Automating Iowa DOT lettings and contract administration

by Donna Buchwald, Deputy Director, Office of Local Systems, Iowa DOT

To make project lettings and contract administration more efficient, the Iowa DOT has developed several new processes. Following is a short explanation of changes made so far.

Electronic bidding documents
In January 2012, at the request of the governor, the Iowa DOT prepared a Road Use Tax Fund Efficiency Report that identified $50 million in possible efficiencies that would reduce the cost of maintaining and improving Iowa’s roadway system.

One of the recommendations was to prepare a plan to eliminate printing plans and proposals for all projects let by the Iowa DOT.

Electronic plan submittals
The Iowa DOT started requiring electronic plan submittal starting with the November 2012 letting.

The new requirements are explained in the Electronic Submittal section of I.M. 3.005, Project Development Submittal Dates and Information, which was revised on February 18, 2013.

If your agency is experiencing technical difficulty preparing or transmitting plans electronically, contact the Iowa DOT for assistance. The department realizes that not all agencies may be proficient in producing electronic plans and is committed to providing assistance to those that need help.

In the near term, project lettings will not be delayed if your agency is unable to submit plans in electronic format.

If you have any questions, please contact John Dostart, Office of Local Systems, 515-239-1291, john.dostart@dot.iowa.gov.

Bid Items Application
A new web-based Bid Items Application was implemented with the February 2013 letting. It replaces BIAS 2000, which local agencies have been using for years to provide an electronic bid item file for projects submitted for letting through the Iowa DOT.

The new Bid Items Application and additional instructions are found in I.M. 3.520, Electronic Bid Item Information.

The Iowa DOT is also investigating the possibility of enhancing the new Bid Items Application to enable its use for locally let projects as well. While additional enhancements are being considered, the old BIAS 2000 will temporarily remain available on the Iowa DOT’s web site.

At a point yet to be determined, technical support for the BIAS 2000 will be discontinued.

Electronic submittal of Change Orders
To expedite the contact administration process, local agencies now have the option to electronically submit Change Orders (also known as Contract Modifications) for federal and state funded local agency construction projects.

Change Orders with the contractor and project engineer’s signatures may now be scanned and sent electronically to the Iowa DOT Administering Office for review and approval.

However, in order to maintain the required internal controls, the Iowa DOT Administering Office will still apply an original signature to indicate its approval of the Change Order.
From the director

Rebuilding the “Roads Scholar” program: Evaluation and redesign

Iowa LTAP has a program to recognize personnel who continue their education through our workshops, etc. This program is called Roads Scholar. It has four levels of achievement, and the current program is described in more detail at www.iowaltap.iastate.edu/workshops/road-scholars/.

During the next year the components of this program will be evaluated and updated. The objective of this evaluation and update is to create a more sustainable program that allows Iowa LTAP to consistently offer participants the ability to advance through the achievement levels and also track their progress.

The registration process for many of our workshops is now automated, and this was a significant first step in our ability to track training efforts. But, we are still “debugging” how our new registration system and the Roads Scholar tracking work together and how the tracking output appears to participants. We are working on it.

Some of the Roads Scholar program components that will be evaluated in the next six months to a year include methods of entry into or opting out of the program, levels of achievement, optional and required workshops and courses in the curriculum, alternative methods of instruction, effort tracking, types of recognition, costs, and allowances for repeated courses. These components will be reviewed and updated to meet the objective noted above and provide a program that has a high value to local agency transportation personnel.

In the interim time period, we have placed a “notice” in this newsletter (see page 6) and on the Roads Scholar program website page. The notice has three parts. First, if you believe you’ve attained the workshop hours for the Roads Scholar I, II, Senior, and/or the Master levels, please contact us if you want a certificate. We will also be contacting public agencies, if possible, to ask them the same question if our records indicate there are people that might be recognized.

The second part of the notice requires people to indicate that they would like to be involved with the “new” Roads Scholar program when it is initiated. We will continue to ask this question for some time after the new program starts and on our workshop registration forms in the future.

The third part of the notice indicates that we’ll be announcing the changes to the Roads Scholars program as they are developed. It also provides my contact information if you have any suggestions or input to the process. We will also be asking the LTAP advisory board for their input on the final outcome of our evaluation and suggested updates.

We apologize for taking so long to start this process. The Roads Scholar program provides a great mechanism to give recognition to those that continue their education as transportation workers. Stay tuned as we complete this rebuild.

Sincerely,

Keith
For iron and steel used in construction, Buy America

Federal requirements for procuring domestically manufactured products (that is, those produced in the United States) have been around since 1933. Such requirements for steel and iron products and coatings are called Buy America (U.S. Code, Title 23, Section 313).

The Iowa DOT is responsible for enforcing Buy America provisions in Iowa. It is the role of the project inspector and project engineer to review material certificates to ensure steel/iron products are domestically sourced before they are incorporated into a project.

Summary of Buy America

Buy America requires the use of domestically manufactured steel and iron products, including coatings, in Federal-aid Highway Program (FAHP) funded projects.

In other words, when federal funds are involved in a project, and iron or steel materials are required (that is, materials that are predominately—90 percent or more—iron or steel), every effort must be made to use iron and steel materials manufactured in the United States, i.e., domestic iron and steel. Manufacturing processes include initial melting, rolling, extruding, machining, bending, grinding, drilling, and coating.

Applicable projects include pavements, bridges, tunnels, and other structures. They also include projects that, historically, may not have been considered highway construction, such as bicycle racks.

According to a December 2012 memo, examples of products subject to Buy America include, but aren’t limited to, the following:

- Steel or iron products . . . [such as] . . . fabricated structural steel, reinforcing steel, piling, high strength bolts, anchor bolts, dowel bars, permanently incorporated sheet piling, bridge bearing, cable wire/strand, prestressing/post-tensioning wire, motor/machinery brakes and other equipment for moveable structures.
- Guardrail, guardrail posts, end sections, terminals, cable guardrail.
- Steel fencing material, fence posts.
- Steel or iron pipe, conduit, grates, manhole covers, risers.
- Mast arms, poles, standards, trusses, or supporting structural members for signs, luminaires, or traffic control systems.
- Steel or iron components of precast concrete products, such as reinforcing steel, wire mesh, and prestressing/post-tensioning strands or cables.

Buy America applies to the following:

- Steel or iron products or materials that are permanently incorporated into a project.
- Steel or iron components of precast concrete products, such as reinforcing steel, wire mesh, and prestressing/post-tensioning strands or cables.

The contracting agency cannot circumvent Buy America requirements by making steel/iron products non-participating.

Certain products are not subject to Buy America requirements. These include manufactured products that are not primarily steel or iron. They also include miscellaneous steel or iron components, subcomponents, and hardware necessary to encase, assemble, and construct the above-listed products.

Examples include, but aren’t limited to, the following: clamps, fittings, sleeves, washers, bolts, nuts, screws, tie wire, and spacers.

Minimal use of foreign-source materials

Buy America does not apply to the minimal use of steel/iron materials in a project. The total cost of all foreign-source items must be less than $2,500 or one-tenth-of-one-percent of the total contract amount, whichever is greater. This minimal-use threshold covers small steel/iron products that are difficult to account for, such as bolts, nuts, and other fasteners.

Under the minimal-use provision, the contracting agency must keep a log of all steel/iron products used in a project, noting whether they are foreign or domestic.

If the threshold is exceeded, the contracting agency may lose all FAHP funding for the project.

Responsibility and enforcement

As previously stated, the project inspector and project engineer must review material certificates to ensure steel/iron products are domestically sourced before they are incorporated into a project. See the highlighted text in the sample source documentations below.

Even with the most conscientious effort, foreign steel/iron can be incorporated inadvertently into an FAHP project. There is no clear-cut policy on resolving the after-the-fact discovery of foreign materials in

Buy America continued on page 5
Iowa LTAP Mission
To foster a safe, efficient, and environmentally sound transportation system by improving skills and knowledge of local transportation providers through training, technical assistance, and technology transfer, thus improving the quality of life for Iowans.

Staff
Keith Knapp
Director of Iowa LTAP
kknappiastate.edu

Tom McDonald
Safety Circuit Rider
tmcdonald@iastate.edu

Bob Sperry
Local Roads Safety Liaison
rsperry@iastate.edu

Sabrina Shields-Cook
Communications Manager
shieldsiastate.edu

Marcia Brink
Senior Editor
mbrinkiastate.edu

Advisory Board
Donna Buchwald
Iowa DOT, Office of Local Systems
Donna.Buchwald@dot.iowa.gov

Paul Geilenfeldt III
Marshall County Engineer
engineercocmarshall.ia.us

Shanna Hallmark
Interim Director, InTrans
shallmark@iastate.edu

Tim Herrstrom
Road Maintenance Foreman, Boone County
Bctjh@iowatelecom.net

Beet Hodne
Director of Public Works, City of West Des Moines
Bret.hodne@wdm-ia.com

Joe Jurasic
Transportation Engineer, FHWA—Iowa
Jose.jurasic@fhwa.dot.gov

Ron Knoche
City Engineer, City of Iowa City
Ron.Knoche@iowa-city.org

Catherine Nicholas
Black Hawk County Engineer
engineercoblack-hawk.ia.us

Greg Parker
Johnson County Engineer
gparker@co.johnson.ia.us

Charlie Purcell
Iowa DOT, Office of Local Systems
charlie.purcell@dot.iowa.gov

Roger Schletzbaum
Marion County Engineer
schletzbaum@co.marion.ia.us

David Shanahan
Cherokee County Engineer
dshanahan@co.cherokee.ia.us

Brad Skinner
Page/Montgomery County Engineer
engineernmontgomerycoia.us

Jeremy Vortherms
State Safety Engineer
Iowa DOT, Office of Traffic and Safety
JeremyVortherms@dot.iowa.gov

Wade Weiss
Greene County Engineer
wwes@co.greene.ia.us

Safety assessments to improve local road safety
by Tom McDonald, safety circuit rider

Local agency engineers and managers are responsible for and interested in improving safety for road users in their cities and counties. Several methods are available for examining roadways, evaluating their safety deficiencies, and selecting appropriate mitigation strategies. This article focuses on one of them: safety assessments.

Safety audits and reviews
One evaluation method is a road safety audit. Such audits are conducted by an independent team of multi-disciplined professionals.

Safety audits consist of an in-depth investigation of crash history, roadway conditions, and other factors, culminating in a formal written report documenting findings and suggestions for often low-cost safety improvements.

Another option might be called a simple “safety review.” A safety review of any road or street in the state can be conducted quickly and easily in the office. Such a review uses the Crash Analysis Mapping Tool (CMA T) to map crash history data for the identified roadway. Adding a detailed field examination enhances the value of this process.

CMA T enables mapping of past crash locations as well as their severity and important crash causes.; see the sample partial image at right. With this basic information, an agency can identify past and potential future crash contributors, thus allowing selection of mitigation to address those safety concerns.

Consultation with local law enforcement can be valuable in selecting beneficial improvements, such as enhanced patrols.

Safety assessment
A third option could be designated as a “safety assessment.” A safety assessment combines useful features of a formal safety audit with those of the simpler and perhaps quicker safety review.

A safety assessment consists of a detailed examination of available data for a given road or street segment. It includes a review of crash history, of course, but might also include vehicle speed data, roadway history, traffic volume and mix of road users, common citations, and information about drivers who were involved in recorded crashes.

Input from professionals in a variety of disciplines should be sought for a complete safety assessment. Such professionals may include, for example, law enforcement officers and driver educators. Even frequent road users can provide valuable information.

Suggested approach for safety assessment
Following is a list of suggested steps that a local agency can use to assess safety features of a given road or street segment:

• Select the segment for examination.

Perhaps a request has been received from a citizen or from an elected official, but an identification can be made by agency staff as well by using CMA T data to examine the entire jurisdiction roadway system and identify real and potential high-crash sites from a crash location map.

A detailed crash location map by severity can also be requested from InTrans through the Iowa Traffic Safety Data Service (ITSDS) staff.

For low-volume (<400 vehicles per day) roadways, at least 10 years of crash data

Partial map generated by CMA T, with road segment being assessed circled in white.
should be used to achieve a high level of validity. A five-year record might be used for higher volume sections. While safety evaluations have logically focused on higher volume paved roads, unpaved facilities should also be considered in the initial selection process.

- Following selection of high-crash intersections or segments, perform a detailed examination of crash history, particularly at high-crash intersections and segments.

Look at attributes such as crash severity, common contributing types and causes, time of crashes, weather and roadway conditions, and driver factors such as age, condition, and substance-use involvement. All of these factors are crucial to selecting potentially effective crash mitigation.

- Meet with other agencies and departments that might have interest, responsibility, or expertise in traffic safety. This may include the Iowa DOT (e.g., if intersections with state highways are involved), law enforcement, particularly the sheriff or city police, as well as school officials and driver educators if younger drivers have had a significant involvement in recorded crashes.

- Perform a detailed field review. While the gathering and examination of data is mandatory for a detailed analysis, a complete assessment is not possible without a review of road and street details in the field. Even an office review using a resource such as Google Earth cannot totally substitute for a field examination in identifying past and potential crash contributors.

Including law enforcement staff and perhaps professionals from other disciplines, as indicated by crash history, will be helpful.

- Confer with maintenance staff and signing technicians for valuable advice and information on common problems, limitations, sign age, and suggestions for safety improvement.

- Using all available data, input from staff and other sources, and observations about past and potential crash contributors from field reviews, select low-cost improvements to address the identified safety concerns.

An experienced local agency engineer and/or manager might be capable of identifying and selecting effective crash mitigation strategies. However, outside advice from professionals such as those at the Institute for Transportation (InTrans) is also useful, particularly for selecting low-cost safety improvements in locations where a significant crash history has not yet been developed even though potential hazards might exist.

The Office of Traffic and Safety at the Iowa DOT offers several programs and funding sources to assist local agencies in accomplishing the selected improvements.

- Analyze the results of the selected mitigation strategy(ies) in reducing crashes. This valuable final step is too often omitted.

On low-volume roadways, a statistically valid analysis cannot typically be completed for a minimum of five years. But a simple before-and-after investigation performed at any time can be a valuable first step in determining the potential benefit of a safety improvement or program.

For more information
For information or assistance in conducting a safety assessment, contact Bob Sperry, safety liaison, 515-294-7311, rsperry@iastate.edu; or Tom McDonald, safety circuit rider, 515-294-6384, tmcidental@iastate.edu, at the InTrans office any time.

To request a detailed crash history map of a specific roadway section or segment, contact the ITSDS staff at InTrans via the online form, www.cte.iastate.edu/itsds/.

For specific information about conducting safety audits, see the Technology News article “Road safety audits for local agencies,” www.iowaltap.iastate.edu/resources/technology-news/ (see July-September issues, 2005).

For additional advice in conducting safety analyses, review available resources such as Iowa’s Traffic Safety Analysis Manual (www.intrans.iastate.edu/publications?type; see guides and manuals).

Buy America continued from page 3

a project. Each situation is resolved on a case-by-case basis and requires FHWA headquarters approval.

Possible solutions may include removal and replacement of the excess foreign steel/iron product(s), or making the non-compliant product(s) non-participating.

However, if carelessness, negligence, incompetence, or understaffing on the part of the contracting agency results in the permanent incorporation of excess foreign steel/iron product(s) in a project, all projects costs are made ineligible for federal reimbursement.

For more information
Buy America provisions are included in the Iowa DOT’s Standard Specification articles 1107.06 and 2408.02. In addition, the Iowa DOT certification procedures for Buy America are outlined in Material IM 557.

Note: Buy America is not the same as Buy American. The Buy America requirements discussed in this article are narrower and cover iron and steel materials only.

For answers to commonly asked questions, see the FHWA Buy America Q and A, www.fhwa.dot.gov/construction/contracts/buyam_qa.cfm.

For further information about Buy America, contact Joe Jurasic, construction/transportation engineer, Iowa Division of FHWA, 515-233-7304, joe.jurasic@dot.gov.
“Roads Scholar” program notice

Iowa LTAP has a program, called Roads Scholar, for recognizing local agency personnel who regularly participate in continuing education activities (workshops, webinars, etc.). More information about the program can be found at www.iowaltap.iastate.edu/workshops/road-scholars/. Anyone who has taken our workshops in the past has been enrolled, automatically, in this program.

During the next year, the components of this program will be evaluated and updated. Thank you for your patience during this process. The director’s column on page 2 of this newsletter has more details about the update process and potential changes.

Have you attended past LTAP workshops?
If you believe you’ve reached one of the four achievement levels (Roads Scholar I, II, Senior, or Master) in the Roads Scholar program and would like a recognition certificate, please let me know at kknapp@iastate.edu or 515-294-8817.

We also plan to proactively contact, if possible, agencies with people our records show have not been recognized and may be interested in receiving certificate(s).

Want to be involved with the new Roads Scholar program?
If you would like to join the new Roads Scholar program when it is initiated, please send us your contact information at kknapp@iastate.edu. We will notify you when the new program starts.

Watch for announcements
We will announce and advertise the new Roads Scholar program when it is initiated.

If you have any input or suggestions on potential improvements, please feel free to contact me (kknapp@iastate.edu or 515-294-8817).

Stanley L. Ring Memorial Library: New materials

Publications

P1788
Current and Innovative Solutions to Roadside Revegetation Using Native Plants: A Domestic Scan Report
This report summarizes the observations, discussions, and broad conclusions of nationally recognized revegetation specialists during a 2009 scan tour.

DVDs

DVD398
Successful Roadside Revegetation Using Native Plants
This DVD documents the processes and techniques used in successful and innovative projects that used native plants for roadside vegation.

Three ways to order LTAP library materials
- Mail or fax the order form on the back cover of this Technology News.
- Call the general InTrans telephone, 515-294-8103, and ask for the LTAP library.
- Email Jen Serra @ Jserra@iastate.edu.

Find letting/bidding information online

<table>
<thead>
<tr>
<th>Action</th>
<th>Web URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Download letting documents</td>
<td><a href="http://www.iowadot.gov/contracts/lettings.html">www.iowadot.gov/contracts/lettings.html</a> (follow the download instructions)</td>
</tr>
<tr>
<td>Download L.M. 3.005 (includes explanation of new requirements for electronic plan submittal)</td>
<td><a href="http://www.iowadot.gov/local_systems/publications/im/3005.pdf">www.iowadot.gov/local_systems/publications/im/3005.pdf</a></td>
</tr>
<tr>
<td>Download L.M. 3.520 (with link to Bid Items Application website and instructions for electronic application)</td>
<td><a href="http://www.iowadot.gov/local_systems/publications/im/3520.pdf">www.iowadot.gov/local_systems/publications/im/3520.pdf</a></td>
</tr>
<tr>
<td>Access May 2013 webinar training for local agencies and consultants on the use of new Bid Items Application (developed by Iowa DOT, Office of Local Systems)</td>
<td><a href="http://www.iowadot.gov/local_systems/publications/fss.html">www.iowadot.gov/local_systems/publications/fss.html</a>; click on link to webinar under Bid Item Application</td>
</tr>
</tbody>
</table>
Tom McDonald honored for traffic safety advocacy

LTAP’s own safety circuit rider, Tom McDonald, was recognized recently for his long-time traffic safety efforts. Tom was one of several nominated safety advocates who received the Commissioner’s Special Award for Traffic Safety at the annual conference of the Iowa Governor’s Traffic Safety Bureau (GTSB) in March 2013.

Since retiring from his 33-year stint as an Iowa DOT engineer, Tom has spent the last 15 years traveling the state for Iowa LTAP. Many of you have met him at one of his touring workshops about various safety topics: flagging, work zones, MUTCD requirements, signs and pavement markings, excavation, etc. He also serves on multidisciplinary safety teams across Iowa, unpaved rural road and low-volume road committees, and road safety audit teams.

In his spare time, Tom participates in safety-related research projects at InTrans. He has authored various manuals, including the heavily used *Iowa Traffic Control Devices and Pavement Markings: A Manual for Cities and Counties*.

Like the Eveready® rabbit, the man just keeps on going.

Congratulations, Tom!

---

Conference calendar

<table>
<thead>
<tr>
<th>Month 2013</th>
<th>Event</th>
<th>Location</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 2013</td>
<td>2013 Mid-Continent Transportation Research Symposium</td>
<td>Ames</td>
<td>Judy Thomas</td>
</tr>
<tr>
<td>September 2013</td>
<td>Snow Plow Operators Training (SPOT)</td>
<td>Des Moines</td>
<td>Jennifer Serra</td>
</tr>
<tr>
<td></td>
<td>Snow Equipment Roadshow</td>
<td>Des Moines</td>
<td>Jennifer Serra</td>
</tr>
<tr>
<td>October 2013</td>
<td>Countermeasure Design for Bridge Scour and Instability (NHI 135048)</td>
<td>Ames</td>
<td>Sharon Prochnow</td>
</tr>
</tbody>
</table>

Conference contact information

Sharon Prochnow
515-294-3781
prochnow@iastate.edu

Jennifer Serra
515-294-4401
jserra@iastate.edu

Judy Thomas
515-294-1866
jathomas@iastate.edu

Online resource links

LTAP is in the initial stages of developing an online resource webpage at www.iowaltap.iastate.edu (under the pulldown menu ‘Tools and Resources’). On the page, we will provide links to various published resources as well as to free online training opportunities sponsored by the FHWA or others.

Anyone can suggest a resource to be considered and potentially added to the list.

Also, the National Highway Institute now offers many free online training efforts (www.nhi.fhwa.dot.gov). Use the “more search options” link under “Search for a Course” and search the “Web-based Training (WBT)” delivery type. There are well over a 100, but you can do a more specific search also.
LTAP Materials

Order library materials
Add a name to our mail list
Correct your mailing information

To make a change to the Technology News mail list or to order library materials, please complete the information below and mail or fax this page (including mail label) to the InTrans address below:

Institute for Transportation
2711 S. Loop Drive, Suite 4700
Ames, IA 50010-8664
Fax: 515.294.0467

☐ Add the name/address below to the Technology News mail list.
☐ Delete the name/address below from the Technology News mail list.
☐ Correct the name and/or address below on the Technology News mail list.

New or corrected mailing information:
Name ____________________________________________________
Title _____________________________________________________
Organization _____________________________________________
Address _________________________________________________
City _____________________________________________________
State _________________________Zip ________________________

☐ Send the following library materials to the address above:
Title: _____________________________________________________
P-, V-, DVD or CR-number: _________________________________

Subscribe to Technology News online at