LHTAC

Idaho Technology Assistance Newsletter

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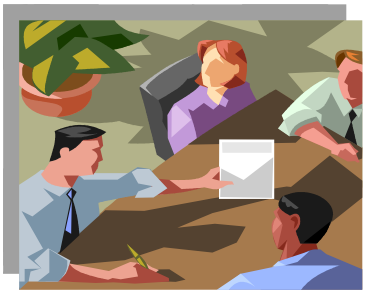
AVOIDING COMMON PROJECT PITFALLS

By Larry Rincover, Project Manager, Negotiation Services, LLC



Widening a county road or replacing a bridge? Simple. Submit an application to LHTAC for funding. Hire an engineer. Send your road supervisor out to buy the right-of-way and you are done. Nothing left but to build it. Well, it is not that simple and if you do not want to risk project delays, cost overruns, and the potential of losing federal funding, it would pay to get all your players on board early. Think of your project as an aircraft carrier. It is best to have all the right players on board before you leave the dock.

The right-of-way acquisition phase is well into the project time-line and you might think that you can wait a year or more before bringing a specialist on board. Worse yet, some agencies assume that their employees can go out and purchase the right-of-ways (after all, we are friends and neighbors!) This is one way to risk federal funding, delaying the project, legal complications, and turning your neighbors against the project and you. There are specific Federal and State requirements to meet in the process of appraising and acquiring rights-of-way. If any of these steps are not met and the "right of way certificate" cannot be confirmed, then your funding and project are at risk. (You may even be required to reimburse funds already spent on behalf of the project to date.) A full-service professional, who is approved by the Idaho Transportation Department, is your best option for providing the work through the appraisal and acquisition process.

In the spirit of getting on board early, it is beneficial to have your appraiser and your right-of-way expert involved as early as the initial design phase. Appraisers and right-of-way experts can see impacts to properties that engineers may view differently. An early "heads up" can help avoid design changes later on and/or expensive compensation issues during the appraisal and acquisition processes.

Finally, consider having your right-of-way expert attend and participate in your public meetings. This gives the right-of-way expert an opportunity to meet with property owners, hear their concerns, and pave the way for a smooth negotiation process later. Public meetings are extremely beneficial in explaining the scope of the project, design options, potential impacts and project time-line. Property owners have an opportunity to voice their concerns and the right-of-way expert has an opportunity to explain the appraisal and acquisition process. As one right-of-way expert puts it, "If you want me in on the landing, I need to be there for the take-off." All aboard!!!

For more information, please contact: Larry Rincover, Project Manager, ns@rincover.com or 208-861-0488.

Reference: Larry Rincover, Negotiation Services, LLC

In This Issue…

See Enclosed: Table 1-2 FHWA Target Compliance Dates For Sign Retroreflectivity

UPCOMING LHTAC WORKSHOPS

Several recent changes are coming to the Local Highway Technical Assistance Council (LHTAC) and the Idaho Transportation Department (ITD) regarding the procedures by which Local Federal-aid Projects will be administered. LHTAC will present a concise workshop on the upcoming changes including the new Stewardship Agreement between ITD and LHTAC, the Selection of Consultants, and the Management during the Design and Construction of Local Federal-aid Projects.

Although new applications will ***not*** be accepted for the STP-Rural Federal-aid Incentive Program in fiscal year 2012, we will take Applications for the 2012 Bridge Replacement and Rehabilitation Program - Local and Off-System.

An overview of the Local Rural Highway Investment Program (LRHIP) and 2013 Application will be presented. (2013 LRHIP Applications are now available)

The *Americans with Disabilities Act* (ADA) compliance issues will also be discussed.

These ½ day workshops (listed below) should be beneficial for both Sponsors and Consultants, and registration is ***not*** required. Please plan to attend.

LHTAC 2011 Workshop Schedule

Federal-aid Incentive Program and LRHIP

District 1 — October 3, 2011, 1:30p.m.–4:30p.m., ITD District 1 Office, 600 West Prairie Avenue, Coeur d'Alene, ID

District 2 — October 4, 2011, 1:30p.m.–4:30p.m., ITD District 2 Office, 2600 Frontage Road, Lewiston, ID

District 3 — October 27, 2011, 9:30a.m.–12:30p.m., ITD District 3 Office, 8150 Chinden Blvd, Boise, ID

District 4 — October 26, 2011, 1:30p.m.–4:30p.m., ITD District 4 Office, 215 South Date Street, Shoshone, ID

District 5 — October 19, 2011, 1:30p.m.–4:30p.m., ITD District 5 Office, 5151 South 5th, Pocatello, ID

District 6 — October 20, 2011, 9:30a.m.–12:30p.m., ITD District 6 Office, 206 North Yellowstone Highway, Rigby, ID

Construction, Engineering and Inspection (CE&I) Workshops will also be available on the above listed dates, however, CE&I workshops will be conducted at *different time schedules and some are at different locations*. ***Registration is required for CE&I Workshops*** due to limited seating space. Please contact Nancy at (208)344-0565 to register. Thank you!

2013 LRHIP Application

LHTAC is gearing up for another round of the Local Rural Highway Investment Program (LRHIP) applications! This round of applications is for fiscal year **2013** grant funds.

The applications were mailed to the qualifying Local Highway Jurisdictions September 15, 2011 and is also available at www.lhtac.org. ***The deadline for submitting applications to LHTAC's office is Wednesday, December 2, 2011 by 5:00 p.m., Mountain Time.***

Here are some helpful hints for completing a successful application: 1) Complete and mail your application early so that you don't miss the deadline. 2) Make sure the application includes the proper signatures. 3) Be sure to include all attachments and copies requested.

Contact: Jim Zier, (800) 259-6841, (208) 344-0565, jzier@lhtac.org

Pavement Preservation: Right Treatment, Right Road, Right Time

Submitted by Ashley Benson, UNH T2 Project Assistant

Most people believe that a road in poor condition should be fixed first. However, pavement preservation stresses applying the *right treatment*, on the *right road*, at the *right time*. This means that road managers should be maintaining their existing "good" infrastructure first instead of fixing the "worst" roads first.

The "right" treatment refers to the best treatment or maintenance option for a particular road. The "right road" refers to the road that is still in "good" condition. The "right time" is before the pavement is severely damaged. The public is largely unaware of the "right treatment, right road, right time" concept. This is part of the challenge for road managers.

Road managers should complete smaller, less expensive repairs frequently to prolong major rehabilitation that all roads need eventually. A good pavement maintenance program will help avoid prolonged traffic disruption for major road projects and will save the community time and money.

According to the FHWA, "with timely preservation municipalities can provide the traveling public with improved safety and mobility, reduced congestion, and smoother, longer lasting pavements."

The goal of a pavement preservation program is to enhance pavement performance and extend road "life". This goal is accomplished through Three main components: preventative maintenance, routine maintenance, and pavement rehabilitation.

Preventative Maintenance

Preventative maintenance is defined as "a planned strategy of cost-effective treatments to an existing roadway systems and its appurtenances that preserves the system, retards future deterioration, and maintains or improves the functional condition of the system (without significantly increasing the structural capacity)" according to the AASHTO Standing Committee on Highways.

Road managers should apply preventative maintenance to roads that are still in good condition as these roads are expected to have a long "service life" remaining. Preventative maintenance treatments include "asphalt crack sealing, chip sealing, slurry or micro-surfacing, thin and ultra-thin hot -mix asphalt overlay, concrete joint sealing, diamond grinding, dowel-bar retrofitting, and isolated, partial, and/or full-depth concrete repairs to restore functionality of the slab; e.g., edge spalls, or corner breaks".

The first tenet of pavement preservation states "right treatment." Not all road treatments and maintenance activities are considered to be pavement preservation, or part of a pavement preservation program. Pavement preservation activities are characterized by their intended purposes. Any treatment that is designed to restore the function of the existing road system and extend its service life is considered to be part of a pavement preservation program. Treatments that increase capacity or strength, while important, are not intended to preserve the lifetime of paved roads, and as such are not part of pavement preservation. The treatments that will be discussed and explained in this article are fog seals, crack sealing and crack filling, chip seals, slurry seals, micro surfacing, and thin asphalt overlays.

Fog Seals—Fog seals are a method of pavement preservation that adds asphalt to an existing pavement surface. Fog seals are an inexpensive treatment that involves "spreading a diluted asphalt emulsion on the roadway". This emulsion contains no added aggregate and is diluted to about 50%.

The intended purpose of a fog seal is to seal the pavement—by spreading the emulsion over the asphalt, raveling on the paved road is prevented and the asphalt is enriched. Fog seals can also be used to waterproof the road surface, prevent stone loss, and improve the surface appearance.

To achieve its goal of pavement preservation, the fog seal emulsion essentially fills the voids in the surface of the paved road, creating a smooth and waterproof surface that protects the road from further damage. If a fog seal is inappropriately applied, however, the result can be a very slick pavement. This can generally be avoided by ensuring that the emulsion is properly diluted before application—the FHWA provides checklists

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for all of the treatments explained in this article. Fog seals are a suitable treatment for roads that have an open surface texture and are weathered, heavily aged, and/or open graded.

Crack Sealing & Crack Filling— Crack sealing and crack filling prevent the intrusion of water and other materials into the pavement cracks, which prevents further deterioration from the spreading of the cracks. Filling cracks is considered short-term treatment between major maintenance or rehabilitation projects.

Crack sealing and filling are the right treatment for paved roads when the roadway base is sound, and the cracks are between 3 mm and 25 mm (0.1 inch to 1 inch). Crack sealing and filling can be completed during any time of year but work best when the temperature is cooler.

Decide whether a crack is "working" or "non-working" first in order to know whether to crack seal or crack fill. A "working crack" is a crack that has a large amount of horizontal movement. A "non-working" crack has a small amount of horizontal movement. Road managers should crack seal working cracks and crack fill non-working cracks.

When crack sealing, a crack sealant should be chosen that is capable of "remaining adhered to the walls of the crack, elongating to the maximum opening of the crack and recovering to the original dimensions without rupture, expanding and contracting over a range of service temperatures without rupture or delamination from the crack walls, and resisting abrasion and damage caused by traffic."

There is less preparation work for crack filling and road managers can use material that have lower performance requirements that those used for crack-sealing.

For example, the materials used for crack filling do need some elasticity to accommodate the movement of the cracks but they do not need to be nearly as elastic or flexible as materials used for crack sealing.

Chip Seals—The process of a chip seal is simple: an asphalt binder is sprayed on to the pavement, and then is covered by one layer of aggregate of a uniform size (the "chips"). After the chip seal is applied, the road is rolled to ensure a proper seal, and the debris is swept away.

Chip seals must be used on structurally sound roads in fair to good condition since they do not increase the structural capacity of the road. Road managers should use chip seals on roads that display a loss of surface texture. Chips seals provide a method of cost-effective treatment that protects the pavement underneath it and extends the service life of the paved road. A chip sealed road is waterproof. Small cracks and imperfections that were present on the old surface are sealed.

Chip seals are one of the most cost effective methods of treatment—the initial treatment itself is inexpensive and can last five to seven years. With multiple applications, it is possible for the chip seal to last ten years.

Slurry Seals—Like a chip seal, a slurry seal protects the pavement underneath and improves the surface of the paved road. If used on a newly paved road, a slurry seal will actually prevent surface problems, such as small cracks, raveling, and water and air permeability. However, a slurry seal is most often used to correct small surface distresses in older pavements, and to seal the surface of the paved road against further damage. A slurry seal is composed of crushed aggregate, an asphalt emulsion (and fillers), and water, which are mixed according to the manufacturer's instructions.

There are three types of aggregate used in slurry seals: Type I (fine), Type II (general), and Type III (coarse). Type I aggregate is used for slurry sealing in low traffic areas, and the fine texture is useful for maximum crack penetration. Type II are the most commonly used aggregates, used in areas of moderate to heavy traffic. Type III aggregate is used in areas where there are severe surface conditions, and provides friction and resistance for heavy traffic loads.

Special equipment is required for slurry seals; a slurry mixing unit with an attached spreader box will be necessary to ensure proper application. The slurry mixture is laid down as a coating on the paved roadway as the mixer/spreader is moved forward. Again, as a method of preventative maintenance, slurry seals do not offer structural improvements, but rather extend the service life of the road by five to seven years.

Micro-surfacing—Micro-surfacing is another convenient and cost-effective form of preventative maintenance for road repair. Micro-surfacing is a cold-mix asphalt mixture with added polymer modifiers, used to repair small distresses on paved roads.

Just like the slurry seal, micro-surfacing is made from a mixture of aggregate, an asphalt emulsion, and water. However, micro-surfacing also has additional materials, such as advanced polymers and other additives. These additional materials give micro-surfacing added capabilities that slurry seals do not have. The added polymers allow micro-surfacing to be used on

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Proposed Revision To 2009 MUTCD Compliance Dates for Sign Retroreflectivity

Bruce Drewes, Idaho T2 Center Manager, LHTAC

On August 31, 2011 the Federal Highway Administration (FHWA) published **23 CFR 655**, titled ***National Standards for Traffic Control Devices; the Manual on Uniform Traffic Control Devices for Streets and Highways; Revision***.

This "Revision" is a request for public comment on the proposed revision to the 2009 MUTCD to address the concerns of the transportation community regarding the number and impact of the list of compliance dates listed in Part 1 of this manual.

FHWA's proposed changes would eliminate 46 compliance dates but not the requirement in the MUTCD. Eight of the dates have expired and 38 are future compliance dates. Four additional dates have been extended or revised with eight other dates seeing no change.

The public comment period is open from August 31, 2011 until October 31, 2011 and once the public comment period closes, FHWA will respond to all comments. FHWA anticipates that this proposed rulemaking will reduce the impacts of compliance dates on State and local highway agencies by streamlining and simplifying the information contained in the MUTCD. **Comments can be submitted electronically at *http://www.regulations.gov* or faxed to (202) 493-2251.**

So what does this mean to me as a Local Highway Jurisdiction?

- Do I need an assessment or management method?
- Do I need to inspect and maintain the signs that we have?
- Should I purchase Engineer Grade signs because they are cheaper?

This change in compliance dates does not remove the requirements within the MUTCD! You will still need to have an assessment or management method and you will need to inspect your signs; an Engineer Grade may not be the most cost effective choice for sign sheeting.

Signs are installed to regulate, warn and guide the road user and should be installed after careful consideration by the agency or organization. After they are installed they need to be inspected and maintained.

The proposed list of "Compliance Dates" as established by the FHWA is attached: **Table I-2. Target Compliance Dates Established by the FHWA**

Reference: Bruce Drewes, Idaho T2 Center Manager, LHTAC
http://mutcd.fhwa.dot.gov/knowledge/09mutcdproposedrev/

Effects of Yellow Rectangular Rapid-Flashing Beacons on Yielding at Multilane Uncontrolled Crosswalks

Drivers generally do not yield the right-of-way to pedestrians in marked crosswalks at uncontrolled sites. One alternative to in-roadway signs and yellow flashing beacons is to add yellow LED Rectangular Rapid-Flashing Beacons (RRFB) to pedestrian warning signs. These LED RRFBs are similar in operation to emergency flashers on police vehicles. The photo to the left shows an RRFB mounted below a W11-2 pedestrian warning sign at a crosswalk.

To provide a more objective understanding of the effects of RRFBs, FHWA conducted a study of these pedestrian warning devices to determine whether they increased driver yielding to pedestrians. This study was part of a larger FHWA research effort to quantify the effectiveness of existing and new engineering countermeasures in improving safety and operations for pedestrians and bicyclists.

The study report presents the results of five RRFB experiments, comparing variations in the features or installation of RRFBs. The report can be found at the following website: http://www.fhwa.dot.gov/publications/research/safety/pedbike/10043/index.cfm.

Key findings are as follows:

- **Experiment 1 – Two- and Four- Beacon Systems**. Installation of the two-beacon RRFB system increased yielding compliance at multilane uncontrolled crosswalk locations from 18 to 81 percent. Yielding compliance increased from 81 to 88 percent following the installation of the four-beacon system at these sites.
- **Experiment 2 – RRFBs vs. Traditional Overhead and Side-Mounted Yellow Flashing Beacons**. Installation of a standard yellow overhead beacon increased yielding compliance from 11 to 16 percent. When side-mounted RRFBs replaced the overhead beacon, yielding compliance increased to 78 percent. Adding the RRFB to the median island increased yielding compliance to 88 percent. The installation of standard yellow side-mounted beacons increased yielding compliance from zero to 16 percent. The installation of side-mounted RRFBs increased yielding compliance to 72 percent. The increases produced by the RRFB system were statistically significant.

- **Experiment 3 – RRBD Effectiveness Over Time**. RRFBs were effective at 22 sites and showed that the effects were maintained over time at each location.
- **Experiment 4 – LEDs Pointed at Traffic and Momentary Light Bars**. LEDs pointed at oncoming traffic increased yielding compliance. Further increases in yielding were not achieved by adding momentary light bars (MLB).
- **Experiment 5 – Advance Warning Devices**. Using advance warning devices placed before the crosswalk along with RRFBs did not increase yielding compliance due to RRFBs alone, but may have increased the distance that drivers yielded in advance of the crosswalk.

These experiments show that the rectangular LED yellow rapid-flashing beacon appears to be an effective tool for increasing the percentage of drivers yielding right-of-way to pedestrians in crosswalks at sites where drivers rarely yield to pedestrians.

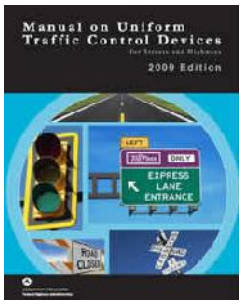
For more information contact Ann Do, 202-493-3319, ann.do@dot.gov.

Reference: SAFETY COMPASS, Winter/Spring 2011: Volume 5 Issue 1

2009 MUTCD is Now Available!

The 2009 Manual on Uniform Traffic Control Devices (MUTCD) is now available for purchase.

As of September 15, 2011, ITD accepted a temporary rule to adopt the 2009 MUTCD. The permanent rule will go to the 2012 Legislature next spring. The cost of the manual is $109.00 each. To order a copy, please contact: *idahot2@lhtac.org* or *dshields@lhtac.org* or call Denise at (208) 344-0565 or (800)-259-6841.



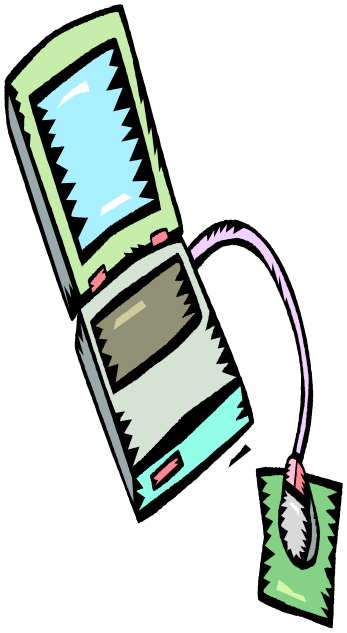
NO NEED TO BE LEFT BEHIND!

Free! Pavement & Sign Management Software ♦♦♦ Available Grants for Data Collection

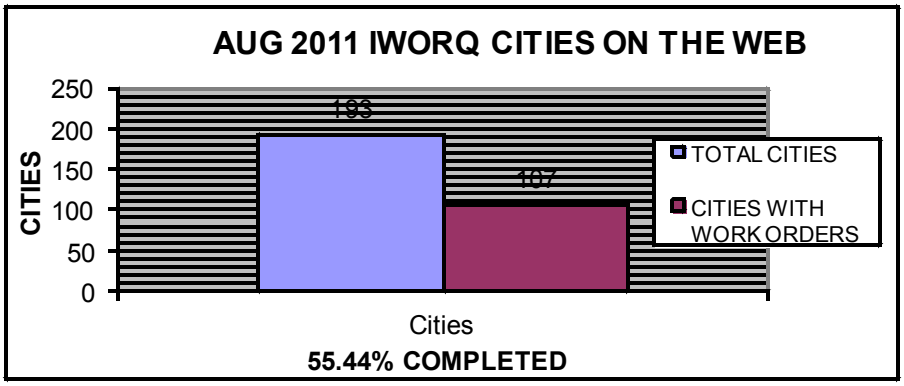
A recent update showed 175 out of 255 rural **IDAHO** Local Highway Jurisdictions (LHJ) now have access to iWorQ's Pavement and Sign Management Software ***at no charge***.

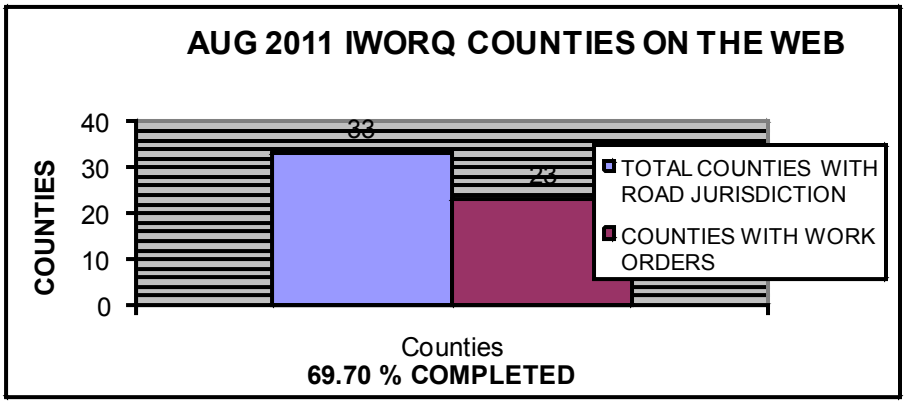
LHJs who have access are listed by district (see Page 9). Please contact Garyn Parrett, iWorQ President at (888)-655-1259 to obtain your log-in and password.

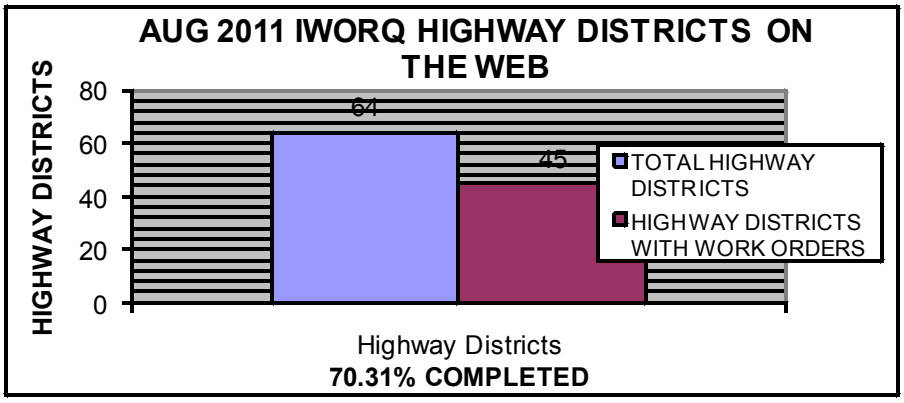
Grants for data collection are still available, so if your agency is not listed, and you would like more information about iWorQ software and the LHTAC grant application, please contact Jim Zier, LHTAC Asset Manager at (800)-259-6841 or jzier@lhtac.org.



Local Highway Jurisdiction (LHJ)	Web Access	% Completed
Cities	193	107	55.44%
Counties	33	23	69.70%
Highway Districts	64	45	70.31%
TOTAL	290	175	65.15%







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Local Highway Jurisdictions (by District) With Access To iWorQ

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DISTRICT 1

CITIES

Bonners Ferry
Clark Fork
Dover
Hayden
Kellogg
Kootenai
Moyie Springs
Mullan
Osburn
Pinehurst
Plummer
Ponderay
Post Falls
Priest River
Rathdrum
Sandpoint
Smelterville
Spirit Lake
St Maries
Tensed
Wallace
Wardner

COUNTIES

Benewah County
Bonner County
Boundary County
Shoshone County

HWY DISTRICTS

Eastside HD
Independent HD
Lakes HD
Plummer-Gateway HD
Post Falls HD
Worley HD
Independent HD
Lakes HD
Plummer-Gateway HD
Post Falls HD
Worley HD

DISTRICT 2

CITIES

Bovill
Cottonwood
Craigmont
Deary
Elk River
Ferdinand
Genesee
Grangeville
Juliaetta
Kamiah
Kendrick
Lapwai
Nez Perce
Onaway
Orofino
Pierce
Troy
Weippe
Winchester

COUNTIES

Clearwater County

HWY DISTRICTS

Central HD
Clearwater HD
Cottonwood HD
Deer Creek HD
Doumecq HD
Evergreen HD
Fenn HD
Grangeville HD
Kamiah HD
North HD
North Latah HD
Prairie HD
White Bird HD

DISTRICT 3

CITIES

Bruneau
Crouch
Glenns Ferry
Grandview
Greenleaf
Homedale
Horseshoe Bend
Idaho City
Marsing
McCall
Melba
Murphy
New Meadows
New Plymouth
Notus
Parma
Payette
Placerville
Weiser
Wilder

COUNTIES

Gem County
Owyhee County
Payette County
Valley County

HWY DISTRICTS

Atlanta HD
Glenns Ferry HD
Golden Gate HD
Highway District #1
Homedale HD
Mountain Home HD
Notus-Parma HD

DISTRICT 4

CITIES

American Falls
Bellevue
Bliss
Carey
Dietrich
Eden
Fairfield
Gooding
Hagerman
Hailey
Hazelton
Ketchum
Oakley
Richfield
Shoshone
Sun Valley
Wendell

COUNTIES

Blaine County
Camas County
Gooding County

HWY DISTRICTS

Bliss HD #2
Buhl HD
Dietrich HD
Filer HD
Gooding HD
Hagerman HD
Hillsdale HD
Jerome HD
Kimama HD
Minidoka HD
Oakley HD
Raft River HD
Richfield HD
Shoshone HD
Twin Falls HD
Wendell HD
West Point HD

DISTRICT 5

CITIES

Arimo
Bancroft
Blackfoot
Chubbuck
Clifton
Dayton
Firth
Franklin
Grace
Lava Hot Springs
Montpelier
Oxford
Paris
Pocatello
Rockland
Shelley
Soda Springs
St Charles
Victor
Weston

COUNTIES

Bear Lake County
Bingham County
Franklin County
Oneida County

HWY DISTRICTS

Power County HD

DISTRICT 6

CITIES

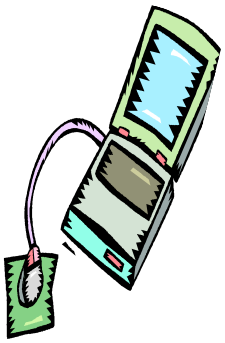
Arco
Challis
Driggs
Mackay
Menan
Newdale
Stanley
Sugar City
Teton

COUNTIES

Butte County
Custer County
Fremont County
Jefferson County
Lemhi County
Madison County
Teton County

HWY DISTRICTS

Lost River HD



iWorQ

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high volume roads—roads that typically have around ten to fifteen thousand cars on them per day. Urban arterials are usually suitable for micro-surfacing.

Just like the slurry seal, micro-surfacing also requires special equipment: the micro-surfacing mixture is fed into a spreader box, which evenly spreads the mixture over one lane of paved road in a single pass. The edges of this mixture are automatically textured, and once injected with water, the micro-surfacing mixture is allowed to "cure" on the roadway. Only about one hour is necessary before the paved road can be opened back up for travel.

Micro-surfacing application can occur during a variety of temperature and weather conditions, and can be applied at night as well. This flexibility is particularly useful for high-volume roads, as it means that the paving season is lengthened significantly. Micro-surfacing is generally accepted as extending the service life of the road for over seven years.

Thin Asphalt Overlays—The final method for preventative maintenance in pavement preservation programs is thin asphalt overlays. Thin asphalt overlays are useful for any paved road with minor distress, such as raveling or light cracking that originates on the pavement surface.

Thin asphalt overlay is a hot mix asphalt mixture of asphalt cement and aggregate, spread in a layer ¾ to 1½ inches thick over paved roads. Because the overlay is thin, the liquid asphalt layer binds the aged surface of the paved road together, and provides a strong but flexible new surface. Overlays typically last ten to fifteen years, and do bring a small structural benefit to the paved roads. Additionally, thin asphalt overlays restore skid resistance and ride quality, and also can reduce noise pollution on noisy pavement.

Road managers should not use thin asphalt overlays to correct widespread structural damage. Instead, road managers should spread thin asphalt overlays on the road surface before significant damage occurs. Like all of the treatments used in pavement preservation, overlays are solely intended for preventative maintenance.

Routine Maintenance

Routine maintenance is any day-to-day, routinely scheduled work that serves to maintain and preserve a paved roadway condition, or to restore the roadway to an adequate level of service. Routine maintenance on a paved roadway includes roadside ditch and structure cleaning and maintenance, upkeep of pavement markings, pothole repair, and crack filling.

Other maintenance activities, such as corrective or catastrophic maintenance, or pavement reconstruction, are not considered a part of pavement preservation programs, because they are performed after serious damage has occurred to the paved road.

Routine maintenance help keep the paved road in serviceable condition, and aid in pavement preservation programs.

Pavement Rehabilitation

The goal of pavement rehabilitation is to extend the service life of a paved road and/or improve road strength and load carrying capacity.

Rehabilitation practices extend pavement life by eliminating pavement cracks or by increasing the thickness of existing pavement in order to strengthen it.

Pavement rehabilitation is divided into two categories that represent these two practices: minor and major rehabilitation.

Minor Rehabilitation—Minor rehabilitation involves non-structural repairs that are intended to eliminate cracks due to age and environmental expo sure. Minor rehabilitation activities such as these are considered to be part of pavement preservation because they are non-structural in nature.

Major Rehabilitation—Major rehabilitations, on the other hand, are structural repairs that intend to extend the life of pavement. These do not qualify as part of a pavement preservation program, as they are structural enhancements.

Pavement preservation programs that make use of the preventative maintenance techniques outlined above provide long lasting protection for municipalities' paved roads. Studies show that for every $1 spent on preventative maintenance and pavement preservation, the municipality saved $6-$8 on costly reconstructions and rehabilitations later.

Effective pavement preservation programs, in which the roadway undergoes preventative maintenance to stop damage before it occurs, are a cost-effective and safe alternative to allowing roadways to deteriorate until it is absolutely necessary to reconstruct them. By selecting the right treatment for the right road at the right time, municipalities can ensure that their roadways are long-lasting and in good condition continuously.

Reference: UNH Technology Transfer Center, Technical Note #19, Fall 2010, Edited by LHTAC Staff

Snow and Ice Equipment Maintenance

Pre & Post Season Equipment Preparation

Follow the steps below before using equipment for the first time this winter season to help prevent malfunctions and prolong equipment life.

Hydraulic System Inspection Service

- Change operation fluid in both main power units and angle cylinders.
- Inspect hoses for dry rot, cracks, or pressure bubbles and couplers if applicable.
- Clean out or replace internal filters or strainers.
- Check all fittings to make sure they are tight and are not leaking.

Electrical Systems

- Inspect all connections to plows and vehicle harnesses for broken terminals.
- Coat each connection with dielectric grease.
- Check solenoid operation and connection.
- Test vehicle batteries and replace if necessary.
- Inspect vehicle lighting including wiring and sockets on headlights, taillights, stop lights, and turn signals.

General Areas of Service

- Grease all moving/pivot points.
- Adjust trip springs and replace if needed.
- Check and tighten "nuts & bolts" on both plow assembly and vehicle mount.
- Inspect/replace cutting edge.
- Adjust plow lights.
- Order replacement parts for all types of plows.

Maintenance During the Season

Remember the following steps to follow during the winter for maximum performance and fewer opportunities for serious damage:

- Thoroughly clean and wash all equipment. Use a pressure washer or car wash as an easy option to ensure that equipment looks its best and is functioning properly.
- While cleaning, look for structural problems. Cracks are usually first shown by paint/powder coat cracking and rusting at joints. Look for bent, twisted, or distorted parts and schedule repairs.
- Regularly check for electrical problems including frayed and crushed wires, loose connections, damaged plugs or pins, broken bulbs, corroded or water-filled motors, and bad batteries, alternators and solenoids.
- Mount, load, and test all spreaders. Calibrate them and place calibration cards on each truck's visor.

Take care of repairs and replacing parts as soon as possible to prevent further damage. Establish a repair and maintenance plan and checklist to use for inspecting equipment after each major event. The Salt Institute's *Snowfighters Handbook* has a good template for this. Spending time before, during, and after each season for equipment maintenance will help prevent damage to equipment, increase employee safety, and save time and money.

S-A-L-T-E-D Advice for Storage

Safety means good visibility for operators, warning signs at entrance and security fencing.

Accessibility means easy access for equipment and delivery trucks, space big enough for front-end loaders to maneuver, room for a 20-ft. extension of the pad in front of storage buildings, and doors large enough to accommodate equipment.

Legality means complying with local zoning ordinances and any required discharge permits.

Tidiness means keeping buildings well maintained, good housekeeping around the storage site and screening the storage site with fencing or plants.

Economics means permanent covered storage and locating the storage site to avoid long distance hauling.

Drainage means good drainage away from the stockpile, sloping bituminous pads (1/4 inch per foot downward from the center), continuing runoff, installing retention curbs if necessary and disposing of salt brine in conformance with applicable federal and state regulations and local ordinances.

Reference: UNH T2 Center, Road Business, Fall 2010, Vol. 25, No. 3

School Bus Operations Demand Motorist Attention

Motorists should be keenly aware of the risks that accompany the reopening of schools as more children use sidewalks and bicycle paths. But drivers also need to watch for buses transporting children to and from schools in the morning and afternoon.

Buses sometimes stop in travel lanes, requiring approaching vehicles to slow or stop. The following rules apply to motorists as they approach a school bus:

- Drivers must stop when approaching a school bus that is stopped to pick up or deliver school children if the bus displays flashing red signals. Flashing yellow lights indicate the bus is slowing to stop. Drivers should consider the flashing yellow school bus lights as they would a solid yellow traffic signal.
- On a two-lane road, following and oncoming traffic must stop and remain stopped as long as the school bus displays flashing red lights and/or the stop arm on the drive's side of the bus is extended.
- On a highway with two or more lanes of traffic traveling in each direction, oncoming traffic is not required to stop when meeting a school bus. However, motorists still are urged to watch for children crossing traffic lanes while on their way to or from the bus.
- Drivers also should use caution when traveling through school zones or near routes used by children and should observe school speed limits and the instructions of crossing guards.

Reference: ITD Transporter, 8-19-2011

In an effort to help save the environment by reducing paperwork and cost, we are offering to provide this publication by Email. If you would prefer an Emailed copy of this publication instead of a printed copy, please send your request to: cstewart@lhtac.org

Thank you!

Safety Fest of the Great Northwest Lewiston-October 25-28, 2011

Safety Fest of the Great Northwest

FREE TRAINING

The Idaho T2 Center will be sponsoring our 2nd Safety Fest of the Great Northwest 4 day conference in Lewiston this October. This ***free*** safety training is available to the construction and general industry communities to provide safety and health training to help reduce fatalities, injuries and illnesses on the job. The Lewiston conference will be held Tuesday, October 25st through Friday, October 28th, 2011 at Lewis-Clark State College.

Registration at http://www.safetyfest-lewiston.org. is now open and will close October 7, 2011. For more information please go to **www.idahot2.org** or contact T2 Event Coordinator, Denise Shields at: dshields@lhtac.org, 1-800-259-6841 or 1-208-344-0565. ***We hope to see you there!***

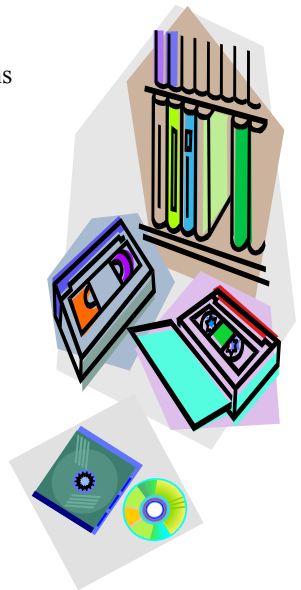
Reference: Denise D. Shields, T2 Event Coordinator

Recently Added Media—T2 Library

Please visit our website — www.idahot2.org

New DVD'S

DSA1115 - Distracted Driving, At What Cost?
DSA1155 – Driven to Distraction
DSA4505 - The Safety Edge
DSA3755 – Sharing The Road with Bicyclists & Pedestrians
DSA1316 – Fire Safety
DSA3620 – Safe Winter Driving Considerations
DSA5616 – Winter Driving; When The Rules Change
DSA5745 – Work Zone Traffic Control & Flagger Safety



New VHS

HE3025 – Office Ergonomics
SA1220 – Emergency Evacuation – Getting Out Alive
SA3578 – Road Rage: How to Protect Yourself
SA3602 – Safe Driving – Real Life
SA4550 – The Safer Lifting/Strategy
SA4665 – Thinking About Fall Protection
SA5609 – Winter Dangers

New CD's

CSA0278 – Speed Management
CSA0290 – Trench Safety Awareness Training

Also check the List of Publications available on the Media Library Page.

For library assistance, contact Denise Shields at: dshields@lhtac.org, 1-800-259-6841 or 1-208-344-0565.

Idaho T2 Center 2011 Recipients Road Scholar & Road Masters

James Ashley, Road Foreman, Payette County Road & Bridge—Recipient of both Road Scholar and Master this year!

Bruce Drewes and Jim Ashley

Jim attended Junior High in Ontario, Oregon and graduated from high school in Nyssa, Oregon. Jim worked for a millwright for 5 years during high school and for a short time afterwards. Jim has been with Payette County Road & Bridge since 1995 and Foreman since 1998. His background includes experience with Military Heavy Equipment Training with the 321st Army Reserve Headquarters Unit out of Boise from 1990 – 1995. He also has experience in small construction including concrete work, sheetrock, painting and car painting. Jim participates in the local UCC & PAWG groups, enjoys hunting, fishing, boating, and restoring old vehicles. "I would like to thank Payette County for allowing me the opportunity to further my education in my field. I greatly appreciate every opportunity to learn new & improved ways of doing a job."
–Jim Ashley

City of Nampa Street Department

The Idaho T2 Center is once again proud to announce that the City of Nampa Street Division has three more employees who have received their Road Master! On August 16, 2011, Jake Smith, Sam Clark and Mike Fusselman were awarded their Road Master certificates and Carhartt coats at the City Council meeting. These employees have worked very hard to complete the program and we appreciate their efforts!

Jake Smith, Sam Clark, Mike Fusselman

Eric Killen, City of Coeur d'Alene, Street Department

Eric Killen is originally from Springfield, Illinois and he has been with the City of Coeur d'Alene Street Department for eight years. Eric's professional background includes the U.S. Army, Kootenai County Sheriff's reserve deputy and he is licensed with the State of Idaho as a Water system Operator. Eric's personal involvements include PANTRA Trail Riders Association, Boy Scouts of America, and LCEA E-Board member. Eric enjoys being involved with his family and likes to help with their sports activities by coaching or assisting in any way he can. Eric also enjoys the outdoors and likes activities such as, hunting big game, fishing, riding dirt bikes and scuba diving. "I would like to thank everyone for their involvement including the Idaho T2 Center staff and instructors; the City of Coeur d'Alene staff Tim, Jim, Terry, Dick and Diana. I appreciate the opportunity to receive the Road Scholar status, it's a great program."
– Eric Killen

From left to right, Tim Martin, City of Coeur d' Alene, Street Superintendent, Aman Sterling, Bruce Drewes, T2 Manager, and Eric Killen.

Aman Sterling, City of Coeur d'Alene, Street Department

Aman was born and raised in Coeur d'Alene. Aman's background includes a list of activities: Level 1 Firefighter, EMT-B, HAZMAT Technician, Wild Land Firefighter, Advanced Extrication, High Angle Rescue, Trench Rescue, and Incident Safety Officer. He is also on the committees for ADA, ped bike, City Fit, and Centennial Trail Member. Aman loves to be with family and friends, especially the love of his life, his daughter Elery. He also enjoys the outdoors and riding dirt bikes, camping, backpacking and has participated in a couple of Ironman competitions.

CONGRATULATIONS!

Idaho T2 Center Fall Classes 2011

Classes By Date

See our website for more details: www.idahot2.org

Date	Workshop	Instructor	Workshop Location	Road Scholar Program	Early Registration Deadline
Oct TBD	Road Safety 365	Doug Chase	Lewiston	Elective	Class date to be determined
Oct 11	Winter Maintenance: Anti-Icing & De-Icing	Bruce Drewes	Boise	Road Master	Sept 26
Oct 13	Winter Maintenance: Anti-Icing & De-Icing	Bruce Drewes	Idaho Falls	Road Master	Sept 28
Oct 18	ATSSA Traffic Control Technician *Prerequisites - Contact the T2 Center*	Bruce Drewes	Lewiston	Road Master	Oct 3
Oct 19-20	ATSSA Traffic Control Supervisor *Prerequisites - Contact the T2 Center*	Bruce Drewes	Lewiston	Elective	Oct 4
Nov 1-2	Speed Limits & Speed Zones (2-day class)	Doug Chase	Magic Valley	Road Master	Oct 17
Nov 3	Roadway Drainage	Doug Chase	Idaho Falls	Road Master	Oct 19
Nov 15-17	Motor Grader Operations	Jim Matosich	Caldwell	Elective	Oct 31
Nov 18	Communications Skills	Kathy Drury-Bogle	St. Anthony	Road Scholar	Nov 4
Nov 30	Communications Skills	Kathy Drury-Bogle	Burley	Road Scholar	Nov 16
Dec 1	Supervising With Confidence	Kathy Drury-Bogle	Burley	Road Scholar	Nov 17
Dec 13	Communications Skills	Kathy Drury-Bogle	Boise	Road Scholar	Nov 29
Dec 14	Supervising With Confidence	Kathy Drury-Bogle	Boise	Road Scholar	Nov 30

Spring Class Preview

Here are some of the classes that the Idaho T2 Center will be offering. Class dates and locations are to be determined.

***ATSSA Flagging, TCT & TCS *Basic Math *Basic Survey *MUTCD 2009**
***Pavement Maintenance I *Roads 101 *Roadway Materials *Road Safety Audits**
***Road Safety 365 *Speed Limits & Speed Zones**

NEW classes! The Idaho T2 Center will be offering:
***ADA Compliance *Communications *Environmental BMP's**
*** Highway Safety Manual *Retroreflectivity for Sign Inspections *Roundabout Training**
***Supervisory Skills**

Idaho T2 Center Fall Classes 2011

Classes By Date

See our website for more details: www.idahot2.org

Date	Workshop	Instructor	Workshop Location	Road Scholar Program	Early Registration Deadline

Motor Grader Operations

(see dates on page 1)

Here are few points of interest regarding the class that you will need to make note of:

- The cost of the class is $300 per person for local government agencies; $450 for outside/private agencies (*early registration fee does not apply*).
- Agencies are responsible for bringing their own equipment and you can have two people to one piece of equipment. If you are not able to provide your own equipment, you can contact a local dealer to see if they will loan one for the class. Most dealers are very willing to assist.
- Classes are a full day and can be held over a three day period. The first day will include classroom instruction and the other days are hands on demonstration.

Registration Fees

ATSSA Traffic Control Technician Registration Fee:
Local Highway Jurisdictions - $85
State & Federal - $105
Private - $130

ATSSA Traffic Control Supervisor Registration Fee:
Local Highway Jurisdictions - $180
State & Federal - $200
Private - $335

ATSSA Certification - add $100 to the course fee

Agency	Early Registration	After Reg. Deadline
Local	$40	$50
State & Federal	$75	$85
Out of state & Private	$100	$115

New Registration Costs
Be sure to register early!

How To Register

Go to the Idaho T2 Center website: www.idahot2.org and log into the site with your user name and password. If you do not have a user name and password, on the left side of the webpage, click on the link "request login". Once logged in you can register by viewing available classes on the training calendar or go to "Your Info" on the left navigation bar.

Class Information

- Class information is posted online: www.idahot2.org
- All classes start at 8:30 AM unless noted otherwise.
- Attendees will have a one-hour lunch break; lunch will not be provided.
- Register two or more weeks in advance to receive the early registration discount (discount does not apply to heavy equipment courses.)
- Registration Cut Off: Is two weeks prior to the class
- Cancellation Policy: If you must cancel, please call us at 208-344-0565 or at 800-259-6841. There will be no refunds unless a cancellation is received at least two (2) business days before the class.

Please contact the Idaho T2 Center if you need assistance with class registration.
Contact us at IdahoT2@lhtac.org or call 208-344-0565 or 800-259-6841.

Local Highway Technical Assistance Council (LHTAC)
Idaho Technology Transfer Center (T2) LTAP
3330 W. Grace St.
Boise, Idaho 83703

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CALENDAR OF EVENTS

October 3,4,19,20,26,27, 2011	LHTAC Funding Programs - Workshops—ITD District 1-6 Offices	Coeur d'Alene, Lewiston, Pocatello, Rigby, Shoshone, Boise, ID
October 25-28, 2011	Safety Fest of the Great Northwest—Lewiston	Lewiston, ID
October 27, 2011	Idaho Asphalt Conference	Moscow, ID
October 31-November 4, 2011	National Bridge Management, Inspection and Preservation Conference	St. Louis, MO
November 8-9, 2011	Idaho Association of County Engineers and Road Supervisors Annual Conference	Boise, ID
November 9-11, 2011	Idaho Association of Highway Districts 83rd Annual Conference	Boise, ID
December 1, 2011	Idaho Technology Transfer (T2) Center Semi-Annual Board Meeting	Boise, ID
December 9, 2011	Local Highway Technical Assistance Council Meeting	Boise, ID
January 24-27, 2012	Safety Fest of the Great Northwest—Boise	Boise, ID

If you are interested in additional information regarding any of the above referenced meetings and/or training sessions, please contact LHTAC at 1-800-259-6841 or lhtac@lhtac.org.

Table I-2. Target Compliance Dates Established by the FHWA

2009 MUTCD Section Number(s)	2009 MUTCD Section Title	Specific Provision	Compliance Date
2A.08	Maintaining Minimum Retroreflectivity	Implementation and continued use of an assessment or management method that is designed to maintain regulatory and warning sign retroreflectivity at or above the established minimum levels (see Paragraph 2)	2 years from the effective date of this revision of the 2009 MUTCD
2A.19	Lateral Offset	Crashworthiness of sign supports on roads with posted speed limit of 50 mph or higher (see Paragraph 2)	January 17, 2013 (date established in the 2000 MUTCD)
2B.40	ONE WAY Signs (R6 1, R6-2)	New requirements in the 2009 MUTCD for the number and locations of ONE WAY signs (see Paragraphs 4, 9, and 10)	December 31, 2019
2C.06 through 2C.14	Horizontal Alignment Warning Signs	Revised requirements in the 2009 MUTCD regarding the use of various horizontal alignment signs (see Table 2C-5)	December 31, 2019
2E.31, 2E.33, and 2E.36	Plaques for Left-Hand Exits	New requirement in the 2009 MUTCD to use E1-5aP and E1-5bP plaques for left-hand exits	December 31, 2014
4D.26	Yellow Change and Red Clearance Intervals	New requirement in the 2009 MUTCD that durations of yellow change and red clearance intervals shall be determined using engineering practices (see Paragraphs 3 and 6)	5 years from the effective date of this revision of the 2009 MUTCD, or when timing adjustments are made to the individual intersection and/or corridor, whichever occurs first
4E.06	Pedestrian Intervals and Signal Phases	New requirement in the 2009 MUTCD that the pedestrian change interval shall not extend into the red clearance interval and shall be followed by a buffer interval of at least 3 seconds (see Paragraph 4)	5 years from the effective date of this revision of the 2009 MUTCD, or when timing adjustments are made to the individual intersection and/or corridor, whichever occurs first
6D.03*	Worker Safety Considerations	New requirement in the 2009 MUTCD that all workers within the right-of-way shall wear high- visibility apparel (see Paragraphs 4, 6, and 7)	December 31, 2011
6E.02*	High-Visibility Safety Apparel	New requirement in the 2009 MUTCD that all flaggers within the right-of-way shall wear high- visibility apparel	December 31, 2011
7D.04*	Uniform of Adult Crossing Guards	New requirement in the 2009 MUTCD for high- visibility apparel for adult crossing guards	December 31, 2011
8B.03, 8B.04	Grade Crossing (Crossbuck) Signs and Supports	Retroreflective strip on Crossbuck sign and support (see Paragraph 7 in Section 8B.03 and Paragraphs 15 and 18 in Section 8B.04)	December 31, 2019
8B.04	Crossbuck Assemblies with YIELD or STOP Signs at Passive Grade Crossings	New requirement in the 2009 MUTCD for the use of STOP or YIELD signs with Crossbuck signs at passive grade crossings	December 31, 2019

*** MUTCD requirement is a result of a congressional mandate.**

Note: All compliance dates occurring after January 31, 2011 that were previously published in the MUTCD and do not appear in this table have been deleted.

Attachment: Idaho Technology Assistance Newsletter, Volume 5, No. 1, September 2011