

State-Aid Bridge News

July 25, 2002

- **Bridge Aesthetics**

If you have any questions or inquiry regarding bridge aesthetics, please feel free to consult our Bridge Architect (David Hall) located in the Mn/DOT Office of Bridges and Structures. Dave has over 15 years of experience in bridge architecture, and has been with the Mn/DOT Bridge Office for 4 years. Dave can be reached at 651-747-2174.

In general, bridge funding eligibility for decorative or aesthetic items are still limited to the estimated cost of the standard item. For example; ornamental metal railing is prorated to the cost of chain link fence.

Bridge architectural surface/color treatments are eligible for payment with State Aid Funds. Funding is subject to 5% of the annual construction allocation cap.

- **New Bridge Design Specifications**

Based on the recommendations from the FHWA, the Mn/DOT Office of Bridges and Structures has opted to use the newly adopted AASHTO LRFD Bridge Design Specifications. In the near future, the FHWA directive, will require all federal aid bridges to be designed using the LRFD specifications.

LRFD (Load Factor Resistance Design) is a design methodology that accounts for variability in both construction materials and loads. This design method should achieve fairly uniform levels of safety for different bridge types, and will provide a consistent method of design.

The Bridge Office has been working to develop a new Mn/DOT bridge design manual to guide bridge designers in the use of LRFD specifications. The manual will be completed by the end of the year. Once the manual is complete, the bridge office will hold training sessions for our design consultants. We're hopeful that all bridge designers will be using LRFD specifications by the end of the year, 2003.

The State Aid Bridge Office will be working close with the Local Bridge Design Consultants to assure that LRFD specifications are understood and implemented. We feel it is important that we stay current with the latest design trends, to assure that the counties and municipalities are receiving the most economical and reliant bridge structures.

- **Bridge Preventive Maintenance**

Highway Bridge Replacement & Rehabilitation Program (HBRRP) Funds can now be used for bridge preservation type activities regardless of their sufficiency rating or deficient status. Types of bridge preservation work may include:

- Bridge painting
- Expansion Joint repair/replacement
- Bridge deck overlays
- Railing/barrier repair/replacement
- Partial deck replacement (to current width)
- Minor superstructure or substructure repair

For additional guidelines on Bridge preservation, improvement, and rehabilitation or replacement, please refer to the Bridge Preservation, Improvement, and Replacement Guidelines for fiscal year 2003 through 2004. This guideline will be available this fall on-line at <http://www.dot.state.mn.us/bridge/#Bridge%20Construction>.

- **Pontis Update**

The Bridge Management Section will be installing a new web page for Pontis. This new web page will allow the counties and municipalities to print out the latest Pontis Inventory and Inspection Reports. The web page should be up and running next month, and can be accessed through the Bridge Management Website at www.dot.state.mn.us/bridge/mgmt/index.html. If you have any questions, please feel free to contact Charlie Deutsch with our Bridge Management Section, at phone: 651-747-2121, or e-mail: charles.deutsch@dot.state.mn.us.

- **Local Bridge Inspections**

The FHWA and Mn/DOT Local Bridge Audits have revealed that most of our counties and municipalities are now conducting their bridge inspections earlier in the year (prior to the winter months of Dec., Jan., & Feb.). If a county or municipality inspects their bridges in winter conditions, they must still provide the Bridge Management Section with a follow up inspection report. The follow up inspection must be conducted under spring or summer conditions, and should address all elements of the bridge that could not be adequately inspected in winter.

- **Hydraulic Data Base**

The Hydraulic Data Base (BrHydInfo) is currently under development. The database includes hydraulic data from Trunk Highway and State Aid structures and is accessed through a GIS format. Rowekamp and Assoc., the consultant who developed the program, have been hired to create an application that will allow Counties and Local Agencies to have read only access to the data over the Internet. We should have something by this summer.

- **State-Aid Bridge Web Site**

Development of the web site is nearly complete. Our site will include the secure link to the BrHydInfo System, a frequently asked questions (FAQ) screen, hotlinks to web sites that we feel can be of assistance and information about our staff including phone numbers and e-mail addresses. Comments and/or suggestions about what you would like to see on the web site are always welcome.

- **Design-Build Pedestrian Bridges**

We are in the process of updating and clarifying the approval process that has been required for Design-Build Pedestrian Bridge projects. Our goal is to develop a simpler, more straightforward process that will avoid some of the confusion, and help “streamline” the project through to construction.

- **State-Aid Bridge Costs:**

The average cost per square foot for the routine cast-in-place slab span bridge and prestressed beam span bridge remains around \$70.00 to \$75.00/SF. We saw the prices creep up last summer, from \$60/SF to approximately \$70/SF, due to demand, and increases in labor costs. The SA Bridge Office will be putting together a cost summary for local bridge construction for fiscal year 2002. This report will be distributed to the counties sometime in early fall. The square foot costs shown in the report can be used to roughly approximate current trends in bridge costs, but they are not necessarily representative, as all projects are unique.

- **Bond Fund Projection**

Assuming we get the \$15 million on hold and we fund the Sauk Rapids bridge from that \$15 million, we will run out of bond funds in August of 03, except for the \$1.7 million reserved to match 2004 federal-aid projects. We will need to wait until at least May of 04 for the 04-05 bonds unless more are appropriated in the meantime. This assumes we get a normal distribution of bridge projects in. Please feel free to contact Mark Gieseke (State Aid Program Delivery Engineer) at 651-296-7679 if you have any questions regarding bridge funding.

- **New Bridge Structure**

This new shallow precast beam system is made of precast solid rectangular prestressed concrete beams. These new beams provide support for spans up to 65 feet. They are available in 14, 18, and 22-inch depths. The beam's shape was created with support of the local precast fabricators and Mn/DOT. The rectangular shapes were derived from modifications to our prestressed concrete girder shapes.

The precast beam system allows for quick erection of the deck, omitting the need for the falsework design, review, and construction that would be required for a cast-in-place concrete slab span bridge. The cost of the bridge was approximately \$80 per square foot deck area, which is competitive to a typical slab span bridge.

Photo of the New Rectangular Prestressed Concrete Beam Bridge:



- **State Aid Bridge Contacts:**

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