



(Bridge 10552, Camden Township Road (84th St.) in rural Carver County. This typical local bridge consists of 45 inch prestressed concrete beams on integral style abutments with a Type S vehicular concrete barrier. Stonebrooke Engineering, Inc. performed the bridge and roadway approach designs, and construction inspection.)

# State Aid Bridge News

January 2020

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## Bridge Inspection General

In the 2019 Bridge Safety Inspection Refresher Training Seminars, we incorporated an extended presentation on inspecting and load rating steel corrugated plate culverts. To revisit this presentation along with several other steel culvert load rating resources, please visit the LRRF of In-Service Metal Pipe Structures on the [State Aid Bridge Website](#).

Please feel free to visit the 2019 State Aid Bridge newsletter for additional background information on this local bridge hot topic. To date, a lot has been learned and new load rating tools and advanced inspection techniques have been employed to adequately load rate steel culverts. We're starting Special Hauling Vehicle Load Rating Contract VII in which more local steel culverts will be inspected to properly load rate them to satisfy FHWA requirements.

In 2019, the PA sessions included a review of PA roles and responsibilities, a PA checklist, a NBI rating calibration exercise, and a prestressed concrete beam inspection example. In 2020, the PA sessions will include a review of PA roles and responsibilities, a SIMS Tutorial/Inspection Review Checklist, and relevant Bridge Information Management Topics.

Again, if you're a PA, we highly recommend attending the 2020 seminar to capture this new material. Don't be surprised if you see your friendly District State Aid Engineer in the classroom, for they've been invited as well to learn and better understand the associated PA's duties.

## Bridge Safety Inspection Refresher Training

MnDOT, in cooperation with the Federal Highway Administration and Lake Superior College, conducts annual Bridge Safety Inspection Refresher Training in February and March to:

- Improve the quality of inspections
- Introduce new equipment and techniques
- Maintain consistency and reliability throughout the statewide network of bridge safety inspection programs



*A serious finding showing dismantled load posting signs at CSAH 10 Bridge over the March River in Anthony Township. Unlawful sign removal is a right-of-way use misdemeanor.*

Speakers discuss a variety of issues that surround key topics, and use visual presentations with handouts to deliver the core of this training. Seminars are scheduled from 8 am to 4 pm.

## Who Should Attend

Individuals who need to maintain MnDOT certifications as Bridge Safety Inspection "Team Leader." Attendance is required at a minimum of two bridge inspection refresher training seminars during each four year recertification period.

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## ...continued, Bridge Inspection General

- County, city, or consultant engineers who are designated as bridge inspection “program administrators” are required to attend a minimum of two bridge inspection seminars every four years.
- Individuals who assist in bridge inspections are not required to attend, but are welcome and encouraged to do so.

### Description

MnDOT conducts Bridge Safety Inspection Refresher Training each year to improve the quality of inspections, introduce new equipment and techniques, and maintain consistency and reliability throughout the statewide network of bridge safety inspection programs. Speakers will discuss a variety of issues that surround key topics, and use visual presentations with handouts to deliver the core of this training.

### 2020 Topics

- State of Minnesota and FHWA Updates
- Bridge Inspection and Data Updates
- Critical Findings and Compliance Reviews
- Bridge Maintenance Data
- Protected Species
- Structural Element Calibration Exercise
- Non Destructive Testing Equipment Demo
- Program Administrator Breakout Session
- Bridge Inspectors Breakout Session

### Instructors

- MnDOT and FHWA staff

### General Information

- The seminar fee is \$125 and includes training materials, lunch and refreshment breaks.
- Registration begins at 7:30 a.m. Seminars are scheduled from 8 a.m. to 4 p.m.
- Class space is limited and early registration is highly recommended.

Registration questions contact: Shannon Wark, Lake Superior College, 218-733-5959, [shannon.wark@lsc.edu](mailto:shannon.wark@lsc.edu)

Curriculum Questions Contact: Pete Wilson, MnDOT, 651-366-4574, [pete.wilson@state.mn.us](mailto:pete.wilson@state.mn.us)

### Dates and Locations

- February 13 - Bemidji
- February 18 - Shoreview
- February 20 - Cloquet
- February 26 - Rochester
- March 5 - St. Cloud
- March 19 - Marshall
- March 26 - Shoreview

You may [register online](#) or print out a [registration form](#) (PDF) and mail or fax in.

## UAS/Drone Update

Drones for bridge inspection research has been completed by the MnDOT Bridge Office Inspection Unit in multiple phases since 2015. As of summer 2018, Phase III of this research completed using the senseFly Albris and the Flyability Elios, a collision-tolerant drone more suited to confined spaces such as box girders, culverts, or areas that are difficult to access.

Due to the success of this research, MnDOT Metro District purchased the Elios drone to supplement bridge inspection access where space is confined and optimal lane closures are prohibited, which has been an on-going issue in the District due to traffic volumes. As a result, an additional

*(continue on page 3)*

## ...continued, UAS/Drone Update

research phase was instituted July 2018 by the Bridge Office and Metro District that would implement drone inspection to the Metro Bridge inventory by creating an inspection plan that would identify situations best suited for drone use, what parameters govern drone use in bridge inspection, and how UAS could be integrated into standard inspection operations. Part of this phase includes preparation of a UAS user/policy manual specific to structure inspection, UAS guidance, and best practices. This final research phase is the cornerstone model for implementation into the districts statewide, with central management, oversight, and expertise by the MnDOT Bridge Office Inspection Unit in conjunction with the MnDOT Aeronautics Office.

Concurrent with this last research phase, FHWA innovation funding was awarded to MnDOT to provide the necessary means to complete the UAS manual, develop and implement statewide District UAS training parallel with other state and federal initiatives, and purchase multiple inspection-specific UAS and post-processing software for identified district champions and the Bridge Office of various types that are best suited and cost-effective. As a result of this, a Drone Inspection Sub-Committee (DISC) was formed by State Bridge Inspection Engineer, Jennifer L. Wells. The DISC

includes all agency representatives that use or will use drones for bridge inspections such as MnDOT Districts, local government agencies, the DNR, and consultants. As of January 2020, the MnDOT Bridge Office is in the final steps of purchasing the UAS fleet within a continuous open contract. At this point, the DISC will resume operations for continued implementation. Full UAS field training will occur in April at the Bridge Workers Safety and Training Conference for the Districts and any other agencies that have interest. For more detailed information please contact Jennifer Wells at 651-366-4573 or [jennifer.wells@state.mn.us](mailto:jennifer.wells@state.mn.us).



Minnesota Welcomes Unmanned Aircraft Systems (UAS)/Drones

## Bridge Maintenance

### Bridge Maintenance Support

MnDOT's Bridge Operations Support Unit is available to assist. Please contact Greg Mensen at 651-366-4520 or [greg.mensen@state.mn.us](mailto:greg.mensen@state.mn.us) or Sarah Sondag at 651-366-4529 or [sarah.sondag@state.mn.us](mailto:sarah.sondag@state.mn.us) if you have any questions or if you would like guidance for your agency's bridge maintenance program.

### Structure Information Management System (SIMS) Maintenance Module

The SIMS Maintenance Module is available for local agencies to utilize. Please contact Sarah Sondag at [sarah.sondag@state.mn.us](mailto:sarah.sondag@state.mn.us) if you would like to schedule a demonstration.

### Training

Bridge Maintenance Training is available to local agency participants. Training announcements are posted on the [MnDOT Bridge and Structures Training webpage](#). If interested, please follow the registration process outlined in the training announcement.

A brief description of each class is presented below.

#### Bridge Maintenance Academy I (eLearning Modules)

MnDOT is converting Bridge Maintenance Academy I into eLearning modules. As modules become available, they will be posted on the [MnDOT Bridge and Structures Training webpage](#).

#### Bridge Maintenance Academy II (Anticipated February, 2021)

In Bridge Maintenance Academy II, participants will receive an introduction to the fundamentals required to perform bridge maintenance effectively including strategies for structural steel, timber bridge maintenance and formwork. Participants will also be given the opportunity to observe experts and perform hands-on bridge maintenance tasks, such as concrete formwork, rebar placement, concrete placement, finishing and curing, chain dragging, concrete removal, concrete patching and structural steel repair.

(continue on page 4)

## ...continued, Bridge Maintenance

Please note that each agency is responsible for providing the appropriate safety, tool and equipment training, PPE and basic tools that are needed for participating in this hands-on academy.

The cost to attend Bridge Maintenance Academy II is \$100.

Bridge Maintenance Academy II will not be offered in 2020. It is anticipated that a class will be offered in 2021.

### Bridge Maintenance Academy III (February 3-7, 2020 at the MnDOT Plymouth Truck Station)

In Bridge Maintenance Academy III, participants will be given the opportunity to construct a small single span bridge in order to facilitate bridge jacking training. As part of this exercise, participants will be able to observe experts and perform hands-on bridge maintenance tasks, such as setting elastomeric bearings, setting steel beams, fastening steel diaphragms, constructing bridge deck formwork, placing rebar, placing, finishing and curing bridge deck concrete, installing a strip seal joint and performing full depth deck patching. Following construction of the bridge, participants will receive an introduction to basic bridge jacking and bearing and joint maintenance fundamentals as well as perform a bridge jacking exercise.

Please note that each agency is responsible for providing the appropriate safety, tool and equipment training, PPE and basic tools that are needed for participating in this hands-on academy.

The cost to attend Bridge Maintenance Academy III is \$100.

Registration is available on the [MnDOT Bridge and Structures Training webpage](#) until January 10, 2020.

### Bridge Preventive Maintenance eLearning Modules

Bridge preventive maintenance eLearning modules developed by MnDOT are available to local agency participants. Modules include:

- Crack Sealing
- Strip Seal Gland Repair
- Poured Joint Sealing
- Bridge Flushing

The eLearning modules focus on planning, equipment, materials and best practices for these bridge preventive maintenance activities. These modules are available on the [MnDOT Bridge and Structures Training webpage](#). There is no cost to access the bridge preventive maintenance eLearning modules.

Please contact Sarah Sondag at 651-366-4529 or [sarah.sondag@state.mn.us](mailto:sarah.sondag@state.mn.us) if you have any questions regarding bridge maintenance training.

### **Bridge Maintenance Manual**

The Bridge Maintenance Manual is now posted on the [MnDOT Bridges and Structures – Bridge Maintenance Manual webpage](#).

### **Midwest Bridge Preservation Partnership**

The [Midwest Bridge Preservation Partnership \(MWBPP\)](#) is comprised of representatives from regional state and local highway agencies, provincial transport agencies, industry, suppliers, consultants, and academia. The mission of the partnership is to provide a platform for the MWBPP Member Agencies and Organizations to exchange, promote, and advance best practices, new technologies, and innovation in the areas of highway bridge management, inspections, preservation and maintenance.

One of the goals of the MWBPP is to promote outreach to local agencies. The partnership has monthly teleconference calls, working groups and regional meetings in order to conduct partnership business and exchange bridge preservation knowledge.

At the 2019 Regional Meeting, the partnership adopted the following language regarding Local Agency Participation into the bylaws: *Local Agencies may join a regional partnership upon payment of a membership fee of \$2250.00 each year. The local agency member would then be allowed full participation in the Regional Partnership for either bridge or pavement preservation and would have travel expense reimbursement for one person per local agency membership.*

The 2020 Midwest Bridge Preservation Partnership Regional Meeting will be held in Lexington, KY on September 9-11, 2020.

If you would like more information about the partnership, please contact Sarah Sondag at [sarah.sondag@state.mn.us](mailto:sarah.sondag@state.mn.us).

# Bridge Hydraulic News

## New Hydraulics Engineer

Erik Brenna will serve as our new State Aid Bridge Hydraulics Engineer, the on-demand position formerly held by Petra DeWall. His current role is the Assistant State Hydraulic Engineer in the MnDOT Bridge Office. He graduated from the University of Minnesota with a Bachelor's Degree in Civil Engineering. He has been with the department almost 10 years and has worked in Metro Hydraulics, Metro State Aid, and Metro Project Management. He lives with wife Amy, daughter Abigail, and dog Barley. When not proudly serving our local partners he enjoys curling, brewing beer, and fishing in his spare time.

## Upcoming Training for Aquatic Organism Passage Culvert Design

Training opportunity for local agency engineers and their consultants to gain understanding of new Aquatic Organism Passage (AOP) design framework. Content will be based primarily on the Minnesota Guide for Stream Connectivity and Aquatic Organism Passage through Culverts and other reference material. There will be an emphasis on stream assessment and practical issues of culvert design for AOP.

Cost: Free

Duration: 1.5 +/-

Tentative dates/locations:

- June 3-4: MnDOT Arden Hills Training Center
- July 15-16: Carlton County Public Works
- August 12-13: MnDOT District 2—Bemidji Office
- September 15-16: MnDOT District 3—St. Cloud Office
- September 29-30: MnDOT District 7—Mankato Office
- October 7-8: MnDOT Arden Hills Training Center

Course work is still being developed, more specifics to follow. In the interim, if you have any questions please contact Erik Brenna, State Aid Hydraulics Engineer at 651-366-4536 or [erik.brenna@state.mn.us](mailto:erik.brenna@state.mn.us).



*Erik and daughter head out to a favorite casting spot where they search for tasty aquatic organisms*

## MCEA County Engineers Bridge Committee (CEBC) Update

Under the leadership of Brian Pogodzinski, Houston County Engineer and CEBC Chairman, the CEBC's relevance continues to grow to address the ever changing and challenging local bridge issues. You can visit the [2019 State Aid Bridge Newsletter](#) (PDF) on pages 11-12 to gain additional CEBC background information. The CEBC traditionally meets in the fall for a full day meeting to address emerging and ongoing local bridge issues. The meeting generally accommodates selected guests in way of local bridge consultants, Bridge Office staff, and others to share their expertise in the various bridge topics. In the winter, the CEBC sits down for a shorter meeting in January, and concurrent with the MCEA Annual Winter Conference. At the MCEA Annual Summer Conference, time is typically afforded for State Aid Bridge and the CEBC to present and report on local bridges issues and related progress.

At the 2019 Fall CEBC meeting, topics discussed included the proposed 2019 NBIS (National Bridge Inspection Standards) Rules, 2020 MnDOT Bridge Safety Inspection Seminar Topics, Local BRIM Updates, Underwater Inspection & Fatigue Detail Study, Local Bridge Inspection Program, Funding Updates, Hydraulic Issues and more. Important carry over topics into 2020 will include Ownership of Local Road Bridges over Trunk Highways, proposed 2019 NBIS Rules, and MnDOT District Support of the Local Bridge Inspection Program. If you see another need area in the local bridge world, do not hesitate to contact Brian Pogodzinski, or Dave Conkel-State Aid Bridge to get the issue rolling through the CEBC. The CEBC works closely with the Minnesota County Engineers Association Board of Directors to implement and effect positive change for local bridge owners.



## Local BRIM Update

In 2019, State Aid Bridge made its final round of State Aid District Meetings to issue Local BRIM packets which included a draft BRIM-LPI bridge funding eligibility criteria for the State Aid Manual, and latest BRIM LPI reports for each county and State Aid District. The packets also included instructions to access the local BRIM tool, how to read the LPI scores and report output. Along with the BRIM packets, each county had an opportunity to provide State Aid Bridge and the CEBC (County Engineers Bridge Committee) with suggested comments.

The new BRIM funding criteria revolves around a LPI < 60. This LPI threshold value for bridge funding was derived from an exhaustive effort with the CEBC, the MnDOT Bridge Office, State Aid Bridge, and multiple local agencies and consultants. Please reference the [2019 State Aid Bridge newsletter](#) (PDF), pages 8 thru 9 to refresh yourself with the Local BRIM Tool, Resources, and Reports. At our 2019 Fall CEBC Meeting, consensus was established to omit outdated FHWA terminology such as SR (Sufficiency Rating), SD (Structurally Deficient) and FO (Functionally Obsolete), and to add NBI (National Bridge Inventory) Appraisal Ratings for Deck Geometry, Approach Roadway, and Waterway Adequacy to the Local BRIM Reports.

Our next steps with Local BRIM is to update the reports by mid-January 2020 with the proper terms and NBI items, and to update the State Aid Manual with the LPI criteria for bridge funding. Please continue to use BRIM Reports for Locals with LPI, as the old bridge funding criteria using SR, and SD or FO, will no longer be relevant as of January 1, 2020. However, when the new LPI eligibility requirements were put into place, the CEBC established a 5 year grace period for bridges eligible under the old criteria with SD, FO, SR, and that were already within the county's five year plan for bridge replacements. The State Aid Programs Engineer should have a list of which bridges these are for you.

Until then, next phases of Local BRIM will be explored. These phases will be directed by the CEBC, and will likely include more logic to help local bridge owners make timely repairs, maintenance, rehabilitation and replacement decisions. The logic will ultimately include items such as bridge cost information, stay tuned.

# brim



## Local Historical Bridge Preservation Update

### Notable Bridge Projects

We had a few very interesting historic bridges pass through State Aid Bridge in 2019. They included the famous Kern Bridge in Blue Earth County, and the Silver Lake Park Bridge in the City of Rochester, Olmsted County. The [Kern Bridge](#) is unusual in that its 189-foot span length exceeds the standard lengths of 50 to 130 feet for bowstring truss spans nationally. Constructed in 1873, the bridge is listed in the National Register of Historic Places (National Register) as the only example of a bowstring through-truss bridge in Minnesota. This bridge has been closed since 1991, and survived its 145th Minnesota winter. In cooperation with the township, county, and State Aid District 7, a federally funded project was developed and is under construction to carefully dismantle the bridge, load it into sealed steel ocean shipping containers and to store them at a MnDOT District 7 owned gravel pit. A Letter of Interest Solicitation to move the dismantled Kern Bridge to a new location to re-erect and to rehabilitate it to historic standards was also developed. We're hopeful in the spring of 2020 a successful applicant will be identified. Federal funds at 80 percent with a 20 percent State or local match will likely be used for this future project.



*Internal Shear Anchor Strengthening of the 7th Street Bridge (Bridge 89188) in the City of Rochester, Olmsted County.*

Along with the Kern Bridge, the [7th Street Bridge](#) in the City of Rochester was rehabilitated. This was a \$1.4M rehabilitation project which included shear strengthening the concrete haunched girders with innovative techniques from Oregon. This innovative shear strengthening approach is brand new to Minnesota. The shear strengthening work entails coring 1 inch diameter holes by approximately 3 to 5 feet deep,

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## ...continued, Local Historical Bridge Preservation Update

spaced from 7 to 14 inches centered along the concrete girder webs. The holes then received ¾ inch diameter threaded shear anchors set in epoxy adhesive. The Project Engineer WHKS-Justin Zimmerman was instrumental in successfully introducing and implementing this shear strengthening technique on the 7th Street Bridge. We will be adding this project to our [Historic Bridge Rehabilitation Projects webpage](#).

### Local Historic Bridge Addendums

Over the last decade MnDOT and MnDOT State Aid in collaboration with the FHWA, local agencies and local agency consultants, have expended millions of dollars to build a strong Minnesota Historic Bridge Program to fulfill the National Historic Preservation Act. This effort included establishing a reliable state and local historic bridge list, educational resources through YouTube videos, case studies, FAQs, custom local historic bridge reports and additional resources. These valuable resources can be found at the [MnDOT Historic Bridges website](#).

A significant and important resource for local historic bridge owners is the individual custom bridge reports. These reports provide excellent information on the associated historic bridge data, existing bridge condition, maintenance, stabilization, and preservation recommendations and costs. As you can imagine as local historic bridges are being either repaired, rehabilitated or replaced, our library of local historic bridge reports can quickly become obsolete without an avenue to keep the reports up to date. Recognizing this dilemma, SALT decided to develop a local historic bridge report addendum process. This effort is being led by Girma Feyissa in the SALT Office. Girma formally worked in the Bridge Office, and rotated through State Aid Bridge for a few years. His bridge background and State Aid experience is ideal for this important work.

The addendum process Girma crafted will document the rehabilitation of the bridge by providing historic bridge data, what led up to rehab, what measures were taken to complete the rehab, what goals were achieved in improving the existing conditions, whether the Secretary's Standards and other standards have been followed and met. The addendum will also document the before and after conditions as well as the after rehab inspection and possible future maintenance and stabilization recommendations and cost as necessary. A template scope of services has been developed which includes 4 to 5 tasks to adequately develop a rehab addendum document. If you're a local historic bridge owner and are planning a rehabilitation project, please make sure to include the rehab addendum document to the scope of services in your RFP (Request For Proposals). Any questions can be directed to Girma Feyissa at [girma.feyissa@state.mn.us](mailto:girma.feyissa@state.mn.us) or 651-366-3818, or State Aid Bridge.



*Stabilize, removal and superstructure salvage of Yaeger (Kern) Bridge (Bridge L5669) in South Bend/Mankato Township, Blue Earth County.*

## 2019 Featured Local Bridge Projects

### Bridge 27C50

Bridge 27C50 was recently nominated for a 2019 AGC bridge award in the category for bridges costing between \$1.5 million to \$5.0 million. AGC bridge awards will be announced very soon. The project goal entailed replacement of existing Bridge No. 90437, carrying Cedar Avenue (CSAH 152) originally constructed over the Chicago, Milwaukee and St. Paul (CM&StP) Railroad Grade Separation, now operating as the Midtown Greenway, with new Bridge No. 27C50. The structure description includes a single-span 94-foot prestressed concrete beam bridge with integral abutments and non-supporting aesthetic concrete piers.

The project accommodated the historic nature of the corridor, provided accommodations for pedestrian/bike operations and future transit improvements. It included several innovations, including an adaptable substructure design which

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*Bridge No. 27C50, CSAH 152 (Cedar Ave.) over Midtown Greenway, Hennepin County, and Nominated for a 2019 MnDOT-AGC Bridge Construction Award*

## ...continued, 2019 Featured Local Bridge Projects

allows pier removal without modifying the superstructure if future transit needs change and pier locations are in conflict. Several challenges and complexities were negotiated, including impacting a historic district, removal of the existing bridge and detailing of the replacement structures. All these decisions were coordinated with a project historian, MnDOT's Cultural Resources Unit (CRU), and the State Historic Preservation Office (SHPO). Also a condominium complex was constructed within 25-feet of the southwest corner of the Cedar Avenue Bridge. The condominium is a multi-level residential property with underground parking. A ventilation unit was located within 10-feet of the wing wall. Partial wing wall removal, reconstruction and vibration monitoring were performed to minimize disruption to the building, and utilities.

Tony Schrempp, C. S. McCrossan Construction, Inc., Casey Black, SRF Consulting Group, Inc., and Owner, Hennepin County Regional Railroad Authority worked closely together to achieve a successful project and a very appealing end product.

### Tenth Avenue Bridge (Bridge 2796)

This was a featured bridge in the [2019 State Aid Bridge newsletter](#) (PDF), see pages 6-7 for detailed information. But because this major historic bridge accounts for approximately 60 percent of the total cost of all bridges let in 2019, which equates to roughly \$43 million, it warrants a second year of recognition! The project includes some very innovative bridge design, details, and construction approaches. We're excited to capture these features and to communicate them on the [Historic Bridges Rehabilitation Projects webpage](#) in 2021.

Visit the project website and see the informational project video at [www.10thAveBridge.com](http://www.10thAveBridge.com). Regarding a construction and schedule update, the contractor began preparing the site for construction by setting up trailers and equipment. Scaffolding and protective sheathing is being installed around some arch piers for concrete removal and repair in December to February. The bridge will be closed to all traffic including, vehicles, bikes, and pedestrians beginning in March 2020. The bridge closure and detours will be in effect for approximately 18 months, until summer 2021.



*Historic Tenth Avenue Bridge 2796, Tenth Avenue over the Mississippi River, Minneapolis. Photo showing heating and housing Piers 1 and 2 for galvanized reinforcing shot-concrete surface repair.*

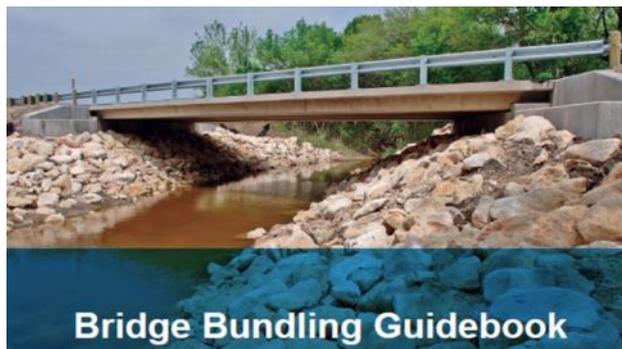
## 2018 FHWA Competitive Highway Bridge Program Grant “Bridge Bundling” Update

As you recall, last year we submitted three separate applications to compete for \$225 million in Competitive Highway Bridge Program (CHBP) grants to demonstrate the efficiencies associated with "bundling" of highway bridge replacement and/or rehabilitation projects into a single contract. You can see more detail and attain more background information regarding this endeavor by visiting the [2019 State Aid Bridge newsletter](#) (PDF) on pages 7-8. At this time, we're happy to report that the MnDOT District 1/St. Louis County Bundled Bridges Project which was seeking \$14.1 million program funds to address the deteriorating structural conditions of 21 bridges (4 state bridges on TH 210 and 17 local bridges) in north-eastern Minnesota did receive a Grant of \$10.3 million back in August 2019.

The State Aid Office, State Aid District 1 Office, FHWA, and St. Louis County have been working through the project logistics, and are well into developing the project. St. Louis County is the lead agency, and it is anticipated that construction will be phased over the 2021, 2022, and 2023 construction seasons. New replacement bridge structures include mostly MnDOT standard precast concrete box culverts, and some prestressed concrete beam bridges. We'll keep you posted as the St. Louis/ MnDOT District 1 bridge bundle project progresses.

Until then, additional bridge bundling resources and opportunities are emerging. For instance, a newly developed [FHWA Bridge Bundling Guidebook \(BBG\)](#) (PDF) was recently issued with an accompanying [webinar](#). This BBG Guidebook provides detailed information to assist DOTs, LPAs,

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*Bridge Bundling (BB) is not a new concept to save time and money, but limited information exists, and FHWA recognized guidance was needed. A BB FHWA implementation team was created and Co-Chaired by our Former FHWA Bridge Engineer, Romeo Garcia to newly develop a Bridge Bundling Guidebook (BBG).*

## ...continued, Bridge Bundling Update

and other bridge owners in using bridge bundling as a viable project option to ensure time and cost savings. We encourage you to spend time reviewing these resources and to seek opportunities with your DSAE, SA Bridge, and Consultant to try a bridge bundling project.

Lastly, our FHWA Bridge Engineer, Tim Anderson secured FHWA Invitational Travel Funds for approximately 5-6 local agency and state aid representatives to embark on a domestic scan/peer exchange on bridge bundling. The exact time frame, state and location hasn't been fully decided yet. We'll work with the CEBC (County Engineers Bridge Committee) to coordinate this effort with Tim. At this time, if you have any interest in this opportunity please contact Dave Conkel SA Bridge, or Brian Pogodzinski CEBC Chairman.

## Request For Proposals for the Replacement of a Local Bridge

What makes the world of local bridges so interesting and diverse, is the wide variety of bridge structure types and project scopes. We can have anything from a short concrete slab span bridge spanning only 40 feet to a basket handle tied-arch bridge spanning 450 feet over the Mississippi River. With the wide variety of bridge structure types comes the local owner's responsibility to develop a suitable and reasonable RFP (Request for Proposals) document to land the ideal local bridge consultant to perform the necessary services to assure a successful bridge project.

Some bridge projects in urban environments can come with a host of challenges beyond the magnitude of the bridge structure type. For example, Hennepin County's Vernon Ave Bridge replacement project in the City of Edina, which crosses over the CPR (Canadian Pacific Railway) will likely call for a new prestressed concrete beam bridge with a maximum span of approximately 85-95 feet. Even though this bridge structure type is somewhat routine, the site location presents several challenges for the County and City to negotiate. Such challenges include balancing CPR vertical clearance requirements with an ideal profile grade raise to limit impacts to a very busy commercial and residential area, whether or not to use staged or accelerated bridge construction to minimize disruptions to the traveling public. This multi-million dollar project also entails federal funds which requires compliance with Section 106 and 4(f), a potential noise study, challenging ROW and utility constraints, coordination with MnDOT and TH 100 features, geotechnical challenges, etc.

Because the Vernon Ave Bridge project has so many design and complex issues to consider, Hennepin County deemed it necessary to develop a fairly extensive RFP with a ten page limit to accommodate the consultant's team experience, qualifications, extensive proposed work plan/deliverables, approach and timeline, etc. The RFP ten page limit did not include a required Quality Control/Quality Assurance Plan, which should be part of every good RFP. The Vernon Ave Bridge project also included live interviews with several selected consultant project teams that advanced through the RFP evaluation phase. The interviews provided an opportunity for the selection committee to see the project team and their designated project manager in action, and gave the project team an opportunity to expand their project approach and other details in their RFP. The extensive RFP and interview process worked well for this involved project, but it would not be conducive or reasonable for a typical or routine local bridge project in a rural setting.

With that in mind, at our fall CEBC (County Engineers Bridge Committee) meeting, the RFP topic was discussed regarding the appropriate content and page limit for a routine local bridge project. We understand some local bridge consultants have seen RFP's with page limits exceeding 10 pages, and requirements to provide project experience, resumes, and other items that may be beyond what's needed for a routine bridge project. It will always be the prerogative of the local bridge owner to decide on the RFP content, page limit, etc., but the CEBC suggested and concurred that a template RFP should still be developed for a routine local bridge project and a SA Bridge News article written discussing RFP's. SA Bridge is



*(continue on  
page 10)*

*Hennepin County, Bridge Replacement and Intersection Improvements CSAH 158 (Vernon Avenue) Between TH 100 and Interlachen Blvd.*

## ...continued, Request For Proposals for the Replacement of a Local Bridge

developing a template RFP to be posted on the SA Bridge website soon. Until then, an RFP five page limit for a routine bridge is more than sufficient for consultants to convey their key information. Bridge Office RFP guidance is about 1.5 pages for every page of work scope for a routine bridge.

A routine bridge RFP will specify the responsibilities of the consultant, e.g. bridge type study, geotech investigation, hydro study, preliminary and final plans, final approach plans, initial load rating and load posting report with AASHTOWare (BrR) file, Engineer's Estimate, special provisions, CAD files, State Aid Review Checklist, and a their Quality Control/Quality Assurance Plan. The Bridge Owner responsibilities will typically include: project survey, wetland delineation, hazardous waste assessment, environmental permits, ROW acquisition, assist with utility coordination, plan reviews, special provision division S, and bidding and construction.

## State Aid Bridge Electronic Bridge Plan Submittal Process

It has been recognized by State Aid Bridge for several years now, that an electronic local bridge plan submittal process was overdue. With other important State Aid review work already being processed electronically at the State Aid District level, we finally hopped on board with electronic processing. However, we still understand some local agencies may lag behind current technological capabilities and still require a hard copy plan review process. Either way, we'll continue to accommodate and adapt to best meet our customers' needs.

This fall we presented the proposed electronic bridge plan submittal process to the County Engineer's Bridge Committee. Until the electronic process becomes second nature, we also presented an associated plan submittal and acceptance guideline document which will complement the electronic plan process. The submittal process and guidance documents will be posted on the State Aid Bridge website by mid-January 2020. We look forward to the electronic process to save time, and resources by eliminating hardcopy plans, supporting documents, transmittal letters, and US Mail.

The Electronic Bridge Plan Submittal Process has been vetted through the State Aid District Offices to assure the process is well coordinated. Also we tapped into several local bridge consultants to assure the process works for them. There will be some growing pains, such as: reviewing plans electronically, storing large electronic files, electronic signatures, etc., but we'll get there, failure is not an option!



*Our finest hour, Local Bridge Engineers monitoring the electronic bridge plan process.*

## Local Timber Bridge Update

### Cost-competitive Timber Bridge Designs for Long Term Performance

The last time we provided a timber bridge update was back in 2017. Since then we have seen significant changes and progress with our timber bridge research and implementation projects. To capture the history and detailed information of these projects, we would encourage you to visit [State Aid newsletters](#) dating back to 2014. Regarding the ongoing *LRRB Cost-Competitive Timber Bridge Designs for Long Term Performance* project, two demonstration bridges have been developed and constructed to validate cost-competitive design, details, and construction. Both Hennepin and St Louis County graciously stepped up to help demonstrate cost-competitive timber bridge construction, and with no special research/demonstration funding. St Louis County used local funds and Hennepin County used state, federal and local funds.

However both counties did receive design and detailing assistance from the Project Research Team. Ironically both counties elected to use non-timber substructure units, and St Louis County even decided to use galvanized steel girders for additional long term superstructure performance. Other superstructure details used to improve long-term performance included flashing to protect the timber deck edges,

*(continue on page 11)*



*SA Bridge & Project Research Team partnered with Hennepin County, on the design, construction and validation of County State Aid Highway 202 Bridge 27C53 over Elm Creek River. This demonstration bridge was constructed by Redstone Construction LLC using dowel-laminated timber slab panels on steel pile cap substructure units.*

## ...continued, Local Timber Bridge Update

waterproofing membrane and steel cover plates to minimize potential deterioration at the joint between the abutment and the timber deck, and waterproof reinforcing membrane between layers of bituminous to create a water barrier and retard cracking, and finally, a plastic cap was installed on top of each timber post to protect it from precipitation that can cause deterioration. The most valuable aspect to the timber construction is a compressed construction cycle. For the St Louis County project, steel beams were placed and installed in 5 work days, timber deck completed in 4 work days, railing posts, hardware, and rails in 3 work days. For the Hennepin County project, timber deck panels were placed and installed in 5 work days, timber railing and hardware in 2 work days, and bituminous overlay in 1 work day.

This research is being led by the USDA Forest Service, Brian Brashaw and James Wacker. The final approved written report is scheduled for April 30, 2020. This project also includes outreach through engagement with the Minnesota County Engineers Association (MCEA), a webinar, and by placing the information into the web portal of the National Center for Wood Transportation Structures, hosted by Iowa State University. The Technical Advisory Panel (TAP) recommended the USDA Forest Service to formally present the project findings at the 2020 MCEA Summer Conference.

### Specialized Timber Bridge Inspection Equipment for Local Timber Bridge Owners Update

Back in 2015 through the Local Road Research Board-Research Implementation Committee, three complete inspection equipment sets were purchased and managed for local agency use by the University of Minnesota Duluth, Natural Resource Research Institute (NRRI). The NRRI was retained to manage the equipment for a 24 month trial period. However due to management efficiencies and budget savings, the NRRI extended this trial period another 36 months and through the 2019 inspection season. NRRI's final task to complete this project included working with the Technical Advisory Panel (TAP) to determine the future direction for managing the equipment. After further consultation with the MnDOT Bridge Office, and the County Engineers Bridge Committee, it was officially decided to transfer the management of the equipment to the MnDOT Bridge Office.

The NRRI will be available to assist with training the MnDOT Bridge Office on scheduling annual calibration of the resistance drills, performing inspections and maintenance on equipment as it returns from the field, preparing equipment for annual field use, and answering questions on equipment operation during the transition. We want to thank Victor Krause at the NRRI for his excellent work training and managing the inspection equipment the past five years.

At this time the inspection equipment resides in the MnDOT Bridge Office, and will be managed by Rodney Carter in the Bridge Inspection Unit, contact [rodney.carter@state.mn.us](mailto:rodney.carter@state.mn.us) or 651-366-4544. The online [Timber Bridge Inspection Equipment Request form](#) is now available. We encourage you to visit the timber bridge inspection and maintenance resources and inspection equipment demonstration videos posted on the [Bridge Inspection webpage](#).



SA Bridge & Project Research Team partnered with St. Louis County, on the design, construction and validation of Bridge 69A58 that was constructed between Embarrass and Babbitt Minnesota. This demonstration bridge was constructed by St. Louis County construction crews using galvanized steel girders and a transverse glue-laminated (glulam) deck on concrete abutments.



Advanced inspection equipment identified to improve the quality of timber bridge inspection by MN Local Agency Bridge Inspectors. Equipment includes sounding hammer, probes, moisture meters, stress wave timers and resistance micro drill.

# Bridge Standards and Standards Bridge Plans Update

## Precast Concrete Pipe

The Bridge Office has been working with the Minnesota Concrete Pipe Association to update MnDOT's standard concrete pipe standards. These standards include Roadway Standard Plates 3000 and 3014 for concrete round pipe and concrete arch pipe dating back to 1999-2000. The new pipe standards will be updated for Load Resistance Factor Design (LRFD) as required by the FHWA, see [2002 State Aid Bridge newsletter](#) (PDF) on page 1 for LRFD background information.

Along with the updated pipe standards, a new and associated Technical Memorandum (TM) on minimum cover and maximum fill height tables for rigid, flexible and unpaved roads, and non-roadways will be issued. The TM will supersede the concrete pipe load tables of Section 2.5.2 of the Drainage Manual and fill heights on Standard Plate 3014. The tables will coincide with the new LRFD concrete pipe Standard Plates 3000 and 3014. The new TM and Standard Plates should be available in spring 2020.



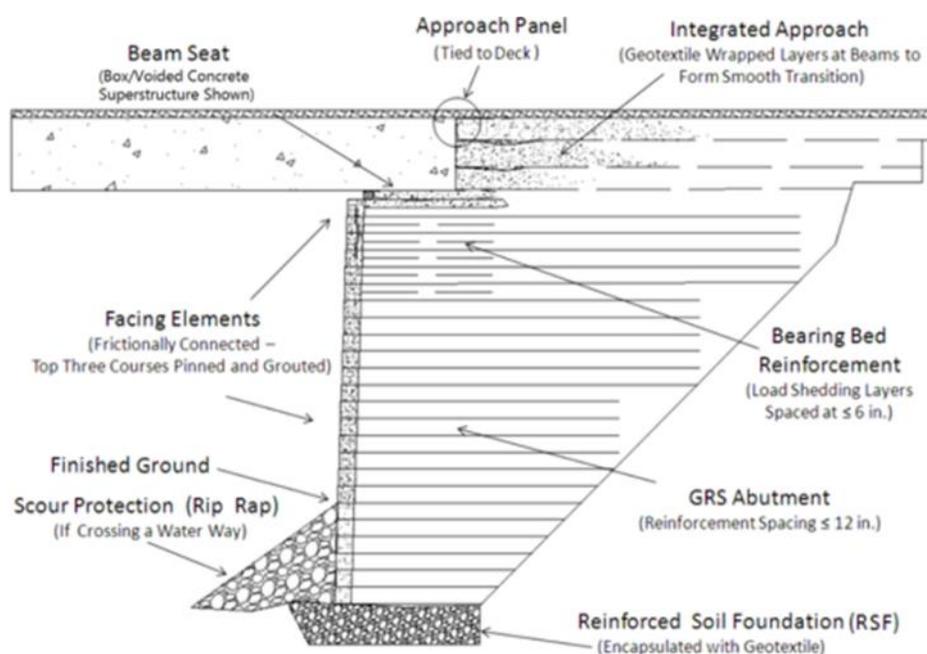
Bridge 69J82, Precast Concrete Pipe Arch, built in 2011, CSAH 88 over Shagawa River, St Louis County

## Geo-Synthetic Reinforced Soil- Integrated Bridge System (GRS-IBS) Abutments

Back in 2013, we demonstrated Minnesota's first ever GRS-IBS abutment bridge in Rock County, see the [2014 State Aid Bridge newsletter](#) (PDF) for detailed information on page 7. In 2014 we also prepared plans to construct 11 short span replacement bridges on GRS-IBS abutments for the City of Minnetonka. You can visit the [2015 State Aid Bridge newsletter](#) (PDF) for more project specific details on page 21. We're still waiting for project funding, but recently let three of the eleven GRS-IBS bridges in the vicinity to accommodate the SouthWest Light Rail Transit construction project.

Note, since 2010, over 200 bridges in 44 states have been constructed using GRS-IBS abutments. As GRS-IBS technology implementation continues to expand both nationally and regionally, the Bridge Office and SA Bridge saw the need to develop a Technical Memorandum (TM) to provide information and guidance to evaluate the applicability of GRS-IBS abutments for both Trunk Highway and State Aid bridge projects. The proposed GRS-IBS TM covers site limits, e.g. AADT, skew, span, abutment height, etc. It also includes design limits, e.g. required soil cover and pH, vertical strain in the GRS abutment, bearing stress on the beam seat, design and construction specifications, etc.

The TM is currently in the final approval stages. It's been vetted through the Bridge Office Bridge Research and Development Committee, a special GRS-IBS TM Subcommittee, FHWA input, and others. We're hopeful the TM will be published this spring 2020. Until then, please feel free to contact State Aid Bridge if you're interested in implementing GRS-IBS technology. At the proper site location GRS-IBS can reduce material and labor costs, and construction time.



Typical Geo-Synthetic Reinforced Soil- Integrated Bridge System (GRS-IBS) Cross Section

## Routine Local Bridge Safety Inspection Assistance

We've seen tremendous changes and evolution in the local bridge safety inspection world, especially since the 35W Bridge collapsed back in 2007. Load rating gusset plates on truss bridges became a primary focus after the collapse. Then the focus shifted to load rating and properly posting all local bridges. We currently have approximately 1,400 local bridges in a posted status, many are timber bridges that have reached their useful life and/or are vulnerable to Special Hauling Vehicles. Minnesota is not alone with an aging and deteriorating local bridge inventory. Recognizing this fact, after the 35W Bridge collapse, the FHWA saw the need to develop national inspection and load rating metrics with levels of compliance to assure consistency in inspection quality from state to state. This resulted into a much more robust compliance/audit review and load rating program administered by the Minnesota DOT and FHWA.

Today, the Minnesota's local bridge inspection and load rating programs are running full strength to meet the growing demands required by the evolving and changing state and federal laws. In fact, the FHWA is now proposing to update the National Bridge Inspection Standard (NBIS) to address MAP-21 requirements (risk based approach), and to incorporate technological advancements including the use of unmanned aerial systems, and to address ambiguities identified since the last update to the NBIS regulations in 2009. The proposed NBIS changes were recently reviewed by the County Engineers Bridge Committee (CEBC), MnDOT Bridge Office, SA Bridge, and distributed to all Minnesota Local Agencies for comment. While many of the proposed NBIS changes will help local agencies to better meet their inspection due dates and other federal requirements, there are also several changes that will place immediate and long term demands on the MnDOT Bridge Office and Local Bridge Owners to meet these new NBIS Rules. You can view the proposed NBIS Rules on the [FHWA National Bridge Inspection Standards Update webpage](#), and offer comments through March 13, 2020. Contact the CEBC, Brian Pogodzinski or Dave Conkel to discuss your comments, and concerns.

With the above issues in mind, it's a reality the local bridge safety Inspection program is placing growing technical and time constraint demands on our local bridge owners. To exasperate the situation, many Local Agencies are losing qualified and experienced bridge inspection staffing to retirements. Also many long time experienced and qualified Local Agency Engineers serving in the Bridge Program Administrator role are retiring too. Granted some local agencies are fortunate to equip themselves with redundancy in staffing capabilities to backfill positions when retirements happen and/or unforeseen construction projects linger and interfere with scheduled bridge inspection work. But for those local agencies scattered across the state that still struggle with current and future qualified staffing levels to meet both bridge inspection and construction work demands, several have directly expressed their concerns to the CEBC, and SA to explore local bridge safety inspection assistance through the MnDOT Districts. The MnDOT Bridge Office and SA Bridge has also received similar feedback, and recognizes bridge safety inspection work is only becoming more time consuming and demanding technically on local agencies. This has prompted them to at least start the conversation with MnDOT Districts to see how they can possibly institute bridge inspection assistance for locals. The State Bridge Engineer and State Bridge Safety Inspection Program Engineer will be helping us sort through the possibilities with the MnDOT Districts, CEBC, SA, and MCEA.

Until then, we appreciate the creative ways our local agencies are overcoming these challenges to assure routine high quality and timely bridge safety inspections. These include using qualified local bridge consultants, dedicated MnDOT District 6 bridge inspectors for SA District 6 Cities and multiple District 6 & 8 Counties, and of course using their own local agency qualified internal staffing whenever possible.



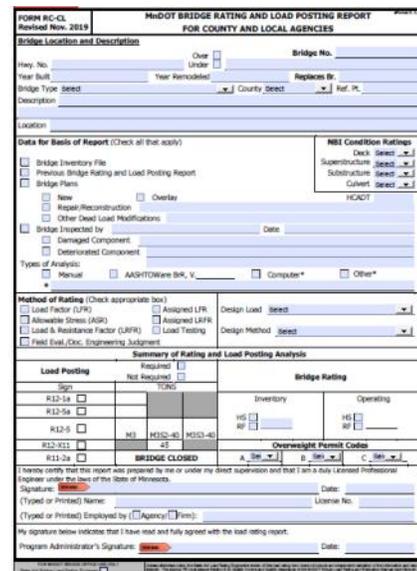
*Bridge 1910, City of Zumbrota Minnesota, showing a bridge inspector with theodolite and stand.*

# Load Rating and Permitting Update

## Electronic Load Rating Forms for Local Agencies

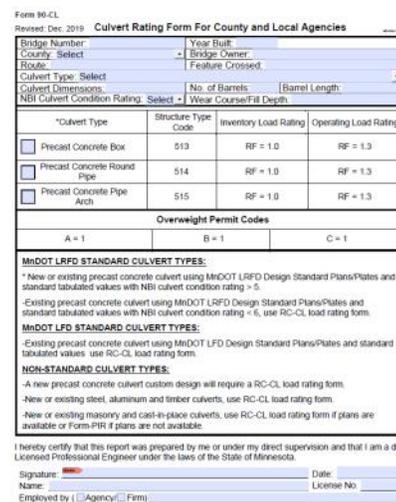
We currently manually enter load rating data into the Structure Information Management System (SIMS). This manual operation requires using a hard paper copy of the load rating form and tediously transposing the data by hand into SIMS. With thousands of local bridge load rating forms that are being reviewed and processed by State Aid Bridge and the Bridge Inventory Management Unit (BIMU) every year through the Statewide Special Hauling Vehicle load rating contracts and local bridge projects, the need for electronic fillable load rating forms (eForms) are more important than ever. Utilizing an electronic document provides numerous benefits. It allows you to control the quality of the data that is being collected by setting up controls or logic to ensure that Engineers are submitting the correct bridge load rating information consistently. Furthermore, the form fields can be integrated with MnDOT's SIMS to synchronize data automatically, a way that will eliminate manual data entry errors, and also to make the entire process more efficient.

Instead of written signature today, the electronic load rating forms (RC-CL & Physical Inspection Rating for County and Local Agencies (PIR-CL)) will require an electronic signature from both the Load Rating Engineer and the Bridge Program Administrator. It's a quick way of authenticating a document with a uniquely identifiable mark that doesn't require the use of paper and pen. It's also simple and very easy to use. Another benefit of an electronic signature is a quick turnaround time. Instead of sending the load rating form to one party, getting them to print, sign, scan, and to repeat the process down the line, everyone can e-sign off within seconds. This faster turnaround gives MnDOT greater flexibility in time-sensitive situations. The eForms have been beta tested by the MnDOT TH Load Rating Unit, BIMU, and several County Engineers and local bridge consultants. These eForms will be implemented in the current SHV Load Rating Contract #7, and after May 29, 2020, the use of eForms on all local bridge load ratings will be mandatory. In the interim, MnDOT will still be accepting the traditional hard copy load rating forms until local agencies and consultants acquire a comfort level in processing the eForms. The forms are available on the [State Aid Bridge Load Ratings webpage](#), along with an easy to follow guide on creating and inserting electronic signatures.



## New Form 90 for Local Agencies

As we all know, culvert load rating form, Form 90, is outdated and several of the structures listed on the form do not comply with the FHWA [requirements for assigned load ratings](#), therefore State Aid Bridge released a new assigned load rating form called Form90-CL (for county and local agencies). The new Form90-CL will only be used for new or existing precast concrete pipe and box culverts that meet MnDOT Design Standard Plans/Plates, tabulated values and with a NBI culvert condition rating >5. For the remaining culvert types, RC-CL or PIR-CL load rating forms must be used. The new Form90-CL will also require electronic signatures from the Load Rating Engineer and the Bridge Program Administrator. The use of this form will be mandatory for all local bridges after May 29, 2020. Copies of Form90 and Form90-CL should be submitted to SA Bridge Load Rating Engineer (Moises Dimaculangan) and District SA Office concurrently. The form is available on the [State Aid Bridge Load Ratings webpage](#).



## Metal Culvert Load Rating Update

In order to evaluate the structural capabilities of metal culverts, MnDOT State Aid Bridge currently uses an in-house spreadsheet called MnDOT LRFDR Metal Culvert Spreadsheet along with a guidance document to assist load rating engineers on how to use the spreadsheet and to interpret the results. As stated in the 2019 State Aid News, the spreadsheet was originally developed by Ohio DOT, endorsed by the FHWA, and we updated it per the latest AASHTO LRFDR Bridge Design Specifications and included MnDOT's legal and standard overweight permit and emergency vehicles. The use of this tool along with proper field inspection information has improved our current metal culvert load rating practices and procedures.

The SHV load rating contract 6 work is nearly complete, and one of the primary focuses of the contract was to load rate metal culverts that are at a higher risk of partial collapse closure, or load posting. There were approximately 700 local bridges that were evaluated in SHV contract 6, of which 257 were metal culverts and 45 percent of them required load posting. We attribute this large percentage of load postings to the high number of metal culverts in poor condition. Also we had metal culverts with substandard minimum cover which significantly effects the load rating. Similar to load rating our aging timber bridges in the past, we fully expect the number of metal culverts requiring load posting to decrease in future SHV contracts. The next SHV load rating contract 7 will have 60 metals culverts.



## Bridge Cost Update

Calendar year 2019 saw a small unit cost increase for PCB type structures and a small unit cost decrease for the C-SLAB type structures. These two structure types account for the majority of local bridges. As usual, the C-SLAB structure type was the lowest unit cost structure on the local system.

We let a single steel pedestrian TRUSS structure in CY 2019 and the unit cost was about the same from last year. Steel truss bridge prices fluctuate greatly from year to year and likely reasons are the size/length/location of these bridges which can vary widely and these factors can affect the unit cost.

We let a single treated timber slab (TTS) span bridge in CY 2019. There was a large unit cost decrease from last year. Last year the unit cost was fairly high because one of the TTS bridges let in CY 2018 had all steel substructure units (which led to a higher bridge cost).

We let 3 Pedestrian Boardwalk (BRDWLK) bridges in CY 2019. We didn't let any Pedestrian Boardwalk bridges in CY 2018, but there was a moderate unit cost increase from the CY 2017 unit cost.

There was a large decrease in the number of C-SLAB bridges compared to CY 2018 (11 let in CY 2019 vs. 21 let in CY 2018). There was a similar number of PCB bridges compared to CY 2018 (16 let in CY 2019 vs. 17 let in CY 2018). The unit cost percentage increases/decreases are shown below.

- **PCB structure cost was up 3 percent** (\$155.39/sf in CY 2018 vs. \$160.81/sf in CY 2019)
- **C-SLAB structure cost was down 2 percent** (\$133.16/sf in CY 2018 vs. \$130.34/sf in CY 2019)
- **TRUSS pedestrian structure cost was down 1 percent** (\$276.13/sf in CY 2018 vs. \$274.47/sf in CY 2019)

We replaced approximately 46 timber bridges and one fracture critical bridge in CY 2019. Timber bridges are considered to be of full timber construction or timber pile/abutment construction. Fracture critical bridges are steel high trusses, steel low trusses, or thru-girder bridges.

Of the 46 timber bridges replaced in CY 2019, 28 of them were replaced with concrete box culverts, eight were replaced with C-SLAB bridges, and eight were replaced with PCB bridges. There was a single timber bridge that was replaced with concrete arch pipes. There was a single timber bridge and a single fracture critical bridge (a steel low truss) that were removed from the system, via ROAD IN LIEU projects.



## Local Bridge Replacement Program

In spite of limited bridge resources in 2019, local agencies replaced 110 bridges with a total replacement cost of over \$100 million. New money made available in 2019 for the local bridge replacement program totaled \$12.7 million generated from 13 percent of the motor vehicle lease sales tax revenues collected in 2018. No new bond funds were appropriated in 2019.

To date, all the available local bridge funding is allocated (spent) or on reserve for the 2020 federal bridge off system (BROS) projects expected to be awarded in the spring of 2020.

(continue on page 16)

## ...continued, Local Bridge Replacement Program

In addition to the State Transportation Funds (Bridge Bonds), counties and townships receive annually approximately \$17.9 million of Town Bridge Program Funds each year. The funds are distributed to counties based on the number of deficient town bridges and the average bridge replacement cost. Townships replaced 52 bridges in 2019, spending approximately \$12.1 million in Town Bridge Program Funds. The town bridge funding is replenished each January with funding from the Highway User Tax Distribution Fund. This consistent and dedicated funding source for township bridges has been crucial for replacing the hundreds of deficient town bridges throughout the state. Counties are encouraged to make sure the bridge improvement cost estimates for your township bridge projects are updated to reflect accurate bridge replacement costs. Instructions can be found on the [SALT LBRP webpage](#).

What is the future outlook for the Local Bridge Replacement Program (LBRP)? Currently there is a waiting list of bridge projects with plans signed, approved and waiting for additional funding from the legislature. The waiting list changes constantly as bridge projects are approved by the District State Aid folks, and the State Aid Bridge Office. The current waiting list has approximately 67 bridges with plans ready to go, and approximately 25 projects in various stages of design, and anticipating funding for 2020. The total request for Bridge Bonds for the 92 bridges is approximately \$43 million with a total replacement cost of \$93 million. The bridge program can anticipate approximately \$12-\$13 million from the 13 percent of dedicated motor vehicle lease sales tax in August of 2020.

We encourage you to visit the [SALT LBRP webpage](#) for the history, details, and information on the LBRP. There are also links to tools on various resolutions, such as how to advance county regular/county municipal funds to supplement the Town Bridge Account. Tools on how to create a prioritized bridge replacement list, and to amend a prioritized bridge replacement list is also provided. For more information contact Patti Loken, State Aid Programs Engineer at [patti.loken@state.mn.us](mailto:patti.loken@state.mn.us) or 651-366-3803.



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