the corridor, create a GIS map of the corridor locating and providing details (e.g. communications, parking capacity) of weigh stations and truck parking, 	

Project Title	8.3 Freight Task Force
	concept of operations describing how truck inspection results could be shared across the corridor, concept for reporting parking availability) 5. Determine if a 2014 MCOM proposal is warranted dealing with commercial vehicle e-clearance along the corridor. If so provide guidance for proposal preparation. 6. Identify North/West Passage representation to participate in other national activities or associations established for freight and commercial vehicle operations. For example, the American Trucking Association has several advocacy committees and councils associated with cross border and safety topics. The FHWA Office of Freight Management and Operations and the American Transportation Research Institute are other established resources that North/West Passage could initiate more routine contact with to represent the interests of the corridor and to learn how the corridor can contribute to broader freight needs. 7. Identify what, if any, other activities the task force would oversee on a
Goals Addressed	continued basis. This project will further enhance the states' efforts to develop and promote cross-jurisdictional coordination of traveler information (Goal 1) for North/West Passage.
Implementation	 Survey the task force participants and steering committee members regarding their perceptions of the value and willingness to continue. Prepare a final assessment of the value of the task force and recommend other activities the group could potentially oversee on a continued basis. This assessment will be presented to the steering committee during their 2014 annual meeting for further action.

Project Title	8.4. Winter Road Condition Map Aggregation	
Project Champion	Brandi Hamilton, Montana DOT (tentative)	
Project Purpose	The goal of this project is to extend a multistate winter road condition aggregate map to the remaining four states for complete North/West Passage coverage.	
Budget	\$20,000 for SSEC staff time and approximately \$4,000 of the funds would be directed to hardware and server upgrades for improved performance and reliability.	

Winter weather operations are of special importance for northern tier states and there are some unique opportunities when viewed at the multistate corridor or mega region scale. For instance, the North/West Passage has recently begun hosting a winter season operations preparedness webinar and in 2012-13 they evaluated coordination among the states during major winter events. To support this type of multistate preparation and coordination, the Space Science and Engineering Center (SSEC) at the University of Wisconsin-Madison has aggregated the upper Midwest states' winter road conditions on a single map. An excerpt of the map is shown at below and the live map may be viewed at this link.



Background / Current Status

This type of mapping application also accommodates National Weather Service radar coverage and warning overlays, RWIS and potentially other types of information. With this in place, a time lapse over multiple days can be provided as an after action review tool for a winter storm traversing the region as seen in this vouTube video. Four of the North/West Passage states are already integrated into this platform through separate funding, and this project would further integrate the states of WA, ID, WY and MT.

The suggested timeline for this project is approximately six months from notice to proceed. However, writing the decoders requires data sources (e.g., reports from each state) that contain valid reports. These reports are typically generated during the winter months of the year (usually November-April). As such timing on this part of the task may be limited to these months.

Project Title	8.4. Winter Road Condition Map Aggregation
Approach	 Research alternative sources for hooking into the winter road conditions in WA, ID, WY and MT.
	 Construct the segment geometry files for each state.
	 Write the decoder for each state.
	 Maintain and adapt the decoders to various situations (e.g., text variability).
	This project will further enhance the states' efforts to develop and promote cross-
Goals Addressed	jurisdictional coordination of operations (Goal 2) and traveler information (Goal 1)
	for North/West Passage.
Implementation	Assesse the value of the map and recommend an outreach plan for the Winter
	Road Condition Map Aggregation.

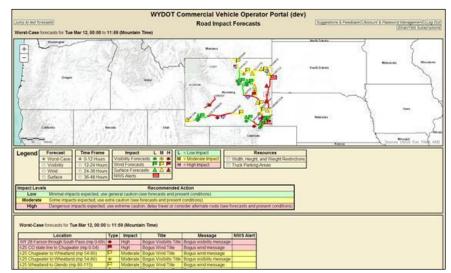
Project Title	8.5 Member Outreach Support
Project Champion	Cory Johnson, Minnesota DOT
Project Purpose	Develop materials for and provide outreach support to the steering committee members as they share information about North/West Passage with other staff in their agencies.
Budget	\$26,000 (Note: This budget includes supporting North/West Passage member travel to share project results to other states)
Background / Current Status	As the North/West Passage has continued to expand its efforts to coordinate traveler information and operations across state borders, it has also expanded its reach to include additional operations oriented staff in the member agencies. The program also has goals to support the coordination of planning and programming ITS deployments in the corridor. For most of the states, these expanded efforts require the engagement of agency staff beyond the steering committee representative. This project would develop materials for and provide outreach support to the steering committee members as they share information about North/West Passage with other staff in their agencies. The materials will provide background on the overall program, information on current projects, and details about the nature of the additional engagement that may be necessary for specific projects.
Approach	 Assess existing outreach tools for modifications or the creation of additional tools. Existing tools include the program and traveler information brochures, quarterly and annual progress reports, annual work plans and conference presentations. Develop, as needed, additional outreach tools that may include but are not limited to newsletters, presentations, talking points or brief videos. This project will further enhance the states' efforts to develop and promote cross-
Goals Addressed	jurisdictional coordination of traveler information (Goal 1), operations (Goal 2), and planning and deployment of ITS projects (Goal 3) in the I-90/I-94 corridor.
Implementation	Work with steering committee members to identify and then present North/West Passage during existing agency meetings.

Project Title	8.6 Major Event Operations Coordination Support
Project Champion	Bill Legg, Washington State DOT
Project Purpose	Have program support consultant serve as a temporary, central point for identifying and facilitating agency coordination during major events along I-90/I-94.
Budget	\$25,000 (Assuming four hours for each state to discuss and develop operating procedures; weekday monitoring for 26 weeks at 90 hours; two hours to alert agencies of approximately 8 events; approximately four of those events could result in facilitating coordination and after action reviews at 16 hours each; developing the final recommendations would take another 16 hours)
Background / Current Status	The North/West Passage has specific goals associated with coordinating traveler information and operations along I-90/I-94. Several projects have developed tools and guidelines to encourage and support such coordination. During the course of evaluating major event coordination in Projects 6.1 and 7.2 – Corridor Traveler Information Coordination Operational Test, it appeared that the central point of contact provided by the program support consultant was useful in facilitating coordination activities among the states. One of the fundamental elements of a successful incident management program is relationships. Because major events can happen somewhat infrequently along the corridor, relationships among TMC/TOC operations staff are currently somewhat limited. This project will temporarily extend the major event coordination that has occurred in the past year through the program support consultant for Project 6.1 and 7.2. However, the expectation is that it will strengthen the relationships among operations staff in states so that coordination will occur without the need for a contractor serving as a central point of contact and organization.
Approach	 Work with TMC/TOC operations staff to develop written border state operating procedures, where they aren't already in place. This will create a point for connecting the North/West Passage coordination guidelines and further enhance relationships among state TMC/TOC operations staff. Develop and implement a standard operating procedure for the temporary, centralized coordination that will be provided by the program support consultant. Monitor agency alerts for planned and unplanned major events affecting I-90/I-94 between Washington and Wisconsin. Alert agency TMC/TOC operations staff about major events affecting their portion of the corridor that may require traveler information or operational coordination across state borders. Facilitate, as needed, ongoing coordination during major events that result in coordination across state borders. Facilitate and prepare summaries for after action reviews among the states

Project Title	8.6 Major Event Operations Coordination Support	
	following major events that result in coordination across state borders.	
Goals Addressed	This project will further enhance the states' efforts to develop and promote cross-jurisdictional coordination of operations (Goal 2) and traveler information (Goal 1) for the North/West Passage.	
Implementation	Based on the experience during this project, develop recommendations for how centralized coordination support could be accomplished in both the near-term (1-2 years) and long-term (3+ years).	

Project Title	8.7 Corridor-wide Commercial Vehicle Portal Feasibility Study
Project Champion	Vince Garcia, Wyoming DOT
Project Purpose	Conduct a feasibility study and develop a Concept of Operations document for a Corridor-wide Commercial Vehicle Portal based on the Wyoming CVO Portal.
Budget	\$25,000

Wyoming DOT is developing a web portal that will provide road condition forecasts to support freight movement through Wyoming as shown in the image below.



Forecasts for the truck routes highlighted in the portal include:

Background / Current Status

- 12, 24, 36 and 48-hour road impact forecasts with wind speed/gust, visibility and surface conditions
- National Weather Service watches and warnings
- Both map and text formats provided

The road impact forecasts will be tailored specifically for commercial vehicles and then written and updated daily by WYDOT's on-site meteorologists. The technology for the web portal could be expanded to the other North/West Passage states. This project would focus primarily on working with the states to develop a concept of operations for how the CVO Portal could be expanded through the corridor. Key topics to be discussed include but are not limited to:

- Whether to maintain meteorologist involvement in writing alerts as the system expands to other states. This will involve determining if other states have access to and funding for meteorologists, if DOT (non-meteorologists) staff could perform the role, or if the portal could rely solely on automated data synthesis.
- Whether the North/West Passage group can agree to consistent formats and reporting procedures such that commercial vehicle operators receive consistent information from the portal, regardless of the state they are

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8.7 Corridor-wide Commercial Vehicle Portal Feasibility Study

traveling in. The concept of operations process would facilitate a discussion about whether this consistency is needed and if each state could maintain flexibility in their reporting.

- Whether the concept of a commercial vehicle portal should be combined with the MCOM project following this concept of operations task, or if expansion of the CVO Portal should use the software developed by Wyoming DOT.
- How ongoing hosting and operations of the CVO Portal would be handled.
 For example, would Wyoming DOT host and maintain the software that data is aggregated into for other states, or is there a migration to a central hosting solution (or another state) and how would costs be shared among members?

This project is less about the technology and more about the logistics behind the concept of expanding the CVO Portal throughout the corridor. The concept of operations development process would involve one-on-one discussions with member states, as well as group discussions to reach consensus. If review of the concept of operations results in a "go" decision to deploy the CVO Portal, the current understanding is that technology costs will be minimal (as it is not a technology-heavy system). However, there are a number of commitments and agreements that would need to be reached to help ensure that the quality of the existing CVO Portal remains high as new states are added.

Approach

- Facilitate one-on-one discussions and group discussions with North/West
 Passage states to discuss the needs for the CVO Portal, the logistics of
 manual entry of weather impacts (either by a meteorologist or a nonmeteorologist) in each state, the level of agreement regarding consistency
 in reporting and information to be presented, and a business model for
 ongoing hosting and operations of the system.
- Compile the meeting results into a concept of operations document.

Goals Addressed

This project will further enhance the states' efforts to develop and promote cross-jurisdictional coordination of traveler information (Goal 1) for North/West Passage.

Implementation

Facilitate discussions and revisions until the concept of operations is finalized and accepted by all North/West Passage members. The understanding is that the CVO Portal could be expanded quickly and with minimal development costs if the logistics are all agreed upon and active participation is achieved.