RELEVANT COALITIONS OVERVIEW

1. INTRODUCTION

The purpose of this document is to provide an overview of other established and successful multi-state transportation coalitions. This document focuses on when and why the coalition was formed, how the coalition is organized, funding, projects and benefits of the coalition. This document also includes information on the Transportation Pooled Fund (TPF) program and lessons learned from other coalitions. The I-80 Winter Operations partner states can use this document as a reference to help them as they form their Coalition.

2. DETAILS OF RELEVANT COALITIONS

The following sections outline relevant information relating to other established successful multi-state transportation coalitions. Emphasis is placed on when the coalition was formed, how it is organized, funding, projects, and benefits/outcomes.

2.1 I-95 Corridor Coalition

http://www.i95coalition.org

The I-95 Corridor Coalition began in the early 1990s when transportation officials from several states met informally to address transportation issues. In 1993, the I-95 Corridor Coalition was formally established with the goals of enhancing transportation mobility, safety, and efficiency in the eastern United States. When the Coalition began, the main focus was on ITS and roadway transportation issues, but has since expanded to cover all modes of transportation within the corridor. The I-95 Corridor Coalition currently includes transportation agencies, toll authorities, transit and rail authorities, port authorities, rail, state police and law enforcement.

The I-95 Corridor Coalition provides a forum to address transportation management and traffic operations issues of key interest to the agencies and transportation within the corridor. Over the past 25+ years, the I-95 Corridor Coalition has become a model for multi-state/jurisdictional interagency coordination and coordination.

The I-95 Corridor Coalition stretches from Florida to Maine, and extends into Canada. The following states are involved in the I-95 Corridor Coalition:

- Connecticut
- Delaware
- Washington, D.C.
- Florida
- Georgia
- Maine
- Maryland
- Massachusetts
- New Hampshire
- New Jersey
- New York
- North Carolina
- Pennsylvania
- Rhode Island
- South Carolina
- Vermont
- Virginia

According to their website, the I-95 Corridor Coalition covers:

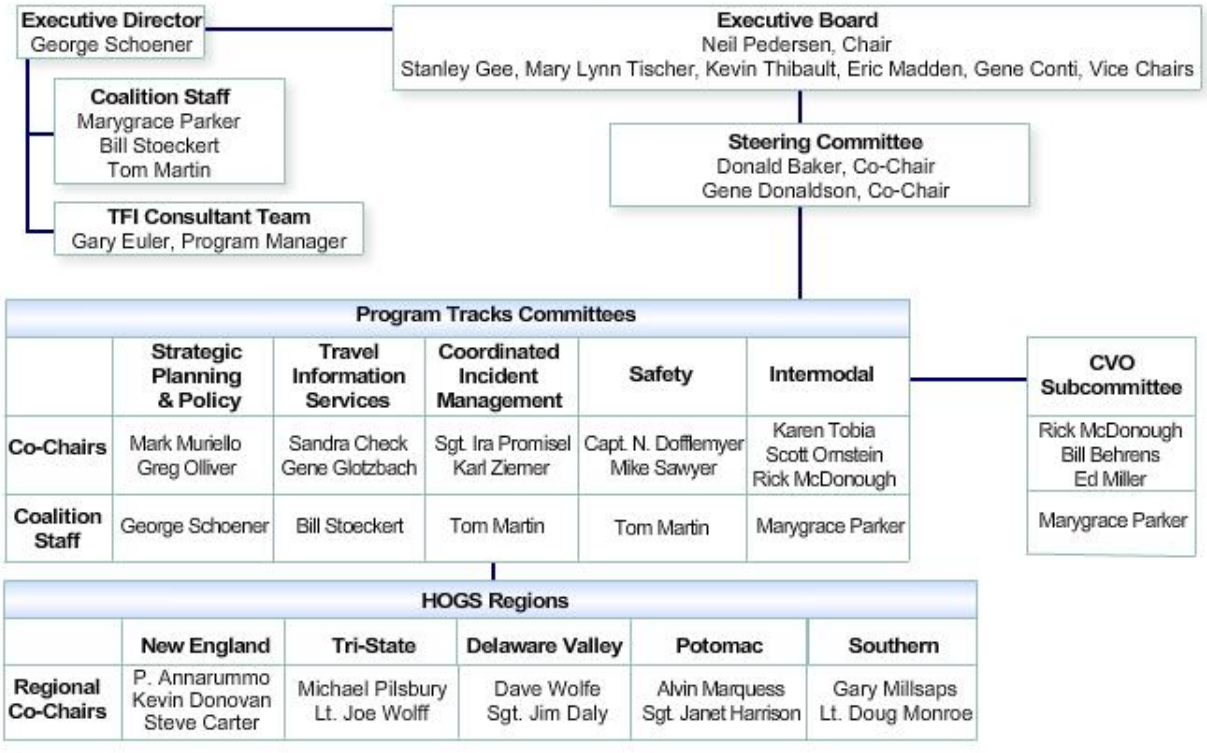
- 1,917 Miles of I-95
- 40,000 National Highway System Miles
- 22,000 Miles of Class 1 Rail Mileage
- 46 Major Seaports
- 103 Commercial Airports

2.1.1 Roles and Responsibilities

The Coalition does not have a formal set of By-Laws or guiding rules; however, the I-95 Corridor Coalition has adopted a number of procedures, policies, and guidelines to facilitate its operation. These guidelines are published in the *I-95 Corridor Coalition Procedural Guidelines* manual. The manual is updated on a regular basis as the organization evolves and changes. Topics covered in the manual include: organization, membership requirements, program development, project management, contract management, and other operating policies.

Figure 1 shows the organization of the I-95 Corridor Coalition. The I-95 Corridor Coalition is divided into different committees that focus on different areas areas and disciplines, such as travel information services, coordinated incident management, and safety. Projects are carried out at the committee level.

Figure 1 – I-95 Corridor Coalition Organization Structure



Source: www.i95coalition.org

2.1.2 Frequency of Meetings

The I-95 Corridor Coalition Executive Board meets twice a year in person (June and December). The other committees decide on an appropriate meeting schedule and/or meeting format. In general the committees meet once a year in person with teleconferences/webcasts throughout the remainder of the year.

2.1.1 Funding

The Coalition typically receives 80 percent of its funding from the Federal Government matches and 20 percent from the member agencies. Each year, the Coalition publishes a summary of match fund status along with the annual work plan. The following match fund policy is currently in effect for the Coalition:

- **Coalition Deployment and/or Integration Projects:** Member agencies and participants are responsible for the 20 percent "project specific" funding match. This match can be assembled from the private or public sector and must be from non-federally derived sources. The contribution can consist of money, equipment for the project, or personnel to complete the project.
- **General Support Activities:** Member agencies and participants can use "pooled" match credits to satisfy match requirements for administrative activities, training, studies, etc. Member agency projects can be use as "pooled" match credits if they are consistent with the Coalition's projects and activities. The match credits must be from non-federally derived sources and members cannot use the same projects or resources to match other federal funds for their agency.

2.1.2 Projects

Each year, the Executive Board creates a project guidance document and issues it to all Coalition Program Track Committees. The Track Committees, member agencies, staff and other sources outside the Coalition may submit project proposals. After all project proposals are received, the Coalition hosts a Policy and Strategic Planning Meeting where the different proposals are ranked in order of importance. The project list then goes to the Steering Committee for review. The projects recommended for funding are then passed on to the Executive Board for final approval. **Figure 2** shows detailed program planning cycle for the Coalition.

Figure 2 – I-95 Corridor Coalition Program Planning Cycle

Calendar Cycle	*Current Year Program Planning*
April/May	• Executive Board/Steering Committee issue guidance, setting broad program priorities
May	• Program Track Committees review goals and objectives, adding or changing as appropriate; develop new project ideas with brief scopes, and prioritize them within objectives; assess readiness of new projects, identify project managers and secure match commitments for agency deployment projects
October	• Program Track Committees submit a comprehensive work plan request
October	• Program Track Committee requests are compiled and submitted to the Steering Committee for review.
November	• Steering Committee reviews all submissions and develops a recommended work plan for the Executive Board
December	• Executive Board adopts a work plan for that year and develops direction for the next work plan cycle.
	• Final work plan letter is submitted to FHWA
January	• FHWA formally approves the work plan
January – April	• Coalition itemizes the budget by project sponsor and amounts, working with FHWA
	• FHWA begins the partnership agreement issuance, or interagency agreements if required for a specific project
April/May	• Next year's program planning cycle begins

Source: I-95 Corridor Coalition Procedural Guidelines, July 2009

Since 1993, the Coalition has performed numerous projects relating to:

- Policy and Strategic Planning
- Travel Information Services
- Incident Management
- Intermodal Projects
- Commercial Vehicle Operations
- Electronic Payment Services
- Safety

Relevant projects underway or that have been completed by the I-95 Corridor Coalition include:

- Private sector data procurement. The I-95 Corridor Coalition initiated the first multi-state contract to procure speed/slow/incident data from the private sector (INRIX). 4,100 centerline miles are currently covered and includes the entire limited access road network in New Jersey, and the entire interstate systems for North Carolina and South Carolina.

- Development of a real-time information dissemination system for efficient use of public and private truck parking. The system is comprised of the following subsystems: data collection, data integration, and data dissemination/traveler information.
- SAFETRIP-21 is a $6.4 Million partnership between the USDOT and the I-95 Corridor Coalition to use advanced technology to provide real-time traveler information, improve safety, improve public transportation, and reduce gridlock on the I-95 corridor.
- Training opportunities on topics such as performance measures, TMC operations simulation, quick clearance toolkit and workshop, incident management virtual training, operations academy, and freight academy.

2.1.3 Benefits/Outcomes

Since its development, the I-95 Corridor Coalition has provided numerous benefits to the multi-modal transportation needs within the Corridor, including:

- Efficiency through coordination between multiple agencies.
- Support and technical assistance from member agencies.
- Shared research and development through the use of pooled funding.
- Peer to peer networking between different agencies and organizations.
- The coordinated training programs and training resources (such as the quick clearance training and toolkit and operations and freight academies). These programs are designed for agency staff (consultants not allowed!!!) and are open to agencies throughout the country.
- The I-95 Corridor Coalition has established a 'centralized resource' for agencies to provide a clearinghouse of info and corridor-wide databases to facilitate information sharing for member agencies.

2.2 North/West Passage Program

http://www.nwpassage.info

The North/West Passage (NWP) Program began in 2002 when a group of transportation officials met to discuss development of multi-state transportation program. Minnesota DOT led the initial development of the NWP Program as an extension of the Minnesota Guidestar Board, which is Minnesota's ITS Program. In 2003, the NWP was established as an FHWA Transportation Pooled Fund (TPF) study. The NWP Program is predominantly a rural corridor and has similar issues related to traffic management, traveler information, and commercial vehicle operations as the I-80 Winter Operations Coalition. The following sections outline lessons learned from the NWP Program and should be considered when forming the I-80 Winter Operations Coalition.

Initially, the purpose of the NWP Program was to utilize effective techniques for sharing, coordinating, and integrating traveler information along I-90 and I-94 across state borders (Minnesota, North Dakota, and Wisconsin). Although the NWP Program was formed to address traveler information across state borders, long term goals of the Coalition include maintenance and operations, planning, and programming. The NWP Program provides an outlet to guide and coordinate states' projects within the corridor by developing standards and utilizing effective communication across state borders.

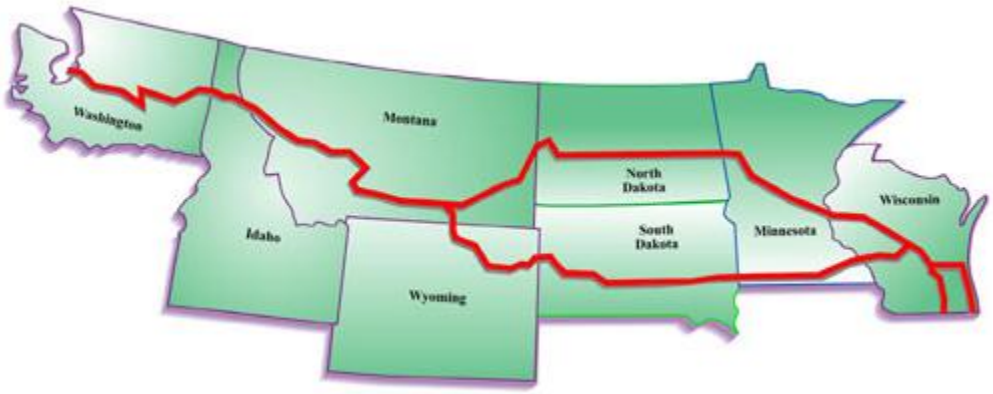
"The goals of the NWP Program are to:

- Integrate traveler information systems that can provide information appropriate to the location and need of the traveler
- Develop and promote cross-border jurisdictional cooperation and coordination in the planning, deployment, operations, and maintenance of ITS infrastructure
- Integrate ITS projects for the North/West Passage Corridor in the state, regional, and local planning and programming processes."

The NWP Program includes all states along I-90 and I-94 from Wisconsin to Washington. **Figure 3** shows the NWP Program member states, which include:

- Idaho
- Minnesota
- Montana
- North Dakota
- South Dakota
- Washington
- Wisconsin
- Wyoming

Figure 3 – NWP Program Member States



Source: 2009 North/West Passage Progress Report

2.2.1 Roles and Responsibilities

Membership in the NWP Program is currently limited to DOTs; however, other organizations are sometimes brought in on a project-specific basis.

There is a Steering Committee that is comprised of one representative from each state that financially contributes to the Coalition. Each member state is allowed one vote on all program issues. The Steering Committee meets monthly or as necessary to address Coalition issues.

A single state approved by the Steering Committee serves as the Program Administrator. The current Program Administrator is the Minnesota DOT.

A Stakeholder Group advises the Steering Committee on important matters. Members of the Stakeholder Group are identified and invited to participate by the Steering Committee. Stakeholder Group Members can include: additional individuals from participating

organizations, individuals from other state and local agencies within the corridor, university research organizations, and private organizations deemed to be direct stakeholders in the NWP Program.

Over the years, members believe it is beneficial to have two to three champions from each state involved in the Coalition. This helps with transition if people leave their organization, and keeps the momentum going between conference calls. Frequent conference calls also help with the transition. The Coalition has also felt the project leaders should not be members of the steering committee.

Even though the initial coalition discussions have focused primarily on maintenance and operations, there might be a future expansion of the coalition that could include public information/communications groups, incident management, etc. This transition may open up involvement in the Coalition to others within the DOT that have an interest.

2.2.2 Frequency of Meetings

The NWP Program has one in person meeting per year. The rest of the meetings are held by teleconference. Over the years, the NWP Program has adjusted meeting formats and frequency. In general, there are monthly teleconference calls, as the time lapse between by-monthly or quarterly teleconference calls can become too lengthy.

2.2.3 Funding

The current arrangement for the NWP Program is that each state commits $25,000.00 per year to be a member. It is important to note that some states have continued to contribute more than the annual dues. This membership fee covers travel arrangements for the yearly Coalition Workshop/Conference, covers project match fees, and consultant fees. Although travel is covered under the yearly membership dues, it is a challenge to organize travel arrangements for the member state DOTs.

The NWP Program is a FHWA Transportation Pooled Fund (TPF) Study. The first Work Plan totaled $100,000 from three member states. As the Coalition grew, membership grew to eight states and a budget of $450,000 for Work Plan II and III combined. Work Plan IV projects have anticipated completion dates in 2009, and have a member agency budget of $200,000. **Table 1** summarizes the member agency funding for the NWP Program. It is important to note that the NWP Program is a TPF Study and receives grant funding in addition to the member agency funding outlined in **Table 1**.

Table 1 – NWP Program Member Agency Funding

State	Work Plan I	Work Plan II and III	Work Plan IV
Idaho		$50,000***	$25,000*
Minnesota	$50,000*	$150,000*	$25,000*
Montana		$25,000****	$25,000*
North Dakota	$25,000*	$25,000*	$25,000*
South Dakota		$50,000*	$25,000*
Washington		$50,000*****	$25,000*
Wisconsin	$25,000**	$50,000***	$25,000*
Wyoming		$50,000***	$25,000***
Total	$100,000	$450,000	$200,000

** SP&R Dollars*
*** 80/20 I-90/94 Earmark Dollars)*
****Federal and State Dollars*
*****Unknown*
******State Dollars*
Source: North/West Passage TPF-5(190) Q3 2009 Status Report

2.2.4 Projects

Previously completed projects include:

- Corridor-Wide Consistent Major Event Descriptions
- CAD to Reporting System Integration Workshop
- *Clarus* Demonstration Initiative
- Cross Border Operations and Maintenance Collaboration Workshop

The Phase IV Work Plan was approved on April 30, 2008, and projects are anticipated to be completed by the end of 2009. The Phase IV Work Plan included the following projects:

- Traveler Information Website – Phase 2 and Center to Center Communications ConOps (to enhance the existing corridor-wide traveler information website: www.i90i94travelinfo.com)
- Call forwarding and Evaluation of Cross Border Information Requests
- North/West Passage Regional Permitting
- Expanded Corridor-Wide Truck Parking Facilities

2.2.5 Benefits/Outcomes

Members of the NWP Program have identified numerous benefits of participating in the TPF study including:

- Forum to share lessons learned
- Provided important contacts at other agencies
- Assisted in making revisions to road condition reporting phrases

- Provided the ability to share ITS experiences and operation and maintenance experiences
- Promoted data sharing between transportation agencies and public safety/law enforcement
- Developed a corridor-wide traveler information website (www.i90i94travelinfo.com)

2.3 West Coast Corridor Coalition

http://www.westcoastcorridors.org

The West Coast Corridor connects all three countries (Canada, United States and Mexico) in the North American Free Trade Agreement (NAFTA) and accounts for 40 percent of port-related freight in the United States. As such, a majority of the port related freight corridors are concentrated in large metropolitan areas along the Pacific Coast. The West Coast Corridor Coalition (WCCC) was established in November, 2001, to address goods movement in the Pacific states along I-5. The Coalition has since shifted its focus to all modes of transportation supporting the movement of people and goods within the west coast region.

The purpose of the WCCC is to provide collaborative solutions to transportation system challenges along the West Coast Corridor while working together to address mobility challenges in the member states.

"Specific WCCC objectives are to:

- Develop and mutually support a roster of "projects of corridor significance" that serve the nation and region.
- Share "best practices" in order to optimize of the capacity and performance of existing corridor system.
- Encourage joint effort and effective cooperation among West Coast state, regional and local governments and the private sector.
- Advocate for financing options to fund transportation system improvements serving the interests of the Coalition, including both additional funding and regulatory changes."

The WCCC consists of members from the four west coast states of Alaska, California, Oregon and Washington. **Figure 4** shows the WCCC member states.

Figure 4 – WCCC Member States

Source: www.westcoastcorridors.org

2.3.1 Roles and Responsibilities

The WCCC consists of a wide variety of transportation agencies including: DOTs, ports, regional transportation planning agencies, and MPOs. The WCCC contains a Board of Directors, Executive Committee, and three Committees (Federal Relations Committee, Goods Movement Committee, and the ITS, Operations, and Environment Committee).

2.3.2 Frequency of Meetings

The Board meets once or twice a year to discuss approval of budget, work program, and significant changes in the organization.

2.3.3 Funding

Since inception, the WCCC received funding from federal appropriation and matching provided by some of the member organizations. In the April 2009 Business Plan, there was indication that a new funding source must be identified, whether it be through federal funding programs (energy, homeland security, freight), "pooling" planning and research resources, or membership fees.

2.3.4 Projects

Following are some projects that have been recently completed by the WCCC:

- Corridor-wide Trade and Transportation Study highlighting freight challenges, April 2008
- Clean, Green and Smart Best Practices, June 2009
- Business Plan, April 2009

2.3.5 Benefits/Outcomes

The WCCC has allowed a variety of states and agencies to join forces to address the challenges of congested rails, border crossings, seaports and roadways throughout the West Coast. The West Coast economy is sixth largest economy in the world, consisting of $2.2 trillion USD in 2006. Coordination between the various agencies is key to the successful movement of people and goods throughout this congested corridor.

2.4 Aurora Program

http://www.aurora-program.org

The Aurora Program is an FHWA TPF program. The Aurora Program was established in 1996 and currently includes U.S., Canadian and European agencies.

The purpose of the Aurora Program is to bring together agencies to conduct shared research, development and deployment of road and weather information systems (RWIS). Like many other coalitions, the Aurora Program is a TPF program which allows the financial resources from multiple agencies to be pooled together to fund RWIS-related programs.

The Aurora Program includes members from U.S., Canadian, and European agencies. Following is a list of members at the time this document was prepared.

- Alaska DOT and Public Facilities
- Illinois DOT
- Indiana DOT
- Iowa DOT
- Michigan DOT
- Minnesota DOT
- Ohio DOT
- Ontario Ministry of Transportation
- Pennsylvania DOT
- Quebec Ministry of Transportation
- Swedish Road Administration
- Utah DOT

- Nevada DOT
- New York State DOT
- North Dakota DOT
- Virginia DOT
- Wisconsin DOT

2.4.1 Roles and Responsibilities

The Aurora Program is comprised of transportation agencies, universities, and weather services in the U.S., Canada, and Europe. There are three levels of membership: full membership, associate membership, and visitor status.

- **Full Membership** is open to all transportation-related agencies. The yearly membership fee is $25,000.00. This membership fee is utilized to leverage funds to conduct large-scale research projects.
- **Associate Membership** is open to research and non-profit public entities, such as universities or other research institutes. All associate members must be nominated by an active Aurora Program full member, and do not pay membership fees.
- **Visitor** status is open to public organizations interested in becoming full members. The visitor program allows potential full members to attend one general meeting to gain an understanding of the program prior to committing to full time membership.

The structure of the Aurora Program consists of the executive board and technical project committees.

- The **Executive Board** contains one voting member from each full member agency. The executive board is responsible for directing the program and projects of the coalition.
- **Technical Project Committees** are responsible for specific project related work. A "Champion" is assigned from each technical project committee to be responsible for each project.

2.4.2 Frequency of Meetings

The Aurora Board meets in person on a yearly basis, and has additional web meetings throughout the year.

2.4.3 Funding

Each agency is required to contribute $25,000.00 per year for full time membership. Most agencies use SP&R funding; however, they are also allowed to make in-kind contributions (such as equipment or personnel) in lieu of membership fees. The Aurora Program is currently looking into the feasibility of attracting private sector contributions and federal grants to increase funding.

2.4.4 Projects

The Aurora Program has completed a variety of projects relating to RWIS including:

- Guidelines for Testing, Installation, Maintenance, and Calibration of Pavement Sensors
- Integration of Road Weather Information with Traffic Data
- Update of SHRP H-350 and H-351 – benefit-cost assessment for weather information in winter road maintenance.

Many of the projects that are currently underway were conceived at the 2007 National Winter Maintenance Peer Exchange and include:

- Evaluation and Inter-comparison of the Lufft R2S Microwave Precipitation Sensor
- Road Weather Information Outreach/Second Peer Exchange
- Knowledge Base for RWIS Programs and Environmental Data Loggers
- Road Weather Education Enhancements and Dissemination
- Further Development of Pavement Precipitation Accumulation Estimation System
- Salinity Sensor Improvements and Development
- Review of Friction Detection Technologies

2.4.5 Benefits/Outcomes

The Aurora Program has allowed a number of U.S., Canadian, and European agencies to pool their agency's financial resources to address RWIS-related research, development, and deployment. In addition, the coalition has allowed member agencies to develop relationships with national and international, public and private leaders in RWIS equipment, decision support systems, standards, and training

2.5 *Clarus* Initiative

http://www.clarusinitiative.org

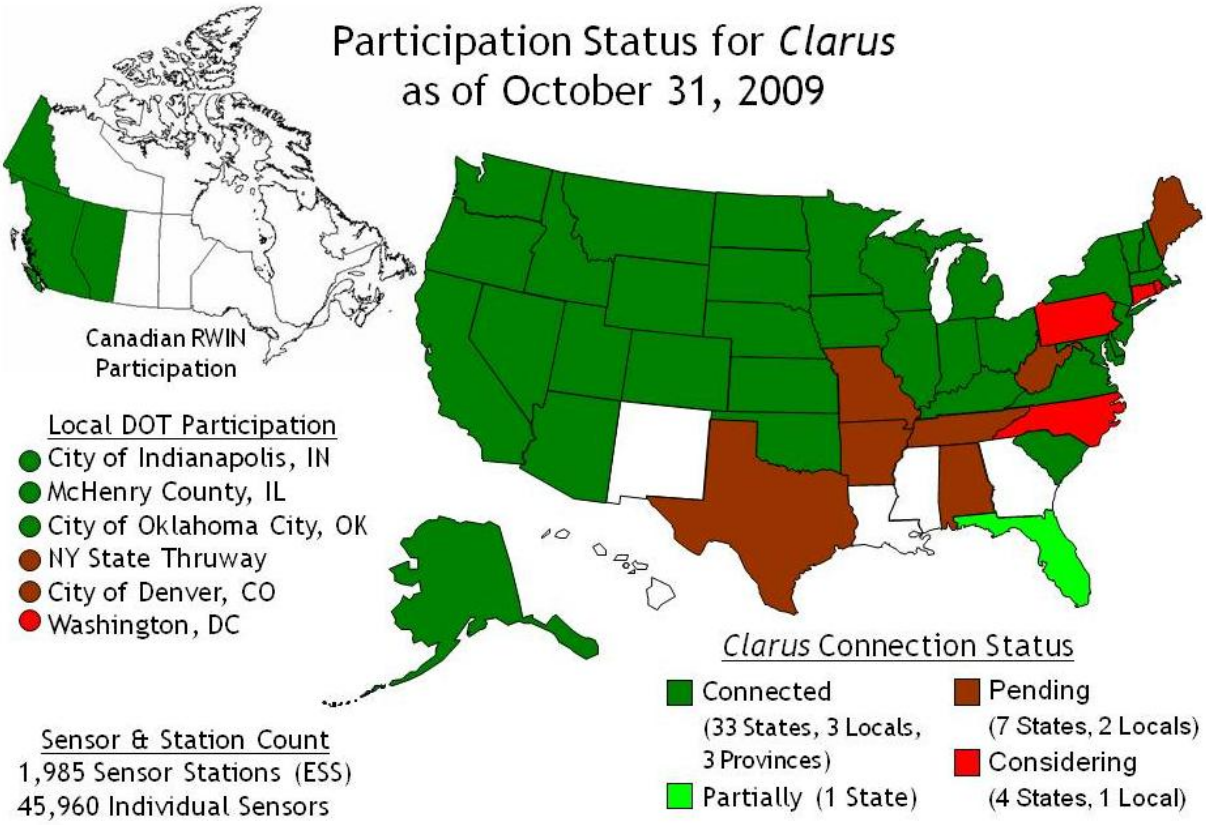
The *Clarus* Initiative was established by the USDOT in 2004 in conjunction with the FHWA RWIS program and the ITS Joint Program Office. *Clarus* means "Clear" in Latin.

The primary goal of the *Clarus* Initiative is to create a National surface transportation weather observing and forecasting system through the creation of partnerships between transportation and weather agencies. The *Clarus* Initiative strives to place all regional/nationwide collection of all state-funded transportation-related observations (atmospheric, road surface and hydrologic) into a single database. As such, the *Clarus* Initiative focuses on requirements for gathering weather data, systems engineering, and database design for federal, state, academia, and private sector weather information providers.

The RWIS requirements that have been developed aid with the collection of existing and future weather data. The *Clarus* Initiative also tests technologies for fixed, mobile, and remote sensing of weather conditions on surface transportation.

The *Clarus* Initiative currently has representatives from a majority of states as well as some participation from Canadian providences. **Figure 5** shows the participants in the *Clarus* Initiative as of October 31, 2009. At the time this document was prepared, there were 33 states, three local participants, and three provinces connected to the *Clarus* system accounting for 1,985 ESS sensor stations and 45,960 individual sensors.

Figure 5 – *Clarus* System Participants



Source: www.clarusinitiative.org

2.5.1 Roles and Responsibilities

The structure of the *Clarus* Initiative consists of the Initiative Coordinating Committee (ICC) and Project Task Forces.

- The **ICC** is comprised of meteorological and transportation experts from the public, private, and academic sectors. The ICC provides expertise and guidance on the *Clarus* Initiative. They are responsible for providing consultation, reviewing projects, and performing outreach in addition to verifying that project task forces are on schedule, under budget, performing their tasks. The ICC attends one annual meeting.
- A **Project Task Force** consists of eight to ten people involved with the development of a product or task. Each project task force creates an application that is reviewed by the ICC. If approved, a project task force "leader" is created to guide the task force (conference calls, e-mails, and other communications) to advance the development of the product or task.

2.5.2 Frequency of Meetings

The ICC attends one annual in-person meeting with web conferences throughout the year, as needed. Project Task Forces meet as needed to complete their product or task.

2.5.3 Funding

The USDOT funds the *Clarus* program through ITS program funds from the ITS Joint Program Office. There is also a *Clarus* Connection Incentive Program (CIP) which provides grants to states to participate in regional demonstrations and deployments.

2.5.4 Projects

The *Clarus* Initiative projects include system design, design review, design proof of concept, multi-state regional demonstration, and model deployment of RWIS systems. Several specific projects of the *Clarus* Initiative include:

- Development of Environmental Sensor Station (ESS) network Guidelines
- Metadata Task Force Data Dictionary

The *Clarus* Initiative has also undertaken Regional Demonstration Projects to evaluate the performance of the *Clarus* system design. The Regional Demonstration Projects will allow the ICC to test the system in an operational environment, where users are placing high demands on the system to access RWIS data. After the Demonstrations Projects were complete ConOps guides were created for each project. The following three demonstration projects were undertaken:

- Alaska – Canada (ALCAN) Highway Road Weather Portal ConOps
- Aurora Regional Demonstration Team and ConOps
- NWP Program Demonstration Team and ConOps

Valuable information obtained from the Regional Demonstration Projects has been utilized to create the Final Design and Model Deployment for the *Clarus* network in different regions of the country.

2.5.5 Benefits/Outcomes

The *Clarus* Initiative has created valuable partnerships between the transportation and meteorological industries. By working together, states have been able to modernize and integrate road condition observations; standardize weather data formats, communications, and network architecture; and disseminate road weather information to surface transportation system operators. As a result, timely and accurate road condition and weather information is now available to the users of the surface transportation system.

2.6 Maintenance Decision Support System Pooled Fund Study

http://mdss.meridian-enviro.com/pfs/

The Maintenance Decision Support System (MDSS) Pooled Fund Study was initiated in 2002 by South Dakota and five member states. South Dakota is still the lead for the MDSS Pooled Fund Study. The purpose of the Pooled Fund Study is to:

- Assess the need, benefits, and receptivity for a MDSS
- Define functional and user requirements for a MDSS
- Build and evaluate an operational MDSS that will meet requirements from participating state DOTs

- Improve the ability to forecast road conditions based on changing weather and maintenance treatments

The ultimate goal of the Pooled Fund Study is to create a fully functional MDSS to support the needs of transportation agencies.

Table 2 lists the states that are involved in the MDSS Pooled Fund Study along with the number of MDSS routes contained in each state.

Table 2 – MDSS Member States and Routes

State	MDSS Routes (2008-2009)
California	6
Colorado	108
Indiana	156
Iowa	65
Kansas	18
Kentucky	5
Minnesota	185
Nebraska	101
New Hampshire	7
New York	17
North Dakota	77
South Dakota (Leader)	80
Virginia	9
Wyoming	68

2.6.1 Roles and Responsibilities

Members must contribute financially, intellectually, conduct field trials, and provide intellectual property stewardship.

2.6.2 Frequency of Meetings

There are three project panel meetings per year along with conference calls, technical product reviews, and technology assessments.

2.6.3 Funding

Member states must contribute financially and intellectually as well as conduct field trials of the MDSS.

2.6.4 Projects

MDSS reports road surface conditions, describes actual maintenance treatments, provides past and present weather conditions, predicts weather events and pavement conditions,

recognizes resource constraints, identifies feasible maintenance treatments, and communicates recommendations to supervisors and workers.

Analysis of MDSS Benefits and Costs

2.6.5 Benefits/Outcomes

Studies have shown that MDSS allows DOTs to achieve the same or better level of service with less material and effort. Studies in New Hampshire, Colorado and Minnesota have shown extremely high Benefit/Cost ratios.

Member states have experienced the following benefits:

- Shared research and development through the use of pooled funding
- Opportunity to test MDSS
- Peer networking and learning between state agencies and private entities
- Forum to share research and technology information

In addition, use of the MDSS can benefit the following areas:

- Safety
- Mobility
- Productivity
- Efficiency
- Energy and the Environment
- Increase Customer Satisfaction

2.7 ENTERPRISE

http://enterprise.prog.org/

ENTERPRISE was established as a Transportation Pooled Fund Study in 1991 between four states with common interests in developing, evaluating, and deploying ITS technologies. Since inception, ENTERPRISE has maintained a strong focus on rural states and ITS applications. Over the years, ENTERPRISE has grown to include Canadian and European agencies; however, its focus still remains on ITS.

Some of the goals of the ENTERPRISE program include the following: increase highway safety, reduce highway congestion, reduce environmental impacts of travel, support research and development of advanced technologies for use in solving transportation problems.

The following agencies are members of the ENTERPRISE Executive Board:

- Arizona DOT
- Colorado DOT
- Federal Highway Administration
- Iowa DOT
- Kansas DOT
- Michigan DOT
- Ministry of Transportation Ontario
- Minnesota DOT
- Transport Canada
- Virginia DOT
- Washington DOT
- Rijkswaterstaat, Dutch Ministry of Transportation

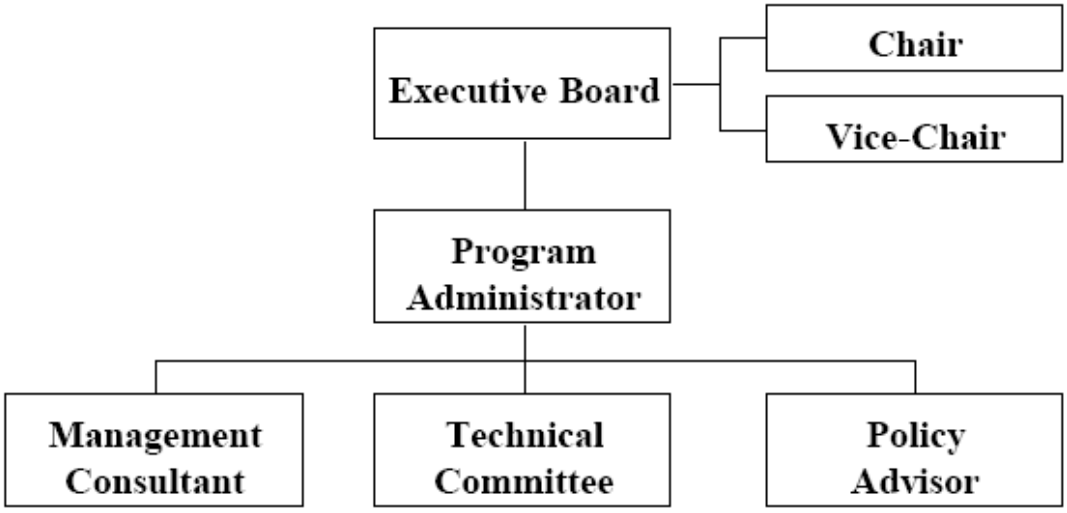
Maricopa County, Arizona (MCDOT) is a local government agency that participates through Arizona DOT and is not a full voting member.

2.7.1 Roles and Responsibilities

The organizational structure of ENTERPRISE is summarized below. **Figure 6** graphically depicts the organization structure.

- The **Executive Board** consists of one voting member from each full member agency. The Executive Board is responsible for directing the program and projects of the coalition.
- The **Program Chair** and **Vice-Chair** are elected by the Executive Board. The Program Chair serves as head of the board, and Vice–Chair is responsible for supporting the Chair and temporarily assuming Chair duties in periods of absence. Bill Legg of Washington DOT currently serves as the Program Chair.
- The Executive Board delegates a **Program Administrator** who is responsible for the day-to-day management of the coalition including contracts, budget, and travel authorization. The current Program Administrator is the Iowa DOT.
- **Technical Committees** are responsible for specific project related work, and are created by the Executive Board.
- The **Management Consultant** provides support to the Executive Board, Chair, Program Administrator, and Technical Committees.

Figure 6 – ENTERPRISE Organizational Structure



Source: http://enterprise.prog.org/

2.7.2 Funding

Active members must contribute $30,000.00 or more per year to the Program. For a designated member of the Board to continue active membership, the participating entity must contribute at least $30,000.00 per year. Pooled funding is derived from contributions received from participating entities.

2.7.3 Projects

ENTERPRISE defines and develops projects based on review of state and provincial plans, proposals of ENTERPRISE members, and based on FHWA and Transport Canada needs/interests.

Projects are considered on an annual basis as part of the development of an annual work plan and schedule. A project may be fast-tracked in the event that a project with significant benefits is identified. All projects are ranked by the member agencies on a 0-20 point ranking system with the following selection criteria:

- Value to members
- Suitability to ENTERPRISE
- Project feasibility
- Validity of approach
- Cost realism

After the projects are ranked, the Program Administrator analyzes the results and reports to the members.

The ENTERPRISE Pooled Fund Study has completed a variety of ITS projects including:

- Multi-Jurisdictional Mayday (MJM) Project
- Integrating NTCIP Compliant Hardware
- Weather and Road Information Coordination –WRIC

Current projects include:

- Renewal Energy for Rural ITS Applications
- IP Cameras – Developing Low-Cost Satellite IP Cameras (SPIC)
- Nationwide ATIS
- Virtual TMC

2.7.4 Benefits/Outcomes

The ENTERPRISE Pooled Fund Study has facilitated the sharing of technological advances and institutional experiences gained from ITS projects by allowing agencies to share funding, resources, and risks.

2.8 TMC Pooled Fund Study

http://tmcpfs.ops.fhwa.dot.gov/

The purpose of the TMC Pooled Fund Study is to provide a forum for local traffic management agencies to focus on traffic signal control systems, freeway management, and multi-modal TMCs.

Membership in the TMC Pooled Fund Study is open to the FHWA and state/districts that have committed funding to the TMP Pooled Fund Study. Other entities that seek to contribute funds to become members (toll agencies, cities, counties, port authorities, or others associated with operation of transportation control centers) are considered for membership on a case-by-case basis.

Membership consists of the following 28 states plus the FHWA.

- Arizona DOT
- Caltrans
- Connecticut DOT
- Delaware DOT
- FHWA
- Florida DOT
- Georgia DOT
- I-95 Corridor Coalition
- Idaho Transp. Department
- Illinois DOT
- Indiana DOT
- Kansas DOT
- Kentucky Transp. Cabinet
- Michigan DOT
- Minnesota DOT
- Missouri DOT
- Nebraska DOR
- Nevada DOT
- New Jersey DOT
- New York State DOT
- North Carolina DOT
- Pennsylvania DOT
- Rhode Island DOT
- Tennessee DOT
- Texas DOT
- Utah DOT
- Virginia DOT
- Washington State DOT
- Wisconsin DOT

2.8.1 Roles and Responsibilities

The FHWA Office of Research, Development, and Technology serves as the Program Administrator and administers resources under the direction of the Members. In addition to being responsible for the day-to-day administration of the TMC Pooled Fund Study, the Program Administrator drafts RFPs and coordinates the proposal review process.

Each membership state has a technical representative chosen by their respective participant state and the FHWA.

The TMC Pooled Fund Study aims to utilize consensus building as opposed to formal voting. The Chair works with members to develop consensus decisions regarding projects and budgets. If voting is necessary, a 2/3 majority of assembled participants is required.

2.8.2 Frequency of Meetings

The members meet on an annual basis to review current project progress and select new projects. More frequent teleconferences and meeting is required for those directly involved in project teams for the TMC Pooled Fund Study.

2.8.3 Funding

Participating agencies contribute to the pooled fund at a level deem appropriate by the Study using SP&R funding.

2.8.4 Projects

Consensus is the most important step in choosing projects. The TMC Pooled Fund Study strives to choose a group of projects, that when completed together, addresses the needs and concerns of all member agencies.

Members are responsible for approving project budgets and work plans, as well as, creating and terminating project teams as needed.

Completed projects include:

- Changeable Message Sign Operation and Messaging
- Multi-State, Statewide and Regional TMC Concept of Operations Requirements
- TMC Operations Manual
- TMC Performance Monitoring, Evaluation and Reporting Handbook

Current projects include:

- Driver Use of Real-Time En-Route Travel Time Information
- Methodologies to Measure and Quantify TMC Benefits
- Procuring, Managing, and Evaluating the Performance of Contracted TMC Services
- Roles of TMCs in Emergency Operations
- TMC Human Factors Design Guidelines: Requirements Analysis

2.8.5 Benefits/Outcomes

The TMC Pooled Fund Study has many benefits including:

- Completion of 19 projects in seven years
- Providing leadership and coordination with other TMC interests
- Promoting and facilitating technology transfer related to TMC issues on a national level

3. TRANSPORTATION POOLED FUND PROGRAM

http://www.pooledfund.org

The Transportation Pooled Fund (TPF) program is sponsored by the FHWA, TRB, and AASHTO. The TPF program allows federal, state, and local agencies and organizations to combine resources to support transportation research studies. Typically, 20 percent of the funding is supplied by the local agencies and 80 percent is a federal match. As a result, agencies can leverage their funding to complete studies with less funding requirements from individual states. In addition, a TPF fosters the creation of partnerships between different states and agencies with common interests.

A TPF must include more than one state transportation agency, federal agency, or other agency (MPO, college, university, or private company). Any federal, state, regional or local transportation agency may initiate a TPF program, and companies, universities/colleges may partner with transportation agencies to take part in the TPF program.

Agencies must commit funds or other resources (such as in-kind contributions) to conduct the research, planning and/or technology transfer activities. A TPF study cannot repeat a previous study unless the study provides new information advancing the previous investigations

According to the TPF Program, the following general steps must be completed to qualify for the TPF Program.

- Identify partner agencies
- Develop a problem statement/proposal. This problem statement/ proposal should include the following:
  - Title
  - Duration
  - Deliverables
  - Implementation plan
  - Sponsor information
- Determine who will lead the project (state-led, FHWA-led, or TRB-led).
- If accepted, FHWA will establish the project as a TPF project. The FHWA will then:
  - Process funding commitments (usually 80 percent federal, 20 percent non-federal)
  - Assign a project number
  - Assign a technical liaison
  - Determine if the project will be approved for 100 percent state planning and research (SP&R) funds

The TPF program may be one option that the I-80 Winter Operations Coalition explores. This will require member states to commit funds to the program.

4. LESSONS LEARNED

The following sections include lessons learned from the various coalitions that can be used to guide the I-80 Winter Operations Coalition as it moves forward.

4.1 Organization

Other coalitions have identified two to three champions from each member organization provide maximum benefit. Multiple champions provides 'back-up' at the organization, helps maintain continuity if individual roles change within the organization, and/or provides organization representation if all champions cannot make it to a particular meeting.

4.2 Governance Structure

As the I-80 Winter Operations Coalition is forming, it is recommended that a steering committee and champions at the task force level be created. Providing too much structure and too many committees/boards could cause the coalition to become too top heavy with multiple oversight boards. This is a small coalition (by many standards), and needs to be mindful that members have full-time jobs outside of the coalition activities.

4.3 Frequency of Meetings

Most coalitions hold one annual in-person meeting and multiple quarterly or monthly teleconferences or web conferences.

It is recommended that Coalitions hold monthly steering committee calls as opposed to every other month. This is because members cannot make all of the conference calls, and if someone misses a conference call that is on an every other month schedule, it can be four months before

they are on a call and that can be too much time to pass between information sharing. The downside to monthly conference calls is that sometimes there is not always a lot to discuss each month, but it brings everyone to the table and keeps the momentum going.

There is tremendous value to in-person meeting, but there is a need to recognize cost and time factor associated with in-person meetings. It is recommend a combination of in-person meetings/conferences, teleconferences, web or video conferences, etc. to maintain communications and interactions in a very cost effective manner.

4.4 Funding

The current arrangement for many coalitions is that each state commits $25,000.00 per year to be a member. This membership fee covers travel arrangements for the yearly Coalition Workshop/Conference, covers project match fees, and consultant fees. Although travel is covered under the yearly membership dues, it is a challenge to organize travel arrangements for the member state DOTs.

The downside of the current set-up for most coalitions is that states have to recommit annually. Each year, coalition members have to re-sell the coalition to management, and it can be a struggle to show management the benefit when projects do not always occur in each member state every year. In addition, the differentiation between multiple pooled funds can be hard for decision makers to understand. If there is overlap between coalitions of member states, it could be beneficial to look for ways to develop joint projects between the two coalitions to benefit the members as well as demonstrate to decision makers that the two coalitions are aware of each other and working together for a common goal.

It is important to clearly and concisely explain benefits of membership to decision makers. The I-80 Winter Operations Coalition could explore and discuss the option to try a four to five year commitment from each state for funding the Coalition. This would save time and effort each year when funding is established between the states.

4.5 Projects

One of the challenges with Pooled Funds is that the work planning process is constantly going on. The work planning process includes suggesting projects, work planning, project approval, and the execution of projects. It can sometime feel like the Coalition is in perpetual planning and work planning mode. Another challenge is prioritizing projects. Some may be of greater benefit to a limited number of partners; projects that are funded with collective monies need to demonstrate a benefit to the coalition as a whole.

As the Coalition is taking shape, it is a good idea to plan projects that can capture the low hanging fruit. For example, the NWP Program held a CAD-TMC two day workshop with two reps from each state (one DOT employee and one law enforcement employee). The two day workshop focused on lessons learned and effective communication. After the workshop, the NWP Program published the results and sent states a mini-plan for coordinating communication. The project cost approximately $20,000.00, of which $10,000.00 was travel.

It is also important to define the identity of the Coalition in relation to what types of projects the Coalition wants to take on. Most coalitions start with two to three smaller projects per year (less than $30,000.00). As the coalition matures, they start looking at completing larger joint deployment projects. The larger joint deployment projects can become more complicated as it can be difficult to work out some of the legal issues, such as who maintains the equipment or can

the Coalition sign a two year agreement for a website when they have yearly business planning process.

Although the projects completed by the various coalitions described in this document are very innovative and would have been very tough to complete individually, it is still hard for states to commit to the coalitions on a yearly basis.

Moving forward, the Coalition should determine what types of projects and/or programs they want to focus resources on. For example, developing external tools (like an I-80 traveler info web site) or conducting research projects. In addition, the Coalition will need to establish coalition resources to conduct projects and provide sustainability for the Coalition.