



North/West Passage Project 7.1 Summary Assessment Document

May 16, 2013

1. Introduction

North/West Passage completed an [ITS Integrated Corridor Strategic Plan](#) in July 2007. The plan outlined transportation issues within the corridor and established a vision with corresponding goals and objectives for the pooled fund. An ITS architecture and an inventory of ITS devices deployed along I-90 and I-94 were also included in the plan. The inventory was completed to help the states understand what had been deployed and to provide insight into the states' experiences with various technologies, technology preferences, and the potential for further deployment. The Strategic Plan also included a series of prospective projects through 2012 based on the inventory and corridor goals.

Many of the projects identified in the plan have been completed, along with several other projects related to the corridor goals and objectives. Additional ITS devices have also been deployed in the corridor. As the North/West Passage states consider future work plans for the pooled fund, this project was selected to assess their progress. Projects that have been completed to-date were mapped against each of the Strategic Plan goals as an initial indicator of progress. That information was then shared with the member states and a series of interviews were conducted to gather each state's impressions of progress toward the stated vision and goals. Finally, an inventory of ITS deployments in the corridor was reviewed as an additional assessment of progress. Information from these sources was combined and reviewed for potential gaps and the summary assessment presented in this document.

2. Identifying Gaps

The general assessment of progress made by North/West Passage is positive. Numerous projects have been successfully completed, members are pleased with the work that has done to promote cross-border coordination in particular, and there is an overall appreciation for the peer exchange that occurs among the states. Although members generally feel the pooled fund has made good progress with its efforts, there are gaps between the work that has been completed to-date and goals identified for the corridor.

Following is a brief overview of three significant gaps identified during this assessment. Gaps were considered significant if more than half of the members expressed similar feedback about it or if the projects and deployments completed to-date indicated a weakness in achieving the pooled fund goals. Additional, potentially less substantial gaps are noted within the remaining details of the assessment summary. For each of the significant gaps, an explanation is provided below, along with recommended resolutions for further consideration and action by the steering committee. These recommended resolutions are intended to address gaps on programmatic level. To further address gaps and align future work with the North/West Passage vision and goals, a series of targeted future project ideas are also being developed through this project.

2.1. Gap 1: Strengthen coordination of traveler information and operations in the corridor

A closer review of state feedback in particular indicates that the pooled fund should place higher priority on **strengthening the coordination of traveler information and operations in the corridor (goals 1 and 2)**. Coordination that took place around the Sturgis Motorcycle Rally in August 2012 was frequently cited by members as an example of the stronger collaboration desired in the future. Many projects have been completed in response to goals 1 and 2 but the impact of some projects has been limited by the states’ abilities to complete additional implementation within their agency. Implementation has been limited at times by a lack of engagement from the agency staff that is directly responsible for traveler information program changes or the need for additional resources to make changes to traveler information systems. For example, [Project 4.1: Traveler Information Website-Phase 2](#) and [Project 4.3: Center to Center Communications Concept of Operations](#) identified several recommendations for consistent mapping and data to enhance the delivery of traveler information via the corridor web site (www.i90i94travelinfo.com). Unfortunately, these changes for some states were too significant in terms of resources and the effect on their systems. That, in turn, limited the project impact on expanding the integration of traveler information in the corridor.

<i>Recommended Resolution 1: Establish Operations Task Force</i>	
Purpose	Establish a temporary operations task force for an initial period (Summer 2013 through Spring 2014) designed to assess the value of an ongoing, dedicated group focused on North/West Passage traveler information and operational coordination activities and projects.
Background	Traveler information and operations staff has 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 trial period, 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.
Implementation Approach	<ul style="list-style-type: none"> • Identify 1-2 staff from each state that are directly responsible for managing daily traveler information services or TMC/TOC operations. • The task force will meet by webinar/teleconference once each month for one hour, immediately after the scheduled steering committee meetings. • During this temporary trial period, the task force will: <ol style="list-style-type: none"> 1. Serve as primary coordination points for coordination during major events.

2. Provide insight to the OTIIS project.
3. 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.
4. Provide guidance and insight to any coordination project(s) selected for Work Plan 8.
5. Provide input on future project ideas to support coordination.
6. Support and participate in seasonal coordination webinar (Winter 2013-14).
7. Identify what, if any, other activities the task force would oversee on a continued basis.
 - 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.

2.2. Gap 2: Limited understanding of commercial vehicle travelers’ needs and operational challenges

The second significant gap between the work completed by North/West Passage and the group’s goals is a **limited understanding of commercial vehicle travelers’ needs and operational challenges (goals 1 and 2)**. Most of the members felt enough is known about travelers’ needs in general – particularly in relation to the level of impact that the pooled fund projects can have. In contrast, several states commented that the steering committee members have limited knowledge of commercial vehicle travelers’ needs and operations. This can then limit the type of projects selected and the implementation of results upon project completion. For example, North/West Passage has completed several projects related to over-dimension permitting. To supplement the steering committee’s limited knowledge the group has engaged permitting staff from the North/West Passage states to identify challenges with current permitting processes and identify potential opportunities to address them. The engagement and exchange of information among the states is very constructive and useful. However, the project results often require legislative changes or significant changes to the systems used for issuing permits. Limited staff authority and budget to accomplish such changes can restrict further implementation of project results.

<i>Recommended Resolution 2: Establish Freight Task Force</i>	
Purpose	Establish a temporary freight task force for an initial period (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.
Background	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 the trial period, 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.

Implementation Approach

- Identify 1-2 staff from each state that are responsible for managing freight planning or permitting activities. Note that the 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 one hour, immediately after the scheduled steering committee meetings.
- During this temporary trial period, the task force will:
 1. Provide insight to [Project 7.3: Truck Parking Projects and Evaluation of Third Party Data for Truck Parking Availability](#) and [Project 7.4: CVO – Regional Permitting Phase 4](#).
 2. Provide guidance and insight to any freight related project(s) selected for Work Plan 8.
 3. Provide input on future project ideas to maintain North/West Passage understanding of freight issues and support freight movement along I-90/I-94.
 4. 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.
 5. Identify what, if any, other activities the task force would oversee on a continued basis.
- 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.

2.3. Gap 3: Unclear path for executing deployment oriented projects

The final noteworthy gap identified during this assessment is an **unclear path for executing deployment oriented projects (goal 3)**. While gathering feedback on members’ perceptions of overall progress, information was also gathered about each state’s approach to planning ITS deployment projects. This was specifically done in recognition of the limited projects that have been done to address goal 3. As noted with the other gaps, organizational and financial limitations that have been encountered in projects that include the deployment of new ITS devices or modifications to existing systems within the states. For example, [Project 1.6: Preliminary Design for DMS Deployment at the I-90/I-94 Split in Tomah, WI](#) began with the intent to complete preliminary design for the deployment of a dynamic message sign that would expand traveler information for the corridor. Concurrent with the execution of Project 1.6, Wisconsin DOT was developing a Traffic Operations Infrastructure Plan for key ITS deployments statewide. The need to coordinate efforts between these projects became apparent and the focus of Project 1.6 shifted to developing a concept of operations to articulate the corridor need for the DMS deployment in Tomah.

<i>Recommended Resolution 3: Require Project Deployment Strategies</i>	
Purpose	As part of the North/West Passage project development process, require that deployment strategies be added to the scope of work for future projects.
Background	Implementation plans have occasionally been developed for past North/West Passage projects. Such a plan was developed for Project 3.1: Corridor-Wide Consistent Major Event Descriptions . The document briefly describes the project, major results, recommended future North/West Passage project activities, and how project information will be used by member agencies. As future projects are developed for North/West Passage, they should consistently identify potential impacts on state practices, policies, systems or devices that, if unaddressed, could limit success of the project. The deployment strategy will also identify supporting materials or activities that may be needed to assist with implementation. Depending on the nature of the project, the resulting deployment strategies could vary in complexity from next steps for implementation in a project final report to a separate project implementation plan.
Implementation Approach	<p><i>This approach is suggested for implementation with the development of project ideas for Work Plan 9.</i></p> <ul style="list-style-type: none"> • Identify potential deployment impacts when project ideas are initially developed. This step should consider: <ol style="list-style-type: none"> 1. How final products from the project are likely to be used by members, 2. If project conclusions are likely to impact state practices, policies, systems or devices, and 3. If project conclusions are likely to require additional resources from North/West Passage or the individual states.

- Once final projects are selected for the North/West Passage annual work plan, recommended actions for addressing the potential deployment impacts will be added to each project scope to explain how the deployment strategy will be addressed for each project.

These gaps and the remaining, detailed information from this assessment will be used next to develop a series of project concepts for the steering committee's consideration in future work plans. The project concepts will be tied directly to the gap or gaps it is intended to address. Additional information from the inventory assessment will also be added to the Google map used to facilitate coordination among TMC/TOC Operations staff, and an updated copy of the issues, vision and goals will be added to the North/West Passage web page for the 2007 Strategic Plan.

3. Updated Corridor Issues

When developing the initial plan in 2007, the North/West Passage states were asked to identify issues, problems and needs that were common in the corridor. Select ITS architecture, strategic planning and deployment documents from several states were also reviewed for issues related to the I-90/I-94 corridor. Issues were grouped into three broader categories – Traveler Information, Maintenance and Operations, and Planning and Program Management.

In the five years since the initial set of issues were identified, the transportation environment has changed significantly enough to generate some new issues and make others obsolete. North/West Passage members were presented with a revised set of issues for the corridor and asked to identify those they believe are most pressing. This was intended to identify common thinking among the states, get acceptance of how issues have changed in the past several years and determine if the original goals for North/West Passage still align with the most pressing corridor issues today.

When asked to identify the most pressing issues facing the corridor today, it was most common for members to identify the continued lack of coordination and exchange of information about major events affecting travel. Several of the states also noted performance measures as an emerging issue, primarily driven by the recent emphasis placed on performance in MAP-21. In general, the comments made about issues for the corridor indicate the need for continued emphasis on traveler information.

Following is a more detailed review of the original issues and revisions made to reflect the states' current thinking and other factors influencing the corridor. For each issue, original language is in black text, new language is highlighted in red and deleted language is struck through. Notes are provided after each revision to capture the rationale behind any changes.

3.1. Traveler Information

There is a wide variety of commuter, recreational, and commercial vehicle travelers who use the North/West Passage Corridor. A common theme among the issues in this category is making information readily available to these diverse travelers. Travel is naturally heavier in urbanized areas around Milwaukee, Minneapolis/St. Paul and Seattle where daily commuter traffic impacts are stronger and congestion related information is in greater demand. Conversely, travel is lighter and occurs over longer distances in rural parts of the corridor so there are greater needs for weather and road condition information. The North/West Passage states also have numerous systems and diverse operating

procedures for collecting, processing, and integrating data and for delivering information to travelers. The current issues associated with delivering corridor-wide traveler information are listed in Table 1.

Table 1 Revisions to Corridor Issues for Traveler Information

<ul style="list-style-type: none"> • Lack of consistent and adequate corridor-focused traveler information. 	<p>“Corridor-focused” was added to clarify that the pooled fund is primarily concerned with how traveler information is conveyed from a corridor perspective vs. individual states’ traveler information practices.</p>
<ul style="list-style-type: none"> • Ongoing demand for resources to update and maintain traveler information across multiple services (e.g. phone, web, social media). 	<p>The reference to “resources” was added to reflect the growing diversity of traveler information services that must be maintained within individual states and the challenge that presents for the additional coordination of information with other states.</p>
<ul style="list-style-type: none"> • Inconsistent and unreliable Information for commercial vehicle travelers varies from state to state across the corridor. frustration with rest area restrictions, multiple and uncoordinated points for getting permits, etc. 	<p>Commercial vehicle operators are seen as a unique subset of travelers with the need for unique information and services. The type of information and services (e.g., rest area restrictions) available to commercial vehicle travelers varies from state to state and that can be challenging for efficient movement across multiple states in the corridor.</p>
<ul style="list-style-type: none"> • States continue to search for opportunities to make coordination more consistent for major events in the corridor. 	<p>This was added to reflect the challenge with identifying major events to assess coordination during Projects 6.1/7.2: Corridor-Wide Traveler Information Coordination Operational Test. Although the states agree that coordination is necessary and tools have been developed to support it, there is still very little coordination among the states.</p>
<ul style="list-style-type: none"> • USDOT requires all states to report basic traffic and travel conditions on Interstate system highways and Metropolitan Area Interstate system highways no later than November 8, 2014. 	<p>In response to Section 1201 of SAFETEA-LU, the Federal Highway Administration published a final rule (23 CFR 511) in 2010 to establish minimum parameters and requirements for states to make available and share traffic and travel condition via real-time information programs. 23 CFR 511 defines the content of traffic and travel condition information and sets minimum requirements for the timeliness, accuracy and availability of it. The final rule defines a consistent set of data that will be available from all states and this could be used as the basis for presenting more cohesive and complete information along I-90/I-94. Project 6.2: 23 CFR 511 Final Rule documented each North/West Passage states’ approach and progress toward meeting the 2014 requirements.</p>
<ul style="list-style-type: none"> • Misunderstanding that good traveler information is not an end unto itself, but involves ongoing improvement. 	<p>This issue was deleted and incorporated into the issue relating to overall coordination of traveler information among the states.</p>
<ul style="list-style-type: none"> • Provide more information in regard to work zones to improve safety. 	<p>This issue was deleted and incorporated into the issue related to USDOT’s new requirements for basic traffic and travel conditions, which include construction as a key element.</p>
<ul style="list-style-type: none"> • Incident management, 511, and operational needs to take on a greater significance in the future. 	<p>This issue was deleted and incorporated into the issues associated with maintenance and operation in the corridor.</p>

<ul style="list-style-type: none"> Lack of consistent and adequate real-time information that would enhance corridor-wide travel.
<p>This issue was deleted and incorporated into the issue that noted a lack of consistent and adequate corridor-focused traveler information.</p>

3.2. Maintenance and Operations

There are maintenance and operation activities associated with the ITS systems deployed now and in the future along I-90/I-94. Currently, responsibilities for maintenance and operations are segregated among regional or district offices within the departments of transportation and sometimes among various local levels of government. The availability and responsibilities of operations staff also varies among the states. For example, one state may have a fully functional transportation management center with staff specifically dedicated to operating DMS and managing incidents. In contrast, another state may not have a physical center for their traffic management operations nor staff readily available to operate DMS from their location. Information about facilities, staff and capabilities need to be well understood to support the coordination of operational activities. The current issues associated with corridor maintenance and operations are listed in Table 2.

Table 2 Revisions to Corridor Issues for Maintenance and Operations

<ul style="list-style-type: none"> Need to share information among local and regional transportation management centers to include crossing state borders.
<p>The specific reference to borders was removed to avoid the impression that coordination is only desired around state borders.</p>
<ul style="list-style-type: none"> Gathering reliable, accurate and timely information on work zones throughout the corridor and how best to navigate them is challenging.
<p>The reference to navigating detours was removed to keep this issue focused on the need for states to exchange information about work zones for operational and traveler information purposes.</p>
<ul style="list-style-type: none"> States are working to quantify the costs and benefits of deploying ITS devices in rural parts of the corridor.
<p>This issue was added to reflect the growing emphasis on understanding benefits and costs for transportation projects and to address the increasing competition for transportation funding.</p>
<ul style="list-style-type: none"> Commercial vehicle travelers need adequate areas for rest and coordinated points for getting permits.
<p>This issue was added presuming that rest and permitting are two of the more significant challenges for efficient commercial vehicle travel throughout the corridor. However, the steering committee has limited understanding of commercial vehicle needs and operations and that could mean there are additional or other issues that are more critical.</p>
<ul style="list-style-type: none"> Inconsistent management of weather-related incidents and Differing perspectives on incidents and approaches to traffic management.
<p>The differences in managing traffic among the states can complicate the sharing of information. For example, a several hour closure of I-90 through Snoqualmie Pass is quite common in WA and wouldn't be seen as a major event. In contrast, a several hour closure of the interstate in any of the other states would be considered major.</p>
<ul style="list-style-type: none"> Common reporting systems are needed among states, including guidelines for frequency, accuracy, reliability, etc.
<p>This issue was removed based on the states' comments that coordination does not necessarily have to occur via a system to system data exchange. Effective coordination can happen through</p>

staff communication via phone and email.
<ul style="list-style-type: none"> • Lack of agency and management coordination at borders.
This issue was removed to eliminate the focus of coordination being needed only at borders between the states.
<ul style="list-style-type: none"> • Legal issues dealing with data transmission and firewall/system security are always present when sharing data with law enforcement.
This issue was removed based on the states' diminished focus on achieving coordination via system to system exchanges of data.
<ul style="list-style-type: none"> • There are large gaps in communication because fiber and commercial wireless services are not consistently available throughout the corridor.
Because of the tremendous advancements in cellular communication, members agree that this is less of an issue today than it was in 2007. It still remains an issue in extremely rural areas of the North/West Passage states but it is not as significant along I-90/I-94.

3.3. Planning and Program Management

The North/West Passage pooled fund envisions greater sharing, coordination and integration of traveler information and operations along I-90/I-94. Achieving this for travelers and for operational purposes requires some level of coordination in how ITS projects are planned and programmed across state borders. The group has emphasized projects that emphasize the coordination of traveler information and operations but some of the implementation of some of those projects has been limited by a lack of understanding how the individual states plan and program their ITS projects. Table 3 illustrates the current issues associated with planning and programming for the North/West Passage.

Table 3 Revisions to Corridor Issues for Planning and Program Management

<ul style="list-style-type: none"> • Need for improved regional coordination among the states for planning and programming ITS projects.
States' individual ITS projects are sometimes shared among the groups if they relate to a pooled fund project, but there is not a consistent or routine approach for exchanging this information so the coordination of planning and programming projects is very limited.
<ul style="list-style-type: none"> • Differences in the management, planning and funding of ITS projects and funding among the states make it challenging for North/West Passage to advocate for corridor-oriented deployments.
Clarification was added to this issue to explain how the differences in states' ITS project planning and funding can impact the North/West Passage.
<ul style="list-style-type: none"> • Need to understand how the corridor will pursue competitive funding opportunities.
This issue was added to reflect the increased flexibility in MAP-21 to fund ITS under various surface transportation programs and to reflect the increase in competitive opportunities (e.g., TIGER, Multistate Corridor for Operations and Management Program) for funding.
<ul style="list-style-type: none"> • Lack of corridor oriented performance measures.
Performance management has gradually become a more prominent issue in transportation over the past several years. MAP-21 has also established a performance-based program for states to invest resources in projects that will make progress toward specific national goals. MAP-21 also defines transportation systems management and operations to specifically include among many things corridor management, traveler information services and coordination of highway, rail, transit, bicycle, and pedestrian operations. This issue was added to reflect the increased significance places on performance and transportation systems management and operations in

MAP-21.
<ul style="list-style-type: none"> • Need for development of unified and coordinated response procedures throughout the North/West Passage Corridor.
<p>This issue was deleted to reflect the greater need for coordination of information rather than hands-on response to events in the corridor.</p>
<ul style="list-style-type: none"> • Differences in the way states govern themselves and the laws relating to the departments of transportation.
<p>This issue was deleted and incorporated into the more specific issue associated with differences in states' planning and funding processes for ITS projects.</p>

4. Vision and Updated Goals

In addition to the issues, problems and needs that were identified in the 2007 Strategic Plan, a vision and series of corresponding goals and objectives were developed for the North/West Passage Corridor. The vision provided a framework to guide the states' future projects in the corridor. The corresponding goals and objectives were then intended to support the vision and guide individual projects.

4.1. 2007 Vision from ITS Integrated Corridor Strategic Plan

The North/West Passage states are predominately rural and face similar transportation issues related to traffic management, traveler information and commercial vehicle operations. I-90 and I-94 connect these states and serve as significant east-west routes for travelers in the northern United States. Within the states, there are also numerous systems for collecting, processing, and integrating traveler and road maintenance information. Recognizing the value of coordinated, cross-border collaboration for ITS deployment to address these issues along I-90/I-94, the following vision was developed in the 2007 Strategic Plan.

The vision of the North/West Passage Corridor is to immediately influence ongoing standards development and utilize effective methods for sharing, coordinating, and integrating traveler information across state borders. While travel information reflects the initial destiny, maintenance and operations and planning and programming are long-term visions.

4.2. 2010 Vision Revised

The vision has been reviewed each year at the North/West Passage annual meetings, and in 2010 the vision was revised to be more concise and reflect the potential for additional coordination with the Canadian provinces north of the corridor. Based on the 2010 revisions, following is the current vision for North/West Passage.

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.

Based on members' most recent feedback, no further changes to the vision are recommended. All members are pleased with the streamlined version from 2010. States were also generally neutral on the reference to coordination with the Canadian provinces. Several commented that even though the group is still working hard to develop good coordination for I-90/I-94, the corridor is part of a larger network of

other corridors (e.g., I-29, I-5, I-80) on the National Highway System. As such, leaving the provincial reference in the vision will remind the group that coordination along I-90/I-94 will eventually have broader impacts on coordination with and among other corridors.

4.3. Updated Goals and Objectives

Building off the issues identified for the corridor and the vision that was established for the North/West Passage program, three longer-term goals were developed for traveler information, operations and planning. To supplement the goals and focus near-term work for the program, a series of shorter term objectives were also developed. The goals and objectives reflect the unique issues and needs of the North/West Passage corridor but also relate to common transportation priorities within the individual states.

Progress toward these goals and objectives was initially assessed by mapping projects that have been completed to-date to each of the objectives. To further assess progress, members were also asked for their thoughts on the goals and objectives during interviews. In summary, the intent of the original goals is still valid with some slight modifications to reflect today's context. The greatest progress has been made toward the goals for integrating traveler information and developing cross-border coordination. Most of the projects completed to-date have been associated with these goals and members noted that the collaboration that has occurred among the states through these projects has been extremely valuable. Although generally pleased about the progress that has been made to coordinate efforts among the states, members also consistently noted that much more work is needed to strengthen the coordination and maintain what has been established.

It is also significant to note that a very limited number of completed projects have been aimed at understanding traveler needs in the corridor. However, when members were asked if they felt enough was known about most travelers' needs, most agreed that enough was known in terms of the group's ability to address those needs. Although several states also pointed out that more could be known about commercial vehicle travelers' unique needs. Members noted that several projects have been initiated to address select challenges – permitting and parking availability – that commercial vehicle travelers are believed to experience in the corridor but it is not clear if these are the most significant challenges to address. Some members also expressed concern over the North/West Passage's ability to influence implementation for some projects, particularly those that may require legal or policy changes. Making additional progress toward goals 1 and 2 as they relate to commercial vehicle travel in the corridor will require additional effort to better understand commercial vehicle needs and how North/West Passage can effectively influence changes to address them.

In addition to strengthening coordination and better understanding commercial vehicle travelers, North/West Passage has also made limited progress toward their goal to coordinate the planning of ITS projects in the corridor. This is particularly relevant to projects that involve the deployment of ITS devices or systems that could enhance the coordination of traveler information and operations. All of the members agreed that the North/West Passage should continue to develop and influence deployment projects in the corridor. Most states noted the best role for North/West Passage is to clearly explain the corridor need for and potential benefits of particular deployments. This could be

added to the states’ planning and programming efforts to demonstrate further support for specific projects.

A final, general observation was made during this assessment of goals and progress toward meeting them. It would be very useful if future project development and selection was further influenced by goals and objectives – not exclusively, but there should be a stronger and more direct correlation made between desired project concepts and the program goals.

The following three tables illustrate the project mapping that was completed during the assessment, as well as specific modifications that were made to the goals and objectives to reflect member input and the current transportation environment.

Goal 1: Integrate state traveler information systems that can to provide corridor-wide information appropriate to the location and need of the traveler.
Objective 1: Understand the common and unique information needs of the corridor’s diverse travelers. This includes the type of information, as well as the mechanism for delivering the information.
<ul style="list-style-type: none"> • Project 4.5: Traveler Information Dissemination to Commercial Vehicle Operators • Project 6.7: Corridor-Wide Marketing and Outreach to CVOs
Objective 2: Provide integrated traveler information along the entire corridor.
<ul style="list-style-type: none"> • Project 3.1: Corridor-Wide Consistent Major Event Descriptions • Project 3.4: North/West Passage Traveler Information Web Site • Project 4.2: Call Forwarding and Evaluation of Cross Border Information • Project 5.1: Citizen-Assist Reporting • Project 5.3: Consistent and Coordinated DMS Use • Project 6.2: 23 CFR 511 Final Rule • Project 6.3: Citizen Assisted Reporting – Phase 2
Objective 3: Provide integrated traveler information systems where appropriate and technically feasible. — gathering and distributing — along the entire corridor.
<ul style="list-style-type: none"> • Project 1.1: Integrate ND, WI, and MN Reporting Systems • Project 1.2: Deploy Limited CARS Study Application for WI • Project 1.9: Develop Lessons Learned Document Comparing Reporting Systems in WI and ND • Project 3.3: CAD to Reporting System Integration – Workshop • Projects 4.1 and 4.3: NWP Traveler Information Website Phase 2 and Center-to-Center Communications Concept of Operations

Goal 2: Develop and promote cross-border jurisdictional cooperation and coordination in the planning, deployment, operations and maintenance of ITS infrastructure.
Objective 1: Maintain awareness and understanding of coordination tools and best practices among the North/West Passage states. Develop compatible and reliable communication systems among the states to support the operation of current and future ITS technology in the corridor.
<ul style="list-style-type: none"> • Project 5.6: Facilitating the Use of Open Source Software Throughout the Corridor • Project 6.1: Corridor-wide Traveler Information Coordination – Operational Test: Phase 1 • Project 7.2: Corridor-Wide Traveler Information Coordination Operational Test: Phase 2 • Project 7.6: Multistate Coalition Coordination

Objective 2: Establish and maintain shared procedures for coordinating using traveler information and operations dynamic message signs among the states.
<ul style="list-style-type: none"> • Project 1.4: Provide Integrated Communications Capabilities for ND DMS • Project 1.5: Concept of Operations for DMS Deployment on I-94 EB in ND and WB in MN • Project 1.6: Preliminary Design for DMS Deployment at the I-94 and I-90 Split at Tomah, WI • Project 1.8: Develop a Communication Plan for the De-Icing System to be Installed on the I-94 Bridges at Red River • Project 3.2: Clarus Regional Demonstration Concept of Operations • Project 3.5: Cross Border O&M Collaboration – Workshop • Project 4.4: NWP Regional Permitting – Phase 1 • Project 5.4: Use of Mobile Sensors and Maintenance Decision Support for Automated Road Condition Reporting • Project 5.5: NWP Regional Permitting – Phase 2 • Project 6.6: NWP Regional Permitting – Phase 3 • Project 7.4: NWP Regional Permitting – Phase 4 • Project 7.5: NWP Freight Industry Workshop • Project 7.3: Truck Parking Projects along the NWP Corridor and Evaluate Third Party Data for Truck Parking

Goal 3. Integrate Coordinate the planning and deployment of ITS projects for the North/West Passage Corridor into the state, regional, and local planning and programming processes.
Objective 1: Develop a one to three-year list of key ITS deployments project plan for the corridor, identified by state.
<ul style="list-style-type: none"> • Project 2.1: ITS Integrated Corridor Strategic Plan • Project 7.1: NWP Goal Assessment and Planning for ITS Corridor Deployment
Objective 2: Document and share lessons learned from integration of ITS projects into state, regional, and local planning and programming processes. Identify and resolve legal or institutional issues related to funding project deployment and ongoing operations.
<ul style="list-style-type: none"> • Project 5.2: Cost/Benefit ITS Tool Evaluation – Phase 1 • Project 6.4: Cost/Benefit ITS Tool Enhancement – Phase 2

These modified goals and objectives, along with other changes to the issues and vision for North/West Passage, will be used in conjunction with the 2007 Strategic Plan as a supplemental update and will be further used by the North/West Passage program in the development of future work plans.

5. ITS Deployment Inventory Assessment

A key element of the 2007 Strategic Plan was the inventory of ITS technology currently deployed along I-90/I-94 within each of the North/West Passage states. Understanding what is currently deployed in the corridor provides insight on the states’ experiences and what technology can be leveraged to support coordination of traveler information and operations.

In 2011, the inventory was further updated and converted to a more interactive format for operational use. [Project 5.3: Consistent and Coordinated DMS Use](#) began with the intent to establish a set of operating guidelines to support coordinated use of dynamic message signs (DMS) throughout the North/West Passage corridor during major events. Information about DMS locations, operating

procedures and messages was gathered from each of the states. During the project workshop, the states determined that coordination during major events should include other traveler information tools such as highway advisory radio (HAR), social media, 511 telephone and web services. The Googlemap resulting from this discussion updated location information for DMS, HAR, traveler information services and TMC/TOC operational contacts along the corridor.

In the assessment of North/West Passage progress toward its vision and goals, ITS deployments throughout the corridor were again reviewed to identify potential gaps in deployment and update, as needed, the Googlemap that is now being used as an operational inventory. The deployments were reviewed using a national GIS Database of ITS deployments developed by Oak Ridge National Laboratory on behalf of USDOT and the ITS Joint Program Office. The [ITS Asset Viewer](#) is an interactive, online database contains information about all of the states' deployments of cameras, message signs, traffic detection, traffic control, weather stations and highway advisory radio stations. Figures on the following pages illustrate the information contained in the national database regarding deployments in the North/West Passage states. From this information, CCTV sites have been added to the Googlemap to further enhance its use in coordinating traveler information and operations.

The database was also a key resource used to identify potential gaps in deployment that, if addressed, could enhance the coordination of traveler information and operations. The most significant potential gap in deployment is along I-90 through Wyoming and into Montana. There are currently several CCTV deployed in the corridor to support remote observation but there are no permanent DMS along the corridor to support real-time information for travelers. The last DMS on the east side of the corridor is in Spearfish, SD and the next DMS on the west side of the corridor is in Livingston, MT – a gap over 400 miles in length. The effect of this gap was also experienced during the supplemental coordination organized by North/West Passage for the 2012 Sturgis Motorcycle Rally. The lack of permanent DMS, in particular, limited Wyoming's ability to easily deliver traveler information about a major event impacting the corridor. The gap was more than adequately, but only temporarily, addressed during Sturgis with the use of portable DMS deployed by WYDOT staff. During this assessment WYDOT shared that it is planning to deploy 19 DMS along I-90 during the 2013 construction season. The signs are being deployed as part of a district DMS project as a means to inform drivers of road conditions and travel advisories. Signs are expected to be operational by October 2013 and will further support the dissemination of traveler information in the corridor. Montana's share of this gap presents another potential challenge as it relates to the I-90/I-94 corridor split in Billings, MT. This is a key decision point for many travelers during the winter months. The last DMS available to inform eastbound travelers is in Livingston, MT – over 100 miles west of Billings. North/West Passage may want to further consider these locations in particular as projects are identified for future work plans.

6. Closing

The 2007 strategic planning process was useful for the North/West Passage program to more clearly identify the issues for the I-90/I-94 corridor between Washington and Wisconsin that could potentially be addressed by their work. The process also clarified the program vision and established specific goals and objectives that have influenced the projects completed each year since.

This effort to assess the program's progress toward its goals has also been useful for the states to reflect on their accomplishments, validate their strategic direction for the corridor and identify future areas of potential work. Evaluating progress on a periodic basis is useful for all organizations. As such, the North/West Passage may choose to conduct a similar assessment again in another 3-5 years, particularly in light of the ever changing transportation landscape.

In addition to the resolutions recommended in this document that will address gaps on programmatic level, a series of targeted future project ideas are also being developed through this project. The project ideas for 2013-2018 are intended to further align future work with the North/West Passage vision and goals. Together, the project ideas and programmatic changes will support the North/West Passage vision for sharing, coordinating, and integrating traveler information and operational activities across state and provincial borders.

Figures 1-2 CCTV Individual Sites and Clusters

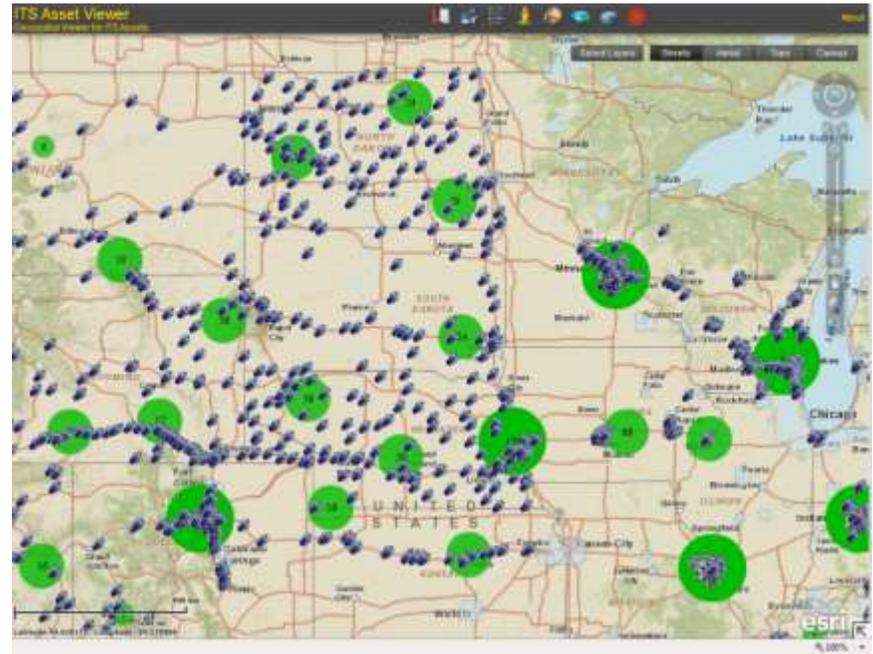
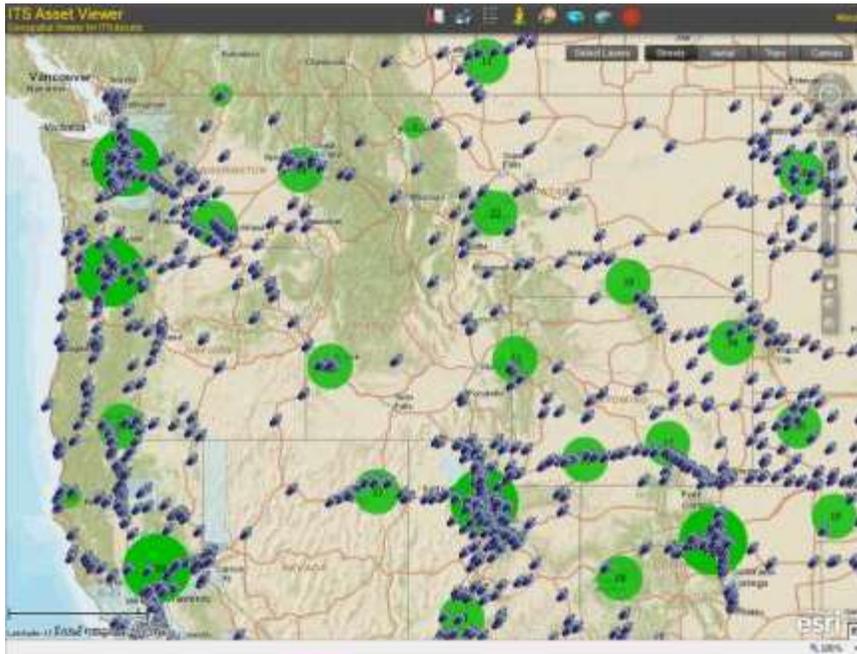


Figure 3-4 DMS Individual Sites and Clusters

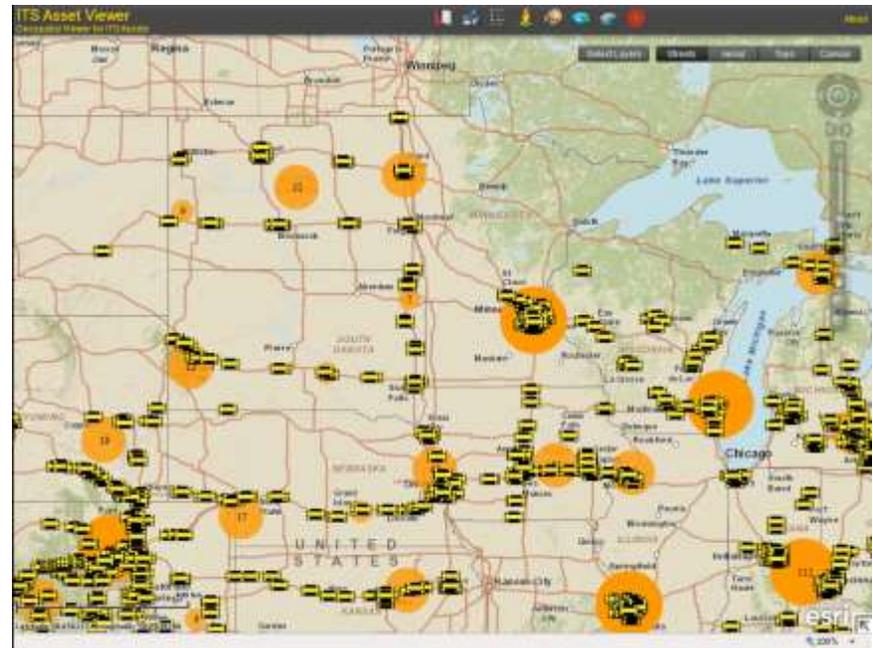
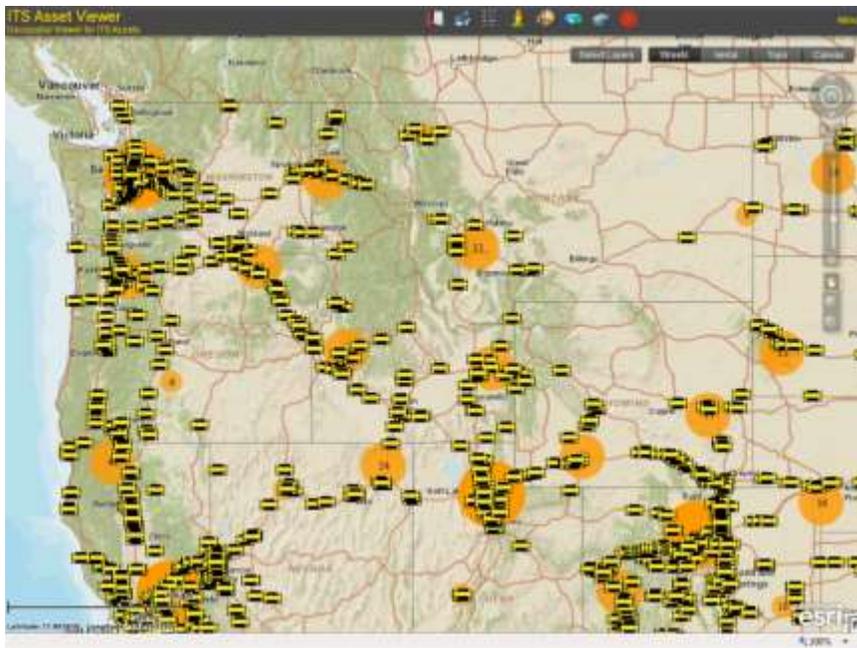


Figure 5-6 HAR Individual Sites and Clusters

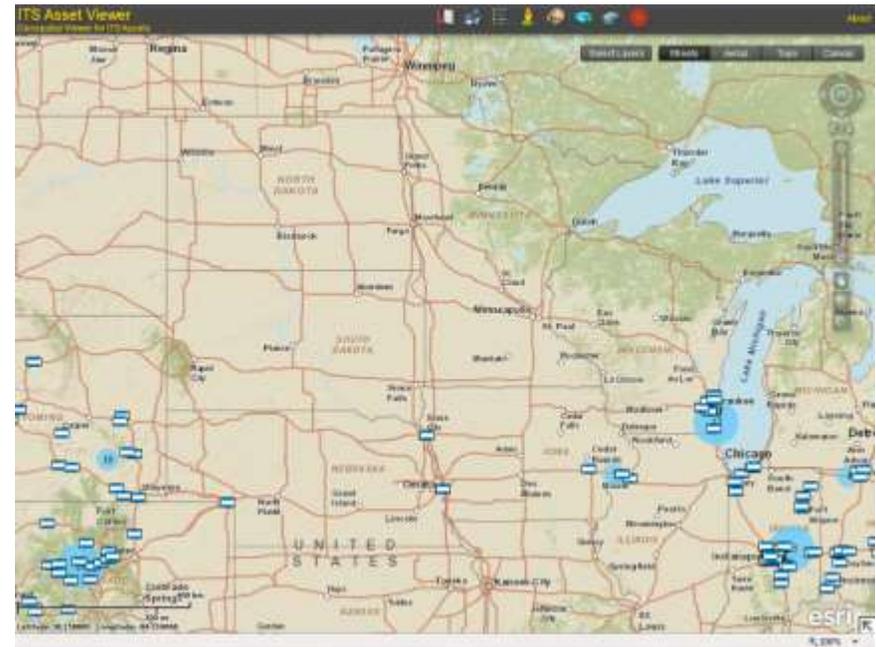
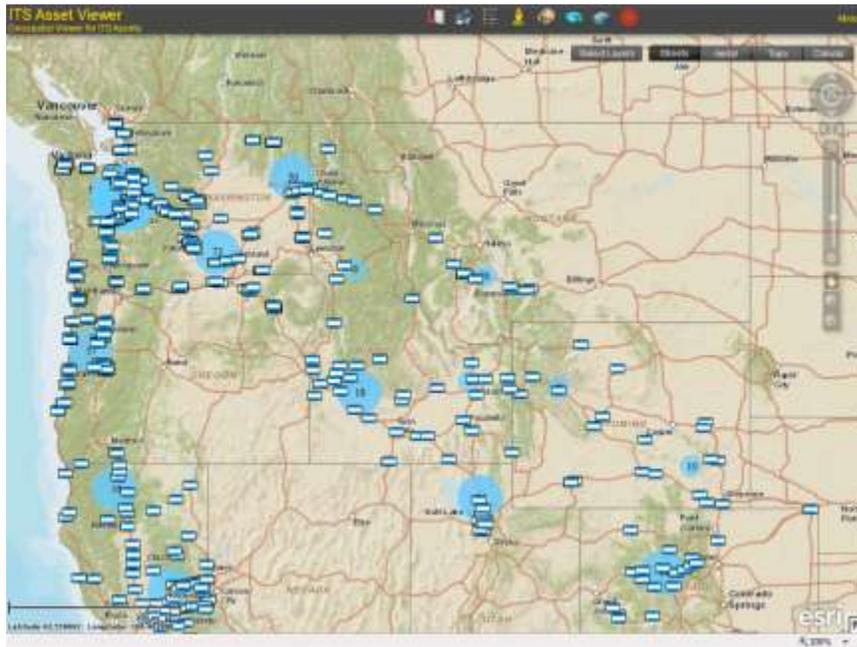


Figure 7-8 Detection Individual Sites and Clusters

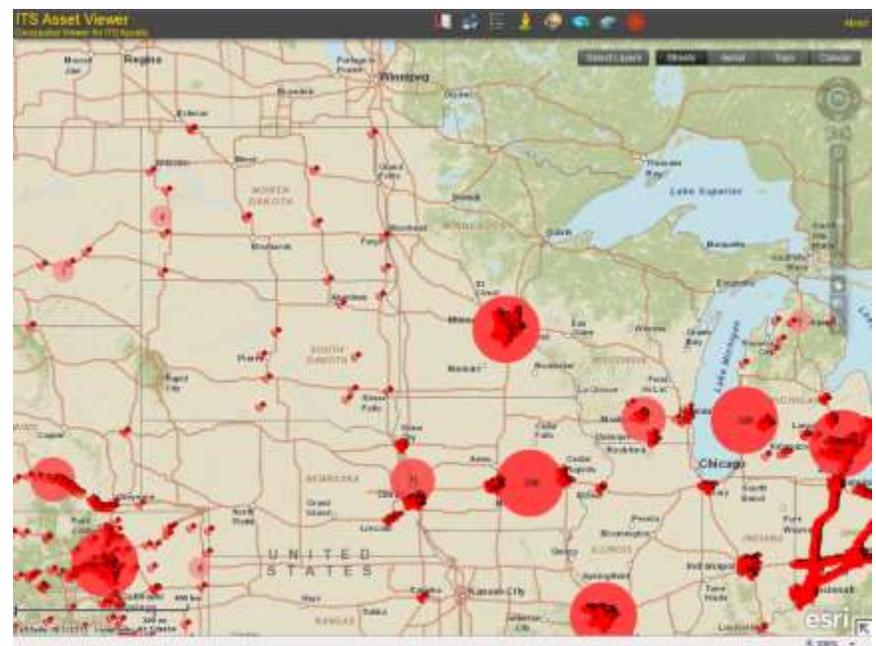
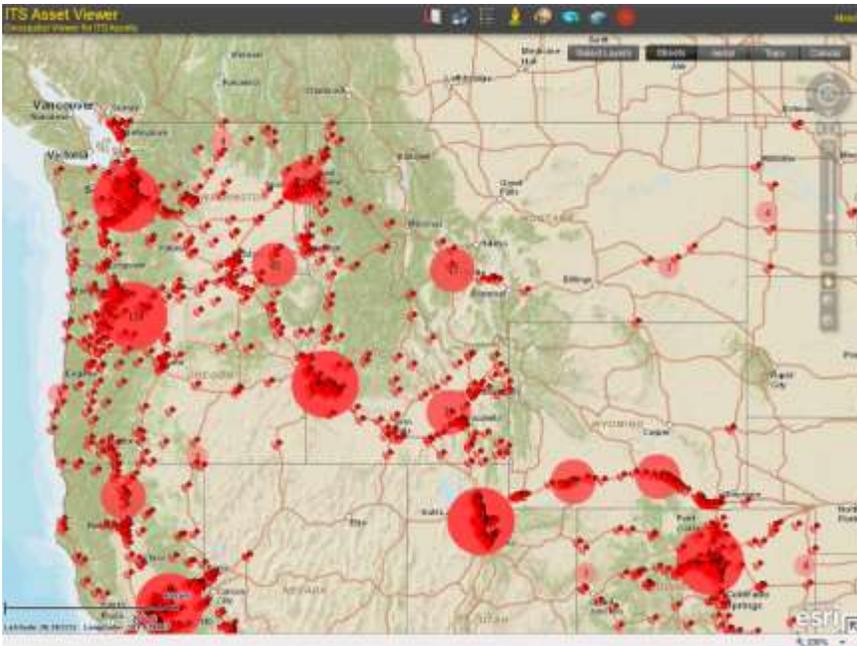


Figure 9-10 RWIS Individual Sites and Clusters

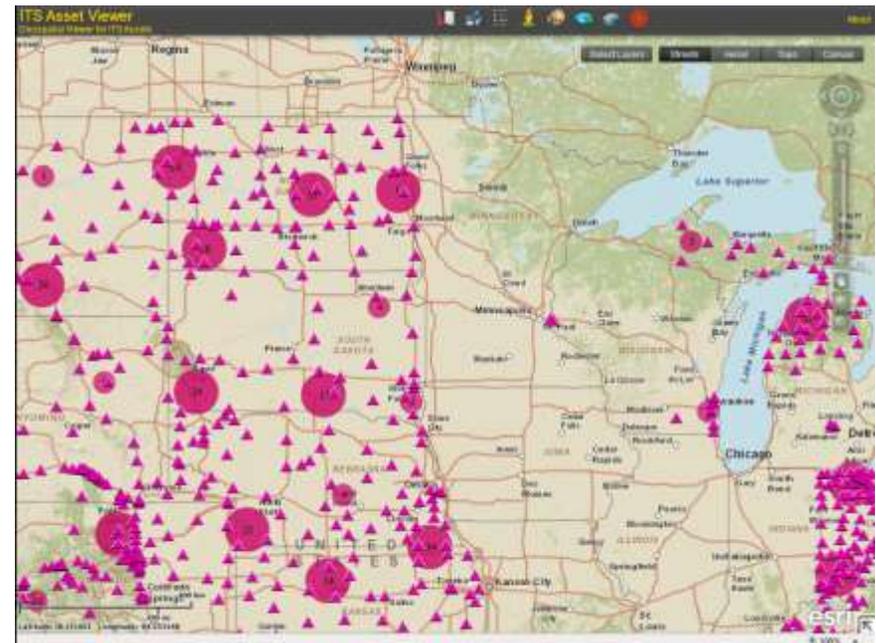
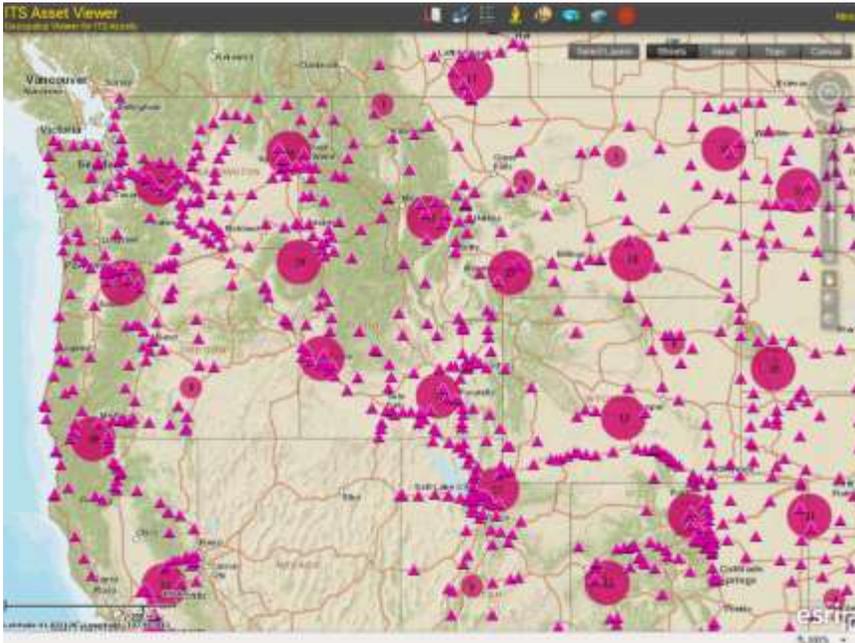


Figure 11 RWIS Individual Sites - Minnesota

The inventory of weather stations for Minnesota was incomplete in the National GIS Database of ITS Deployments. Figure 9 provides the missing information for Minnesota.

