



T² Roads on the Range

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WYOMING'S FIRST ASSET MANAGEMENT FAIR

WYDOT, the T²/LTAP Center and WACERS organized an Asset Management Fair on May 21st in Casper. It was attended by 5 WYDOT employees, 2 Center employees, 1 county commissioner, and 21 county road and bridge, GIS, and engineering workers from 13 counties, all involved in the development and implementation of county asset management systems throughout the State. Rich Douglass, WYDOT's Local Government Coordinator, kicked off the meeting by asking the most basic of questions: "How do we best spend our money?"

Breaking this down into more detail led to many more specific questions about a county's assets: What do we own? Where are they? What kind of shape are they in? How much longer will they last? How much are they worth? What level of service is needed? What do our customers expect? What regulatory requirements must be met? What are the most critical assets? What is their likelihood of failure? What will it cost to fix them? How will they fail? What are the best operations and maintenance strategies? What are the best capital improvement strategies? What are the best funding strategies? These questions and more may be answered, at least in part, with effective asset management systems.

After Rich's introductory remarks, he introduced Taylor Rossetti with WYDOT's Local Govern-

ment Coordination (LGC) section and David Clabaugh with WYDOT's Planning office. Dave described some of the work he is doing with county road inventories and travel demand forecasting. Rich also noted that there is a wealth of information on asset management at AASHTO's Asset Management website: <http://assetmanagement.transportation.org/tam/aashto.nsf/home>.

Dan Blakeman, Crook County Road and Bridge Administrator and President of the Wyoming Association of County Engineers and Road Supervisors (WACERS), described their efforts to come up with consistent evaluations of all counties' needs and assets. This effort is largely geared towards providing the State Legislature with a comprehensive picture of the shortfalls county road and bridge departments are facing.

Khaled Ksaibati and George Huntington of the T²/LTAP Center provided an overview of asset management and the Center's activities in this area. The overall features of an asset management system (AMS) were described as a computerized way of tracking, inventorying and analyzing information about a road network. A pavement management system, one aspect of an AMS, was described as a tool that uses inputs such as current conditions and traffic loads to recommend maintenance and rehabilitation activities and to prioritize these activities. They



also described the Center's work in developing AMSs with Carbon, Sheridan and Johnson Counties on both a project and a network level. They emphasized several key implementation points, such as the need to tackle relatively small projects, such as sign management, early on to develop familiarity with the asset management process.

Martin Kidner, WYDOT's Planning Program Manager, stressed his desire to see local governments develop a strategic vision that will guide their development of asset management systems that will function well in the long term, along with his desire to see the counties adopt universal data standards. Rich echoed these sentiments, mentioning that planning funds are available to counties with sustainable asset management plans.

Delbert Eitel, Johnson County Commissioner, urged those in attendance to stress the importance of safety to their county commissioners.

The rest of the meeting was devoted to descriptions of current asset management efforts taking place in some of the State's counties interspersed with descriptions of related activities taking place at WYDOT. These descriptions were provided by Don Beard, Laramie County; Rob Fisher, Albany County; Mike Collier, Park County; Jim Waller, Bighorn County; and Bill Masson, Fremont County.

It was apparent from these discussions that there is a lot more 'project level' asset management taking place than 'network level' – counties are using their systems to facilitate their activities but they are doing less county-wide needs projections.

Overall, the fair was a first step towards better coordination and communication among the counties, WYDOT and the Center. The



WYDOT employees, particularly Dave Clabaugh, provided a lot of detail on the data collection and analysis activities taking place at WYDOT, highlighting, among other things, the problem with traffic counts in areas with highly variable traffic resulting from

drilling activities. Martin Kidner pointed out some of the current steps being taken, such as the data sharing between WYDOT's Bridge Program and Goshen County. WYDOT has information, particularly about crashes and bridges, that the counties need, while the counties have a lot of information that would be helpful to WYDOT. This fair demonstrated the willingness and desire of those on both sides of the fence to work together to improve our State's road network, regardless of jurisdiction. Though the ideal of a fully integrated, statewide asset management program is a long way off, the sharing of experiences and information that took place can only help us move towards this goal.

SIGN MANAGEMENT AND THE RETROREFLECTOMETER

New regulations require that local government agencies have a sign management program in place by 2012. The compliance date for regulatory, warning, and ground mounted guide signs is 2015 so now is the time to begin tracking sign sheeting replacements. For more details, see the Winter 2008 edition of *T² Roads on the Range* or

visit the FHWA's website at: http://safety.fhwa.dot.gov/roadway_dept/retro/sa07020/sa07020.pdf

Complying with these regulations does not require a geographic information system (GIS) or even a computer-based system. However, this is an

opportunity for local road and street departments to take a small, first step towards implementing a comprehensive GIS-based asset management system (AMS).

The T²/LTAP Center purchased two retroreflectometers with a grant through WYDOT. The retroreflectometers measure sign retroreflectivity quickly and easily. They also have a global positioning system (GPS) built in so a GIS layer can be built with the GPS and retroreflectivity data collected. Several cities and counties have already used the retroreflectometers to help develop their sign management systems. The retroreflectometers may be borrowed by counties and municipalities. The Center's loan policy can be found at our web site: www.eng.uwyo.edu/wyt2. Contact George Huntington at the Center for more information about this program or to borrow one of the retroreflectometers.



George Huntington demonstrates the use of the retroreflectometer using the extension for taller signs.

ASSET MANAGEMENT: THE BASICS

One way or another, everyone responsible for roads or streets does asset management, whether or not they call it that. We decide where and how to spend our funds; we decide when to regravell a road, when to extend a culvert, whether to replace a sign. To have an asset management

'system' (AMS) requires a degree of analytical rigor. Simply put, an AMS uses computers to better organize and analyze information.

An AMS has three parts: data collection; data management; and analysis and reports. All three parts should work together to provide useful results. When considering implementation of an AMS, it is important to identify the most important outputs since decisions about data collection, storage, and management will be driven by the results desired.

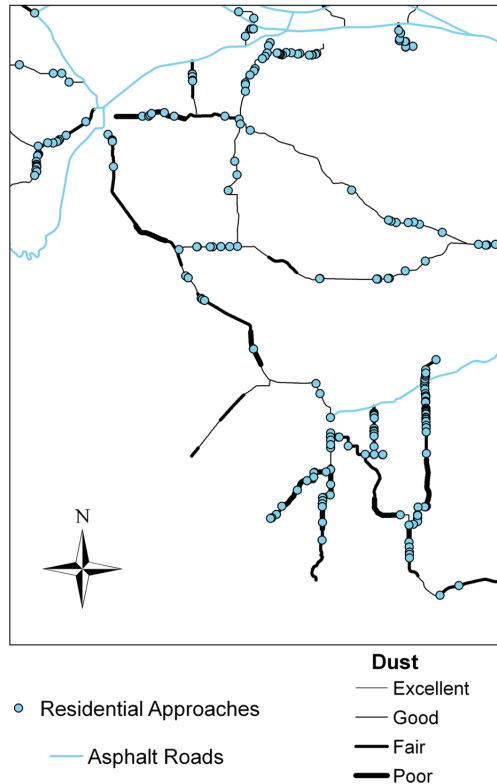
There are two main types of outputs from an AMS, referred to as 'project level' and 'network level.' The basis for all these is good data about a road and bridge network. *Project level* analysis is used on individual road segments. It may be as simple as retrieving



Asset Management the Old Way

the size of a damaged culvert or as complex as a long-term maintenance strategy for several streets. *Network level* analysis considers the system as a whole. It may generate a system-wide table of maintenance needs; it may predict the consequences of various budgeting decisions; or it may estimate the total expenditures needed to maintain and improve a street network. For an AMS to be successful there must be a commitment to making the system work; for it to be fully utilized both project and network level outputs should be generated and applied.

Data collection is simply the process of adding information about the road or street network, and about the activities that are performed to maintain and improve the network. To be of much use, it is *critical that up-to-date information* is in the database. To do this successfully, the agency needs to routinely document their activities and associated costs. Without good inputs, the outputs from an AMS are of little value.



Dust Near Residential Approaches

Data management is the AMS element requiring the greatest computer skills. It involves organizing the data so inputs can easily be added and so reports and analyses can be quickly extracted. Though it is a somewhat separate activity, software development is also related to data management. Software is the tool used to manage data. There are software packages specifically tailored to road and street network applications that can be used, or systems can be developed using off-the-shelf software, usually with a geographic information system (GIS) package. Effective, up front planning and communication between database administrators and those will be using and operating the AMS are critical to good data management.

Benefits are realized through the reports, tables, graphs, and maps generated from the information in the AMS. If a GIS-based AMS is used, maps may be one of its primary outputs. The map shown here might be used to decide where dust suppressant should be applied to reduce dust-related health hazards. Tables, such as the one shown here, may be used to present agency needs to those who control the purse strings. The possible outputs from an AMS are limited only by the amount of data collected.

Maintenance Needs	
Dirt	\$45,678
Gravel	\$2,345,678
Asphalt	\$789,123
Bridges	\$456,789
Culverts	\$234,567
Signs	\$98,765
Fencing	\$45,678
Snow Removal	\$123,456
Other	\$234,567
TOTAL	\$4,374,301

County Maintenance Needs

TRACKING YOUR COSTS: IT'S IMPORTANT

Do you know where your money goes? Without a detailed understanding of where you are spending your limited funds, you won't be able to stretch your dollars. And that is what asset management is all about – getting the most out of limited funds.

Imagine your city has a few residential streets that always seem to need patching. Every spring you go out, throw some cold mix in the potholes, roll them with an 8-yard, and come back again soon – maybe next week, maybe next year – and patch them again. Would it make sense to dig out the failed areas and solve some of the underlying problems, or just keep patching them as necessary? To answer this question, you need to know what it costs for a deep repair and what it costs for a throw and roll patch, and you need to know how often you are re-patching a particular location.

Or imagine there is a section of gravel road that generates lots of complaints. Do you respond to every one? Or do you tell the caller that they are on a schedule and there are other roads that are in more urgent need of work elsewhere? If you are tracking your expenditures well and you have a quick, efficient way of retrieving information about where you have done work recently, handling complaints and requests can be done in a far more even-handed and cost-effective manner.

On a larger scale, do you know how much you spend per year on mowing, fence repair, regravelling, pothole patching, chip seals, and so on? In order to optimize your overall operations, it is crucial that you have this information. Do you have an appropriate balance between pothole patching costs and crack seal costs? Between placing additional gravel and maintaining gravel

road surfaces? Without good data, you won't be able to justify your allocation of funds, even if years of experience and knowledge tell you that you are doing it right. Good cost data can help justify your actions; it also can help you or your successors make better decisions.

So, we know tracking expenses is important. How do you go about it? There are a number of commercially available software packages that can help. Find out about available support; about functions, such as GIS compatibility; about report generation; about flexibility; about ease of use and training. Selecting a software package is not necessarily an easy choice. Contact their other customers, especially those you know and trust. Alternatively you may decide to develop your own system. Do you have knowledgeable computer people on staff with the time and ability to customize your expense tracking? Be careful on this one – what may initially look like a simple task could quickly become a very complex process. But you may decide that what you need is really very simple. A year after you decide, you'll know if you made a good selection. Organizations have been successful both by purchasing commercial software and by performing the work in-house – they have failed both ways, too.

It all comes down to identifying what information is most critical and collecting that data. You should know how you will use the data before you begin collecting it. Then you must put that data into a useful format. Every situation is different. Laramie County's needs are not the same as Crook County's; Casper's needs are not the same as Shoshoni's. Assess your needs, your resources, and begin collecting and organizing your cost information. Know where your money goes.



ROADS SCHOLARS HONORED AT SAFETY CONGRESS

The 13th Annual Transportation and Safety Congress was held on April 2nd and 3rd at the Parkway Plaza in Casper. With nearly 150 attendees, 14 speakers and 17 vendors, there was something for everyone. Opening remarks were given by Khaled Ksaibati, Wyoming T²/

They both received a plaque, an engraved mug and an engraved Wyoming clock. In order to receive this honor, they had to attend at least 20 Wyoming T²/LTAP workshops, including at least one Transportation and Safety Congress and one Work Zone Safety workshop.



LTAP Director, Vince Garcia, WYDOT GIS/ITS Program Manager, Phil Miller, FHWA Wyoming Division Administrator and Rocky McWilliams, WACERS Vice President.

One of the first orders of business was to present the Master Roads Scholars and Roads Scholars Class of 2008. This year, there were two new Master Roads Scholars: **Wallace Crowder** and **Bill Obermeier** (shown in the photo), both with the City of Cheyenne (although Wallace is now retired).



Roads Scholars must attend a minimum of 12 Wyoming T²/LTAP workshops, with the same two required workshops that Master Roads Scholars must attend. Roads Scholars receive a plaque and an engraved mug. The eleven members of the Roads Scholar Class of 2008 are listed below:

Dennis Green, WYDOT
Larry Griffith, City of Casper
David Pendleton, Fremont County
Doug Peterson, Town of Torrington
Norman Rennich, City of Casper
Nick Saunders, City of Gillette
Doug Sims, Fremont County
Bill Snapp, Fremont County
Mark Swenson, City of Casper
Bobby Welch, City of Green River
Dave Williams, Park County



Pictured above from left to right: Doug Peterson, Larry Griffith, Nick Saunders, Bobby Welch, Norm Rennich and Mark Swenson.

To date, the Center has recognized a total of 45 Master Roads Scholars and 120 Roads Scholars. We again congratulate all of these fine men and women for their dedication and outstanding accomplishments.



Paul Harker, FHWA Wyoming Division, gave a brief presentation on the new rules on retroreflectivity. All Safety Congress participants received a copy of the “*New MUTCD Sign Retroreflectivity Requirements*” (FHWA-SA-07-020). If your agency needs additional copies of this document, please contact the Center and we will be happy to provide them to you.

A very informative presentation addressing Full-Depth Recycling and Stabilization was given by Steve Christensen with Asphalt Zipper, Inc. This was followed by a presentation on warm asphalt mixes by Mike Farrar, Western Research Institute.

On the lighter side, the audience was treated to a “Road Trip on the Lincoln Highway: Travel in

Early-Day Wyoming. This presentation was given by Chavawn Kelley, Western Research Institute.

At the end of the first day, a panel was convened to discuss the “High Risk Rural Road Program”. Panel members were Khaled Ksaibati, Paul Harker, Rich Douglass (WYDOT Local Government Coordinator), Martin Kidner (WYDOT Planning Engineer), Matt Carlson (WYDOT Highway Safety Engineer) and Rocky McWilliams.

The second day began with George Huntington, Wyoming T²/LTAP Senior Engineer, giving an update on Asset Management Systems. This was followed by a presentation on Stormwater Plans by John Gorman, Wyoming



Department of Environmental Quality. “Planning for Transportation Safety in Cheyenne” was the topic of Sreyoshi Chakraborty’s (Cheyenne MPO) presentation. The final presentation, “Laramie Full-Depth Recycling Demonstration Project”, was given by Don Clem, Rocky Mountain Cement Council.

Last, but not least, a large number of door prizes were awarded and the meeting was adjourned.



The Center's web site has recently been redesigned.

Our lending library database is searchable and materials can be ordered on-line. In addition, on-line registration for our workshops is now available. Take a look:

www.eng.uwyo.edu/wyt2

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Vern Mickelsen
Tom Bonds**

The national Local Technical Assistance Program mission is to foster a safe, efficient, and environmentally sound surface transportation system by improving skills and increasing knowledge of the transportation workforce and decision makers.



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