



**Local Bridge 101 Training: Planning, Hydraulics, Optimal Type & Size  
Presented By  
Minnesota Department of Transportation, State for Local Transportation Bridge Division**

**Need for the Training**

In realization that our local bridge needs continue to outpace available funding resources which are likely to remain so or be reduced, the time seemed appropriate to revisit and educate on planning and sizing local bridge structures. After coordinating with State Aid, several DSAE's, the County Engineer's Bridge Committee, and our local bridge consultants, we have now developed a class agenda and are preparing materials to conduct classes this year. The primary purpose of the class will be to provide basic training on bridge type and size selection with an emphasis on bridge hydraulics. The training will also look at how to achieve a reasonable balance between hydraulics, structural limits, costs, permitting agencies, special interests, risks, etc.. Regardless, the class participant will go home with some valuable reference materials.

**Who Should attend**

The class is designed primarily for County Engineers, Assistant County Engineers, DSAE's and DSAAE's. Interested City Engineers and their assistants are also welcomed. (All classes will run from 9 am to 3:30 pm, lunch included)

**CLASS LOCATIONS AND DATES**

Duluth, March 21st, 2012  
Marshall, March 27th, 2012  
Detroit Lakes, March 28th, 2012  
Bemidji, April 4th, 2012  
Owatonna, April 6th, 2012  
St Cloud, April 9th, 2012

**Contact Information:** Please indicate the class location you wish to attend in an email to Abdiaziz Farah at [abdiaziz.farah@state.mn.us](mailto:abdiaziz.farah@state.mn.us).

# **2012 LOCAL BRIDGE 101 TRAINING: PLANNING, HYDRAULICS, OPTIMAL TYPE & SIZE**

**INTRODUCTIONS, CLASS GOALS AND AGENDA 1**

**DESCRIPTION OF BASIC TERMS AND DATA COLLECTION 2**

**HYDROLOGY 3**

**DESIGN FREQUENCY AND RISK ASSESSMENT 4**

**STATE AID BRIDGE 5**

**BRIDGE CASE STUDIES 6**

**CULVERTS 7**

**WRAP UP 8**



# SALT PRESENTS

## Local Bridge Hydraulics 101

### Planning & Funding Considerations

*Your Destination...Our Priority*



## Planning for replacement

- ❑ What causes a bridge to be considered a priority for replacement?
- ❑ What roadway system is it on and what purpose does it serve?
- ❑ Is it an emergency or part of a planned construction program?
- ❑ Does it meet the minimum requirements for funding sources (federal, bonds, state aid, town bridge, local)?
- ❑ Can it be rehabilitated?
- ❑ Is it historic or environmentally sensitive?

## Local Bridge Priority List

The county board in cooperation with other local units of government within the county...shall determine a proposed program for the construction or reconstruction of key bridges within the county...This county board by resolution shall request of the commissioner authorization to construct or reconstruct specific bridges or remove an abandoned bridge within the county and request funding.

Minnesota Rules 8810.8200

Topic

3

## Funding – questions to consider

- ❑ What sources are available for this structure?
- ❑ What alternatives to replacement can be used with funding (removal or road in lieu)?
- ❑ Does the crossing purpose warrant spending state resources?
- ❑ What's the risk of not replacing the structure even when it may meet the minimum requirements for funding?

Topic

4

## Funding Application

- ❑ DSAE's reviews and approves after giving consideration to information provided on the application.
- ❑ Determine if due diligence been given to justification for use state resources?
- ❑ Review the site?
- ❑ Discussed options?

Topic

5

- ❑ Bridge Sufficiency Rating \_\_\_\_\_
- ❑ Is this bridge hydraulically deficient?
  - Yes    No
- ❑ Adequacy Status from Structure Inventory
  - Structurally Deficient    Functionally Obsolete
  - Adequate
- ❑ Date of Council/Board action prioritizing this bridge \_\_\_\_\_
- ❑ Is this a road-in-lieu of bridge project?
  - Yes    No
- ❑ Is the bridge on a private approach and within the public right-of-way?    Yes    No

Will completion of this project effectively eliminate a deficiency in the transportation system?  Yes  No

How many people are affected by this deficiency?

What is the ADT on this bridge?

Describe the economic importance of replacing this bridge.

Will this project adversely affect optimum land use or cause other planning concerns?  Yes  No

Have federal-aid funds been applied for on this project?

Yes  No

Is the road designated or planned to be designated as a Minimum Maintenance road?  Yes  No

(Attach additional sheets for explanation if necessary)

Topic

7

## The DSAE May Recommend To:

Replace the in-place structure with another bridge.

Replace the in-place bridge with a road (may include a structure <10 feet or low water crossing).

Remove or abandon the in-place structure.

Defer the project.

Seek other funding sources.

Topic

8

The District State Aid Engineer is the check in the process that assures the best projects are being selected.



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