Volume 1, Issue 1

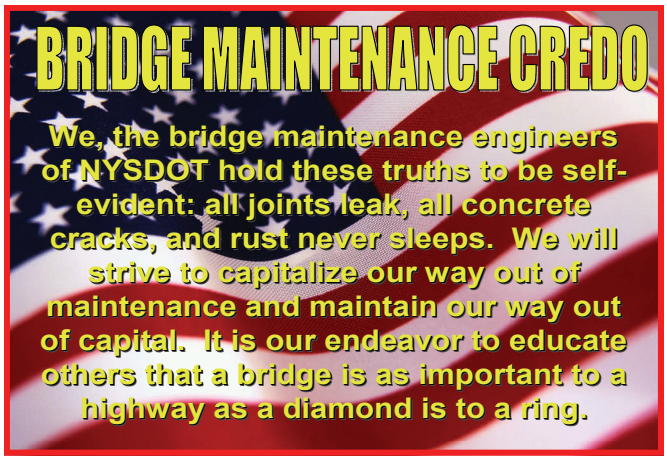
November, 2008

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

Bridge Maintenance News

Greetings from Pete Weykamp

Welcome to our first issue of the Bridge Maintenance Newsletter. We'll be publishing the newsletter periodically in an effort to expose our accomplishments and capabilities to others interested in the maintenance of highway structures. Recently completed showcase projects are highlighted, along with summary information on a few of our initiatives, and other noteworthy information. And we're starting with a bang.



Two national periodicals have articles that spotlight on our efforts related to bridge preservation at NYSDOT.

The October issues of ASCE News published an article on the "White Paper of Bridge Inspection and Rating, Rehabilitation, and Replacement." The document, developed by an ad-hoc group including Sreeni Alampalli (chair) and myself, provides direction and guidance on how the bridge assessment process in the U.S. could be improved. A number of the recommendations listed in the Bridge Evaluation and Quality Assurance in Europe (BEQA) are included in the paper. The BEQA Report is available at www.international.fhwa.gov.

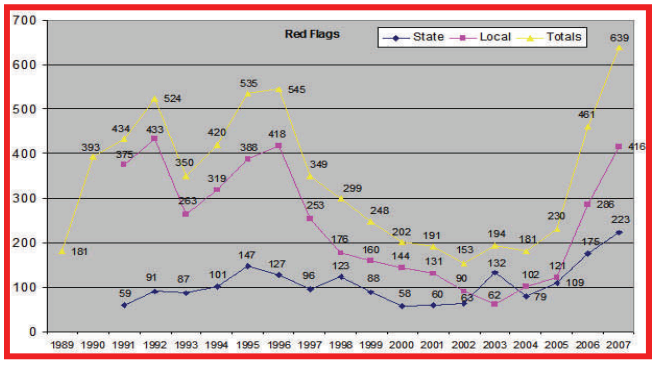
The October issue of Better Roads article entitled, "New Support Groups Will Bolster Bridge Preservation, Life Extension" lists a number of activities I have been deeply involved in as Chair of the Bridge Task Force to the AASHTO Sub-Committee on Maintenance, Steering Committee Member of the TSP2, and Chair of the Northeast Bridge Preservation Partnership. The article praises our Credo as something "worth reproducing" - and it does, though without the colorful graphics.

Enjoy the Newsletter and give us some feedback. Its good to know someone is interested.

Discussion on Flags

The NYSDOT bridge inspection process identifies three levels of flagging for bridges. Safety flags are issued for dangers that are non-structural in origin. Yellow flags indicate potentially hazardous conditions which if not addressed may present a clear and present danger or for a non-structural element in a failed state.

Red flags are issued when a structurally important member of the bridge has failed or has the potential for failing before the next inspection. Red flags with a PIA (prompt interim action) designation require a response within 24 hours of notification. The Responsible Party for resolving red flags on state-owned bridge is the Regional Bridge Maintenance Engineer. State Bridge Crews or contractor forces are called upon to correct



FEATURED BRIDGE MAINTENANCE PROJECT:
Region 1: Vischer Ferry over the Back Channel of Mohawk River

Background:

BIN 4416010

Town of Niskayuna

Built in 1916

Thru Girder and Floorbeam system

11 spans – 588 ft. long

Bridge was taken over by DOT from the Canals. Bridge received very little if any maintenance over its life. Bridge has been continually pushed back on the capital program and minor and major "First Aid" has been administered over the past few years. Being Region One's bridge to no where; it is the only means of access to and from a peninsula which has 8-10 homes and a small agricultural business on it.

Problem:

Inspection initially found severe deterioration of 7 steel floorbeams and their connections to the girders. Repair of these floorbeams and the connections would be costly and time consuming and the bridge is currently to be replaced in 2010(?) so Structures wanted to keep it simple and relatively cheap.

Solution:

Install new beam to be supported on its ends by the Thru Girder and carry the load of the floorbeam and stringers. They will be supported using 4 - ¾" threaded rods on each end and will be drawn up to the bottom of the girder and tightened down to a plate that is welded to the top

of the thru girder and the bottom of the new beam.

Method:

Each Beam had plates pre-welded to the bottom of both ends and the plates were drilled with 4 holes to accommodate the threaded rod. The beam had a steel angle welded on the top flange at one end which would act as a pivot point. A hole was drilled in the web where a clevis would be installed for the attachment of the crane cable. A D-Block was also welded to the top of the flange at the other end where a winch cable would be attached. 2 holes were drilled in the bridge deck on each side of the bridge to accommodate the interior threaded rods. Another hole was drilled in the deck on the winch side to anchor a pulley that carried the winch cable. Beams were hoisted into place using a combination of a 7- Ton Crane on the bridge deck and a 1 ton winch that sat on a seat which was anchored to the web of the girder under the deck. Once the crane and winch were readied the beam was dropped off on the deck. The crane cable was attached to the clevis and the beam was drawn up so that it was hanging vertically. It was swung out over the opposite side of the bridge from where the winch was anchored and slowly lowered down into location. The beam was lowered until the angle, welded on top of beam, rested on bottom flange of girder. The winch cable was then attached to the D-Block and then drew the lower end of the beam up into place as the upper end pivoted on the welded angle. Once the beam was in place workers on the deck placed a top plate on the girder's top flange and then lowered the outer two rods down through the holes in the top and lower plates and hand tightened nuts. Then the 2 interior rods were installed the same way except they went through the holes drilled in the deck. The nuts were cranked down and the same

procedure was done to the other end of beam. Once all the nuts were tightened down the cables were removed and plates and nuts were tack welded. Steel benches were then welded to the top of the new beam to support the stringers. Once all the bugs were worked out the crews were easily able to install 2 beams a day. After the initial 7 beams were installed 12 other locations mysteriously appeared to have similar deterioration and we returned a month later to address those locations.

Moral:

Keep your cranes in good working condition, the department needs to train people on how to operate them, get the operator and cranes certified. We went through 3 cranes and stirred up a hornet's nest using them with a questionably qualified operator, although he did a great job. To set minds at ease Canals was able to help us out with an operator for the final 12 locations.

Thanks to Rob Robbins of Region 1 Bridge Maintenance for providing the details.

New Product Section

Region 1 Uses BASF IC-2415, Polyurea

Material used: BASF IC-2415 CPR, Polyurea crack patch repair. This material was "introduced" to NYSDOT and a "field" demonstration was held at the RBME meeting held May 7, 2008 in Syracuse. Factory reps Peter Badger and Ken Calautti of BASF performed the demonstration using BASF material with the "liquid concrete" pump (assisted by R2 BM crew). All seemed to work fine at the demonstration, however when R2 BM crew got back to their shop they realized the pump was clogged, and it took a lot of work to get it unclogged.

Field application: Wednesday, September 24, 2008 R1 Bridge crew placed BASF Polyurea at deck joint and in partial depth deck repair at BIN 1016020, US Rt. 20 over the Kinderhook Creek. BASF factory rep Peter Badger on site. All work performed as per manufacturers recommendation. The existing armored angle was left in place at the deck joint. The deck area was removed to the top matt of rebar prior to installing the Polyurea.

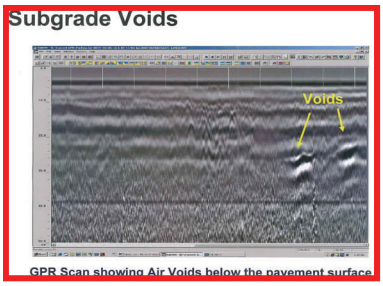
Results: The deck joint is holding up, but the partial depth deck repair has experienced considerable cracking. R1 did not report any pump clogging, as they were aware of the problems R2 had prior to performing this work.

Please contact Doug Rose or Dave Schwartz for additional info.

New 400 MHz Antenna

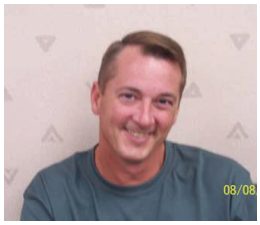
Main Office Bridge Maintenance has received a 400 MHz antenna that can detect any voids that are present around culverts and deep areas of 10 to 15 feet that the 1.5 GHz antenna can not reach. This will be the second antenna that Bridge Maintenance has purchased to help with non-destructive testing of elements and or materials. Region 8 will be the first place to try it out. We will be attempting to locate an abandoned tank. This will take place on November 6th.

Dr. Andrew Kozlowski from NYS Museum will be giving some instruction on this antenna at a later time



GPR Scan showing Air Voids below the pavement surface

WELCOME to BRIDGE MAINTENANCE



William Zimmerman, Reg 5


Brian Mehlenbacher, Reg 6

Ron Kudla, Reg 10

Joe Foley, Main Office

Bridge Maintenance Skills Training

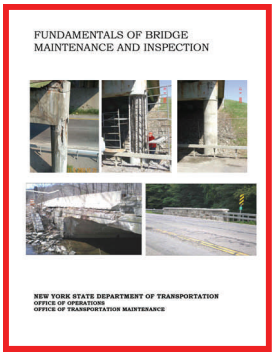
Scaffold Safety Train the Trainer Class (Sept 2008)

As we move forward developing and delivering Bridge Maintenance Skills Training to the folks in the Bridge Maintenance Community and others in the Transportation Maintenance Division (and beyond), the Bridge Skills Instructors were joined by representatives from Regions 2,3,4,7,8 & 10 to attend and participate in a 4 day Scaffold Safety Train the Trainer class held in Saratoga in early September.

The class was led by John Palmer CSP, from the Scaffold Training Institute. (John travels around the world delivering training, designing and inspecting scaffold systems) The class was extremely well received. We are currently developing a curriculum for the scaffold systems we utilize here in DOT and with the assistance of the participants from the class will be delivering the training in the near future. (Weather permitting)

Since we started Bridge Maintenance Skills Training (in late June 2008), we have conducted 43 classes, training a total of 448 participants.

Revised Manual Now Available



The revised edition of the Fundamentals of Bridge Maintenance and Inspection manual has been printed and is available. Hard copies are available by request by calling Joe Foley at 518-457-0081 or through e-mail at jfoley@dot.state.ny.us . The manual is also available both on the Intradot and the internet.

Bridge Maintenance News

Alvin Cadwell - Editor

Pete Weykamp - Ace Reporter

Joe Foley - Reporter Extraordinaire

Dwayne Palen - Field Reporter

Sue Maloney - Publisher

Ground Penetrating Radar

The following assessment is based on the bridges that were evaluated with Ground Penetrating Radar (GPR) in Contract BA07/035 this year.

Avg Delamination (without Region 7)	4.4%
Structures	369
Spans	1,503
Area (ft^2)	6,169,791
Cost	$331,244.48
Avg Cost and Area ($ft^{2)}$	$0.05
Avg Cost per Bridge	$897.68
Avg Cost per Span	$220.39
Avg Age	24
Avg Deck Wearing Surf	5