

NORTH/WEST PASSAGE



July 10, 2025

Transportation Pooled Fund Study TPF-5(506)

FINAL Work Plan 20

North/West Passage

TRANSPORTATION POOLED FUND STUDY TPF-5(506)

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. See Figure 1.

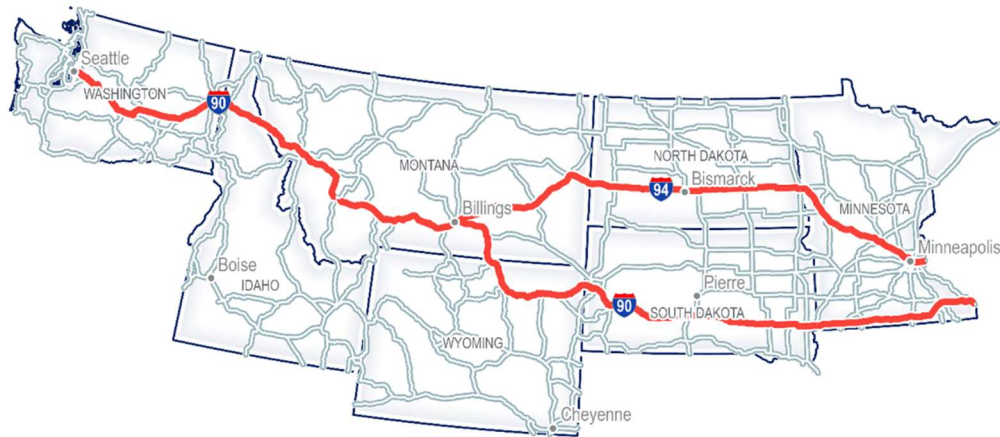


Figure 1: North/West Passage Member Corridor Map

Recognizing the value of coordinated, cross-border collaboration for Intelligent Transportation System (ITS) deployment to address these issues, the Minnesota Department of Transportation (DOT) 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)). TPF-5(376) was closed out with the completion of Work Plan 12 – Work Plan 17 projects and a new number was assigned (TPF-5(506)) to complete Work Plan 18 – Work Plan 22 projects.

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

The North/West Passage Corridor has developed an ITS Integrated Strategic Plan and has successfully implemented eighteen work plans. Currently the group is completing its nineteenth work plan consisting of six projects. Complete details on previous work plans and individual projects are available through the program web site at www.nwpassage.info.

FOCUS AREAS

North/West Passage projects selected annually are focused around six areas. See Figure 2. Members review common issues, problems, or needs around each focus area to assist in identifying project ideas of interest. It is important to note that Integrating Emerging Transportation Technologies incorporates Connected and Automated Vehicle (CAV) project ideas.

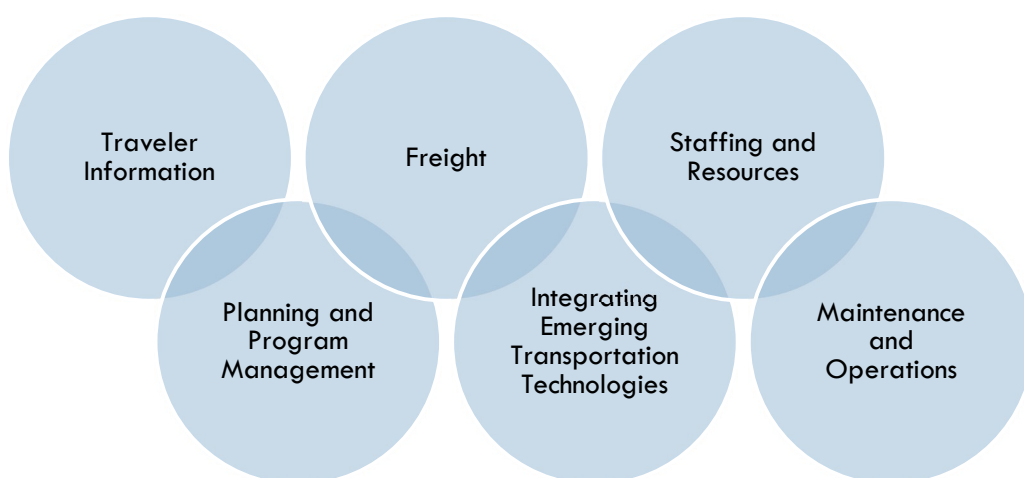


Figure 2: North/West Passage Focus Areas

ACCOMPLISHMENTS

The North/West Passage has completed several projects since its inception in 2003. The following bullets highlight some overall accomplishments of the corridor:

- 2010 Best of ITS rural award winner.
- Memorandum of Understanding (MOU) for traveler information coordination signed by all member states.
- Developed operations guidelines for coordinating traveler information.
- Multistate Corridor Operations and Management (MCOM) federal grant recipient.
- Successfully submitted a project statement to National Cooperative Highway Research Program (NCHRP).
- Established an Operations Task Force.
- Established a Freight Task Force.
- Hosted a Regional Operations Forum.

- Created a Traffic Management Center (TMC)/Traffic Operations Center (TOC) operations coordination webpage.
- Deployed a corridor-wide traveler information website.
- Conducted numerous workshops and peer exchanges on topics of interest to North/West Passage members.
- Presented project results at conferences.
- Developed North/West Passage outreach material.

FINANCIAL STATUS

North/West Passage members contribute \$30,000 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 2025 North/West Passage Annual Meeting held in Bismarck, North Dakota, the member 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 20 was then discussed in detail. The prospective projects were based on member suggestions and the North/West Passage ITS Integrated Strategic Plan and corresponding updates. 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 20 PROJECTS

Project Name	Total Points Voted	Rank by Points
Operations Task Force – Year 13	675	1
Freight Task Force – Year 10	670	2
Corridor-wide Common Data Exchange of Road Closures Demonstration	613	3
Road Closure Impact Planning	559	4
Cross Border Event Coordination Procedures	534	5
Multi-state/Regional Truck Parking Information and Management System (TPIMS) Grant Application	532	6
Identify Opportunities for Truck Parking Collaboration between North/West Passage States	527	7
DOT Infrastructure Standardized Data Feed – Phase 1	492	8

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Corridor-wide Fleet Data Sharing	472	9
North/West Passage Transcontinental Corridor Data Exchange Use Cases	472	10
Emergency Preparedness at Key Locations	438	11
Multi-State Data Exploratory Project	429	12
Artificial Intelligence (AI) Practices: DOT Traveler Information	375	13
Traffic Control for Cable Median Barrier Installation and Repair	368	14
Identify Opportunities for Private Public Partnership (PPP) on Truck Parking in the North/West Passage Corridor	364	15

Table 2 provides a funding plan for Work Plan 20 that includes several other expenses in addition to the projects selected through voting. Program administration support is an overarching contractor task to support the Program Administrator and Chair with meeting preparations, writing conference papers, work plan development, preparing presentations, maintaining progress reports, updating and maintaining the program website, 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 20 FUNDING PLAN

Expense	Estimated Costs	Project Champion
Project		
20.1 Operations Task Force – Year 12	\$25,000	Mike Warren Montana DOT
20.2 Freight Task Force – Year 10	\$25,000	Dave Huft South Dakota DOT
20.3 Corridor-wide Common Data Exchange of Road Closures Demonstration	\$75,000	Vince Garcia Wyoming DOT
20.4 Road Closure Impact Planning	\$30,000	Cory Johnson Minnesota DOT
20.5 Cross Border Event Coordination Procedures	\$30,000	Kelvin Daratha Washington State DOT
20.6 Multi-state/Regional TPIMS Grant Application	\$75,000	Dave Huft South Dakota DOT
20.7 Identifying Opportunities for Truck Parking Collaboration between North/West Passage States	\$35,000	Dave Huft South Dakota DOT
Total Project Cost	\$295,000	

Expense	Estimated Costs	Project Champion
Administrative Cost		
Program Administration Support	\$40,000	
Member Travel Support	\$10,000	
Total Administrative Cost	\$50,000	
Revenue	Estimated Revenue	
State Contributions		
<ul style="list-style-type: none"> 7 states at \$30,000 (Idaho, Minnesota, Montana, North Dakota, South Dakota, Washington, and Wyoming) 		\$ 210,000
Carry forward funds from TPF 5(376)		\$135,000
Total (Revenue vs. Expenses)	\$345,000	\$345,000

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 20.

The details of projects 20.1 – 20.7 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. Also identified for each project is which focus area (Figure 1) the project is related to.

Project Title	20.1 Operations Task Force – Year 12
Project Champion	Mike Warren, Montana DOT
Project Purpose	To continue meeting as a task force for another year (January – December 2026).
Budget	\$25,000
Background	<p>The North/West Passage Operations Task Force was established in 2013. The intent of the task force is to:</p> <ul style="list-style-type: none"> • Establish relationships. • Enhance the scope of operations-oriented, maintenance operations, and Transportation Systems Management and Operations (TSMO) related projects. • Support further implementation of project findings. • Increase interaction among the states outside of major events. <p>A memorandum of understanding was signed for traveler information coordination and operational guidelines were developed in 2011. The documents are periodically reviewed and updated if needed.</p> <p>Since its fourth year as a task force, a technician’s forum is conducted to provide an opportunity for member states to talk with each other and learn about projects or topics of interest. The forum is modeled after the Western States Forum.</p> <p>Since its second year as a task force, a round robin webinar is held annually for members to highlight the major events as well as winter and flood season activities for that year.</p> <p>In addition, 6 to 9 webinars on various topics are held throughout the year which may include presentations or round robin discussions.</p>
Approach	<ul style="list-style-type: none"> • Task 1: Task Force Schedule: 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 may include: <ul style="list-style-type: none"> ○ Emergency Preparedness at Key Corridor Locations Practices ○ Traveler Information Artificial Intelligence (AI) Practices ○ Traffic Control Median Barrier Installation and Repair Practice ○ State Practices for Removing Snow • Task 2: Conduct Webinars: Prepare, gather information, facilitate, and conduct task force webinars. • Task 3: Update Website: Post recordings and webinar presentations on the Operations Task Force webpage.
Focus Area(s)	Maintenance and Operations

Project Title	20.2 Freight Task Force – Year 10
Project Champion	Dave Huft, South Dakota DOT
Project Purpose	To continue meeting and providing informational webinars as a task force for another year (2025-2026).
Budget	\$25,000
Background	<p>North/West Passage has supported a Freight Task Force for nine years, where the task force intends to enhance North/West Passage activities and build a freight community. Key activities have included:</p> <ul style="list-style-type: none"> • Conducted informational web meetings on topics of interest to the North/West Passage members. • Conducted best practice (and practical) research on project funding opportunities. • Identified truck parking opportunities to best fit North/West Passage needs. • Conducted exploratory research on the truck platooning concept, regulations, and supported the engagement of stakeholders to advance a multi-state truck platooning demonstration. • Conducted an assessment of virtual weigh stations and applications for the North/West Passage. • Conducted topic-specific assessments to document existing conditions, assess needs and issues, and identify opportunities for the North/West Passage. Topics of focus have included commercial vehicle traveler information, e-screening, and oversize/overweight movement.
Approach	<p>Ongoing Freight Task Force Support in Year 10 would include:</p> <ul style="list-style-type: none"> • Maintain the task force memberships list with input from the project champion. • Prepare, gather information, facilitate, and conduct up to 4 informational web meetings on topics directed by the task force. Topics will continue to be selected for their relevance to task force initiatives and from topics that task force members express an interest in. This may include the creation of a new “Spotlight on...” series, in which freight operations in other states are highlighted to provide a learning opportunity. • Engage the task force through surveys and/or meetings periodically throughout the year to provide an opportunity for task force members to guide and provide input to work plan projects. • Other support, as needed.
Focus Area	Freight

Project Title	20.3 Corridor-wide Common Data Exchange of Road Closures Demonstration
Project Champion	Vince Garcia, Wyoming DOT
Project Purpose	To conduct a 12-month demonstration providing road closure Traveler Information Messages (TIMs) through a common exchange (e.g., Situation Data Exchange (SDX)).
Budget	\$75,000
Background	<p>Closures that happen on Interstates are critical when they occur. The SAE J2735 standard includes TIMs that provide standardized approaches to describing events. Through multiple previous efforts, North/West Passage learned about the SDX as an operational data exchange that enables TIM uploads and allows subscribers to request and receive TIMs based on geographic queries. A number of third-party traveler information providers already subscribe to the SDX and receive TIMs from the SDX.</p> <p>While the vision of all reports of disruptions (e.g., work zones, lane closures, driving conditions, delays) created and shared as TIMs may be too large a step initially, this project would focus on just road closures along the I-90/I-94 corridors, with the goal that all road closures would be reported and shared through the SDX using TIMs to describe the conditions.</p> <p>This project will provide support to North/West Passage states to assist them in creating automated feeds to upload TIMs describing road closures to the SDX. As a fallback option, one or more North/West Passage members may opt to use the manual entry tool to create TIMs in the SDX. The intent of this project would be an entry point effort that demonstrates collaborative use of TIMs and corridor-wide message uploads to the SDX. This unified and corridor-wide approach will be shared to the third-party information providers (e.g., Google Maps, Apple Maps) describing this corridor-wide approach.</p>
Approach	<p>Task 1: Northwest Passage Members Create TIM export to SDX. In Task 1, each member agency will work with their traveler information system contractor (or in-house if appropriate) to advance the automated creation of TIMs for full road closures along either I-90 or I-94 and upload of the TIMs to the SDX. As a fallback approach, members may opt to manually create TIMs. The contractor team will provide support to members (and their traveler information provider) to support this process. The goal is not to create a new system, but that the current traveler information systems in each state are modified to support this project.</p> <p>Task 2: Conduct and Document Pilot Demonstration. In Task 3, a pilot demonstration will be conducted over 12 months of North/West Passage member states providing road closure TIM messages to the SDX.</p> <p>Task 3: Outreach with Third-Party Providers. The North/West Passage Steering Committee in 2024 initiated yearly webinars with third-party providers (Waze, Google,</p>

	<p>and TomTom). In Task 3, as part of the yearly webinars with the third-party providers, the plans for the demonstration will be shared and discussed.</p> <p>Task 4: Outreach with Other Corridors/Groups. In Task 4, North/West Passage will identify other corridors/groups (e.g., I-80, I-35, CTSO Traveler Information Community of Practice) to share the approach of the consistent delivery of road closures conducted during demonstration. This could occur through existing meetings.</p> <p>Task 5: Identify Next Steps. In Task 5, next steps will be documented if it is agreed to continue providing TIM messages to the SDX. This will include describing the operations and maintenance for TIM messages in each state and assessing if a state may want to expand their local system to generate additional high priority TIMs.</p> <p>Task 6: Prepare Project Summary. Develop a draft and final project summary report.</p>
Focus Area	Traveler Information

Project Title	20.4 Road Closure Impact Planning
Project Champion	Cory Johnson, Minnesota DOT
Project Purpose	To increase information shared (current and upcoming impacts) to motorists, truckers, and third-party providers during road closures.
Budget	\$30,000
Background	<p>North/West Passage member states have processes in place for closing roads and alerting motorists through many different dissemination mechanisms (e.g., traveler information systems, dynamic message signs (DMS), press releases) of closures.</p> <p>Roads may be physically closed by lowering gates at entrance ramp locations to a freeway. The Minnesota DOT is upgrading the snow gate technology along I-90 from Mankato, MN to the South Dakota border.</p> <p>However, these road closures are often anticipated hours (sometimes days) in advance through forecasting. With the information member states know about plans for plowing/treating the roads and the potential to close roads, this information and likely impacts could be shared to motorists, truckers, and third-party providers. While North/West Passage states would not likely forecast a road closure, they may forecast a “major impact” to the road. Providing information early enough could enable diversions upstream of the closure, adding more flexibility in alternate interstate route selection by motorists (especially commercial vehicles). Describing these forecasted “major impacts” and information about plowing/treatment plans is not typically done in all states and a coordinated approach with common messaging corridor-wide would be beneficial. Wyoming DOT noted that they forecast some “major impacts,” and this could be the start of a model for others to explore.</p>
Approach	<p>Task 1: Document North/West Passage Members Road Closure Plans. In Task 1 the researcher will gather information through interviews with each North/West Passage member state about road closure approaches, plans, dissemination mechanisms, and most importantly, the willingness to forecast “major impacts” to roads due to weather as well as any potential to share plow/treatment plans. A questionnaire will be developed to guide each interview. The information gathered will be summarized to highlight similarities and differences among the members. Participation in the interviews will include the Steering Committee representative and other staff within member states as deemed appropriate. The Wyoming DOT approach to forecasting “major impacts” will be shared during each interview and discussed as a possible solution.</p> <p>Task 2: Document Approaches for Sharing Current and Upcoming Impacts. Based on information gathered in Task 1, the researcher will identify approaches for members to consider for sharing impacts (current and upcoming) with travelers and third-party providers during a road closure. The information will be presented and discussed with</p>

	<p>the member states to develop and agree on an overall approach for road closure impact planning. This may include, for example, identifying when a “major impact” is expected and the messaging to travelers (e.g., use of TIM messaging, use of existing 511 web/app delivery, use of DMS).</p> <p>Task 3: Outreach with Third-Party Providers. The North/West Passage Steering Committee in 2024 initiated yearly webinars with third-party providers (Waze, Google, and TomTom). In Task 3, as part of the yearly webinars with the third-party providers, the results of the impact planning in Task 2 will be shared and discussed and the plan agreed by members shared.</p> <p>Task 4: Implementation. In Task 4, detailed steps to implement the impact closure will be developed for 2 member states. This would include outreach within the select member states to share the impact planning approach within their state and to discuss implementation steps. The researcher would then document and summarize the implementation including coordination with third-party providers for closures that occur over a 3-month duration. The summary would also include a plan for implementing the impact closure to other member states. Note that it is expected that existing traveler information tools will be used. The difference would likely be additional messaging and a process followed to determine the new messaging and execute the use of the messaging.</p> <p>Task 5: Conduct Project Webinars. In Task 5, project webinars will be scheduled. The webinars will include participation from Steering Committee members and other staff within member states as deemed appropriate.</p> <ul style="list-style-type: none"> • Webinar 1: Present road closure members’ plans and discuss approaches for sharing impacts. • Webinar 2: Present and discuss detailed approaches for sharing interstate closure impacts. • Webinar 3: Finalize overall approach for road closure impact plan and identify two (2) member states to implement. • Webinar 4: Present implementation results and next steps. <p>Task 6: Prepare Project Summary. Develop a draft and final project summary report.</p>
Focus Area	Traveler Information

Project Title	20.5 Cross Border Event Coordination Procedures
Project Champion	Kelvin Daratha, Washington DOT
Project Purpose	To increase awareness and improve formal and informal cross-border coordination procedures.
Budget	\$30,000
Background	<p><u>Project 5.3: Consistent and Coordinate DMS</u> (2011) provided information about DMS locations, operating procedures, and messages in each member state.</p> <p>Recently Washington DOT started looking into the coordination at neighboring borders.</p> <ul style="list-style-type: none"> • In the Spokane region, there are ongoing conversations with Idaho if there is a crash at the border. • Washington owns and operates a VMS in Idaho. • South of the Spokane area there is not collaboration, but they are onboard to start a discussion as a result of the efforts from North/West Passage Project 5.3. <p>There is coordination in other North/West Passage members states (both with urban areas and rural areas at the borders).</p> <p>This project would document the border coordination that already occurs between North/West Passage states for incident/event management and would encourage and initiate similar discussions for additional border crossings. The intended outcome of the project is:</p> <ul style="list-style-type: none"> • To understand what cross border coordination is already agreed upon. • To encourage more cross border coordination and to be as uniform as possible initiating discussions in this project with the intent that they carry on and reach coordination plans. • To document this in an easy to read/access format for all members. Document agreements such as phrases used on DMS with those located in bordering states.
Approach	<p>Task 1: Document Border Coordination. In Task 1, the researcher will document the coordination that occurs among North/West Passage members. This may include:</p> <ul style="list-style-type: none"> • Gathering documentation outlining coordination. • Documenting informal coordination processes. • Documenting Pathfinder uses. • Documenting agreed phrases for DMS displays at borders. <p>Commonalities and differences among border states will be documented. The information will be gathered through calls with each North/West Passage member state.</p>

	<p>Task 2: Project Webinars. In Task 2, project webinars will be held with Steering Committee members and operations staff at borders to encourage or initiate cross border coordination.</p> <ul style="list-style-type: none"> • Group Webinar 1: Share information gathered in Task 1, and discuss other border crossings that would benefit from coordination discussions at this time. • Site specific webinars: Plan and conduct smaller webinars with the groups identified to begin additional coordination discussions. • Group Webinar 2: Discuss the findings from the site specific webinars, and share/discuss commonalities from the discussions. • Webinar 3: Present implementation outcomes (See Task 3). <p>Task 3: Encourage ongoing coordination at the borders discussed in the site specific webinars. In Task 3, members that participated in the site specific webinars will be encouraged to continue coordination discussions and to share results with the North/West Passage members. Their findings and plans for coordination will be added to the documentation created in Task 1.</p> <p>Task 4: Prepare Project Summary. Develop a draft and final project summary report.</p>
Focus Area	Traveler Information

Project Title	20.6 Multi-state/Regional TPIMS Grant Application
Project Champion	Dave Huft, South Dakota DOT
Project Purpose	To facilitate collaboration among the North/West Passage states to submit a multi-state application for a grant to conceive and deploy a regional truck parking information system.
Budget	\$75,000
Background	<p>In 2023, the North/West Passage funded the Freight Task Force to advance a TPIMS assessment. That effort</p> <ul style="list-style-type: none"> • Conducted best practice desk research. • Engaged the seven North/West Passage states via two roundtable meetings and one-on-one consultations. • Reached out to industry via an online survey to truck drivers and a consultation with the Owner Operator Independent Drivers Association (OOIDA) to obtain industry input on truck parking information needs and solutions. • Consulted with The Eastern Transportation Coalition (TETC) to understand the truck parking information effort undertaken by the Coalition and inform the identification of best practices for other multi-state coalitions. <p>A TPIMS Assessment was published to the North/West Passage website in June 2023 (project 16.4) that outlined the opportunities, challenges, and critical next steps for the advancement of a multi-state TPIMS in the North/West Passage – which included the advancement of a multistate TPIMS grant application.</p> <p>It is expected that this project will require State DOT executive consent prior to advancing, as the grant will need letters of support and funding matches from each DOT to be considered.</p>
Approach	<p>Develop and execute a task force work plan. The focal points of the work plan will include:</p> <ul style="list-style-type: none"> • Identify state leads and conduct regular meetings (up to weekly during application window). • Identify grant programs to target; understand requirements. • Work with the states to develop a unified concept of operations, and with each state to identify their individual technology solution. • Collaboratively develop a winning TPIMS grant application. • This approach recommends that a designated representative from each North/West Passage state serve as their state lead through this effort. State lead tasks may include coordinating with internal DOT staff on topics such as concept

	of operations, technology solutions, cost estimating, cost sharing document review, and senior leadership buy in, among other tasks. If approved, a refined and detailed scope of work for this effort will be developed.
Focus Area	Freight

Project Title	20.7 Identify Opportunities for Truck Parking Collaboration between North/West Passage States
Project Champion	Dave Huft, South Dakota DOT
Project Purpose	To explore existing or future opportunities for North/West Passage member states to begin to advance a PPP truck parking project.
Budget	\$35,000
Background	Challenges associated with truck parking are issues identified by each of the North/West Passage member states. As identified through previous North/West Passage research – including the recently completed Truck Travel Times and Hours-of-Service Needs Assessment – truck parking issues cannot be addressed by a single state on its own. Collaboration among the North/West Passage states and with the private sector is one way that has been identified for the North/West Passage to improve truck parking throughout the corridor.
Approach	<p>Develop and execute a task force work plan. The focal points of the work plan will include:</p> <ul style="list-style-type: none"> • Desk review of existing public-private truck parking projects in the North/West Passage. • Engage the private sector to understand their capital investment plans across the corridor and where they have an interest in advancing public-private partnerships. • Conduct outreach to the public and private sectors and identify barriers and opportunities for interstate collaboration.
Focus Area	Freight