



WINTER OPERATIONS COALITION



I-80 Winter Operations Coalition

Strategic Plan

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1. OVERVIEW

California, Nevada, Utah and Wyoming have initiated a single strategic planning effort to reach consensus on how to best link operational processes and data to maximize winter mobility in the I-80 Corridor. The purpose of the I-80 Winter Operations Coalition of states is to share information and coordinate operations and maintenance activities among transportation departments along the corridor. The Coalition will build on existing multi-state coordination efforts and expand the coordination to include general road condition information, consistent traveler information along the corridor, traffic management strategies, maintenance, operations, and potential for shared use of infrastructure near state boundaries. The Coalition will leverage state resources of the partner state DOTs to create innovative solutions to issues that many states share during the winter months and provide a foundation for developing those solutions through Coalition program activities. Coalition objectives are to:

- Establish and maintain a forum for regular communications and ongoing collaboration and planning for I-80 winter operations;
- Establish institutional structure for coordinating operations, and leverage existing state programs;
- Establish existing capabilities and near-term enhancements to identify continuity issues; and
- Research innovative practices from other areas of the country facing similar challenges to potentially apply these practices within the I-80 corridor.

This strategic plan is focused on the priorities and direction for the Coalition for the next five years. While winter months create a prominent enabling link between TMC operations and maintenance activities, coordination between the two functions can be planned for in the future is beneficial throughout the year.

This strategic plan provides the “who”, “why”, and “what” the Coalition will move toward, it does not prescribe “how” or “when” it will get there. The reason for this differentiation is because the purpose of the Coalition should not change, it is the individual actions of the Coalition that will.

It is important that this strategic plan guide the Coalition objectives moving forward. This is a living document in the sense that there may be changing priorities of Coalition states along this corridor. This document does not reflect individual projects that five years from now may or may not have been implemented depending on funding constraints, champions transitioned, or other conditions change direction of the actual actions for this Coalition. However, the focus on what priorities and functional areas to move forward with for the purpose of this Coalition should stay the same, and enhanced only by new technologies and systems that would benefit the Coalition states.

The Strategic Plan will be based on building consensus around the following topic areas:

- Existing agency operations and maintenance activities along I-80 corridor;
- Existing interagency coordination occurring for operations and maintenance activities;
- Gaps/issues that are of priority concern for operations and maintenance along the I-80 corridor;
- Needed coordination or activities that would benefit the Coalition states;
- Procedural/process changes that can be modified quickly with no or minimal funding (“low hanging fruit”);
- Other stakeholders that need to get involved – private partners, freight, etc.;
- Systems or connectivity issues that would need longer lead time for implementation;
- Funding opportunities for pilot tests or pilot deployments; and
- Organization of the Coalition including roles and responsibilities of the different members and the institutional structure of the Coalition.

Ultimately, this plan will help the I-80 Coalition achieve their vision to utilize existing and create new effective methods for sharing, coordinating, and integrating operations and maintenance activities for multi-state benefits to travelers.

1.1 Members

This is multi-state Coalition and strategic planning effort which includes transportation departments, operations, maintenance, and DOT executive level decision makers from California, Nevada, Utah and Wyoming. Input from these and other stakeholders is a critical part of defining the Coalition’s goals, objectives, and issues that need to be addressed by the Coalition moving forward. Stakeholders were selected to represent the champions of the Coalition from each state in the most impacted areas of I-80 operations during the winter seasons. Key partners include departments of transportation in each of the states: NDOT Headquarters, NDOT District 2 and 3, Caltrans District in Kingvale, UDOT Headquarters, and WYDOT Headquarters. The Coalition will be driven largely by transportation department interests while including perspectives from other areas such as highway patrol, maintenance, and other stakeholders.

Additional stakeholders may be asked to participate within certain Coalition projects or activities (to be determined by Coalition members, and on a project-by-project and annual workshop-by-workshop basis). Additional stakeholders and their potential roles could include, but are not limited to:

Agency Partners	
State Highway Patrol	Perspective in incident management and beneficial information for public safety operations
County Public Safety	Perspective in incident management on arterials and beneficial information for public safety operations
Local Transportation Management Centers	Operations of ITS devices and data collection and usage to make traffic management decisions
District Level Operations within each state DOT	Individual district needs and processes that are used to manage traffic and maintenance activities within each district
Public Information Office/Communications	Methods and systems for disseminating traveler information
Regional Transportation Agencies	Project involvement and process development on a regional basis
Local Law Enforcement (as needed for I-80 purposes)	Perspective in incident management on arterials and beneficial information for public safety operations
DOT or State Information Technology & Systems	Communications and data collection capabilities for sharing data between states

Private Sector Partners	
University Transportation Research Centers	Data collection and analysis
Tow Truck Companies	Incident information for quick response as needed
Freight Companies	Types of traveler information throughout corridor and how that information is disseminated to the freight community
Tourism Industry (resorts, ski areas, welcome centers, chambers of commerce, etc.)	Partnerships to manage traffic and share information to benefit highway operations
Special Event Planners/Organizations (such as Reno-Sparks Convention and Visitors Authority [RSCVA])	Partnerships to manage traffic and share information to benefit highway operations
National Weather Service/Private Sector Weather Forecasting	Weather data and forecasting for roadway conditions reporting and better prediction of traffic impacts
Equipment/technology vendors	Technology demonstrations, etc.

Stakeholders may be asked to participate in specific committees or focus groups as part of activities based on the priority focus areas for the Coalition. This may include participation in Coalition activities, projects and research outside of formal meetings and conferences and could also include participation and presence at the Coalition meetings.

1.2 Technology Components and Inventory

There are a number of tools and technologies that Coalition states have either existing or are envisioned to implement in the future that could support the winter operations objectives of interstate communication and integration. These tools and technologies are described in **Table 1** below.

Table 1 – Coalition Tools and Technologies

Component	Description	Inventory
TOC/TMC	<ul style="list-style-type: none"> Monitors and controls traffic and the road network Collects and processes freeway system data, combines it with other operational and control data, synthesizes it to produce “information” Distributes information to stakeholders such as the media, other agencies and traveling public Monitors freeway operations and initiates control strategies Agencies also coordinate their responses to traffic conditions and incidents through the TOC/TMC Different hours of operation and staffing shifts Typically the central point for weather data 	<ul style="list-style-type: none"> Organized regional TOC/TMCs in each of the states Caltrans District 3 TMC in Sacramento Caltrans Winter Operations Center in Kingvale NDOT D2 Regional Operations Center in Reno/Sparks NDOT D3 Regional Operations Center in Elko UDOT TMC in Salt Lake City (includes weather/on-site meteorologists) WYDOT Operations Center in Cheyenne

Table 1 – Coalition Tools and Technologies

Component	Description	Inventory
Reporting Systems	<ul style="list-style-type: none"> • Systems for facilitating real-time electronic reporting of surface transportation incidents and data to a central location • Different systems collect different information (i.e. traffic and public safety) and are beneficial to integrate • Typically provide the database that supplies automated information into the different 511/traveler information tools for each state or region • Not all reporting systems for Coalition states are standards-based systems for interoperability 	<ul style="list-style-type: none"> • Caltrans Highway Information Network (CHIN) (www.dot.ca.gov/hq/roadinfo) • Nevada statewide traffic and road closure information system available provided by Meridian at www.safetravelusa.com/nv • Nevada Highway Patrol road incident information for the state is located at www.nvdpspub.gov/nhp/roadhazard.aspx • Utah Commuterlink is the statewide resource at www.utahcommuterlink.com • Wyoming Condition Acquisition Reporting System (CARS) (by Meridian) which is non-proprietary and standards-based
Closed Circuit Television (CCTV)	<ul style="list-style-type: none"> • Typically distributed along the urban roadways, passes, and state borders to monitor and control traffic • Used by maintenance and law enforcement personnel to assess roadway conditions on the roadway without physically being at the location • Most prevalent within the urban areas of the states to monitor congestion and incidents • They are important traveler information tools for sharing video images with motorists and freight travelers 	<ul style="list-style-type: none"> • All four states have strategically placed CCTV cameras on I-80 to assist in monitoring incidents related to severe weather in mountainous and remote areas (see infrastructure maps for existing locations) • Operated and controlled by the operations centers in each state • Some CCTVs have been deployed on RWIS along the corridor
Dynamic Message Signs (DMS)	<ul style="list-style-type: none"> • Used to display relevant information about the roads for the traveler such as conditions, dynamic travel times, road closures, and special event details • Typically are placed at closer intervals in urban areas than in rural areas due to limited access points and communications/power to locations • Centralized communications (via fiber, wireless, or telephone leased lines) back to an operations center for control/management 	<ul style="list-style-type: none"> • Used by each Coalition state in urban and rural areas (see infrastructure maps for existing locations) • Caltrans has deployed shared use DMS in Nevada near the state line for westbound traffic • Utah has installed shared use DMS in Nevada near the state line for eastbound traffic
Highway Advisory Radio (HAR)	<ul style="list-style-type: none"> • Low-powered radio transmitter licensed for state use in the AM frequency • Transmit traveler information in short, pre-recorded messages that alert drivers of severe weather conditions, construction, incidents, or congestion • Beneficial for freight community for access to traveler information about road currently traveling • Typically used in rural areas more than urban areas because of the availability of other more direct traveler information tools in urban areas to convey the same information, such as DMS 	<ul style="list-style-type: none"> • Used by each Coalition state (see infrastructure maps for existing locations) • Caltrans operates one HAR in Nevada for westbound I-80 travelers • Utah has a number of HAR transmitters along the rural segments of I-80 • Wyoming has deployed HAR in proximity to and in the direction of state lines

Table 1 – Coalition Tools and Technologies

Component	Description	Inventory
Communications Media	<ul style="list-style-type: none"> • Method of directly linking a device or a center with another device or center for data transfer • Comes in a variety of media including fiber, wireless, telephone, copper, and radio • Each method has pros and cons and is utilized based on the availability of resources in the area to support its use (i.e. fiber requires proximity to connection, wireless requires strong line of sight, telephone and radio can be more rural in application) 	<ul style="list-style-type: none"> • Extensive fiber networks are mostly found in the larger urban areas within the corridor • Wireless options typically used to communicate with devices in rural areas • Where commercial cellular service is unavailable or spotty at best in some rural areas, this is where telephone communications are used for ITS devices • Radio communication is available at the 150, 960, and 800 MHz frequencies
511	<ul style="list-style-type: none"> • Provides route-specific road condition reports and travel forecasts • Weather information for 511 is provided on a segment-by-segment basis and is focused on the travel impact of weather conditions • Information is typically pulled from statewide or regional databases that collect data to compile and disseminate as traveler information • Winter road conditions on highways and weather forecasts are typically the most requested information items on 511 networks in states that have winter storms • 511 can be provided through a phone service, website, or mobile phone capabilities 	<ul style="list-style-type: none"> • Each state operates a unique 511 phone and web traveler information service: <ul style="list-style-type: none"> ○ California – 511 and www.sacregion511.org – real-time traffic provided by BeatTheTraffic.com, live traffic camera images, road conditions from CHIN, highway patrol traffic incident information, planned road work from CHIN, weather from National Weather Service ○ Nevada – 511 and www.safetravelusa.com/nv – offered by Meridian ○ Utah – 511, www.utahcommuterlink.com, and mobile phone format ○ Wyoming – 511 and www.wyroad.info – offered by Meridian
Other Traveler Information Tools	<ul style="list-style-type: none"> • These can include, SMS/emails, in-vehicle devices, kiosks, wireless hot spots or media • Information should not conflict with 511 reports but should be summarizing them or relaying them • Weather forecast services can be provided 	<ul style="list-style-type: none"> • NDOT has an email notification list for internal subscriber traveler information • WYDOT has a text/email subscription service for traveler information blasts available to the public
Maintenance Decision Support System	<ul style="list-style-type: none"> • Decision support software tool that provides winter maintenance managers with recommended road treatment strategies • Used for strategic planning 12-48 hours in advance of a storm or during a storm in the 0-12 hour timeframe • Can provide two-way communication links between maintenance supervisors and trucks using mobile communication and AVL technology • Generates treatment quantities, timing, and personnel recommendations based on predicted pavement temperature/condition, weather impacts, frost potential, and blowing snow potential 	<ul style="list-style-type: none"> • California was part of the initial MDSS Pooled Fund Study in 2002 to develop a customized MDSS for their agency • Wyoming was included in the MDSS Pooled Fund Study in 2007 • Coalition states are not actively using MDSS technologies to carry out maintenance activities on I-80

Table 1 – Coalition Tools and Technologies

Component	Description	Inventory
Automated Vehicle Location	<ul style="list-style-type: none"> • Provides vehicle location to operating agency • Can be used to calculate travel times and alert of slowed conditions (although not typically used for maintenance vehicle applications) • Typical deployments on public safety vehicles, maintenance vehicles, and fleet vehicles • May require partnership with fleet management companies for collection of travel information along I-80 from fleet perspective 	<ul style="list-style-type: none"> • California has equipped snow plows with GPS antennas • No other Coalition states have equipped snow plows with AVL equipment
Automated Closure Gates	<ul style="list-style-type: none"> • Provides automatic closure of roadway from a centralized operations center • Also provides remote control and manual options for closing in the event that communications to operations center is hindered 	<ul style="list-style-type: none"> • WYDOT is working toward automating their closure gates from the WYDOT Operations Center in Cheyenne
Automated Anti-Icing / Deicing Systems	<ul style="list-style-type: none"> • Anti-icing involves pre-treating a road before the freezing weather or storm arrives • Anti-icing can be more effective when coupled with an RWIS station to identify and verify when the system needs to be used • Two types of application systems: mobile application mounted on truck, or fixed application systems installed into the roadway • Deicing methods generally involve the use of chemicals to speed the melting process after snow pack or ice has formed on a road 	<ul style="list-style-type: none"> • No Coalition states have indicated the use of anti-icing/deicing systems on I-80
RWIS and ESS	<ul style="list-style-type: none"> • ESS is a roadway location with one or more fixed sensors measuring atmospheric, pavement and/or water level conditions • ESS are typically deployed as field components of RWIS • Data collected from environmental sensors are stored onsite in a remote processing unit that is connected to a center for data transfer 	<ul style="list-style-type: none"> • All Coalition states have RWIS deployed throughout I-80 • Some RWIS have been equipped with CCTV cameras for visibility verification
Clarus Initiative Involvement	<ul style="list-style-type: none"> • Goal is to create a National surface transportation weather observing and forecasting system through the creation of partnerships between transportation and weather agencies • Strives to place all regional/nationwide collection of all state-funded transportation-related observations into a single database 	<ul style="list-style-type: none"> • All Coalition states are involved in the <i>Clarus</i> Initiative
IntelliDrive SM technologies	<ul style="list-style-type: none"> • A suite of technologies and applications that use wireless communications to provide connectivity that can deliver transformational safety, mobility, and environmental improvements in surface transportation • Provides connectivity with and among vehicles, between vehicles and the roadway infrastructure 	<ul style="list-style-type: none"> • Coalition states have not yet deployed IntelliDriveSM technologies. • Per JPO strategic plan, USDOT is focusing approx. \$4.5M to research IntelliDrive road weather focused apps.

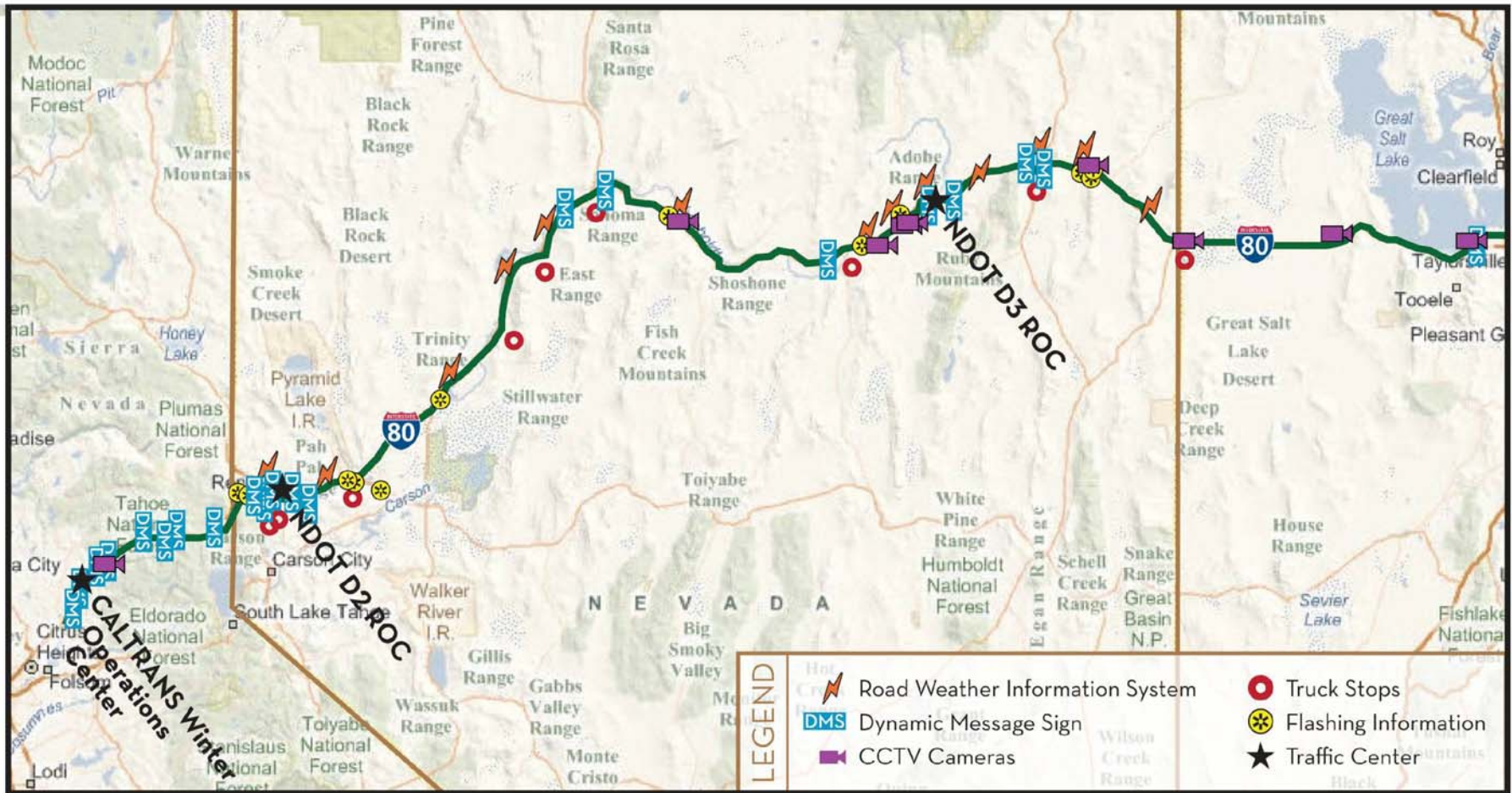


Figure 1 – California and Nevada Infrastructure

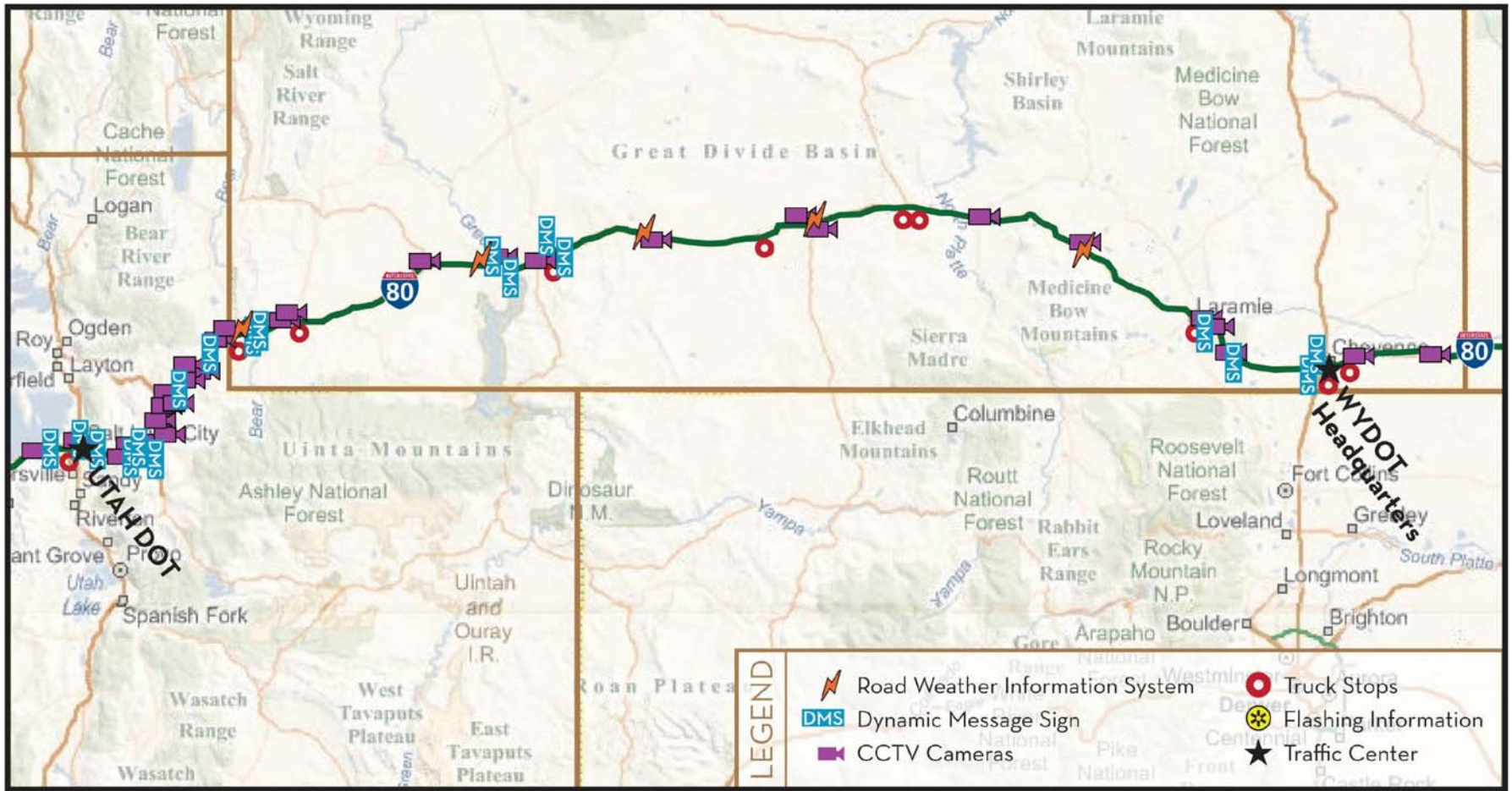


Figure 2 – Utah and Wyoming Infrastructure

2. FOCUS AREAS AND GUIDANCE FOR COALITION

The purpose of this strategic plan is to define the direction and objectives of the Coalition that will be achieved through individual activities captured by the annual action plan. Typically with planning activities, the vision and goals that are established remain constant throughout a program. However, the actual projects and individual activities that it takes to achieve those goals may change with the funding availability, championing of the project, feasibility of implementation, and other factors that could change on an annual basis or even within a year. Coalition states met in January, 2010 at an initial Coalition workshop to discuss the primary issues, problems, needs and concerns for moving in a coordinated and integrated direction. The discussions originated in the topics of traffic operations and maintenance. Other topic areas emerged as potential focus areas for the Coalition such as freight and traveler information.

This section provides insight into the priorities of Coalition states when managing and maintaining I-80 for travelers, particularly during winter conditions, but extending throughout the year as well.

2.1 Priorities/Needs

The process of extracting needs of the I-80 Coalition is through interviews, surveys, strategic planning meetings, workshops, and document review. Issues, problems, and needs may relate to traffic operations, weather, traveler information, or other matters. All of the states in the corridor experience severe winter weather conditions. During severe weather, each of the states struggle with similar issues related to providing traveler information or maintaining road conditions.

The following needs are categorized into functional areas that have emerged as priorities for Coalition states:

Traffic Operations/TMCs

- Traffic management operations during winter conditions.
- Regional truck parking coordination during ice and snow events.
- TMC integration, coordination, and sharing information between states.
- Consistent level of service and weather and road condition descriptors.
- Communication between states' TMCs and maintenance divisions to support traffic activities.
- Need to share information on best practices, new technologies, etc. among Coalition members.

Infrastructure/Communications

- Adequate coverage of traffic in rural areas and robust coverage in urban areas.
- Efficient use of ITS device data and potentially shared use.

Performance Measures

- Data collection method and archiving.
- Performance measures and monitoring using data to show progress and justify concerns.

Traveler Information

- Expand methods to disseminate information efficiently and effectively to travelers.
- Consistent content guidelines for traveler information.
- Available traveler or road closure information for the corridor across county, state, and district boundaries.

Weather Forecasting

- Coordination between states from a weather perspective before a storm hits.
- Forecast data inputs to operations/maintenance decisions.
- Leverage existing weather programs.
- Better weather and database integration for winter operations and management.

Maintenance Support and Equipment

- Distribute the impact of trucks and traveler information available to trucks on I-80 across the states.
- Operational understanding of neighbor states maintenance activities.
- Communication between states' TMCs and maintenance divisions to support maintenance activities.

Freight

- Communication with trucking industry and travelers.
- Traveler information specific to freight community, and need to have a better understanding of freight-specific needs and issues.
- Targeted surveys of corridor users, with emphasis on freight community.

Staffing/Training

- Direct communications process established between all states.
- Retention of experienced staff and proper training to support operations and maintenance.

These issues, problems and needs represent areas of opportunity through which the I-80 Coalition states can focus their efforts for improved cross-border data sharing and collaboration. Ultimately, these issues, problems, and needs will set the strategic direction for the I-80 Coalition effort.

2.2 Coalition Direction

The objective of more integrated and coordinated winter operations (that can extend through the rest of the years) between states remains intact regardless of the formality of this Coalition. The strategic vision for developing this Coalition and sustaining its purpose is mapped in terms of “Initial Coordination” and “Formalization and Moving Ahead”. The near term focus of the Coalition is to continue independent state initiatives but share information and results to build an understanding of what each states successes/achievements are and to warrant other states of the Coalition to look into implementing similar successes. In due time, formalization of the Coalition will become a reality and this is where structure, rules and activities of the Coalition are formed and collaborative projects become the implementation strategies for each year’s action plan. **Figure 3** below depicts the progress for the Coalition from the onset of cooperation through formalization and continuing into the future.

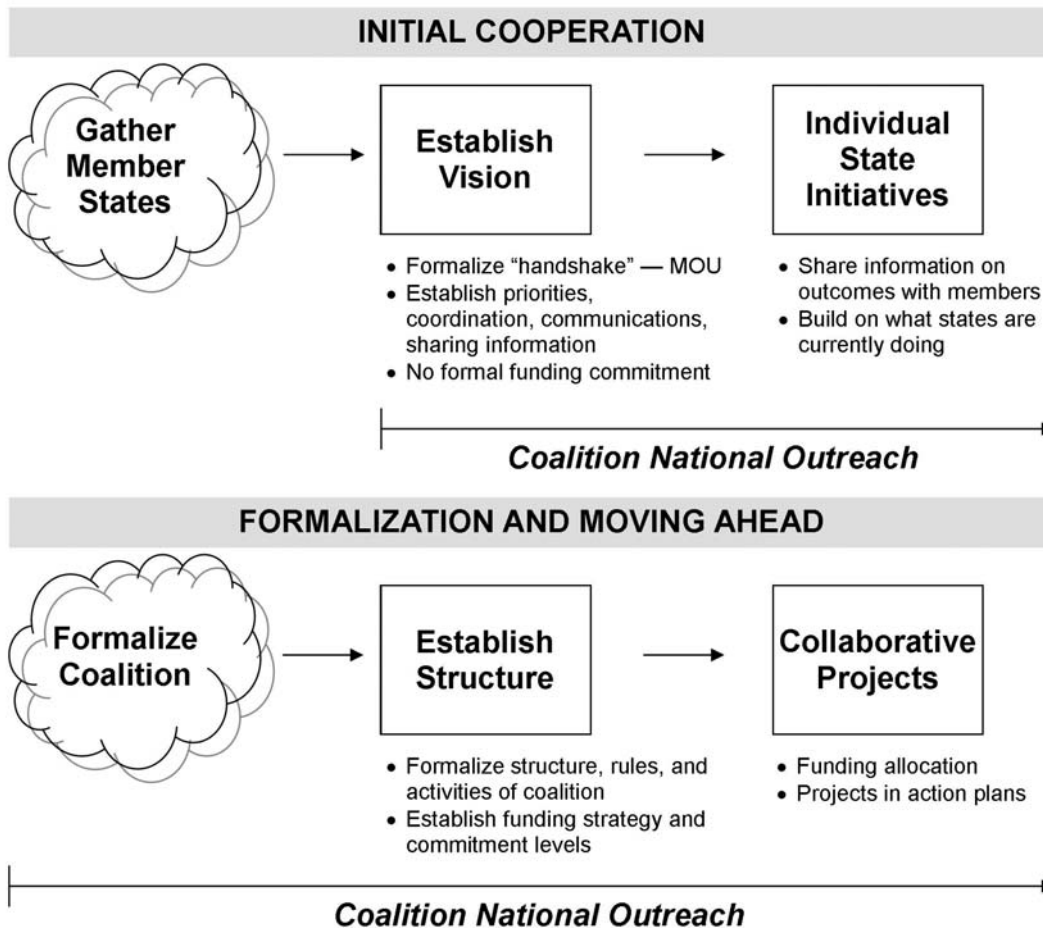


Figure 3 – I-80 Coalition Building Process

There are actions identified in this section that require consensus between states and are necessary for the success of building this Coalition into a nationally-recognized and federally-supported program. Outreach to promote Coalition purpose and objectives from the beginning of the coordination between states is necessary. Publicizing the value and success of the Coalition can be a challenging task. Implementing outreach efforts beyond Coalition states to promote project impacts will be important to leverage opportunities for attendance at conferences, working groups, and national committees to present and inform others about this Coalition. Materials prepared for the Coalition will also be distributed to key organizations and agencies to keep up the education on Coalition activities and progress. Opportunities for federal acknowledgement need to be carefully strategized to more Coalition progress forward. Coalition national outreach has been identified as a key task carrying from the informal “handshake” between states and continues through formalization of the Coalition and into the later years of the program.

2.2.1 Initial Cooperation

The following outline actions that should be ongoing for the Coalition, but are initial focuses prior to formalization:

- ***Incorporate individual state projects funded separately from Coalition in activities published for Coalition purposes.*** There are many processes, programs, communications, and projects that are performed on a state-by-state basis as funding

becomes available or is completed internally that could benefit each state. Coalition states have found value in publishing the results of projects or overviews of programs that are new or existing in each state that would benefit the other states in the Coalition. Leveraging the successes and lessons learned from other states helps to streamline the implementation and operations of the programs that are desired from one state to another. These individual state and regional projects are important to include in the strategic direction of this Coalition because there will continue to be opportunities for states to initiate projects outside of the Coalition that could address some needs of the Coalition.

- ***Leverage other pooled fund studies, multi-state projects, and working groups for useful results/benefits information to benefit Coalition objectives.*** There are a number of existing Coalitions and multi-state consortiums (such as Aurora and Clear Roads) that have completed research and development activities, projects and studies for their purposes. Clear Roads in specific has completed activities in the maintenance equipment and testing of new products/technologies. Leveraging the results and information gathered as a result of those projects that can apply to the I-80 Coalition's objectives is an efficient use of available resources and potentially could save the Coalition states funding for other new areas of research.
- ***Enhance and maintain the I-80 Coalition website.*** The Coalition website is a useful resource for Coalition activities but can be enhanced to include real-time information for the corridor to support the Coalition's objective for multi-state information sharing. More integrated I-80 Coalition website to include traveler information site that provides closure, road condition, weather, and other segment-specific data for use by agencies, public, and freight.

2.2.2 Formalization and Moving Ahead

The following outline actions that should be ongoing for the Coalition, but are focuses that are added to the states' responsibilities once formalization occurs and member states have clear direction and commitment:

- ***Formalize Coalition structure and terms.*** Formalization of charter involvement secures the championing of objectives and sets the strategic plan in motion. It is recommended that a *Memorandum of Understanding of State Involvement* be developed and signed by states in the beginning of Coalition activities. This memorandum should be developed regardless of other formalities listed below being established to be able to show a history of cooperation of states that will be useful in applying for federal funding once the Coalition is qualified for federal funding. Components of the Coalition that are recommended to be formalized once determined by states to do so include:
 - Organization charter;
 - Operating rules;
 - Steering committee;
 - Working committee/s;
 - Project championing requirements;
 - Voting procedures;
 - Roles and responsibilities;
 - Funding requirements of members; and
 - Project champions.

- ***Incorporate joint projects funded by Coalition or joint funding pools.*** There is great benefit to addressing the priorities of multiple states by creating larger multi-state projects that have the same outcome and benefit for all Coalition states. Funding streams may or may not be the determining factor in developing these projects. Infrastructure or system projects may require the addition of federal funding through a formal Coalition process whereas process or integration projects may be able to be completed through state and local funding where applicable. It is important that joint projects are recommended to implement larger projects that will impact a broader range of users and travelers.
- ***Open membership of Coalition up to interested parties.*** Members of the Coalition initially are the four I-80 western states. The corridor may have additional stakeholders interested in being part of the Coalition including other I-80 states moving toward the east, private sector data providers, fleet management agencies, transportation consultants, and potentially neighboring states that see value in integration due to proximity to I-80. As the Coalition formalizes and expands the opportunity for membership to other interested parties, the Coalition should consider different levels of membership to reflect differences in voting rights, project involvement, funding requirements, etc. A diverse membership could bring new perspectives and opportunities to the table and should be encouraged through controlled expansion by existing Coalition states.
- ***Maintain a management consultant for Coalition administration.*** The management consultant needs to have knowledge and understanding of Coalition issues and a strong understanding of national best practices, trends and programs to help guide objectives and projects developed for the Coalition. While some of the projects and studies resulting from Coalition action planning can be performed by this management consultant, it is important to develop Coalition activities through more than one perspective. There is no need to change management consultants in a specific time period, unless the consultant is moving the Coalition in a direction different from this strategic plan and/or warrants a change for another unsatisfactory reason determined by Coalition states.

3. ONGOING COLLABORATION

Continued collaboration and information exchange will help to maintain involvement in Coalition activities from member states and champions. The strategies for ongoing collaboration can be relatively low cost and can be structured to facilitate specific information exchange between member states. Strategies include:

- ***Coalition Conference*** – A Coalition Conference is envisioned to be held annually and is recommended in the fall of each year in advance of the upcoming winter season. The location might vary from year to year. All Coalition members are invited to attend the annual Coalition Conference. The conference is a two-day event where all Coalition members can meet to discuss topics pertinent to the advancement of the Coalition. These Coalition Conferences provide a venue for face-to-face collaboration and preparation for the upcoming winter months.
- ***Joint Quarterly Meetings*** – Joint quarterly meetings will be held (in the second, third and fourth quarters) for the Coalition initially. When Committees formalize, these joint quarterly meetings will be conducted for each Committee rather than in one large Coalition group. These meetings are expected to last one day, and contain more in-depth discussions on budgets, projects, and strategic planning. It is recommended that joint quarterly meetings utilize live web conference or webinar media to be able to share recent project implementation details, recent activities, planned activities, and opportunities for collaboration between member states.
- ***Interim Meetings*** – Interim meetings can be held between quarterly meetings. These meetings can be via teleconference, webinars or live web conference meetings. Interim meetings can be scheduled by chair-persons of the Committees once formalized and should be scheduled when issues arise that cannot wait for discussion at the next quarterly meeting. Scenarios that would satisfy this requirement include new funding coming available that has to be spent quickly, a new technology is being developed and the vendor is looking for a pilot project, or discussions relating to the agenda or preparation of the Coalition Conference or quarterly meetings.

These face-to-face, teleconference, live web conference, and webinar meetings offer member states regular opportunities to continue to collaborate and share information that would be beneficial to the Coalition. These meetings will be very important in the initial stages of this Coalition prior to formalization of Committees and structure. As the Coalition matures, these meetings provide an update between annual Coalition Conferences that helps to hold champions accountable for progress and the Coalition as a whole accountable for working toward achieving their objectives.

4. PROJECT DEVELOPMENT PROCESS

Coalition states ability to collaborate and work together to achieve their common objectives is accomplished through a variety of methods. Sharing information between states on existing and developing programs is an important step in maintaining relationships and focus on Coalition objectives. Partnering and coordination on processes and operational strategies between states can facilitate better traffic and maintenance management through easy to implement solutions. There are also projects and implementable solutions that can be completed to address specific needs and issues in the corridor. While some of the sharing and coordination can be done on an ongoing basis between states, projects that may require funding sources (minimal or extensive) can be a challenge to implement particularly when the project spans two or more states in scope. This section provides guidance to streamline and focus project development to minimize challenges in coordination for multiple states' benefit.

The annual action plans will specifically outline what actions need to take place, parties involved, responsibilities for each party, funding requirements and timeline for completion in order to expedite and facilitate activity in support of Coalition objectives. This strategic plan establishes a process for project development that will enhance deployment efforts in the corridor. The I-80 Coalition annual action plans outline a roadmap of deployment activities for each year directed towards achieving a corridor-wide vision. The selection and funding of deployment projects along the corridor for each year's work plan development requires potentially a long-term commitment to operations and maintenance from multiple states. It is recommended that a formal selection process be followed to select projects and commit funding. In order to complete the annual work plan, the I-80 Coalition committees will need to identify projects, prioritize, and select those projects to fund each year.

There are two categories of projects for the purposes of this Coalition:

- **Individual state projects** – These include individual state initiatives that are designed, funded, and implemented within the state boundaries but whose results and lessons learned could benefit the Coalition as a whole. Individual projects that the Coalition states perform or implement will be included in the action plans created on an annual basis. These independent activities are included with Coalition objectives in mind and may generally implement operational strategies that require less funding from a Coalition-perspective than multi-state multi-year projects. The first action plan will include the first two years of projects that the Coalition will work toward.
- **Multi-state projects** – These include projects that have multi-state design requirements, multi-state funding requirements, and implementation in multiple state boundaries. Projects identified in the third year and beyond will begin to include joint projects between states and coordinated funding projects typically larger in scope and outreach. Joint projects and coordinated funding will more appropriately be recommended when the Coalition structure formalizes and moves toward national pooled fund or federal processes for combining resources between states.

This section presents guidelines for how to develop a project idea, establish project prioritization to be incorporated into the annual action plan, obtain funding for the project, and implement the project.

4.1 Project Identification

Projects can be developed by members of the Coalition as representatives of their states to include individual projects that are not requesting Coalition funding as well as multi-state projects that are requesting Coalition funding. It will be important in the beginning stages of the Coalition to document individual state projects that may or may not request Coalition funding to show commitment to sharing project results and benefits with other states.

Ultimately, the Coalition would be looking at developing multi-state projects to benefit multiple states. Projects will likely be solicited and developed in conjunction with the annual workshop in order to include the projects in the annual action plans.

The Coalition member states are recommended to develop projects in the areas of:

- Traffic Operations/TMCs;
- Infrastructure/Communications;
- Performance Measures;
- Traveler Information;
- Weather Forecasting;
- Maintenance Support and Equipment;
- Freight; and
- Staffing/Training.

There is essentially no limit to the type of project that could be suggested for inclusion in the annual Coalition action plan, except within the reasoning of how much the project may cost, where funding is anticipated to be pulled from, and how feasible the project is to be implemented within that year. These may be projects that require feasibility studies, research best practices, implementing existing software or systems into a new area, developing an entirely new system, or installing/constructing infrastructure to benefit the Coalition. Project ideas will be submitted to the Coalition committees for consideration and it will ultimately be the Coalition member states that vote on the projects that will be included in each year's annual action plan.

It is recommended for the Coalition to develop a proposed project idea form to standardize the method of proposing a project idea to the group. There is potentially more thorough project information requirements for federal funding that should be incorporated into this project idea form when the Coalition is more formalized as a pooled fund or integrated program. The basic information that should be included in a project idea form is:

- Project title;
- Brief description of project;
- Objectives of project;
- Anticipated initiation year and timeline for project;
- Recommended project manager/champion;
- Stakeholders/agencies to involve in development and implementation of project;
- Total project costs;
- Amount requested for Coalition funding;
- Other project costs that will be handled/requested by other funding opportunities (grants, state funding, private); and
- Submittal person contact information (name, title, agency, address, phone, email).

Individual states may have opportunities for leveraging deployments within their own state and may suggest a Coalition project that they feel would be timely and opportunistic for deployment in a multi-state concept.

The management consultant and Coalition committees should work together to identify federal funding opportunities that could require project concepts or proposals. Federal funding opportunities might be received in specific functional areas and also the Coalition might be able to receive one-time or ongoing federal grants for deployments if solicitations are pursued. The

Coalition should develop a list of potential projects that would most likely require federal funding to implement to have on hand when federal funding opportunities arise.

The annual action plan process should involve the assembly of all the candidate deployment projects and circulation to member states at least one week in advance of any prioritization or voting efforts.

4.2 Project Selection and Funding Commitments

It is anticipated that I-80 Coalition states will vote and rank deployment projects during the annual action plan development process, and it is important to consider the following elements in deployment plan selection:

- The anticipated benefits to the overall corridor.
- The funding availability for development and deployment.
- The extent to which the project is compatible with the corridor vision and concept of operations.
- The timeliness of the project (is it timely for deployment immediately).

Another factor that should be considered in the deployment selection process is any additional funds that member states would be willing to commit to the project, above and beyond the annual contribution to the I-80 Coalition that will enable project completion. Given the above considerations, it is recommended that Coalition complete a project ranking and voting sheet when selecting deployment projects for inclusion in the annual action plan. Items for voting on a scale from 1-10 should include, but not be limited to:

- Anticipated benefits to corridor;
- Implementation effort;
- Funding availability;
- Compatibility with vision and direction;
- Partnerships established; and
- Timeliness of project.

The nature of multi-state projects most likely will require both development, operational, and maintenance resources. These resources may be funding requirements or staff time for such things as information management, equipment maintenance, or quality control. Because of the critical factor that resource commitments will play in North/West Passage deployment projects, it is recommended that each project selected include a funding and resource allocation plan when documented in the annual work plan. This plan should identify the anticipated resource needs, define the approach for meeting the resource needs, and describe the commitment (either formal or informal) from each member state to address the resource needs.

4.3 Project Implementation Stages

For those deployment projects approved and funded by the I-80 Coalition, it is recommended that a second stage of project development be performed to develop a preliminary design for the project. A formal preliminary design phase is recommended for every corridor deployment project.

The preliminary design phase will typically involve the Coalition project manager/champion from one or more states, contributing to (or reacting to) the design as it develops.

The development stage of project development may either involve the Coalition state members, or in many situations, it may be more appropriate to involve representatives from the member states who work more closely with maintenance activities or traveler information activities or other technical roles.

The operations and maintenance stage of project development will almost certainly rely heavily on other individuals inside participating I-80 Coalition states beyond the actual members. For example, if an ongoing operation involves in-field equipment maintenance, maintenance will likely be performed by the maintenance personnel of the state hosting the equipment. However, the funding for such operations support may come from the Coalition as decided by member states.

4.4 Utilization of Coalition Website

All project information from Coalition activities should be posted on the website. It is also recommended to post information already completed individually by member states that would be beneficial to other Coalition states. Include activities in safety, training, maintenance equipment, 511 enhancements, weather forecasting, infrastructure implementation, etc. Benefit-cost information could help other states initiate projects on an individual basis by being able to point to a neighboring best practice. Activities on performance measures should also be included in the information provided on the website for Coalition states to leverage.

5. FUNDING

Funding may not be a reality from a federal level – therefore Coalition states need to drive the objectives forward through alternative options and potentially smaller individual projects initially. If Coalition states can provide individual state funds to support Coalition objectives, federal funding may become a more realistic opportunity. The strategic plan helps to guide larger projects if federal funding or grant opportunities arise. The Coalition needs to be creative in funding Coalition projects, both initially and longer term. Some options for funding consideration include:

- ***SP&R Funds*** – Each state is allocated State Planning & Research Program funds which support programs that anticipate and addresses transportation concerns before they become critical problems. High priority is typically given to applied research on state or regional problems, transfer of technology from researcher to user, and research for setting standards and specifications. This funding can be reallocated within a current fiscal year or allocated for future funding years by each state.
- ***STP*** – Surface Transportation Program federal funds is flexible funding for projects on any Federal-aid highway. This funding source requires a 20% local match.
- ***National Highway System Program*** – Federal funding that is flexible funding for improvements to rural and urban roads on the national highway system. This funding source requires a 20% local match.
- ***CMAQ*** – Federal funding to support enhanced operations and reducing transportation-related emissions. This funding must be directly tied to air quality. CMAQ funding comes to states every year based on the statewide transportation program and can be assigned to support projects included in that statewide program.
- ***Interstate Maintenance*** – Federal funding provided to each state and each state may transfer up to 50% of its Interstate Maintenance apportionment to the NHS, STP or CMAQ apportionment to support other projects and programs.
- ***State ITS Funding*** – Each state has an established ITS program which is allocated ITS funds each year. Some ITS funding may be discretionary funding and may be able to be reallocated to support Coalition funding for projects in the annual action plan. State should leverage opportunities such as this for state funding to support Coalition projects.
- ***FHWA Pooled Fund Studies*** – The Federal Highway Administration (FHWA) sponsors the Transportation Pooled Fund Program as a means for interested States, FHWA, and other organizations to partner when significant or widespread interest is shown in solving transportation-related problems. Partners may pool funds and other resources to solve these problems through research, planning, and technology transfer activities. There are qualifications to meet to be a pooled fund study.
- ***FHWA General Program Funding*** – FHWA provides funding to specific projects or programs to better the surface transportation system throughout the country. These funds can come in the form of grants, earmarks, discretionary programs, research opportunities, and other methods to support individual project focus areas that the Coalition could tap into to further their own objectives. The management consultant and Coalition committees should work together to identify federal funding opportunities that could require project concepts or proposals. Federal funding opportunities might be received in specific functional areas and the Coalition might be able to receive one-time or ongoing federal grants for deployments if solicitations are pursued.

Near term, there is not a substantial funding commitment of states, beyond what they are already initiating internally to their state. There are many processes, programs, communications, and projects that are performed on a state-by-state basis that could benefit the other Coalition states. Benefit/cost analysis, testing, and implementation of equipment, systems, and programs completed as projects within

each state can be used by other states as a measure of effectiveness to determine if implementation in their own state is worthwhile. Procedural/process changes that can be modified quickly identified initially as project can be implemented with no or minimal funding (“low hanging fruit”).

If the coalition decides to proceed with organizing in a more formal way (such as in a Pooled Fund Study), this will require a financial commitment from each state. Typically this cost is \$25,000 per year and funds Coalition Conference attendance, administration of Coalition, and projects. If states see benefit in funding a project that extends beyond that funding commitment, each state can contribute more toward a specific project to be implemented. There is great benefit to addressing the priorities of multiple states by creating larger multi-state projects that have the same outcome and benefit for all Coalition states. An action plan of potential projects/high priority needs can provide the basis for responses to federal funding opportunities, research need statements, and to showcase the direction of Coalition activities in the future. Funding streams may or may not be the determining factor in developing these projects. Some projects can be accomplished in an incremental method; however, the Coalition should actively pursue grants and federal program funding on an annual basis to support as many Coalition projects as is feasible.

6. ACTION PLAN GUIDELINES

This section describes the components of the annual action plans. Actual action plans will be developed separate from strategic plan. The annual action plans will include:

- **Overview** – provides an overview of the Coalition activities to-date since the last annual action plan, the strategy employed to fund/support the projects outlined in the action plan, and the summary of projects provided in the plan.
- **Projects** – summary information for each project provided in example **Table 2** below.
- **Master Project List** – provides a running list of projects, potential champions, and anticipated cost that have been identified by the member states as important to achieving the Coalition objectives for potential inclusion into future action plans or could be implemented as part of new funding obligations made available. This is a living list of future projects where projects can be added, modified, or removed. Changes to the master project list from the last annual action plan are documented prior to each list to summarize and justify adds/moves/changes.

Table 2 – Project Form Used in Action Plan

Project Title	Title	
Project Champion	Person/Agency	
Project Description	Details about project to help develop scope	
Benefits to Coalition	How project will benefit Coalition objectives	
Current Status	What processes/steps have been completed to help implementation of the project – information that has already been collected, phases that have been completed, funding that has been identified	
Tasks and Major Milestones	Major task #1	Major milestone #1
	Major task #2	Major milestone #2
Schedule	Estimated length of time for project – could be by milestone or general timeframe	
Project Cost	\$ Estimated total project cost including planning, design, procurement, and construction (based on what project components are required)	
Funding	<i>Coalition Funding:</i>	\$ Funding requested from Coalition
	<i>State Funding:</i>	\$ Funding identified from individual states – by state if needed
	<i>Deficit:</i>	\$ Funding left to be identified
Project Contact Information	Name, title, agency, address, city/state/zip, phone email of contact person for project	
Other Information	Other information that would be important for the Coalition to understand prior to implementing the project	