North/West Passage Project 7.1
Summary Planning Document

March 2013

Introduction

This document summarizes how each state within the North/West Passage corridor approaches their planning for ITS projects. The intent of this document is to understand, at a high-level, how each state deploys ITS devices such that the North/West Passage pooled fund can appropriately demonstrate support for specific deployments that would benefit travel in the corridor. Information about the states' planning processes was gathered through a series of interviews and, in some cases, the exchange of documents. Interview participants were primarily the North/West Passage steering committee members who responded to the following questions.

1. How does your agency **know when and where** to deploy ITS?
2. How are ITS deployments **prioritized and planned**?
3. Who **leads ITS planning** in your agency?
4. How does your planning process **evaluate benefits and costs** of ITS deployments?
5. How are ITS deployments **funded** in your agency?
6. How does your planning process for ITS deployments allow for **coordination with other states**?

The states' detailed responses to these six questions are presented on the remaining pages of this document. In some cases, states also provided supporting materials for their responses and those are noted with hyperlinks to online sources or included within the appendix of this summary. Some of the most significant things to note collectively about the states' planning processes are:

- Every state approaches planning differently. Some have more formal processes than others. Some have statewide plans to guide larger scale deployments while others complete deployments within existing construction projects. In some cases a combination of both approaches is used. Planning is led by regions in some states and by headquarters in others.
- With the exception of one state, none of the others conduct benefit/cost analyses with any kind of regularity or formal structure.
- A few of the states have experience coordinating projects with others but none of the states have formal steps in their process to actively do it. More importantly, none of the states are prohibited from coordinating projects with other states.
- All of the states agree that the North/West Passage should continue to identify deployment projects that address a corridor need, but the group's role should focus on clearly articulating the corridor need for specific projects so that it can be included as an additional consideration in states' planning processes.

The information summarized in in this document is primarily intended to help North/West Passage understand how – as a pooled fund – it may further influence future ITS deployments in the corridor. It may also be used by the states individually to understand how their peers are planning ITS projects and consider potential changes their own planning processes.

1. Know When and Where	
Washington	There are six regions within the state and some have structured criteria (e.g. crash/congestion analysis in Tacoma) for identifying ITS needs. Other regions are less formal in their identification of needs (e.g. traffic engineer knows where problems are).
Idaho	Idaho Statewide ITS Strategic Plan Update has been updated twice since 2001. Plan is updated about every five years and although it sets a framework, projects are not restricted by it. ITD originally planned DMS/HAR/CCTV projects centrally but now many are being pushed to districts. RWIS has been expanded and is currently designated as a higher priority among ITS deployments. The performance tie to RWIS data has influenced its current priority.
Montana	MDT has an informal process. They previously had an ITS group/steering committee but it never really took off. ITS is also becoming more prevalent in mainstream construction projects – they're actively thinking about and considering it in projects. ITS is desirable on many projects but there is limited guidance/criteria on selection. Maintenance related deployments have become more structured. Headquarters works more closely with staff on maintenance reviews to better understand needs. MDT has a prioritization for RWIS and CCTV[1] that is reviewed annually. They are focusing on use/standard operating procedures, safety and maintenance problems (e.g. drifting/blow overs in Livingston, wind gauge deployment assessed and deployed).
Wyoming	WYDOT deploys devices based on safety concerns and traffic demands. Much of this is coordinated between the district and the ITS group along with other programs such as Telecom. For the most part, the department's project development processes are followed but recently LiveView has been used to shortcut and reduce the cost of camera deployments. Deployments are primarily done at locations where there are safety concerns after other mitigation strategies (e.g. slope changes, miles of snow fence) are considered. Some cameras have also been deployed at locations that benefit maintenance operations efficiency vs. safety. Deployments are coordinated from headquarters with input from districts (e.g. VSL deployment was requested by District 5 and designed by the headquarters GIS and ITS Program staff).
North Dakota	Projects have occasionally been identified through safety plan (occasional). Ten emphasis areas offer priority for deployments – DMS is currently emphasized through 2019. They have also used recurring closures, Amber Alerts and storage as initial criteria for locating DMS (similar for CCTV, plus operational issues for remote viewing). ESS deployments are based on operational needs (e.g. turnaround points).
South Dakota	Many things have influenced deployments. In the late 90s a South Dakota Rural ITS Deployment Plan was developed to guide projects. SDDOT also has a rural ITS architecture. Many deployments have still been opportunistic. RWIS were early deployments and driven by winter maintenance. DMS came next for Interstates and were still driven a lot by winter maintenance (e.g., many were placed where travelers could actually get off the interstate and find refuge). #SAFE came a bit more accidentally with an earmark for SD to find a way to get information out to cell phones. CCTV is now growing in popularity among travelers and SDDOT is filling in gaps around the state based on that.
Minnesota	In the early days of ITS, deployments were initiated more by the Central Office ITS Section. Safety, traffic, emergency response, maintenance and operational "tails" criteria were often used to generate deployment interest from the districts (e.g. TOCC deployment plans and ITS scoping studies). ITS deployments have since become incorporated into more routine operational activities – all of which are influenced by things like the Strategic Highway Safety Plan, Twin Cities congestion report, construction projects and district traffic/maintenance staff. The ITS Section also maintains an ITS Design Manual that offers an overview of various devices and, where available, warrants guidance for deployment.
Wisconsin	Wisconsin Traffic Operations Infrastructure Plan (TOIP) has 10 metrics across mobility, safety and growth to guide ITS deployments. These are re-evaluated biannually across the same corridors used in the long range plans, resulting in a ranking of priority and emerging priority corridors. Individual deployments are primarily done at the regional level (WisDOT has five regions) and only in conjunction with construction projects.

[1] MT RWIS CAM REQUEST 2011 2012 (Example). Example for RWIS and camera requests for 2011-12 is included in appendix for further reference.

2. Planning and Prioritizing (Programming)	
Washington	Projects are submitted by regions and prioritized by ITS Operations assessing the projects' contribution to select measures.[2] Projects are typically less than $1M. ITS Operations helps determine when projects should be done, especially those of statewide significance. Overall capital program is managed centrally by planning and programming staff at headquarters based on project identified by regions. Headquarters scrutinizes project contents to determine if projects are on statewide or other needs lists. ITS Operations has a comprehensive statewide ITS plan to work from.
Idaho	Projects are proposed through annual STIP update; fits into 5-year cycle but projects can be adjusted according to funding availability; FHWA division is now requiring a systems engineering analysis[3] for each project that describes how it fits within the ITS architecture, a concept of operations, relevant requirements, alternatives analyzed, procurement options, and O&M considerations.
Montana	Once priorities are identified through construction and maintenance, the Systems Section for Maintenance and Traveler Information reviews them with bureau chief for input on connectivity/big picture view. They also look at other issues that influence operations (e.g. current RWIS software will be obsolete by 2014 and there is a more global cost associated with changing it). MDT is also developing a strategic plan for traveler information to understand long-term needs.
Wyoming	Deployments are largely based on the requests from the districts. Deployments are aligned quite a bit with the department safety plan but are still individually completed.
North Dakota	DMS, RWIS and CCTV are in statewide plans and devices are also being deployed on a project level basis through districts. Needs are identified and programmed on an annual basis. NDDOT also has a regional and statewide ITS architecture that serves as a framework for ITS planning, project development and implementation. They have published a user's guide for Systems Engineering and Regional ITS Architecture for ITS Projects that identifies what activities need to be performed at different phases of an ITS project and by whom.
South Dakota	Original deployment plan was more focused but planning has evolved into a process driven by operational needs. For example, when designers are looking at a project on I-90, they looked at crash rates and noticed more in one direction vs. other during winter – not sure why. Starting to look at ITS as a legitimate tool for solving problems like this and ITS is being naturally folded into other DOT work rather than being planned separately. Deployments are being planned more through construction projects but there is still a need for going through exercises to look at deployments (e.g., DMS, CCTV) from a statewide perspective.
Minnesota	Much of the current deployment occurs through routine construction projects where safety, congestion or other operational issues can be addressed with ITS. The ITS Section also has a small portion of deployment funding that is used by the districts for additional deployments. The section solicits[4] MnDOT districts for ITS projects in Minnesota – up to $1 million per year in funding over four years (FY2014 through FY 2017). This funding program is intended to encourage ITS deployment by providing dedicated funds that do not compete with other construction priorities.
Wisconsin	See 1. Some ITS deployments also occur apart from the TOIP framework where other priorities or opportunities arise.

[2] Benefits of ITS – Prioritization Measures DRAFT. Document is included in appendix for further reference.
[3] Systems Engineering Analysis. Completed example for RWIS project is included in appendix for further reference.
[4] Application for Funding for ITS Projects MnDOT Office of Traffic, Safety and Technology – ITS Section. Document is included in appendix for further reference.

3. Planning Leadership	
Washington	Each region is responsible for managing overall transportation and determining what is needed within the region. Projects of statewide significance (e.g. 511) are managed by **ITS Operations** at headquarters.
Idaho	Headquarters leads with district collaboration to develop Statewide ITS Strategic Plan.
Montana	Districts express needs, **Systems Section** gathers them all and looks at broader needs (e.g. RWIS software in 2014) to review with bureau chief and finalize plans.
Wyoming	All ITS deployments are coordinated through the headquarters **GIS and ITS Program** but suggestions come from all over.
North Dakota	**ITS Engineer** (Travis) leads planning with input from the districts.
South Dakota	**Research** works with operations to plan ITS projects.
Minnesota	Planning leadership is shared between the **ITS Section** and the districts. The ITS Section can offer guidance or input on district selections (e.g. ITS Design Manual) but the districts ultimately take leadership on folding deployments into their construction projects.
Wisconsin	WisDOT does not have a dedicated ITS unit. ITS planning is led by the Bureau of Traffic Operations, **Systems Operations and Electrical Engineering Section**, with support from the University of Wisconsin Traffic Operations and Safety Laboratory.

4. Benefit/Cost Evaluation	
Washington	ITS Operations assesses the anticipated project benefits against select measures. This is a softer B/C analysis in place of a harder analysis that was unsuccessfully used in the past.
Idaho	None currently done.
Montana	Not formally at this time.
Wyoming	WYDOT does not emphasize benefit/cost evaluation and there are many political pressures for deployment.
North Dakota	Softer B/C has been done within context of the alternatives analysis required by FHWA. May also sometimes discuss other factors that impact B/C (e.g. cost of physically going out to a site vs. viewing it remotely with CCTV).
South Dakota	Haven't done anything specific beyond looking at others' experience with deployments.
Minnesota	Benefit/cost isn't calculated in a formal fashion but it is addressed in a qualitative fashion in identifying the needs (benefits) that will be addressed by the deployment.
Wisconsin	Following the initial TOIP, a number of IDAS-based B/C studies have been done for the regions. Most are handled as part of projects, if necessary. There is a growing acceptance that ITS is competitive where B/C and effective investment is concerned.

5. Funding	
Washington	Three ways to fund ITS projects: • Capital (e.g. road construction): Generally for ITS project over $1M; most commonly funded/deployed; programmed based on construction not ITS need; follows traditional STIP process • Q Program: Fiscal program for ITS exclusively and managed by ITS Operations; roughly $5M annually • Low cost enhancements: Typically $50k type projects (e.g. intersection lighting); several $M for both ITS and traditional traffic enhancements; no real formal prioritization process
Idaho	Funding is primarily federal. Beyond FY13 there are two projects each year (Traveler Information, ITS Operations) for central programming. Districts continue other deployments as needed but still emphasize RWIS currently. Districts will also add ITS during reconstruction but it doesn't happen often. They recently required fiber conduit be installed at a minimum during construction.
Montana	Construction driven projects are mostly federally funded, but there is some state budget (sometimes designated for specific deployments like RWIS) for other deployments.
Wyoming	ITS deployments are largely completed with federal match dollars.
North Dakota	Approximately $750k/year is dedicated to ITS but $250k goes to 511. Projects are also funded through larger construction projects.
South Dakota	Some deployments are commercial vehicle oriented and receive federal CVISN funding. Other funding is allocated from construction, Interstate maintenance and Surface Transportation Program (STP) dollars where it may be needed.
Minnesota	Funding for the ITS Section deployment comes from District C Federal Surface Transportation Program (STP) funds in the State Road Construction (SRC) appropriation. Federal funds also require a 20% non-federal funding match from districts. District is also responsible for including selected projects in the STIP and obtaining appropriate state and federal project numbers. ITS Section's deployment support program will not fund operations and maintenance of the ITS project, technology or equipment. The ITS Section also ensures that projects using federal funds fit within the "Minnesota Statewide Regional ITS Architecture (Version 2009)" and follow a systems engineering process.
Wisconsin	Funding has been a challenge the last several years. In the 2001-2003 budget, not only was funding for ITS removed, specific language was added to restrict any WisDOT spending on ITS, except from the maintenance budget (2001 Wisconsin Act 16). More recently, there has been some success with using federal appropriations, maintenance funds, improvement funds, etc. Funding restrictions were among the chief motivators for the TOIP, giving WisDOT a plan that is used to inject ITS and supporting communications infrastructure into improvement projects wherever they occur. There are still challenges with other transportation fixes feeling threatened by ITS and there are similar challenges with limited funding for maintenance.

6. Coordination with Other States	
Washington	There is coordination today with OR, ID and Vancouver that is led at regional level for general transportation needs. Spokane meets regularly with ID. Other regions coordinate across their borders to bring projects to Q Program typically. No formal planning happens at the broader state level for ITS but they do meet with CA and OR on I-5 operations.
Idaho	Process allows for coordination. ITD has deployed DMS in WA and UT, and another is coming up in MT.
Montana	There is good coordination (e.g. ID RWIS on MT side of the border, information used in both states). Coordination with other states is definitely a consideration but not necessarily very formal.
Wyoming	North/West Passage representative would be the best person for the group to make a case for a specific project. The representative would the work with the relevant district to discuss options.
North Dakota	On border projects there is typically coordination with adjacent states. For example, DMS deployment in MN used ND for site location and alternatives checklist, also shared some capital and operating costs. There was a similar effort between SD and ND on I-29 for a gate closure deployment.
South Dakota	Coordination is allowed but it doesn't necessarily happen often.
Minnesota	The process doesn't specifically address coordination with other states but such coordination isn't precluded from the process.
Wisconsin	Nothing explicit, but WisDOT is involved a number of things immediately across borders with MN and IL, especially for DMS and camera sharing.

Appendix

The following materials were provided by the states to further illustrate various aspects of their planning processes. There are included in the appendix for further reference and use, as desired, by the North/West Passage states.

- Washington: Benefits of ITS – Prioritization Measures DRAFT
- Idaho: Systems Engineering Analysis (Completed RWIS Example)
- Montana: MT RWIS CAM REQUEST 2011-2012 (Example)
- Minnesota: Application for Funding for ITS Projects MnDOT Office of Traffic, Safety and Technology – ITS Section

Benefits of ITS – Prioritization Measures DRAFT

This tool is to be used to provide an initial scoring for the value and importance of proposed ITS projects. It is composed of seven Measures to quantify the importance and benefits of a proposed project. Each Measure is defined by one or more Purposes, each of which has one of more Descriptions which are to be used to score a project.

Scoring: For each of the 7 Measures evaluate the proposed project for each of the identified Purposes and choose all of the Descriptions that apply to the project and score using the indicated points – do not score less than the indicated points for a Description if it applies (is true) for a project.
So, for example if the Description has a 6 point value and that Description is true for your project then you will score that Description with all 6 points. The maximum points for a project is 70, the maximum points for each Measure is 10 points.

Measure #1 - Traveler Safety

This measure addresses the extent to which projects provide for safer travel and a likely reduction in fatalities or serious injury.

	Purpose: Reduce the number of incidents. How well does the project support safer travel?	
Points for each Description	6	The project improves safety in an area with documented injury or fatality incident histories (e.g., HAL HAC or CAL CAC)
	2	The project improves safety in an area with known problems, but outside HAL/HAC.
	2	The project will reduce secondary collisions.
Total (10 max)		

Measure #2 - Traveler Mobility

This measure addresses the extent to which projects reduce congestion and delay, and improve flow.

	Purpose: Reduce congestion. How well does the project improve existing travel problems?	
Points for each Description	4	The area where the project is located is identified as an existing bottleneck, chokepoint or otherwise congested area.
	4	The project provides a demonstrable mobility improvement for an identified problem that occurs during peak hours of travel.
	Purpose: Reduce potential future congestion. How well does the project improve anticipated future travel problems?	
	2	The project provides a demonstrable travel improvement in an area anticipated to have a future congestion issue (identified by an adopted plan).
Total (10 max)		

Measure #3 - System Efficiency

This measure addresses the extent to which projects can maximize traffic throughput using existing lanes.

	Purpose: Maximize flow. How well does the project allow the greatest number of vehicles to move through a highway segment?	
Points for each Description	6	The project will increase travel time reliability.
	2	The project will decrease non-recurrent congestion.
	2	The project will decrease recurrent congestion.
Total (10 max)		

Measure #4 – Operational Efficiency

This measure addresses our ability to operate our roads efficiently and effectively.

	Purpose: Improve operations. How well does the project improve traffic operations?	
Points for each Description	3	This type of project has a proven track record of providing improvements to traffic operations.
	3	Enhances the ability to quickly and safely clear incidents.
	2	Improves WSDOT's situational awareness for the road network.
	1	Supports coordination between TMCs and other operations centers and agencies.
	1	Provides more robust and better coordinated and interoperable communication.
Total (10 max)		

Measure #5 – Customer Satisfaction

This measure addresses the extent to which projects inform drivers of conditions and events, and enable them to make better travel decisions.

	Purpose: Improve traveler information reliability and capability. How well does the project allow WSDOT to communicate conditions and planned events to the traveling public?	
Points for each Description	4	The project will allow TMCs to detect and report current conditions.
	2	The project will provide information to the traveling public en route.
	2	The project will help support delivery of PSAs.
	2	The project will provide information to the traveling public before they begin their trip.
Total (10 max)		

Measure #6 – Moving Washington

This measure addresses the extent to which projects are part of Moving Washington corridors.

	Purpose: Supports improvements to key corridors identified as part of the Moving Washington Initiative	
Points for each Description	2	The project is on an identified Moving Washington corridor.
	4	The project is a component of multiple projects within the corridor needed to complete the ITS build out for the corridor.
	4	The project helps defer larger infrastructure investments within the corridor.
Total (10 max)		

Measure #7 – System Continuity

This measure addresses the need to insure that no deficiencies exist within an integrated system and that the equipment is operational and up-to-date.

	Purpose: Supports the need to provide spot improvements to leverage the benefits of a larger system.	
Points for each Description	4	The project will provide for key foundational field infrastructure which will permit the deployment of ITS field equipment.
	3	The project will permanently bridge gaps in existing system coverage to eliminate holes in areas which already have coverage.
	Purpose: Supports the need to replace equipment when it becomes obsolete and unsupportable.	
	3	The project will replace equipment that is no longer functional, is obsolete, or can no longer be supported.
Total (10 max)		

SYSTEMS ENGINEERING ANALYSIS

Name of Project: **Key 13347, FY12 RWIS Enhancements and**

Key 12974 FY13 D1 RWIS Upgrades/New Locations

Regional ITS Architecture: **Statewide Architecture published March 2011**

1. Identify the portions of the Regional ITS Architecture being implemented. Is the project consistent with the architecture? Are revisions to the architecture required? Identify which user services, physical subsystems, information flows, and market packages are being completed as part of the project and explain how these pieces are part of the regional architecture.

   - **The project is consistent with the statewide architecture**
   - **No revisions are required to the architecture.**
   - **The User Service being implemented is Maintenance and Construction Management**
   - **The physical subsystem is the RWIS roadside sites and the data collection/distribution network.**
   - **The information flows are the atmospheric and road surface condition data and video images.**
   - **The market packages are MC03 Road Weather Data Collection and MC04 Weather Information Processing and Distribution.**
   - **The data and video are shared with the Idaho 511 public websites and are also accessible on the vendor's website by ITD personnel.**

2. Identify the participating agencies, their roles and responsibilities, and concept of operations: For the user services to be implemented, define the high-level operations of the system, including where the system will be used; functions of the system; performance parameters; the life cycle of the system; and who will operate and maintain the system. Establish requirements or agreements on information sharing and traffic device control responsibilities. The regional architecture operational concept is a good starting point for discussion.

   - **ITD is the participating agency and responsible for design, construction, operations and maintenance of the data collection network.**
   - **The atmospheric data, road surface conditions and video images are collected by roadside equipment. The data is refreshed at 15 minute intervals and the data is published on a password protected website, as well as an FTP website. ITD maintenance staff access the data aggregating website to plan maintenance activities and view an automated winter performance measure index for various data collection locations. The FTP site is used by ITD's 511 contractor to pull data and images for publication on ITD's 511 websites. The FTP site is also shared with NOAA and MesoWest to add to their weather databases.**
   - **A well maintained data collection site is expected to last 20 years.**
   - **ITD will operate and maintain the data collection network through contracts with private companies.**

3. Define the system requirements: Based on the above concept of operations, define the "what" and not the "how" of the system. During the early stages of the systems engineering process, break down the process into detailed requirements for eventual detailed design. The applicable high-level functional requirements from the regional architecture are a good starting point for discussion. A review of the requirements by the project stakeholders is recommended.

- **Atmospheric data (temperature, barometric pressure, wind velocity and direction, humidity, visibility, and precipitation type), road conditions (temperature, dry, wet, snow, ice), and snapshot images are needed on a regular refresh cycle from strategic road locations statewide. Data will be archived for at least 12 months.**
- **An automated winter performance measure is also needed and will be calculated for each site for each winter storm event using the data collected and archived at each site.**

4. Provide an analysis of alternative system configurations and technology options to meet requirements: The analysis of system alternatives should outline the strengths and weaknesses, technical feasibility, institutional compatibility, and life cycle costs of each alternative. The project stakeholders should have input in choosing the preferred solution.

- **Fixed location data collection stations are the only feasible option at this time. At some time in the future some of the required data may be able to be collected and distributed using mobile sensors, but the fixed location data collection stations are a viable long term solution.**

5. Identify procurement options: Some procurement (contracting) options to consider include: consultant design/low-bid contractor, systems manager, systems integrator, task order, and design/build. The decision regarding the best procurement option should consider the level of agency participation, compatibility with existing procurement methods, role of system integrator, and life cycle costs.

- **The initial RWIS contract (design, build, operate and maintain) was executed in 2006. Under this contract 87 sites were either constructed or upgraded to current sensor technology.**
- **In 2011 the ITS roadside equipment maintenance service was advertised for bid and awarded.**
- **In 2012 the RWIS data management service was advertised for bid and awarded.**
- **The design and construction of system enhancements and new RWIS sites is the remaining procurement item.**
- **After researching other sources for the roadside sensors and cameras that are interchangeable with current Vaisala equipment, and considering the installed inventory of 87 RWIS sites, ITD has concluded that the current equipment manufacturer (Vaisala) is the only feasible source for the new RWIS equipment.**
- **The installation of the equipment could either be done by Vaisala or another contractor, however Vaisala is the only company with knowledge and experience on installing their suite of sensors and cameras. Using a non-Vaisala installer would void the manufacturers' warranty and introduce substantial system performance risks.**

- **Therefore contracting with Vaisala for the design and installation of new sites and enhancements to existing sites is the best procurement option.**

6. Identify the applicable ITS standards and testing procedures: Include documentation on which standards will be incorporated into the system design and justification for any applicable standards not incorporated. The standards report from the regional architecture is a good starting point for discussion.

- **The RWIS network conforms to the following NTCIP Standards: 1104, 1201, 1206, 1301, 2104, 2202, 2306, and 2500.**
- **Internet communications use the current IP standards.**

7. Delineate the procedures and resources necessary for operations and management of the system: In addition to the above concept of operations, document any internal policies or procedures necessary to recognize and incorporate the new system into the current operations and decision-making processes. Resources necessary to support continued operations, including staffing and training must also be recognized early and be provided for. Such resources must also be provided to support necessary maintenance and upkeep to ensure continued system viability.

- **The operations and maintenance of the RWIS network is performed by contract and funded by a recurring project in the STIP (ITS Operations). The estimated costs are:**
- **Operations: $300,000 per year**
- **Maintenance: $200,000. Per year**

Area	Description	Sign Route	Milepost	Existing site - camera add	Benefit multiple areas	Request
** Are these sites still applicable?						
** Incidates division priority site						
*** Requests from 2012 spring review						
	public suggestion					
Billings	Broadview	MT-3	30 ?		Blgs/ Lewistown	RWIS & Cam
Billings	Roscoe Hill	MT-78	19	X		Camera only
Billings	Decker Hill	S-314	4			RWIS
Billings	Nye MT	S-419	?			RWIS
Billings	Yellowstone/Golden Valley County Line	?	?			RWIS
Billings	Silesia to Red Lodge					
Bozeman	Big Sky South	US-191	37			RWIS & Cam
Bozeman	Bridger Canyon	MT-86	21.6			RWIS & Cam
Bozeman	Norris (purchased 2010?)	US-287	60			Camera
Bozeman	Rocky Canyon	I-90	316			RWIS & Cam
Bozeman	Toston Bridge	US-287	88.5			RWIS & Cam
Bozeman	Virginia City Hill	MT-287	15.5		Butte/Boz	RWIS & Cam
Bozeman	Woods Corner (Springdale area)	I-90	351.5		Blgs/Bozeman	RWIS & Cam
Bozeman	Big Sky Road	MT 64	7.3			Camera
Bozeman	Not named	I-90	334			Addional Units with Cam and wind gauge
Bozeman	Not named	MT 86	21.6			Camera units
Bozeman	Not named	US 89	13			Camera
Bozeman	Virginia City Hill	MT-287	11			Camera
Bozeman	Yellowstone Park Entrance	US-191	31.2			Camera
Butte	Clancy Interchange	I-15	182.1		Boulder/ Helena	RWIS & Cam
Butte	Cottonwood Hill	I-90	261.8		Butte/Boz	RWIS & Cam
Butte	LaMarche Creek	MT-43	50			Camera only
Butte	Nevada City/Virginia City	MT-287	15.5		Butte/Boz	RWIS & Cam
Butte	Phosphate Interchange	I-90	170.1		Butte/Mis	RWIS & Cam
Butte	Spokane Bench	US-12	55.7		Butte/Boz	RWIS & Cam
Butte	Alder	?	?			RWIS
Butte	Clancy Exit	I-15	?		Boulder/ Helena	RWIS
Butte	Clark Canyon Interchange	I-90	?		Dillon/Lima	RWIS
Butte	Elk Park upgrade	?	?			roadway puck
Butte	Feely Interchange	I-15	?		Butte/Divide	RWIS
Butte	Garrison Upgrade	?	?	X		Add Cam for Bridges
Butte	Glen Interchange	I-15	?		Dillon/Divide	RWIS
Butte	Helena section	Hwy 12 E	55.5		Helena/ Bozeman/ Townsend	RWIS
Butte	MCS Scale	MT 69	?		Whitehall/ Boulder	RWIS

Butte	Milwaukee Grade Separation	I-90	?		Butte/ Anaconda	RWIS
Butte	Section Boundary	Hwy 141	?		Lincoln	RWIS
Butte	Sportsmans Campground	MT 43	?		Divide/ Wisdom	RWIS
Butte	Stemple Pass	Hwy 279	22.2		Helena/ Lincoln	RWIS
Butte	Weigh Station	Hwy 69	?			RWIS
Great Falls	Brady/Dutton	I-15	328		Dutton/ Conrad	RWIS & Cam
Great Falls	Kings Hill	US-89	30			RWIS & Cam
Great Falls	?	Hwy 200	53.3	X		RWIS and Cam / This site is existing but we would like to add a camera
Great Falls	Choteau	US-89N	62.6			RWIS and Cam / This site is one I would like to have constructed
Great Falls	Bowmans	Hwy 200	110.4			RWIS and Cam / This is an existing site. We have talked about moving this to the west so we could view the intersection of 287/200.
Great Falls	Monarch Canyon	US-89	53.5			RWIS and Cam / This is an existing site.
Great Falls	Alice Creek Composting	Hwy 200	82.7			The Bowmans site is being eliminated no RWIS site needed
Great Falls	Deerborn Rest Area	I-15	240			RWIS and Cam
Great Falls	Lyons Creek	I-15	222			RWIS and Cam
Great Falls	Teton Rest Areas N and S	I-15	318.7			RWIS and Cam
Havre	Chinook	US-2	400		2 sections	RWIS & Cam
Havre	Valier Interchange	I-15	348		2 sections	RWIS & Cam
Havre	Hudson Bay	?	?			RWIS
Havre	Marias Pass-West side	?	?			RWIS
Kalispell	Crystal Creek - East end of section	Hwy 2	86			RWIS and Cam
Kalispell	Dickey Lake	US-2	160.2	X		Camera
Kalispell	Dickey Site	?	?	X		Cam
Kalispell	Elmo State Park	US-93	78.5		3 sections	RWIS & Cam
Kalispell	Essex	US-2	179.9	X		Camera
Kalispell	Ferndale - Section line	MT 35	18			RWIS and Cam
Kalispell	Flathead	MT-35	49	X		Camera
Kalispell	House of Mystery	US-2	141			cam & wind sensor

Kalispell	Noxon- Bull Land and/or Trout Creek	?	?			RWIS and Cam
Kalispell	Rollins at Elmo	HWY 93&28	?			RWIS and Cam
Kalispell	West Glacier	US-2	?			camera
Kalispell	West Glacier	US-2	180.4			RWIS site
Kalispell	Yellow Bay - Polson	MT 35	18			RWIS and Cam
Lewistown	Denton	MT-81	18.2	X		camera only
Lewistown	Grass Range South	US-87 (P-61)	40		Lewistown	RWIS and Cam; actual request
Lewistown	Broadview and Lavina	MT-3				RWIS; requested in both Blgs and Lewistown
Lewistown	Lavina to Harlowton	MT-3	??			RWIS and Cam
Miles City	Colewood	MT-59	56			RWIS and Cam
Miles City	Ekalaka	MT-7	14.2	X		Camera only
Miles City	Forsyth	US-12	210-250			RWIS
Miles City	Hillside	MT-59	36.5	X		Camera only
Miles City	Lame Deer	US-212	50.1	X		Camera only
Miles City	Savage	MT-16	25-30			Camera only?
Miles City	Ingomar P-14	US-12	229.8			RWIS upgrade - camera; requested in both Lewistown and Miles City
Miles City	Lame Deer/Ashland Divide N-37	US-212	50			RWIS and Cam
Miles City	Luff Burrow Hill N-57	MT-200	175.1			RWIS
Miles City	N-20	MT-16	29.7			RWIS and Cam
Miles City	N-23	US-212	139.2			RWIS
Miles City	P-18	MT-59	35.8			Add Cam
Missoula	Bass Creek	US-93	70			??
Missoula	Bearmouth	I-90	145.8	X	Msla/Butte	Camera add
Missoula	Greenough Hill	MT-200	22.1	X	2 sections	Camera only
Missoula	St. Regis	I-90	34.6		3 sections	RWIS & Cam
Missoula	Trout Creek	MT-200	30.9	X		Camera only
Missoula		US-93	87.2			??
Missoula	?	?	87			RWIS and Cam
Missoula	Clinton Section	?	121-130			RWIS
Missoula	Greenough Hill	MT 200	22.1			Add Camera
Wolf Point	Comertown	MT-5	13	X		camera add
Wolf Point	Malta South	US-191	122.5	X		Camera add
Wolf Point	Sioux Pass	MT-16	21	X		Camera add
Wolf Point	191 North	?	?			RWIS and Cam
Wolf Point	191 South	?	?			Camera Add
Wolf Point	C-32	?	26			Camera add
Wolf Point	McGuire Creek Cell Tower C-42N	?	17.9			RWIS and Cam
Wolf Point	Opheim - south end of section	?	?			additional RWIS's
Wolf Point	South Fort Peck C-42	?	35-42			RWIS

ANNOUNCEMENT
Application for Funding
For
Intelligent Transportation Systems (ITS) Projects
Minnesota Department of Transportation's
Office of Traffic, Safety and Technology – ITS Section

INTRODUCTION

Mn/DOT's Office of Traffic, Safety and Technology (OTST) ITS Section is soliciting Mn/DOT Districts for ITS projects in Minnesota up to $1 million per year in funding over four years (FY2014 through FY 2017). This funding program is intended to encourage ITS deployment by providing dedicated funds that do not compete with other construction priorities.
The following amounts are available by fiscal year:

- FY2014 - $150,000.00
- FY2015 - $620,000.00
- FY2016 - $1,000,000.00
- FY2017 - $1,000,000.00

GENERAL INFORMATION

Projects can be stand-alone ITS projects or ITS components of other construction projects. Projects can be for any dollar amount up to the entire $1 million per year.

To be considered an ITS project, the project must fit the description of one or more of the ITS "Service Packages" that make up the National ITS Architecture. A description of the service packages can be found at the following line: http://www.iteris.com/itsarch/html/mp/mpindex.htm

Funding for the program will be District C Federal STP funds in the State Road Construction (SRC) appropriation, with the following intended purpose as stated in state law:

> "This appropriation is for the actual construction, reconstruction, and improvement of trunk highways, including design-build contracts and consultant usage to support these activities. This includes the cost of actual payment to landowners for lands acquired for highway rights-of-way, payment to lessees, interest subsidies, and relocation expenses."

THESE FEDERAL FUNDS WILL REQUIRE A 20 PERCENT NON-FEDERAL MATCH FROM THE DISTRICT. The district will be responsible for including selected projects in the STIP and obtaining appropriate state and federal project numbers. This program will not fund operations and maintenance of the ITS project, technology and/or equipment. The OTST ITS section will provide funding numbers for the federal funds.

According to Federal Final Rule 940, ITS projects using federal funds must fit within a regional ITS architecture and must follow a systems engineering process. Minnesota has a "Minnesota Statewide Regional ITS Architecture (Version 2009)" meeting the requirements of this rule. (http://www.dot.state.mn.us/guidestar/2006_2010/its_planning_and_regional_architecture.html) Depending upon the scope of the proposed project, the project may require development of a Concept of Operations document and a Functional Requirements document. The ITS section can provide assistance in determining what is needed and how to best meet the requirements of Final Rule 940 and will work with the districts whose projects are selected.

ITS projects should address identified needs. Section 3 of Mn/DOT's draft ITS Design Manual explains some draft ITS warrants that may help justify the project. The draft ITS Design Manual can be found at the following link:
http://www.dot.state.mn.us/trafficeng/publ
The OTST ITS Section anticipates issuing this solicitation annually for any unused funds from the previous solicitation plus new funds for the year subsequent to the previous solicitation's time frame.

PROCESS FOR SUBMITTING APPLICATIONS:

1. Fill out the District ITS Solicitation Application Form in Microsoft Word format (.doc or .docx.
2. Submit the application electronically to Susan Sheehan at susan.sheehan@state.mn.us.
3. Submittal deadline is by close of business on Friday, April 30 2012.

EVALUATION AND SELECTION OF APPLICATIONS

An evaluation committee consisting of OTST ITS Section staff, OTST management and possibly District Staff and a representative from the Office of Capitol Programs and Performance Measures will evaluate and select proposals.

Criteria to be considered in selecting projects include the following:

- Project identifies a documented need
- Project meets an ITS warrant
- Project fits into a larger ITS plan or complements other construction projects
- Project utilizes proven technologies
- District has identified a plan for operating and maintaining the system
- District has identified a plan for delivering the project
- District has identified a source of state match

It is estimated that the selection committee will be able to notify applicants about the selected funding selections by June 15, 2012.

QUESTIONS

Applicants having questions or requiring assistance with this application should contact:

Susan Sheehan, OTST – ITS
651-234-7061
susan.sheehan@state.mn.us

APPLICATION FOR ITS FUNDING

TITLE OF PROJECT:
PROJECT LOCATION:
DISTRICT:
CONTACT PERSON NAME:
CONTACT PERSON PHONE NUMBER:
PROPOSED LETTING DATE:
PROPOSED TOTAL PROJECT COST:
• Federal Portion (80%):
• State portion (20%) (**District Responsibility)**:
• Source of state portion of funds:

PROJECT DESCRIPTION:

WHO WILL DO THE PROJECT DESIGN:

DESCRIBE HOW THE SYSTEM WILL BE USED AND BY WHOM:

DESCRIBE HOW THE SYSTEM WILL BE MAINTAINED AND BY WHOM:

DESCRIPTION OF THE NEED BEING ADDRESSED:

DISCUSSION OF ITS WARRANTS RELATED TO THE PROJECT:
(See Chapter 3 of the Mn/DOT draft ITS Design Manual –http://www.dot.state.mn.us/trafficeng/publ)

DISCUSSION OF HOW THE PROJECT FITS INTO A BIGGER ITS PLAN OR COMPLEMENTS PLANNED ROAD CONSTRUCTION:

_____ Date:_____
Signature of District Engineer or Office Director

DATE:_____ AMOUNT APPROVED:_____ STATE FISCAL YEAR: _____