

CROSSROADS



WISCONSIN TRANSPORTATION INFORMATION CENTER – LTAP at the University of Wisconsin–Madison



Web-based WISLR is a good and free source of road data that includes advanced features local officials can use to create effective road maintenance and improvement programs.

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WISLR in action

DECISIONS ON SPENDING

for road maintenance, rehabilitation and reconstruction challenge local governments every year as they weigh competing priorities. The more quality data and helpful planning tools they have to support informed decisions, the more cost-effective those decisions are.

The web-based Wisconsin Information System for Local Roads (WISLR) is a good, free source of road data that includes advanced features local officials responsible for local roads can use to create effective road maintenance and improvement programs.

Seven years since its launch by the Wisconsin Department of Transportation, WISLR is earning kudos from local officials and the transportation consultants who work for them. Most users start with WISLR by doing an inventory of the condition of their roads and submitting pavement ratings to WisDOT.

Active users go further. They rely on WISLR features to formulate budgets, analyze improvement plan alternatives, and organize information for Local Roads Improvement Program projects and recovery aid programs. Their experiences illustrate how others can get more out of the powerful application.

Start from scratch

When City Engineer and Street Superintendent Dan Koski began working for the St. Croix County City of New Richmond less than two years ago, he found the city's road maintenance program had lost its effectiveness and was over-



Getting the most out of WISLR starts with creating a current record of pavement conditions. This road rates a 7 on the PASER scale, indicating that routine maintenance will extend its useful life.

shadowed by large new construction projects. "My task was to reinstate the program, basically starting from scratch," he recalls.

Koski teamed up with New Richmond Street Foreman Gary Crosby to consider how to use the comprehensive database of road ratings Crosby regularly submitted via WISLR as a platform for creating a budget and five-year plan. Earlier this year, Koski presented his recommendations to the city council and won approval thanks to clear documentation and visuals from WISLR.

The road to approval involved establishing a new approach to evaluating infrastructure needs. Koski says the previous superintendent relied on his own knowledge of the physical conditions of city streets for annual maintenance planning. "Since I don't know the streets that well, I looked for another method of coming up with information accurate enough to guide our planning process. WISLR was it."

Put ratings data to work

WISLR's Five Year Pavement Analysis Budget Planning Tool was a good starting point. Koski entered budget amounts for each of the five years and asked the program to identify particular streets and needed maintenance based on ratings data. This analysis made it easy for Koski to tailor the results and compile a prioritized list of street maintenance projects. The key to these results, he says, was Crosby's diligence in completing pavement ratings consistently and accurately.

In presenting his recommendations, Koski displayed street maps, color-coded by ratings, and spreadsheets generated through WISLR. "Feedback from the Council was positive," Koski notes. "The visuals helped them understand the thinking behind an effective program, especially in relation to pavement life cycle, and how preventive maintenance is a good investment."

Continues on page 8

Improve intersection sight distances



Stop signs improve safety at an intersection with obscured view.

Follow these procedures to determine recommended intersection sight distances, measure distances in the field and identify actions for improving sight lines.

GOOD VISIBILITY at highway intersections is an important element of roadway safety. Obstructed views where two roads meet increase the chance for vehicle crashes. Local road officials need to maintain sight triangles at these intersections that meet safety standards.

The method described here for determining minimum sight distances at stop-controlled and uncontrolled intersections comes from guidelines in *Geometric Design of Streets and Highways 2004* published by the American Association of State Highway and Transportation Officials (AASHTO). Often called "The Green Book," the guidelines refer to new construction. Local policies related to sight distance requirements might justify lesser minimums for cost/benefit reasons. But the Green Book likely will be used as a defacto standard in a court case if no local policy exists.

Follow the procedures in this article to determine the recommended intersection sight distance for an intersection, measure the distances in the field, and identify

maintenance actions and low cost improvements to address poor intersection sight distance.

These procedures are based on a passenger car approaching an intersection with approach grades of 3 percent or less and an angle near 90 degrees. See the Green Book to adjust for grades greater than 3 percent, angled intersections or significant truck traffic.

Uncontrolled intersection sight triangles

Highway workers and engineers determine sight triangles by calculating an intersection sight distance (ISD) for each leg of an intersection at intersecting roads. The ISD depends on the configuration of the road and existing traffic control at the intersection.

For uncontrolled intersections—those without stop signs, yield signs or other traffic controls—calculate the minimum ISD along two legs of the intersection to establish an "approach sight triangle." (Fig. A) This is the area to keep clear of visual obstructions so approaching drivers have adequate time to identify hazards

and respond safely. Determine the distance of each leg of an **approach** sight triangle from Table 1 using the design speed for each intersecting road.

Stop-controlled intersection sight triangles

Stop-controlled legs of intersections use a "departure sight triangle" (Fig. B) to establish the area with unobstructed views so stopped drivers can judge when to enter or cross the intersection.

The length of the short leg of a **departure** sight triangle (along the stop-controlled leg of the intersection) is 14.5 feet plus the distance from the edge of pavement to the center of the lane traveled by a vehicle approaching on the uncontrolled leg of the intersection. Determine the length of the long leg of the sight triangle (along the uncontrolled leg) from Table 2 using the design speed of the uncontrolled street.

ISD for yield-controlled intersections is a more complex case. It requires taking measurements of the approach and departure sight triangles, with lengths different from those presented here. Consult the Green Book for details.

Estimating design speed

It helps to know the design speed of a road when establishing sight triangles. Different from the speed limit, design speed is related primarily to the road's horizontal and vertical curve geometry.

Keith Knapp, Director of Transportation Safety Engineering at the Center for Excellence in Rural Safety at the University of Minnesota, suggests that when information on design speed is not available, local agencies use a design speed 5-to-10 mph above the posted speed limit to determine the minimum sight distance required.

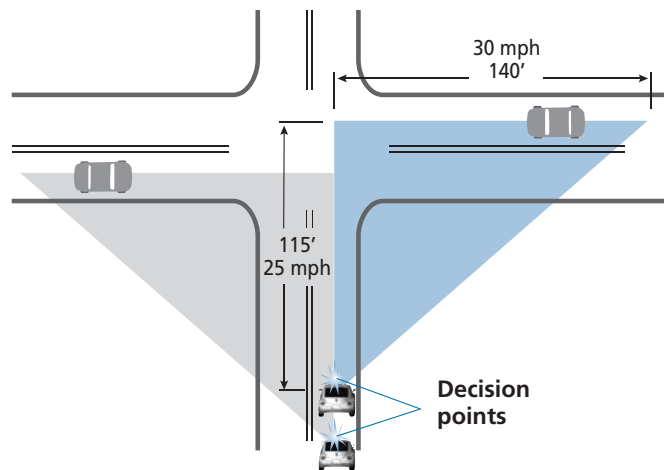


FIG A – Left and right approach triangles at an uncontrolled intersection. Examples show distances taken from Table 1 based on design speeds of intersecting roads.

TABLE 1 – Intersection sight distances: UNCONTROLLED INTERSECTION

Design speed (mph)	20	25	30	35	40	45	50	55	60
Intersection sight distance (ft)	90	115	140	165	195	220	245	285	325

Actions to improve sight lines

Where sight distances do not meet the minimum ISD requirements, the next step is to identify and reduce the obstructions that interfere with sight lines or compensate by changing traffic controls.

Generally, objects that stand higher than 3.5 feet or hang lower than 7.6 feet are considered obstructions in the sight triangle. Some agencies use 2.5 or 3 feet as the lower number and 8.5 feet for the higher number, basing these expanded vertical zones on variations in vehicle height. The expanded vertical zone also helps compensate for vegetation that fills in again after being cut back.

Common sight obstructions include: trees, bushes and crops, fences, signs, buildings, parked vehicles, and roadway pavement or embankment. Although property owners may object, trim or remove vegetation within the right-of-way. For obstructions outside the right-of-way but inside the sight triangle, find out if private property owners must remove them by ordinance. If not, communicate the safety issues and work with property owners to gain voluntary compliance.

When removing an obstruction is impossible or cost prohibitive, local governments can address the sight

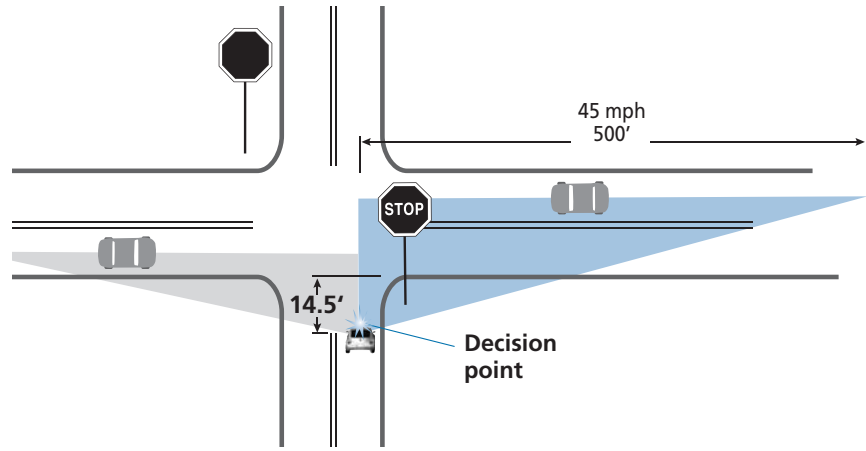


FIG B – Left and right *departure* sight triangles at stop-controlled intersection. Example shows required sight distance taken from Table 2 based on the design speed of uncontrolled leg of intersection.

TABLE 2 – Intersection sight distances: STOP-CONTROLLED INTERSECTION

Design speed (mph)	20	25	30	35	40	45	50	55	60
Required sight distance (ft)	225	280	335	390	445	500	555	610	665

distance issue with other actions. Installing a stop sign at an uncontrolled intersection (when MUTCD stop sign warrants are met) can reduce the size of the sight triangle. In some cases the way to improve sight lines is to make changes to grades, curves and embankments adjacent to the intersection.

If it is not possible to improve sight distance by removing obstructions, changing intersection control or making geometric changes, consider posting advance warning signs and advisory speed limits to make drivers more aware of the intersection.

Safety in season

Summer is a good time to check intersections for adequate and safe sight distances while vegetation is thick and full. The fieldwork to check intersection sight distance is not costly or complicated, and many of the remedies for inadequate sight distance can be done at low cost. Improving sight distances at intersections goes a long way toward reducing crashes and keeping local roadways safe. ■

Resource

<http://www.transportation.org/>

Link to American Association of State Highway Transportation Officials site and the organization's bookstore, a source for the AASHTO Green Book.

Check ISD in the field

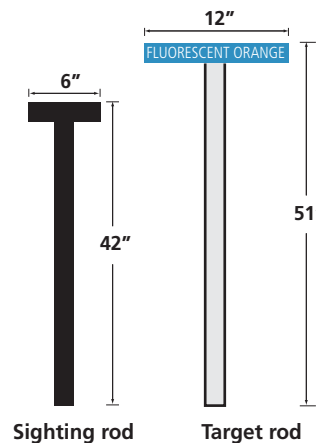
Checking ISD in the field takes a crew of two people with other personnel providing work zone traffic control as necessary.

Tools for the job include sighting and target rods. Construct both from 1x2 lumber. The T-shaped target rod is 51 inches tall with a 12-inch piece of wood fastened horizontally across the top painted fluorescent orange. The sighting rod is a 42-inch-tall version of the same design painted flat black.

Determine sight distances for uncontrolled intersections by placing the sighting and target rods at recommended sight distances taken from Table 1. Sight from the top of the sighting rod to the top

of the target rod. If the target rod is visible, the sight distance is adequate along the line that describes the limits of the sight triangle. Check sight distances at other locations within the triangle by moving the sighting rod and the target rod toward the intersection, checking visibility at different locations along each leg of the intersection.

Check sight lines at a stop-controlled intersection by first placing the sighting rod at the decision point on the stop-controlled leg. Sight along the top of the rod as the other person, holding the target rod, moves away along the intersecting road. Measure the distance along the intersecting road between the two rods at the



point where the target goes out of view. This is the sight distance. If the measured distance is less than the minimum distance, plan to improve visibility by removing obstacles.

Use both sighting and target rods for field measurements.

Snow equipment training pays off

Summer and fall are prime times for scheduling snow equipment training days.



A regiment of tubular markers awaits deployment in the Lambeau Field parking lot at the annual APWA equipment training event.

SUMMER AND FALL are prime times for scheduling snow equipment training days. Operators and maintenance staff members in many highway and streets departments across Wisconsin are participating in refresher courses, and learning how to handle new equipment and technologies.

Gordon Paprocki, Fleet Services Superintendent for the City of West Allis, says every chance to challenge what they know is important to keeping winter road maintenance crews "at the top of their game."

Paprocki speaks from experience and as coordinator of the Snowplow Rodeo sponsored by APWA, the Wisconsin Chapter of the American Public Works Association. The popular event annually pits two-person teams in a test of driving skill, safety knowledge and mechanical aptitude. The

2009 Rodeo takes place at Lambeau Field in Green Bay on September 9.

Create culture of training

Paprocki says as snow and ice control methods get more sophisticated, so does the equipment. Drivers today operate with multiple plows, computerized

salt-spreaders, video cams and other snow-control tools.

For this reason—and to reduce liability—he notes local agencies strive to establish a culture of training.

"There was a time when we put the snow equipment away and didn't think about it until the fall," Paprocki observes. "Now, training



Driver maneuvers through the Rodeo obstacle course at the 2008 competition.

"Training programs and competitions give drivers and mechanics the chance to sharpen their skills and be ready when the season starts."

Training and equipment events

UPCOMING WORKSHOPS and training events give local officials managing winter maintenance operations and their crews the opportunity to learn what's new.

Winter Road Maintenance
October 2009, various locations
TIC offers seven dates and locations for this popular workshop. The updated program offers practical information and procedures for snow and ice control on local roads. Participants share ideas and learn from others, and can see new plows and spreaders on display. The program benefits elected officials, street and highway superintendents, public works engineers, foremen and others with responsibilities for snow and ice control. Topics for 2009 include safe winter driving,

basic winter road maintenance, winter operations and equipment maintenance. See *Calendar* listing in this issue for dates and locations. Go to *Workshops* at <http://tic.engr.wisc.edu/> for registration information.

14th Annual Eastern Snow Expo
August 26-27 at the Alliant Energy Center in Madison

Presented by the American Association of State Highway and Transportation Officials (AASHTO), the Expo presents a showcase of products and services from

industry-leading vendors. For registration details, go to <http://www.transportation.org/meetings/231.aspx>.

20th Annual APWA Snowplow Rodeo
September 9 at Lambeau Field in Green Bay

Wisconsin highway and street departments compete for top honors, connect with other agencies and meet with equipment vendors. Go to <http://wisconsin.apwa.net/> for information on how to register, compete or participate as a judge. Or contact Gordon Paprocki at 414-302-8809 or gpaprocki@ci.west-allis.wi.us. Registration deadline is Sept. 1.

programs and competitions give drivers and mechanics the chance to sharpen their skills and be ready when the season starts.”

Teach preventive maintenance

Milwaukee County Fleet Director Daniel Goeden says the off-season training his department does emphasizes cost-saving and preventive maintenance. He explains that both full-time and seasonal employees participate in a range of training programs. “We want everyone to know their equipment, how to use it correctly and how to maintain it. When they don’t, we end up with too much costly downtime.”

Goeden often brings in vendors to train key personnel on new equipment and, in turn, those operators train their colleagues. The department did this last season when they introduced a D-ring plow hitch for three of its trucks. Pivoting on a ring, the blades react quicker and more effectively to uneven pavement and bumps, which helps reduce equipment damage.

Another pre-season strategy Goeden uses to keep equipment safely on the road during snow events is to have welders on the fleet operations crew teach drivers and mechanics how to spot the signs of equipment failure early, before problems escalate.

Spotlight on safety

Maintenance issues also dominate equipment training in Waukesha County. Bob Rauchle, Manager of the county’s Department of Public Works Fleet Division, says maintenance training continues even after operators learn how to work the computerized controls for various pieces of winter equipment.

“Our training goals are to improve productivity, clarify concepts or procedures, build awareness and camaraderie, and improve safety by reducing injuries and accidents.”



The Waukesha County Department of Public Works Fleet Division conducts an on-site snow equipment training session earlier this year.

Training last year involved maintenance and operation of pre-wetting systems newly installed on 40 of the county’s 65 patrol trucks and a 4,000-gallon anti-icing truck deployed in a shared-equipment agreement with Jefferson County.

Rauchle says the Fleet Division schedules training days in the spring and fall. Managers organize people into groups based on topics and rotate them through a series of sessions, covering four-to-six topics. The programs include refresher training to keep employees up to date on existing equipment and safety issues. He relies on topic experts from the county, his own fleet staff or manufacturers’ representatives to lead the training.

Roadeo extends training

Goeden and Rauchle both view the Snowplow Roadeo as a useful extension of their seasonal training. Like other agencies, they host local mini competitions to identify the top three or four teams who will take the field (or parking lot) at Lambeau. Crews that advance to the Green Bay event have a chance to test their skill under various conditions on the Roadeo obstacle course. Besides the

Beloit wins snow and ice control award

APWA recently honored Beloit for its efforts to promote snow and ice removal practices that minimize environmental impacts. The coveted **Award for Excellence in Snow and Ice Control** recognizes the recipient’s efforts in seven key areas, including materials/handling, equipment and training. Congratulations to the City of Beloit Department of Public Works.

competition course, the event this year features a demonstration roundabout.

Paprocki says the Roadeo began 20 years ago with a handful of people in attendance. Today, it draws as many as 70 two-person teams and more than 30 vendors. The event recently added programs for mechanics to give these professionals more exposure to new equipment and methods, and a chance to network with other departments.

“This is one important way the Snowplow Roadeo has grown over time into a place where many people in many local agencies can connect to share ideas,” Paprocki says. “It gets everyone thinking about how to improve their programs back home.” ■

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Resources

<http://wisconsin.apwa.net/>

Wisconsin Chapter of APWA includes links to Snowplow Roadeo and other leadership and education resources.

Mechanical removal is the most effective method of snow and ice control with the least impact on the environment.

A Joma blade by Black Cat Blades mounted on a Monroe County plow shows carbide inserts on the bottom edge of the rubber casing. This blade has one year of wear.



Because carbide wears tougher than steel, Pieper sees Monroe County reaping the benefits over time despite the higher cost of Joma blades.

Plow blade advances improve snow control

STRATEGIES TO IMPROVE winter maintenance often focus on new techniques in anti-icing and deicing, and how alternative chemicals perform to keep roads passable and safe. Mechanical removal, or plowing, is rarely in the spotlight. Yet this routine method of snow and ice control is the most effective method with the least impact on the environment.

Many local governments are exploring ways to improve equipment and methods to maximize their storm response and cut back on salt use. One approach involves innovative blade designs and plow configurations that do a better job of clearing pavement and produce other benefits.

The experience of highway departments in Wisconsin and Iowa demonstrate the impact of several alternatives—including rubber-wrapped carbide blades and multi-edge plows.

Blade performance impresses drivers

Monroe County started using Joma blades on several trucks about eight years ago. The Joma system consists of carbide segments encased in rubber. William Pieper, Shop Superintendent for the county's highway department, says at first they used the blades only on main county roads because the new

blades were more than double the cost of regular blades, \$480 versus \$216.

In exchange, he says, the Joma blades generally last three times as long, up to two years without full replacement in his experience. The rubber blades performed well enough that Pieper says Monroe County now uses them on additional roads and, last winter, they put the Joma blades on the wings.

He admits his first impression was "these will never work" because the blades were not a full piece of steel. "After we started to use them more, it was like an ugly car that grows on you," he says. "They work especially good on concrete pavements and the operators swear by them."

Patrol Section Leader Larry Rhea is one of those operators. He calls the rubber/carbide blades a significant improvement in winter maintenance equipment. The carbide component is strong, he says, and the rubber acts as a shock absorber, lessening the toll on equipment and sparing drivers fatigue-inducing vibrations. "After 10 or 15 hours out plowing, it really makes a difference," he notes, adding that mounted as they are in four-foot sections, the blades are more forgiving. They "flex" when operators plow across raised pavement markers, or sections of worn or wheel-rutted asphalt. As a result, the rubber/carbide blades leave less snow on the pavement and the county is using less salt on its roads.

Routine maintenance

Because carbide wears tougher than steel, Pieper sees the county reaping the benefits over time despite the higher cost of Joma blades. "We keep them out there longer without the need to replace and maintenance on them is routine, like other plowing equipment." Thanks to minimal

cylinder vibration, he adds, there is less pin wear.

The blades bolt on in sections, making it easier to replace damaged sections or ones that wear unevenly without waste. The only difference Pieper sees is that the bushings inside the mounting holes tend to wear and slide out as the blades wear. To protect against failure in the field, his crews run a steel blade behind the rubber blade—mounted two-to-three inches higher—for support and as a guide.

The benefits outweigh the drawbacks, Pieper says, and he is satisfied with their work-around.

Rhea, who has 21 years of experience behind the plow, says the Joma blades take training to use correctly. "Drivers need to follow appropriate equipment handling to get the most out of them," he adds. "The best blades out there won't last if driven too hard or too fast over pavements."

Prototype comparison

The Iowa Department of Transportation experimented last year with the Joma system and another blade of similar design by Valley Blades called Polar Flex. IADOT technicians also developed and tested a prototype design of their own using one-foot carbide sections and rubber. Dennis Burkheimer, Winter Operations Administrator for IADOT, says his tests indicate that the system of rubber-encased blades in one-foot blade segments is effective for cleaning roads with one pass. And, as in Monroe County, the IADOT operators appreciate the quieter blades and how they adjust to the contour of the roadway.

Life-cycle performance was good, Burkheimer says. His crews did not wear through a single set of the commercial blades last winter. They plan to expand use of the blades next winter and do more extensive testing.



IADOT tested the Polar Flex rubber carbide blade by Valley Blades **LEFT** last year and an in-house prototype **RIGHT** with one-foot carbide sections and rubber.

The IADOT prototypes also wore well. Burkheimer reports they used the blades all winter and wore them down about a quarter-inch. He estimates these will last an additional one to two years. "Since we made them in-house, however, we don't have a good idea of cost for the blades if they were produced by a manufacturer."

Cost, of course, is a major consideration. Burkheimer says IADOT goes through more than 2,000 standard carbide blades each winter season at a unit cost of about \$600 to outfit the department's 11-foot plows. IADOT's annual budget for blades currently totals over \$1.2 million.

"We typically get about 1,000 miles of wear out of each set," he notes. "We also started stacking the carbide blades on the plows, which allows us to get maximum life out of the blade without damaging the moldboard or



Stacked standard carbide blades on an IADOT plow.

having to change them out before they're completely worn."

The \$3,000 price of the rubber/carbide Polar Flex blades includes a holding system that should last the life of the plow. Crews replace the one-foot sections as they wear and the rubber cushioning after about three changes of blades.

Burkheimer considers the rubber/carbide design a serious option for IADOT's winter operations but is not sure which system makes the most sense. "This winter, we plan to do side-by-side testing of the Joma, the Polar Flex, our own design and standard carbide blades to get more data to help with our decision."

One pass, multiple blades

Another idea IADOT is testing for improved plow performance is multi-edge blades. The department has run trials with plows that have a scarifying blade positioned behind the main carbide blade and a third blade made of a rubber material mounted behind the moldboard. Each blade works independently, with the operator choosing the blade or blade configuration that suits conditions.

Burkheimer observes that some combination of multiple blades effectively removes more snow and ice from the road in one pass because the second or third blades move anything left behind

by the main blade. As a result, it takes less deicer to achieve bare pavement.

Last year, IADOT also tested a plow with only the rubber blade on melted snow and slushy material. They have tried different slush blade designs, either deploying the blade by rotating the moldboard or by raising and lowering it.

Iowa was one of five states, including Wisconsin and Minnesota, that joined in a study last year of the effectiveness of multi-edge plows. The ongoing study is sponsored by Clear Roads, a multi-state cooperative research group which funded purchase of five multi-edge prototype plows from four different manufacturers featuring conventional, slush and ice blades. Burkheimer says his group left the ice blade off the prototype they received because it did not measure up. They plan to modify the blade and use it in their tests this winter.



A multi-blade system from Monroe Truck Equipment features a carbide blade backed by an ice blade and a rubber blade.

Material improvements

As local street and highway departments work to keep costs in check, adopting new materials and methods is necessary to sustain an effective winter maintenance operation. Improvements in materials and innovations in equipment like rubber/carbide blade systems and multi-blade plows are examples of new ideas that can help. ■

Some combination of multiple blades effectively removes more snow and ice from the road in one pass because the second or third blades move anything left behind by the main blade. As a result, it takes less deicer to achieve bare pavement.

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Resource

<http://www.clearroads.org>
Link to the Clear Roads project that uses pooled funds to support research aimed at rigorous testing of winter maintenance materials, equipment and methods for use by highway maintenance crews.

WISLR in action

from page 1

“WISLR is a tool for organizing and analyzing data. It’s a guide to decision making but it won’t decide for you.”

Koski uses the physical inventory in WISLR to monitor road attributes and maintenance plans throughout the year. It also helps when determining cost-sharing alternatives for rebuilding roads in partnership with neighboring townships. The mapping and report functions in WISLR are now integral to developing the city’s ongoing road maintenance plans. For example, Koski used them in April to prepare applications for funding through one of the WisDOT Recovery Act programs.

Effective and accessible

Smaller towns and villages without engineers on staff often contract with consulting engineers to develop transportation plans. They also benefit from what WISLR delivers. Project engineers David Buechl and Ken Ward of

Waukesha-based Ruckert-Mielke help many of their municipal clients make greater use of the planning tools in WISLR. They credit the application as effective and accessible, and consider it a viable option for local governments wanting to improve their planning and budgeting process.

Buechl and Ward describe a recent project for the Town of Randall in Kenosha County as a good example. Initially hired by the town to manage a delayed pavement ratings process, the Ruckert-Mielke team suggested combining ratings data with a WISLR analysis to develop a clear road improvement plan. Their proposal highlighted the need to address critical, but neglected infrastructure issues.

The report included ratings data and information about appropriate maintenance actions. It also detailed existing budget resources and

outlined expenditures for road and drainage-related improvements. The plan laid out the facts, Buechl says, so town officials could make a reasoned judgment about approving preventive maintenance measures.

“We always stress that WISLR is a tool for organizing and analyzing data,” Buechl says. “It’s a guide to decision making but it won’t decide for you.” The consultants say they combined WISLR results with knowledge of other recent projects to develop actual cost projections for Randall.

Ward explains their report emphasized the importance of keeping the town’s better roads in good shape. “We used the maps in WISLR to help officials visualize where the roads are on the ratings

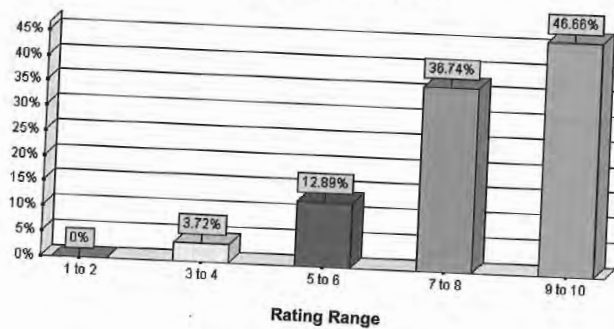
Graphs generated in WISLR for New Richmond [BELOW](#) show the percentage of city streets at different pavement ratings based on the latest data entered.

Key features emphasize interactive tools

As the City of New Richmond and the Town of Randall demonstrate, WISLR interactive tools allow users to create and manage fact-based road maintenance and improvement programs, consider alternatives (including preventive maintenance) and effectively communicate proposed plans to elected local officials and the public.

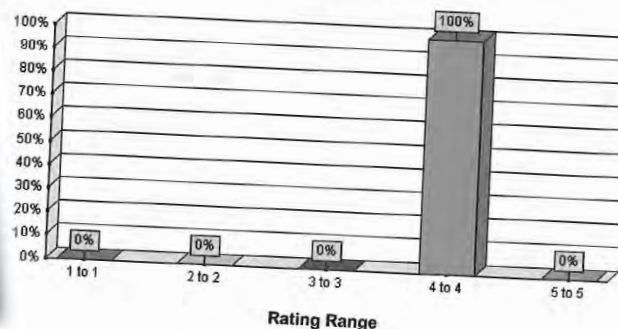
- Map roadway data using GIS technology
- Analyze pavement data to identify condition by pavement type
- Display location of maintenance and improvement needs
- Develop project cost estimates
- Evaluate long-term implications of alternative budgets and project selections
- Generate charts, graphs, tables and maps to illustrate conditions and support plan proposal
- Maintain up-to-date road inventory

Condition Frequency Report - Paved
City of New Richmond

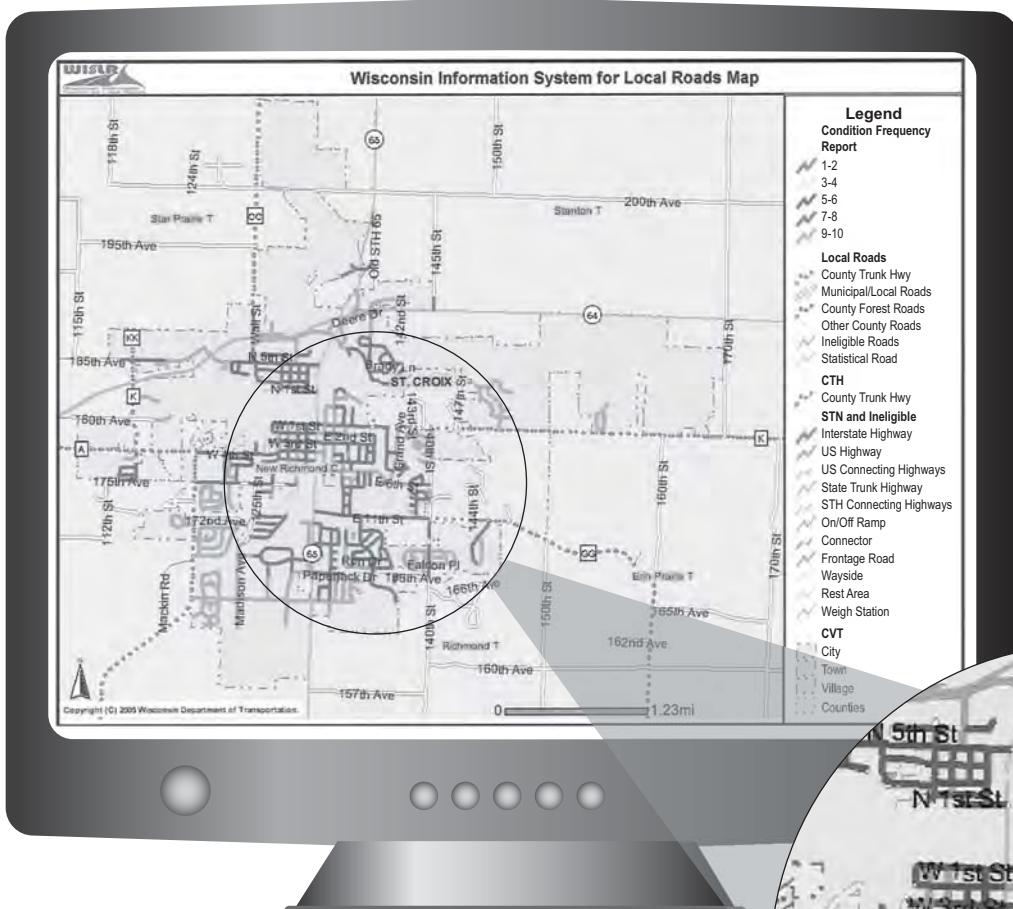


• Based on 55.63 miles of rated roadways.
• Paved: 45,50,52,55,57,60,65,70,75

Condition Frequency Report - Unpaved
City of New Richmond



• Based on 0.25 miles of rated roadways.
• Unpaved: 35,40



“The quality of information we had from the WISLR analysis means our discussions focus on the facts and the facts are there to support the direction we decide to go.”

Color-coded maps like this one illustrate the array of road conditions based on pavement ratings submitted using web-based WISLR. Users customize these and other analysis tools to develop and communicate recommendations for improvement plans.



scale and make sense of the five different budget scenarios we ran to demonstrate options.”

Ward and Buechl ran examples of budgeting from \$50,000 to \$250,000 a year to get Randall’s roads in shape. The cost spread gave town officials a view of a gradual or more aggressive approach, and the information they need to decide whether to budget or borrow to move road maintenance projects forward.

Town Board Member Ken Mangold agrees the WISLR data and presentation materials made it much easier for the entire board to understand the decisions they face. “The quality of information we had from the WISLR analysis means our discussions focus on the facts and the facts are there to support the direction we decide to go.”

Test the tools

Many local governments are finding value in WISLR as they test out the tools and run their ratings database through its paces. Again this summer, the Transportation Information Center, in conjunction with WisDOT, takes its popular workshop *Using PASER and WISLR to Manage Your Roads* on the road to help educate officials responsible for maintaining local roads

and the consultants who work with them on how to realize the potential of these applications. See the *Calendar* or go to <http://tic.engr.wisc.edu/> to learn about workshop dates and locations. ■

WISLR wants feedback

The Wisconsin Information System for Local Roads (WISLR) is looking for feedback. The more the people use the web-based resource to analyze pavement data and develop budget scenarios for maintenance and improvement programs, the more it helps the Wisconsin Department of Transportation enhance the system and its analysis tools. Local officials responsible for roads can establish a WISLR account by going to the Department of Administration website at <https://on.wisconsin.gov>.

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Resource

<https://trust.dot.state.wi.us/wislr/>
Link to existing account log-in for WISLR main menu on the WisDOT website.

Important dates at-a-glance



This list of key dates gives local officials responsible for local roads a snapshot of state and federal deadlines for submitting transportation information, applying for grants or complying with new rules related to sign requirements. See "Meeting sign retroreflectivity levels" in Summer 2008 *Crossroads* for more on the MUTCD (Manual on Uniform Traffic Control Devices) standards.

November 1, 2009

Submit applications to County Highway Commissioners for 2010-2011 Local Roads Improvement Program (LRIP). Contact County Highway Commissioners for more information.

December 15, 2009

- Submit pavement ratings to Wisconsin Department of Transportation (WisDOT).
- Submit certified mileage to WisDOT.

January 2012

Have an assessment or management method in place that is designed to maintain traffic sign retroreflectivity at or above established minimum levels.

January 9, 2012

Meet MUTCD standard for size of lettering (6") and symbols on street name signs.

January 2015

Maintain all regulatory, warning and ground-mounted guide signs at or above minimum retroreflectivity levels.

January 2018

Maintain all street name signs and overhead signs at or above minimum retroreflectivity levels.

Resources

<http://www.dot.wisconsin.gov/localgov/>

Programs for Local Government page on WisDOT site with link to Local Roads Improvement Program (LRIP) page.

<https://trust.dot.state.wi.us/wislr/>

Link to log-in menu for Wisconsin Information System for Local Roads (WISLR) with information on certification and ratings requirements.

<http://mutcd.fhwa.dot.gov/index.htm>

Link to Manual on Uniform Traffic Control Devices site with the latest on sign standards and compliance dates.

RESOURCES

Print copies of listed publications available free from TIC while supplies last. Download electronic copies for some items at: <http://tic.engr.wisc.edu/publications>.

Video, CDs, and DVDs loaned free through county UW-Extension offices. Print copies of the current TIC Lending Library Catalog were distributed in July 2007. A limited number of copies still are available. Also look for titles on the TIC website.

*Web addresses listed here and throughout *Crossroads* are live in the electronic version on the TIC website. Go directly to the pages indicated by clicking on them there. If you cannot retrieve a document on the TIC site, contact us for a print version.*

TIC website

<http://tic.engr.wisc.edu/>

Publications

PASER Manual Series. Pavement Surface Evaluation and Rating manuals provide help with road ratings process; review of surface condition and repairs for most road surface types, describes and illustrates common defects. Includes surface rating system that links type, number and severity of defects with maintenance methods. Six manuals available from TIC.

Asphalt-PASER Manual
39 pp., 2002

Brick and Block-PASER Manual
8 pp., 2001

Concrete-PASER Manual
48 pp., 2002

Gravel-PASER Manual
32 pp., 2002

Sealcoat-PASER Manual
16 pp., 2000

Unimproved Roads-PASER Manual
12 pp., 2001

SAFER Manual: Safety Evaluation for Roadways, 40 pp., 1996. Available from TIC. The manual provides a simplified approach for reviewing safety conditions on local roads and streets.

Web Sources

Iowa State University Institute for Transportation Handbook of Simplified Practice for Traffic Studies includes chapter on sight distance; also covers speed studies, traffic volume counts and crash analysis.

<http://www.intrans.iastate.edu/pubs/traffichandbook/>

Vegetation Control for Safety: A Guide for Local Highway and Street Maintenance Personnel discusses simplified sight distance procedures and strategies for vegetation control to maintain sight distance.

http://safety.fhwa.dot.gov/local_rural/fhwasa07018/

Programs for Local Government link on the Wisconsin Department of Transportation site provides current information on WisDOT funding programs, including the Local Roads Improvement Program (LRIP) and General Transportation Aids (GTA).

<http://www.dot.wisconsin.gov/localgov/index.htm>

Clear Roads website features product experience survey results for winter maintenance equipment, summary reports of research related to winter maintenance and links to other winter maintenance websites.

<http://www.clearroads.org/>

DVD/VHS/Multimedia

Resources new to the TIC collection or related to topics in this newsletter.



Drive Safe!, Public Risk Insurance Made Easy (PRIME) – Division of Glatfelter Insurance Group, 2008, 15 min., #19011, DVD. Provides information on vehicle inspection, driver alertness, defensive driving and safe vehicle backing. Focused on municipal operations, includes driving segments with municipal pickup trucks; useful for new driver training or refresher training for drivers of cars and light trucks.



Employment Practices Liability Program, Public Risk Insurance Made Easy (PRIME) – Division of Glatfelter Insurance Group, 2006, #19012, CD (Windows only). Includes employment practices resource manual and fact sheets (PDFs) with guidance on key topics in brief, useful format. Topics include: personnel policies, harassment and discrimination prevention, employee training, position descriptions, performance development and evaluations, progressive discipline and terminations, and workplace violence. Presents basic information helpful for new supervisors or continuing supervisors.

Snowplow Operator's Guide to Snow and Ice Equipment, Idaho Technology Transfer Center, 2006, #18995, DVD. Self-paced training program discusses snowplow equipment preparation and operation, and snowplowing techniques; combines short video segments with interactive tests.

Video segments are excerpts from the Iowa Department of Transportation Winter Operations Training Series videos #18172-#18175.

Winter Operations Training Series, Iowa Department of Transportation, 1997, #18993, DVD, 80 min. Programs 1-4 cover general introduction to winter operations, pre-season preparation, equipment operation and techniques for plowing.

Winter Operations Training Series, Iowa Department of Transportation, 1998, #18994, DVD, 65 min. Programs 5-6 feature information on anti-icing and deicing operations and use of winter weather resources, including forecasting and RWIS (Road Weather Information System).

Sand and Salt Spreader Calibration, Baystate Roads Program, Massachusetts Local Technical Assistance Program, 2006, #18928, DVD, 13 min. Explores the importance of calibrating spreader operations, and describes procedures for calibration of salt and sand spreaders, and the calculations needed to determine proper calibration.

Anti-icing/RWIS Training, American Association of State Highway and Transportation Officials (AASHTO), 2003, #18790, CD, seven self-paced lessons. Interactive program provides hands-on learning for individuals responsible for anti-icing operations. Focus on understanding weather forecasting, use of forecasts and application of anti-icing chemicals.

CALENDAR

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UW-Madison Seminars

Local government officials are eligible for a limited number of scholarships for these Engineering Professional Development courses held in Madison. Go to <http://lepd.engr.wisc.edu> or 800-462-0876 for course details.

SEPTEMBER 2009

9-11 Preventing and Detecting Deficiencies in Design and Construction Documents #K857

OCTOBER 2009

14-15 Managing Snow and Ice Control Operations #K986

19-20 Concrete Bridge Repair #K934

22-23 Advanced Steady Flow Modeling Using HEC-RAS 4.0 #K307

27-28 Essentials of Hydraulics for Civil Engineers & Designers #L061

NOVEMBER 2009

9-10 Introductory Principles of Engineering Project Management #K965

11-12 Management Skills for Engineering Capital Projects #K966

13 Computer Tools for Engineering Project Management #K967

16-17 Storm Sewer System Design #K760

16-20 Structural Design for Non-Structural Engineers #K859

18-19 Storm Water Detention Basin Design #K761

DECEMBER 2009

7-8 Comprehensive Practices for Effective Construction Project Management #K034

7-9 Highway Bridge Design #K856

9 Principles and Practices of Construction Project Scheduling #K035

10-11 Principles and Practices of Estimating for Construction and Design Professionals #K036

Independent Study – Enroll Anytime

Project Management 100: The Basics, Plus Important Insights #L107

Other Events

The Wisconsin Chapter of the American Public Works Association holds the 20th Annual APWA Snowplow Roadeo at Green Bay's Lambeau Field on Wednesday September 9. Additional information at <http://wisconsin.apwa.net>. Or contact Gordy Paprocki at (414) 302-8809 or gpaprocki@ci.west-allis.wi.us.



CROSSROADS newsletter provides information on roads and bridges for local officials. Published quarterly by the Wisconsin Transportation Information Center (TIC) at the University of Wisconsin–Madison, it is part of the nationwide Local Technical Assistance Program (LTAP). TIC is operated by UW–Madison and is sponsored by the Wisconsin Department of Transportation and the Federal Highway Administration. For permission to reproduce articles or graphics, please contact us.

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SUMMER 2009

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FEEDBACK

Please fill out this form and fax or mail (in separate envelope) with the mailing label below.

NAME _____ TITLE/AGENCY _____

Other

ADDRESS _____ CITY _____ STATE _____ ZIP _____

PHONE _____ FAX _____ EMAIL _____

Mailing list change/addition Information/resource request Idea/comment

CROSSROADS



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of
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 MADISON

Wisconsin Transportation Information Center
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 Madison, WI 53706

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CALENDAR

TIC Workshops

Details, locations and registration forms are sent to all *Crossroads* recipients prior to each workshop. Additional workshop information and online registration available at: <http://tlic.engr.wisc.edu/workshops/listing.lasso>

Using PASER and WISLR to Manage Your Roads

Learn to evaluate and rate your local roads, and submit ratings (due December 15, 2009) to WisDOT. Includes tips on implementing WISLR database and mapping tools successfully. Fee: \$45

July 28	Tomahawk
July 29	Hayward
July 30	Eau Claire
July 31	Tomah
Aug 11	Stevens Point
Aug 12	De Pere
Aug 13	Waukesha
Aug 14	Mineral Point

Sign Retroreflectivity Information and training to meet changes in specific MUTCD requirements on sign visibility at night. Workshop reviews facts about sign retroreflectivity and the new requirements, implementing assessment and management methods, and selecting new sign material. Fee: \$45

Sept 2	Eau Claire
Sept 3	Cable
Sept 10	Barneveld
Sept 14	De Pere
Sept 15	Stevens Point
Sept 16	Tomahawk
Sept 21	Waukesha
Sept 22	Tomah

Winter Road Maintenance Practical information and procedures for snow and ice control on local roads. Topics include safe winter driving, basic winter road maintenance, winter operations and equipment maintenance. Fee: \$45

Oct 1	Tomah
Oct 6	De Pere
Oct 7	Tomahawk
Oct 8	Hayward
Oct 9	Eau Claire
Oct 12	Pewaukee
Oct 13	Barneveld

On-Site Workshops

Save time and travel costs by bringing instruction to your shop or office. Schedule training that is convenient and tailored to your specific needs. On-site workshops let you train more people for the same cost or less, including staff from other municipal departments, nearby communities, and businesses you contract with. Contact TIC to book the program and date you want. On-site workshops include:

- Basic Surveying for Local Highway Departments
- Basic Work Zone Traffic Control
- Flagger Training

Calendar continues on page 11

