

MDT Traveler Information System

*Mike Bousliman, Operations Manager
Montana Department of Transportation*

Traveler Information Systems... These [slides show examples of our] automated procedures. For example, maintenance forces and construction forces enter information into one of these two databases where there is weather conditions or incidents that have closed the road. Load restrictions for truckers, etc. are also entered into a central database at one of our eleven division offices. It gets delivered to Helena where it has to be produced into a report and then from there it is an automatic process to disseminate it to a lot of different sources; the Internet, obviously a web based map, and other automatic systems such as fax and email. This is just a quick little graph to demonstrate some of the capabilities where you can add [information] via email. You [are able to] define the profile and tell it what report you want delivered and how you want it delivered to the distribution list that our staff in Helena maintains. From there it is disseminated to those sources.

One thing that I think is important for other states to consider is the fact that we paid for phone service with federal funds. In our state that is a big deal. In this case, we didn't have a lot of state dollars to go around, as such our Federal Aid Program and the Federal Highways office have allowed us to take the cost of the long distance calls and put them into the Federal Aid budget

This is a map right off the Internet of our main Traveler Information Page. It includes; winter conditions, construction, maintenance work, links to weather information, RWIS link, video cameras, information on rest areas, road restrictions, miscellaneous information (laws relating to studded snow tires, chain requirements, etc.), and also links to Travel Montana.

This is a shot of one of our cameras (McDonald Pass). We have seven cameras at various locations – mostly mountain passes – and I will talk a bit more about that as we move on into the RWIS component. This is a shot of the map. You can't really see it, but all the little green lines up here that is just the extent of the roads we report on in this state. Green is bare and dry and that was the shot that I took yesterday so there isn't much going on obviously at this time of year. In the wintertime we update the condition reports twice daily unless changes occur (such as the road is closed, etc.).

MDT's existing RWIS system consists of 60 sites. It is all SSI equipment. We deployed the system starting back in 1996. And since have just done a major upgrade this last summer where we replaced a lot of the old equipment and took over the maintenance and operation of the system, which is a major step for us. It used to be that we relied on SSI to take care of the network, database, and the actual maintenance of the RPUs. That was quite a test this summer to take over that responsibility ourselves. We are still in the transition phase, but it has helped us quite a bit because we have had better access to the data and we can do more things with the data out there.

This is just a side note, I don't know how a lot of other states are procuring RWIS, but Montana bought the system with a Federal Aid Project 6 years ago so that was a great benefit for us. We don't have a lot of state funds in our maintenance program for purchasing extensive high-tech systems.

This is just a map. The little green triangles are the 60 RWIS sites. They are mostly in rural areas. When this was first deployed we deployed this for maintenance operations to be able to view the worst part of the maintenance section without ever having to drive out there.

That was the concept seven years ago. Since then, it has been used more as a traveler information tool than for maintenance operations. Maintenance folks sure use it, but the value that the general public gets out of accessing this information is more for traveler information. Here are some of our RWIS sights in some of the rural parts of Montana. (Monida Pass is between Idaho and Montana.)

The touch screen kiosks component (I say kiosks, but really there's just one right now). It is part of the original Greater Yellowstone Project. We built a new Rest Area in Bozeman a year and a half ago and as part of that project, we put an electronic kiosk in. This was a partnership between WTI, a programming company out of Helena and the University of Montana to develop the software. The kiosk actually delivers tourist information, links to our cameras, and our road report information.

This is the inside of the Rest Area. As you can see the kiosk is suited for guys that size. We had some ADA issues. We decided to put [the kiosk] in (it wasn't in the original design) after the building was almost finished. We found out that there were some ADA requirements that we hadn't investigated, but we already had a hole in the wall. So we didn't have a lot of options to modify the angle that the screen sits at, etc. It works great unless you are 6 foot 3 inches. Planning a little bit better in future deployments. It is still fairly functional and we get a lot of good comments out of it. We've had some problems, and of course that's when you hear the most comments!

This is just a shot, you can't see it very well due to the glare, this is just the front screen with the information on the bottom of things to do – cities, lodging, road/weather information, etc.

Briefly, HAR and VMS have been [utilized at] our highway radio sites over some mountain passes. They use a flashing light and 530 AM deal. On average, the usefulness varies by the area. We are looking at upgrading some of those and moving them around so they are more effective. But it is actually a pretty good tool in some cases to warn people of major changes.

We have seven changeable message signs. Four are near the Bozeman area and are brand new (they were installed last fall or January I believe). We have been struggling with this project for quite some time. It is our first shot at CMS in Montana. We've had some of the same old problems that I think that most people have, but we've got beyond the hardware and install problems and are now onto the logistical problems of when they are updated, who updates them, what specific data should be changed on the message and some sort of standardization of the messages. We also have three going up on Lookout Pass, which is on I-90 between Montana and Idaho. Some people in the last session asked if we were working with Idaho. The answer is we are really not right now. We will have two different division offices running two different sets of signs so we need to apply some sort of consistent message. We are working on that right now.

That is the extent, very briefly, of our current traveler information system. I will have some time at the end here if anyone has any questions about that. I am just going to talk briefly about six current projects, with varying scope.

Projects. I am going to start with a big project that we are working on – ATWIS/511 deployment. We are working with WTI and Meridian out of the University of North Dakota to implement the ATWIS Travel Safe traveler information system. The system that we are looking at was originally designed as an enroute traveler information system. You can call on a cell-phone punch in the route/direction you are going and it will tell you what the conditions are for the next 60 miles or next hour. That's the component we are going to deploy in Montana – that enroute element. We are doing this for various reasons: 1) we see it as better technology than we are delivering now; and 2) it is going to automate the processes that we have right now. We spend a lot of time statewide rewriting reports from the data that gets entered and then recording them into a machine.

Also, as part of the ATWIS deployment (which is actually part of a bigger ITS project) we are

going to deploy the 511 phone number/line method of access. We are forth big efforts right now, but we are shooting for January 1st to have at least the enroute component (ATWIS) up and running in Montana. That is going to run side by side with our regular toll-free access to road report information.

Part of this (ATWIS) research project is evaluating the effectiveness of this new system compared to the previous system, not just from the customer perspective, but from a cost perspective as well. [We will use this information] to try to make a decision about continuing with the ATWIS program or going back to what we were doing before (which was really just a recording device that is accessible by phone). That's going on right now along with the 511 deployments.

I think that everyone is thinking about 511 in one way or another and is in various stages of addressing it. We are over a lot of the humps and we don't have a lot of some of the bigger problems that some of the other states have with the large metropolitan areas so that makes it a little easier for us. In essence we are just a point guard system. Hopefully, 511 will point to our toll-free number and most users in Montana will see that change take place the first of the year. We are not going to market or advertise 511 until we have tested everything and made sure that it works the way we want it to. That is our tentative plan. Sometime in January, if everything goes as we are hoping, we should have a new [traveler information] system as well a system provided by 511.

This next project utilizes what I call semi-portable changeable message signs (CMS). It is another project that is partnered with the larger Greater Yellowstone Project. We have two portable changeable message signs – they have sort of a permanent mountain site – directed to chain-up areas at a couple of our major passes where we have a lot of problems. We are hoping that this will give the traveling public, especially trucks, more timely information on when chains are required. Right now our guys have to go out there, get out of the truck, and put up a sign. (We have some issues about

mandatory versus advisory.) This is only an advisory deal so we are still going to have to flip up the mechanical ones. We are going to work through that issue and are hoping to make these standardized signs. The maintenance forces will have use of these in the summer (when they are not being used in the mountain passes) as they are trailer mounted and solar powered. We have, however, brought power and phone lines to the mountain sites and poured a concrete pad so they are semi-permanent sites.

We've had some new interest in the changeable signs and gate closure system out in Eastern Montana (we had tried to do this project in eastern Montana in cooperation with North and South Dakota and Wyoming a few years back but were unsuccessful). We had a blizzard type last winter and people reacted to that one such that we wanted to provide better information in Eastern Montana on I-90, I-94 and US 12. All this includes about four smaller ADDCO type signs and a gate closure system. Not an automatic system, but more of a management approach to dealing with incidents that close down the road. Currently, operations personnel out in the field communication or coordination about a road closure by getting on the phone and saying, "We might close the road here so get ready". Hopefully this will provide a more timely mechanism such that every office around the state is aware when a road is closed and when is it opened.

Touch Screen Kiosks. I'm honestly not sure of the status of the Greater Yellowstone component, but we have another project tied to the Lewis & Clark Bicentennial. Part of that is going to be a kiosk deployment, similar to the one you saw in Bozeman, where we put them in places like Rest Areas. The part that I am going to be working with is Rest Areas, but I suspect that they will also put them in other places (maybe truck stops, chambers of commerce, etc.) places where people frequent and can access this information. We are opening a new Rest Area at the Canadian Border along I-15 in November and it is going to have a kiosk.

We just bought seven more cameras for our RWIS sites and those are going up probably as

we speak so we will have a total of 14 cameras. They are still just colored video images out there on the Internet for the traveling public (cheap technology). We've had quite a bit of demand for more cameras since we first put those out. We finally found some funding to get those out there.

The final project is actually part of our ATWIS Traveler Safe Project... We want to develop a traveler information deployment plan, WTI is helping us to identify what our needs are, what type of technology might be appropriate in a certain area, etc.. It is a multi-state effort in that we want to better coordinate the information exchange not only in our state, but also with surrounding states. So that North Dakota is aware we've closed a road, or Idaho is aware we've closed a road, and so forth. Instead of picking up the phone and calling, it will probably be more dynamic with information being downloaded into a database.