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Issue Number 74, December 2015

State Aid E-Scene

Safe Routes to School Update

By: Mao Yang, Asst. Project Development Engineer

New SRTS Coordinator – Dave Cowan joins the MnDOT SRTS team as the new SRTS Coordinator. He has extensive experience and knowledge with community walking, bicycling, and SRTS initiatives through work with the Safe Routes to School National Partnership, Trips for Kids Denver and Bicycle Colorado, and Free Bikes 4 Kids. Dave can be reached at dave.cowan@state.mn.us or 651-366-4180.

SRTS Planning Solicitation – Planning Assistance grants through the [MnDOT SRTS Program](#) are available for communities interested in starting a local SRTS program. The deadline for the planning grant applications is January 8, 2016. Communities can learn more about the SRTS planning process and benefits on the [SRTS Resource Center](#). For questions on how to apply for a planning grant, contact Dave Cowan at 651-366-4180 or dave.cowan@state.mn.us.

SRTS Infrastructure Solicitation – The Letter of Intent phase of the infrastructure solicitation is complete. Applicants recommended to proceed with the full application for infrastructure funding should submit their application and required attachments to MnDOT by the end of business day on January 8, 2016. For questions on the infrastructure solicitation, contact Mao Yang at mao.yang@state.mn.us or 651-366-3827.



Very Important Bridge Training Announcement

By: Dave Conkel,
State Aid Bridge Engineer

The MnDOT Bridge Office has scheduled 10 one-day bridge inspection refresher training seminars in February and March. We highly recommend that any bridge inspection team leader who will be performing bridge inspections in 2016 attend one of the 2016 refresher seminars. Minnesota is changing to the new AASHTO National Bridge Elements (as mandated by the FHWA). This will be a substantial change from our current system. The cost of the 2016 seminar is \$125 and all participants will receive lunch and a revised MnDOT Bridge Inspection Field Manual.

Visit the [University of Minnesota Bridge Safety Inspection Refresher Training webpage](#) for details on the seminar, dates/locations, and registration information.

Dodd Ford Bridge Rehabilitation

By: Alan Forsberg, Blue Earth County Engineer

Blue Earth County is helping to preserve Minnesota's bridge engineering heritage. The county road 147 bridge often referred to as the "Dodd Ford Bridge," spans the Blue Earth River in south central Blue Earth County. It was constructed in 1901 by the county to connect the agricultural area west of Amboy, Minnesota to the city of Amboy trade center and railroad station. Prior to the bridge, this link was made by crossing a shallow area of the Blue Earth River known as Dodd Ford.

This rare structure is a single-span steel pin-connected Pratt through-truss designed in a camelback configuration. The bridge is considered a "pre-engineered" design build developed by L.H. Johnson, a respected bridge builder of the time. Carlstrom Brothers, a local construction company, constructed the shallow spread footing abutments of quarried limestone rock at a cost of \$1,975 and L.H. Johnson constructed the 150 foot span Pratt truss span at a cost of \$4,948 making the total bridge cost \$6,923.



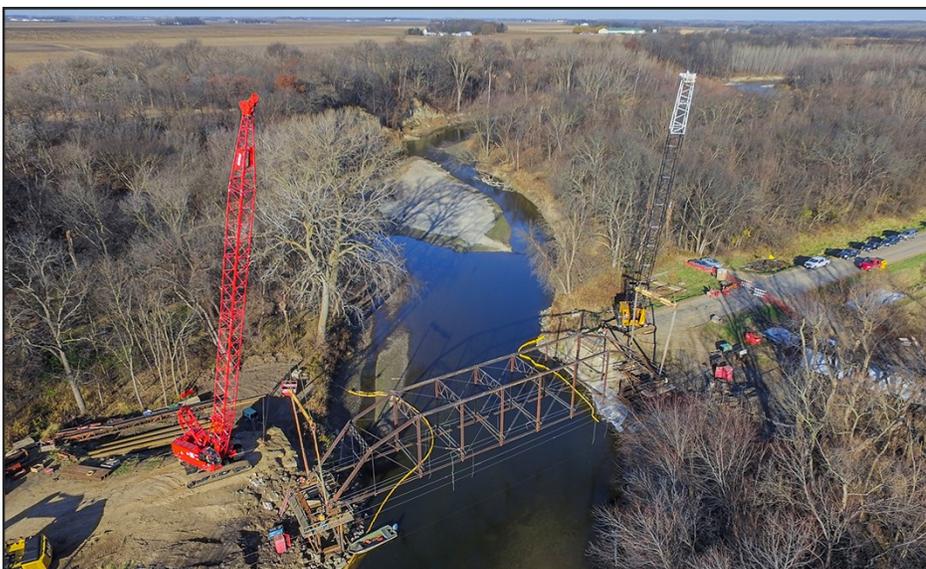
The bridge served light farm to market traffic well for several decades until Minnesota's highway system and modern roads and bridges evolved to meet the demands for increased mobility and heavier loads required for the agricultural industry in the area. The bridge was closed to all traffic in 2009 due to its poor condition.

With the support of the Dodd Ford Bridge Preservation Society of Amboy, the State Historic Preservation Office recognized and acknowledge the bridges historic

status (one of only two remaining engineering examples of L.H. Johnson's work) by listing the bridge on the National Registry of Historic Places.

The bridge closure resulted in a significant detour for local farm to market and emergency vehicular traffic. The county worked with local farmers and township officials, the Dodd Ford Bridge Historic Bridge Preservation Society, MnDOT's Cultural Resources Unit and State Aid Office, SHPO, FHWA and the Corps of Engineers for several years seeking a historic preservation solution which also improved mobility for the rural community.

Many options were studied and evaluated but all of them were unacceptable for one reason or another. The county engineer happened to notice a bridge connecting Nicollet Island to Main Street in Minneapolis that inspired him to explore the same concept and find the solution resulting in the project that is currently under construction today.



continued...Dodd Ford Bridge Rehabilitation

The truss was lifted from its original stone abutments and temporarily stored in the first stage of construction in 2015. The old truss bridge will sit on new concrete abutments that will be form lined and dyed to resemble the original stone and founded on scour resistant steel piling. New steel beams and concrete deck will support the original truss and the bridge will carry full legal bridge loads. The historic value of the truss will be preserved. The bridge will remain a one lane bridge with restricted vertical and horizontal clearance. The historic mitigation plan includes photographic documentation, interpretive plaque, observation deck and a widened shoulder for parking.

SEH, Inc. designed the project and county staff is providing survey,

inspection and contract administration services. MnDOT's State Aid staff, State Aid Bridge staff, and the Cultural Resources Unit staff provided support in the project planning, design and funding processes. The Historic Bridge Foundation provided technical expertise and support to the project regarding the rehabilitation options for the bridge.

The total construction cost of the bridge rehabilitation project is \$1.6 million utilizing a combination of

state bridge bond funds and county road and bridge funding.

The project is scheduled for completion in summer 2016 when the truss is lifted back into its original location. However, now it will sit on the new abutments and deck and carry legal loads for many decades to come. Visit the [Dodd Ford Bridge webpage](#) for more information about this and other historic bridges on the [MnDOT Historic Bridge website](#).



Employee News

Retirements

After 14 years as the District 4 DSAE, Merle Earley retired from MnDOT. Merle began his career working for Houston Engineering in Fargo in 1973. He worked with Houston until 1987 when he became the Trail County Engineer in North Dakota.



(Merle Earley)

In 1989 Merle moved to Minnesota and became the County Engineer for both Stevens and Traverse counties. He began with MnDOT in 2001 as the District 4 DSAE and stayed until his recent retirement.

New Hires

Bill Knofczynski has been appointed as District 8 DSAA. Bill began his career with MnDOT in 1986. Before coming to State Aid in October, Bill served as a Construction Project Manager in the Willmar Construction Office where he oversaw the office's construction and design activities since 2010. Prior to this, he served as the Construction Office Manager and Design Lead for the Willmar Construction Office for 10 years.

Nathan Gannon is the new District 4 DSAE. Nathan started November 16th and most recently served as the Assistant Clay County Engineer for nine years. Prior to this, Nathan worked for MnDOT for five years in the Resident Office in District 7.



(Nathan Gannon)

Roundabout Myths Videos

By: Marc Briese, Stonebrooke Engineer, Inc.

MnDOT and the Local Road Research Board recently completed two videos related to dispelling myths associated with planning, design, construction, and safety and operations of roundabouts. These myths were compiled with the help of private and local/state agency roundabout experts from around the state.

The myths are based on years of experience fielding and hearing many of the same questions and concerns while working with the

public and elected officials on development and implementation of roundabout projects.

The [short version](#) (6 minutes) addresses the top three myths and is intended for a YouTube type audience. The [full length version](#) (15 minutes) addresses the top 10

myths and is intended to create a baseline understanding of roundabouts for attendees at public meetings, city council meetings, county or township board meetings, and at other public outreach venues.

If you have any questions or would like an electronic copy via USB drive contact Marc Briese at mbriese@stonebrookeengineering.com.



Year End Pay Request Deadline

By: Ann McLellan, State Aid Finance Supervisor

State Aid Finance will process State Aid contract payments for 2015 for pay requests received in our office by 4 p.m. Thursday, December 24th. Payments received after this time and date will be processed as time permits. Please remember you do not have to wait until the final week to send your payments in; the earlier the better.

When a payment is submitted to State Aid Finance, we process it and then it's entered into the Statewide Integrated Financial Tools in a nightly batch to Minnesota Management and Budget. MMB reviews the payments before they are released. The entire process can take two to three days, so any payment received after 4 p.m. December 24th may not be fully processed in SWIFT.

SAAS Reports getting Facelift

By: Sandra Martinez, State Aid Accountant

The State Aid Finance group is working on a project to review all State Aid Accounting System reports for improvement to better serve our users.

Participation is needed from all of our users, which includes cities, counties, districts and State Aid staff. The purpose of this project is to clean-up the existing reports for accuracy, determine if the existing reports are meeting users' needs, and if any of the reports are not being used.

State Aid Finance is presenting this project to county accountants at district meetings for their feedback. A quick reference guide for report review has been created. Reviewers should review the name of the report and description, query drop-down menus, determine if the title page is accurate, and determine if the data is accurate.

A survey was sent out November 18th to county and city engineers, DSAEs, DSAAs, and county accountants. If you have received this survey, please help by answering the questions. The success of this project depends upon the feedback of the users and will help the user by providing accurate reports.

Upon completion of this project, we will report the changes and training will be provided to those who would like to learn about reports that you may not be using and that may be helpful in your work.

If you have any questions or would like additional information, please contact the project lead, Sandra Martinez at sandra.martinez@state.mn.us or 651-366-4880.

Structural Rumble Strip Installation on Concrete Pavement Surfaces Clarification

By: Sulmaan Khan, Program Support Engineer

There has been some misunderstanding in regards to the use of structural rumble strips installed on concrete pavement surfaces which is described in MnDOT [Technical Memorandum 14-07-T-01](#) (PDF) "Rumble Strips and Stripes on Rural Trunk Highways." As stated in the tech memo, there are two options for how to install shoulder rumble strips on concrete pavement. They include:

1. Installing 3' long structural rumble strips on alternating panels, **and also** shoulder rumble strips on the adjacent paved bituminous shoulder. (Figure 7)
2. Milling in either continuous or intermittent shoulder rumble strips outside the edgeline, but on the concrete surface. (Figure 8)

The intended purpose of the 3' structural rumble strip is not traffic safety driven to reduce vehicle lane departures but is rather a feature to help reduce the occurrence of vehicles driving on the edge of the concrete pavement, which can potentially lead to pavement edge cracking, by providing a tactile and audible warning. If structural rumble strips are installed, continuous or intermittent rumble strips must also be installed on the adjacent bituminous shoulder to be considered as a roadway safety measure eligible for federal safety dollars. If structural rumble strips are installed without also installing shoulder rumble strips, federal dollars will not be reimbursed for the project.

Additional details and information on rumble strip and rumble stripe installation can be found in the tech memo document. Any questions can be directed to Sulmaan Khan at 651-366-3829 or

sulmaan.m.khan@state.mn.us, or Mark Vizecky at 651-366-3839 or mark.vizecky@state.mn.us.

FIGURE 7 - CONCRETE PAVEMENT OPTION A - STRUCTURAL RUMBLE STRIP

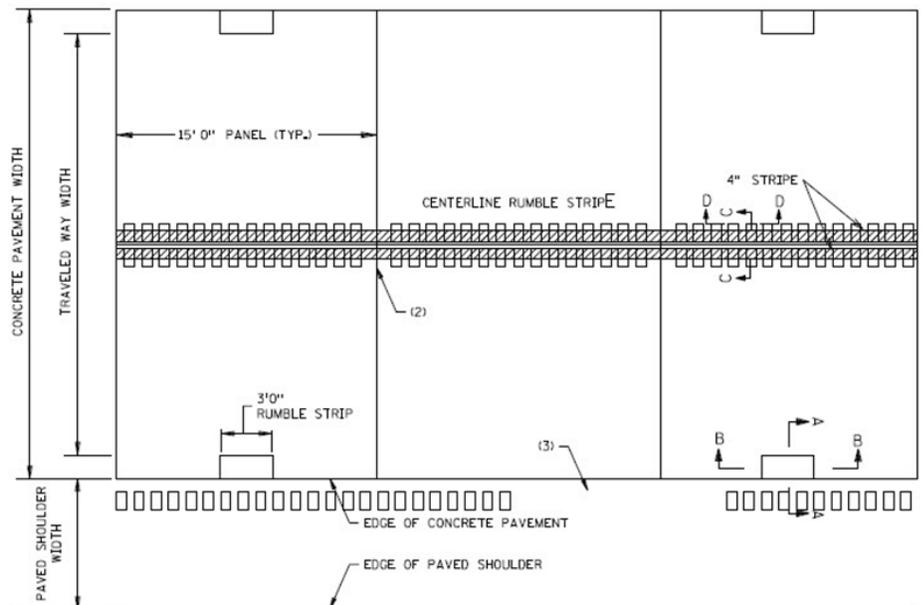
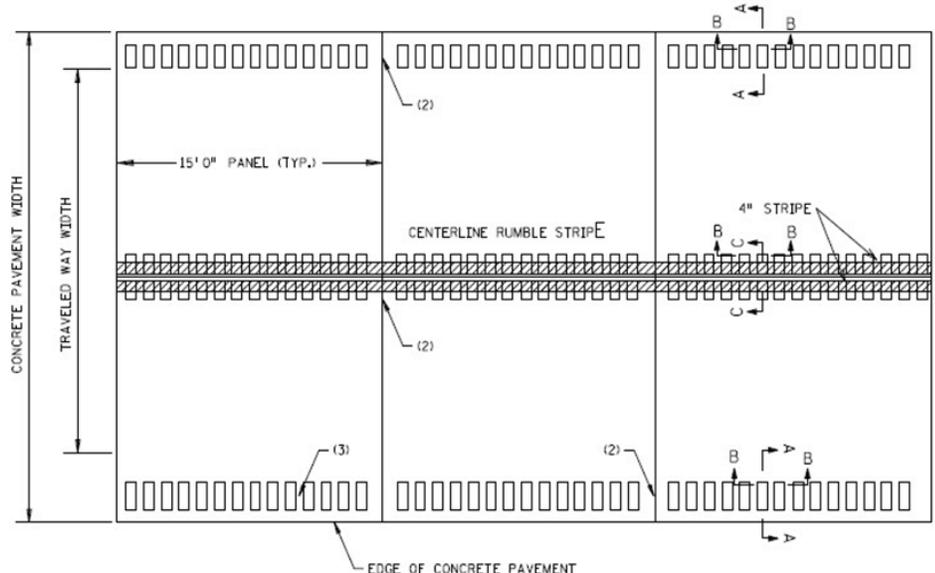


FIGURE 8 - CONCRETE PAVEMENT OPTION B - CONCRETE RUMBLE STRIP



Implementation of Concrete Contractor Mix Designs for All Ready-Mix Concrete

By: Maria Masten, MnDOT Concrete Engineer and Mitch Bartelt, Construction Engineer

The MnDOT Concrete Engineering Unit has been working with the Concrete Ready-Mix industry for the last several years to develop specification language that transfers the responsibility of designing concrete mixes to the Contractor. The Engineer determines the final acceptance of the concrete for payment based on satisfactory field placement and performance.

MnDOT has let 23 pilot projects over the course of the last two years as a trial for the new mix designs requirements. The **2016 MnDOT Standard Specifications for Construction** implement Contractor Mix Designs in Specification 2461, Structural Concrete.

Below is a summary of the significant changes related to concrete contractor mix designs:

- All mix designations have a new name. (See table on page 7)
- Contractor Mix Designs are plant and material specific, not project specific. (This is similar to how the Metro District has functioned for many years.)
- Contractor Mix Designs will not have a sunset date provided the materials and mix continue to meet specification requirements.
- Contractor Mix Designs are proprietary and can't be shared with other Producers.

- Compressive Strength is now a requirement.
- High-early concrete is defined as 3000 psi at 48 hours.
- Standard strength cylinders are required to be made in sets of three for acceptance. (Previously, one cylinder was required.)
- Agency fabrication, handling, curing and breaking of cylinders is even more critical than with previous MnDOT designed concrete mixes. The MnDOT Concrete Manual will provide more detailed guidance regarding cylinders.
- Investigation of low strength cylinders and dispute resolution coring are incorporated into the spec.
- The Contract requires providing temperature monitoring equipment for the curing tanks that have previously been provided.
- All personnel who break concrete cylinders are required to have current strength testing technician certification from MnDOT, ACI, or WisDOT.
- Producer gradation test results are now used for acceptance (gradation rates have decreased).

Contractor is required to provide two Concrete Flatwork Finishers or Technicians for each project with one being on site at all times. However, this requirement will not be part of your contracts until you adopt the 2016 MnDOT Spec Book.

Although the State Aid Office has decided to continue using the 2014 MnDOT Standard Specifications for Construction and later implement the 2016 Spec Book, the MnDOT Concrete Engineering Unit and the State Aid Office are encouraging local agencies to adopt the concrete contractor mix design requirements for projects to be let and built for 2016 construction and beyond.

Specifications superseding 2461/3137 in their entirety are available both on the [State Aid Pavement webpage](#) (beneath the heading **Pavement Design Specifications**) and in the [Electronic Proposal Document Tool](#) for the 2014 Spec Book.

The Concrete Engineering Unit will be training on the new specifications at all concrete technical certification classes this year, District and Local Agency meetings, and Bi-Annual Concrete Ready-Mix Plant Monitor Training in spring of 2016.

MnDOT will continue to design concrete mixes for carryover projects in 2016, but plans to only approve mix designs with the start of the 2017 construction season.

For additional information or questions, contact Maria Masten at maria.masten@state.mn.us or 651-366-5572 or your regional State Aid Construction Engineers.

(Continue on page 7 for table)

continued...Implementation of Concrete Contractor Mix Designs for All Ready-Mix Concrete

Concrete Grade	<u>OLD</u> Mix Number	<u>NEW</u> Mix Number	Intended Use
B Bridge Substructure	3Y43	3B52	Abutment, stems, wingwalls, paving brackets, pier columns and caps, CIP wall stems, pier struts
F Flatwork	3A22 3Y22	3F32	Slipform curb and gutter
	3A32 3Y32 3A34	3F52	Sidewalk, curb and gutter, slope paving, median sidewalk, driveway entrances, ADA pedestrian sidewalk
G General Concrete	1A43	1G52	Footings and pilecap
	3A43 3B42 3Y43	3G52	Footings, pilecap, walls, cast-in-place manholes and catch basins, fence posts, signal bases, light pole foundations, erosion control structures, cast-in-place box culverts, culvert head-walls, open flumes
M Median Barrier	3Y12	3M12	Slipform Median barrier, non-bridge
	3Y32	3M52	Median barrier, non-bridge
P Piling	1C62	1P62	Piling, spread footing leveling pad
R Pavement Rehabilitation	3A32 3B42	3R52	CPR - Full depth concrete repairs, concrete base
S Bridge Superstructure	3Y16	3S12	Slipform bridge barrier, parapets, end post
	3A32 3A42 3Y43 3Y46 3Y46A	3S52	Median barrier, raised median, pilaster, curb, sidewalk, approach panel, formed bridge barrier, parapet, end post, collar
X Miscellaneous Bridge	1X62 1X46	1X62	Cofferdam seals, rock sockets, drilled shafts
	3X46	3X62	Drilled shafts above frost line
Y Bridge Deck #	3Y33 3Y33A 3Y36 3Y36A	3Y42-M 3Y42-S	Bridge decks, integral abutment diaphragms, pier continuity diaphragms, expansion joint replacement mix
		3YHPC-M 3YHPC-S 3YHPCLC-M 3YHPCLC-S	Bridge decks, integral abutment diaphragms, pier continuity diaphragms, expansion joint replacement mix
	3A37 3Y37	3Y47	Deck patching mix

Multiple Stress Creep Recovery Specifications— AASHTO M332

By: Joel Ullring, Pavement Engineer

Beginning January 1, 2016, Minnesota will implement the latest improvement to the PG grading system, Multiple Stress Creep Recovery. See the document [Implementation of MSCR](#) (PDF) which explains the what and why about the new specification. An explanation of the new guidelines is presented in the document entitled [PG MSCR Guidelines Final](#) (PDF). The previous PG Guidelines were easily modified to readily accommodate the MSCR specification without much change. The same asphalt grade designation letters will be used to identify the grades with which you are familiar. For example, “B” will represent PG 58S -28 (old PG 58 -28) and “E” will represent PG 58H -28 (old PG 64 -28).

The primary change seen in asphalt binder grades is in the high temperature grade. The new system now tests binders at Minnesota temperatures (58C) rather than testing at temperatures Minnesota

doesn't experience (64C). The asphalt binder PG 64 -XX will no longer be specified. This binder (PG 64 -xx) was used to “bump” up to a stiffer asphalt to minimize rutting and shoving potential on high ESAL and high volume roads with slow moving traffic. The asphalt binder grades now used with MSCR are PG 58x -28 and PG 58x -34.

With MSCR grading the bumping is done through the selection of a letter after the high temperature grade (the 58x). The letter selection is S, H, V, and E (Standard, Heavy, Very Heavy, and Extremely Heavy traffic). As you move in that order from S to E the binder is still tested at 58C, but, has progressively more polymer and results in the bump previously used to achieve by selecting the PG 64. The “S” designation contains no polymer. As an example, where you previously specified PG 64 -28, you will now specify PG 58H -28.

Consider 2016 a transition year; very few projects will actually contain the new PG MSCR. This will be similar to when the change was made from Penetration grading to PG grading back in 1997. During the 2016 construction season liquid asphalt suppliers will still supply the asphalt grades specified in the contracts. Most projects won't need grade substitution but, if a supplier did want to substitute a MSCR grade for a conventional grade there should be no issue.

If you have questions contact:

John Garrity, MnDOT Bituminous Engineer at 651-366-5577 or john.garrity@state.mn.us.

Joel Ullring, State Aid Pavement Engineer at 651-366-3831 or joel.ullring@state.mn.us.

State Aid Flatwork Spec - Please Wait to Use

By: Mitch Bartelt, Construction Engineer

State Aid has had a flatwork specification for concrete available for a few years. There is a State Aid Technical Memorandum, [12-SA-02](#) (PDF) that details its use. However, it has been lightly used. It is currently not allowed for Federal Aid projects, or projects on the Trunk Highway or National Highway systems.

Ron Bumann from State Aid and

Maria Masten from the MnDOT

Concrete office are working together to improve the flatwork specification. The testing requirements will be changed to be more in line with the State Aid Schedule of Materials Control, and changes will be made in hopes of gaining approval to be used on Federal Aid projects, and projects on the Trunk Highway and/or National Highway systems.

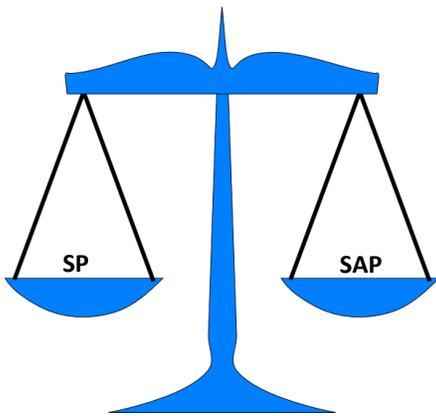
It is not recommended that the aforementioned flatwork specification be used on any projects, particularly those receiving State Aid funding, until it is updated. After it is updated, it will be encouraged to be used on a widespread basis to facilitate consistency among local projects.

SP versus SAP– what does this mean?

By: Lynnette Roshell, Federal Aid Agreement & Special Programs Engineer

Sometimes the original intent of a decision gets blurred over time and sometimes the rules that changed and the original decision are no longer valid. Questions seem to be coming up almost daily on how to address and document projects that are lumped together for bidding purposes. The short answer is, it depends.

When I came to SALT, the policy was that if a project had any (even a dollar of federal funding) then it should be referred to as an SP. Projects that had no federal funding should be referred to as an SAP. There are many people on the MnDOT trunk highway side that think anything on the trunk highway is an SP and anything on the local system is an SAP. We want to continue to push that federal funding is what determines the SAP or SP designation.



It is very important to designate where the funding is going on a project, because the federal rules are applied differently depending on the funding. Each project needs to be looked at on a case-by-case basis because two situations that appear the same may be very different.

We understand the desire to add additional work to a federal contract in an effort to attract a larger contractor and get a better bid price, however, SALT and your DSAE need to be aware of your intent so that the additional work is documented properly. If it comes up late in the plan review, you may need to back track and do additional work that may delay your project. When a non-federally funded project is added to a federally funded project, the next question is if the two projects have independent utility. Could you build each project at a different time and still have the roadways function? If the project has independent utility then the environmental document for the federal project should reference the nonfederal project, but note that they have independent utility. If the two projects do not have independent utility then the nonfederal project must also have its environmental impacts documented in the project memo.

This gets even more complicated because the State Transportation Improvement Program description needs to reflect the work and needs to match with Program/Project Management System (an internal MnDOT program). When changes to the project scope come up late in the process, central office is scrambling to get all of the project descriptions to align and be accurate. For many projects, we are now also required to put begin and end points on the project authorization. These points need to be accurate within the STIP and PPMS descriptions. Unfortunately all of the systems

are not directly tied so a change in one area does not get revised everywhere and different people need to do different parts of the change. It is a messy process, but it is what we currently have. The systems talk to each other enough to know the descriptions are different, but not enough to make them the same.

If you are proposing to add work to a federal contract, talk to your DSAE as soon as possible as it may cause additional effort for STIP, National Environmental Policy Act, and authorization requirements.

Federal Aid Payments

Chris Vang recently moved from State Aid Finance to the Project Accounting Unit and payments have been inadvertently sent to him and others. To clear up any confusion, please send all DCP Construction Payments (partials) to Candy Harding at candice.harding@state.mn.us. If you prefer to send them through the US Post Office, please send them to Candy Harding at MS215. If you do send the payment by email, you do not need to send a hard copy through the mail.



Section 7 Threatened and Engaged Species Determination Requests

By: Gary Reihl, Project Development Engineer

Jason Alcott is leaving MnDOT's Environmental Stewardship Office. Jason provided the Section 7 Threatened and Endangered Species Determination for all the federal aid projects. His last day will be December 15. Interviews for his position will be scheduled by the end of December. In the interim, Ken Graeve will be handing these requests until the position is

filled. Ken can be contacted at 651-366-3613 or 395 John Ireland Blvd., MS 620, St. Paul, MN 55155.

An assistant position is also being filled. This position is scheduled to be in place by early January.

For any further information contact Gary Reihl at 651-366-3819 or gary.reihl@state.mn.us.

Is the grass growing?

MnDOT has made updates to the [Vegetation Establishment Recommendation letters](#) based on feedback received from the different districts.



ADA Construction Training Coming Soon!

The MnDOT ADA office will be holding ADA construction training for local agencies and consultants this winter. The dates and details will be emailed and posted on our [Training & Workshops webpage](#) as soon the information has been finalized.



State Aid for Local Transportation

395 John Ireland Blvd MS500

St. Paul, MN 55155

<http://www.dot.state.mn.us/stateaid/>