

**Hydro-Technologies, Inc.
Modified Concrete Suppliers, LLC**

**Maintaining and Preserving Bridge Decks using
Hydrodemolition Surface Preparation and Latex
Modified Concrete Overlays**

2010 Midwest Bridge Preservation Partnership

Annual Meeting

AASHTO TSP-2

October 12-14, 2010







Bridge Deck Preservation

- It is very cost effective to attain a minimum of 50 years of service life from a bridge deck.
- By placing Modified Concrete Overlays on Hydrodemolition prepared bridge deck surfaces before decks becomes structurally deficient, 75 years of service life or more can be achieved.
- The use of **Fast Track Hydrodemolition and Modified Concrete Overlays** will provide an owner with an economical, long lasting and very fast bridge deck preservation method.

Bridge Deck Preservation Strategies

■ 75 Year Bridge Decks

- Year 1 – Construct New Bridge Deck
- Year 25 – Place MC O/L #1 – Hydrodemolition
- Year 50 – Place MC O/L #2 – Hydrodemolition
- Year 75 – Replace Bridge Deck

Bridge Deck Preservation Strategies

■ 100 Year Bridge Decks

- Year 1 – Construct New Bridge Deck with MC O/L
- Year 25 – Place MC O/L #1 – Hydrodemolition
- Year 50 – Place MC O/L #2 – Hydrodemolition
- Year 75 – Place MC O/L #3 – Hydrodemolition
- Year 100 – Replace Bridge Deck

Fast Track Hydrodemolition / Latex Modified Concrete Overlay Method



The Fast Track Hydrodemolition/Modified Concrete Bridge Overlay Method

- Fastest and most cost effective way to overlay a bridge deck.
- A minimum of 25 years of service life will be attained by the overlay if surface is properly prepared and overlay is properly placed.
- Consists of 4 steps

The Fast Track

Hydrodemolition/Modified Concrete Bridge Overlay Method

- Step 1 – Mechanical Milling of the Existing Bridge Deck Surface to a Specified Depth or to the Top Mat of Reinforcing Steel.
- Mill for depth – Cost Effective
- Mill to top mat of reinforcing steel.













The Fast Track

Hydrodemolition/Modified Concrete Bridge Overlay Method

- Step 2 – Perform Total Surface Hydrodemolition.
- Hydro to get the bad concrete out below the milling line and to provide a highly bondable surface.
- Do not hydro for depth – not cost effective.





























The Fast Track

Hydrodemolition/Modified Concrete Bridge Overlay Method

- Step 3 – Final Cleaning of the Bridge Deck Surface and Minor Hand Chipping in Areas Inaccessible to The Hydrodemolition Equipment.
- Clean closely behind the hydro robot.
- Do not leave loose debris or slurry on the bridge deck surface.













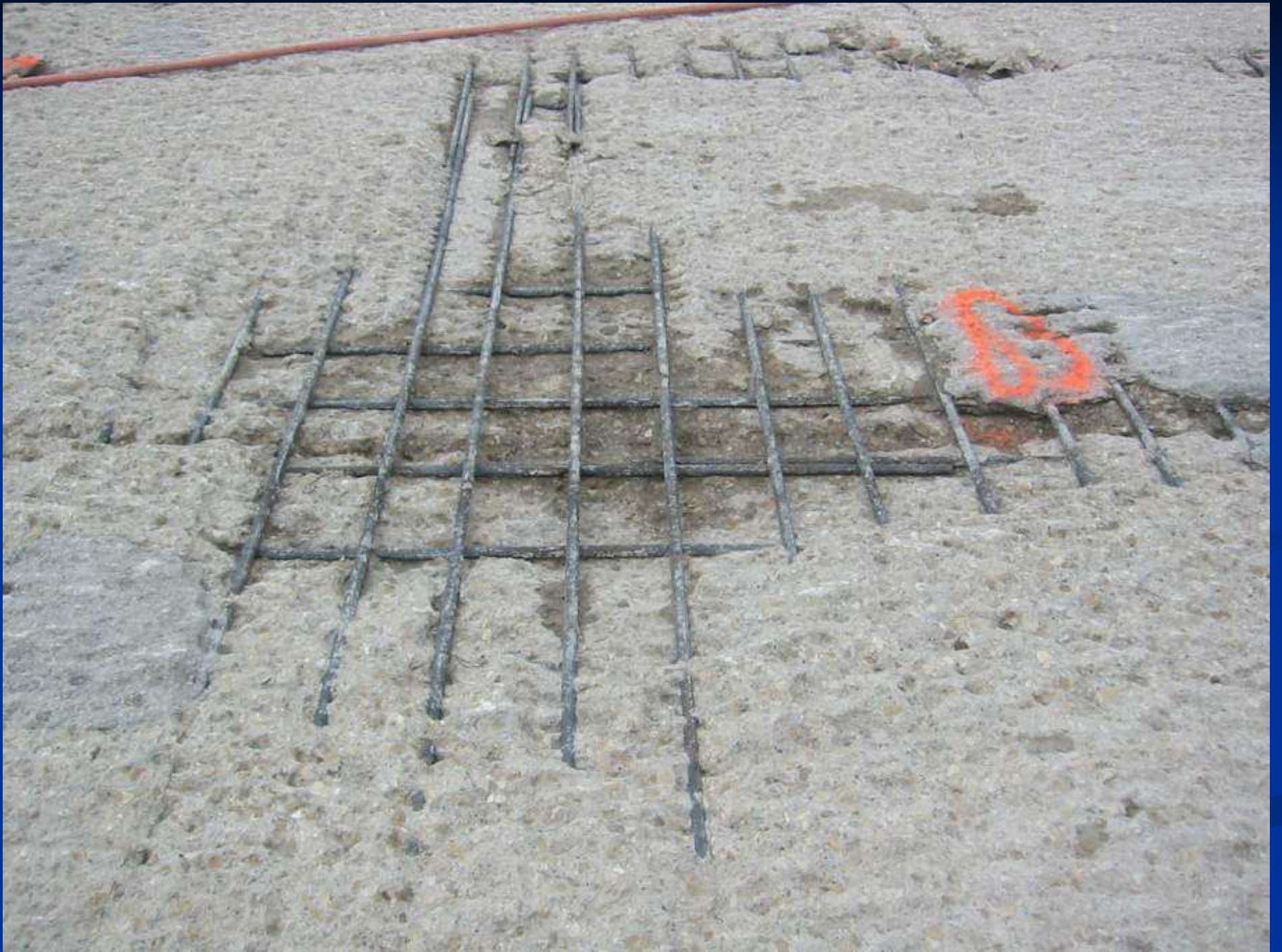




























The Fast Track

Hydrodemolition/Modified Concrete Bridge Overlay Method

- Step 4 – Placement of Modified Concrete Overlay.
- Place during optimum weather conditions.
- Surface must be extremely clean and in a damp condition.































Very Early Strength Latex Modified Concrete

- Adding very early strength hydraulic / portland cement to the LMC mix. The cement is designed to cure very quickly.
- Achieves compressive strengths of over 2,500 psi in 3 hours – traffic ready.
- Provides the same benefits as LMC overlays.
- VESLMC has been used on projects throughout the US since 1991.
- VESLMC is very impervious to chemicals that deteriorate standard concrete.
- VESLMC results in better bonding and less cracking.
- A VESLMC Overlay placed on a Hydrodemolition prepared surface is the fastest construction method to repair a bridge deck. Because project durations are minimized, money is saved on maintenance of traffic costs and road user costs. Future maintenance costs are also minimized and by adding additional years of service life to a bridge deck - funds become available to repair more bridges.
- Typically used on weekend and overnight projects. Can be used and weekday projects.
- For additional information visit - www.RSLMC.com

TYPICAL WEEKEND SCHEDULE:

Friday

- 9:00 pm to 10:00 pm - Close roadway.
- 10:00 pm to 12:00 am - Remove Ex. O/L
- 12:00 am - Hydrodemolition

Saturday

- 12:00 am to 12:00 pm - Hydrodemolition
- 12:00 pm to 12:00 am - VESLMC O/L

Sunday

- 12:00 am to 4:00 am - Cure VESLMC O/L
- 4:00 am to 12:00 pm - Cleanup work area.
- 12:00 pm to 2:00 pm - Open roadway











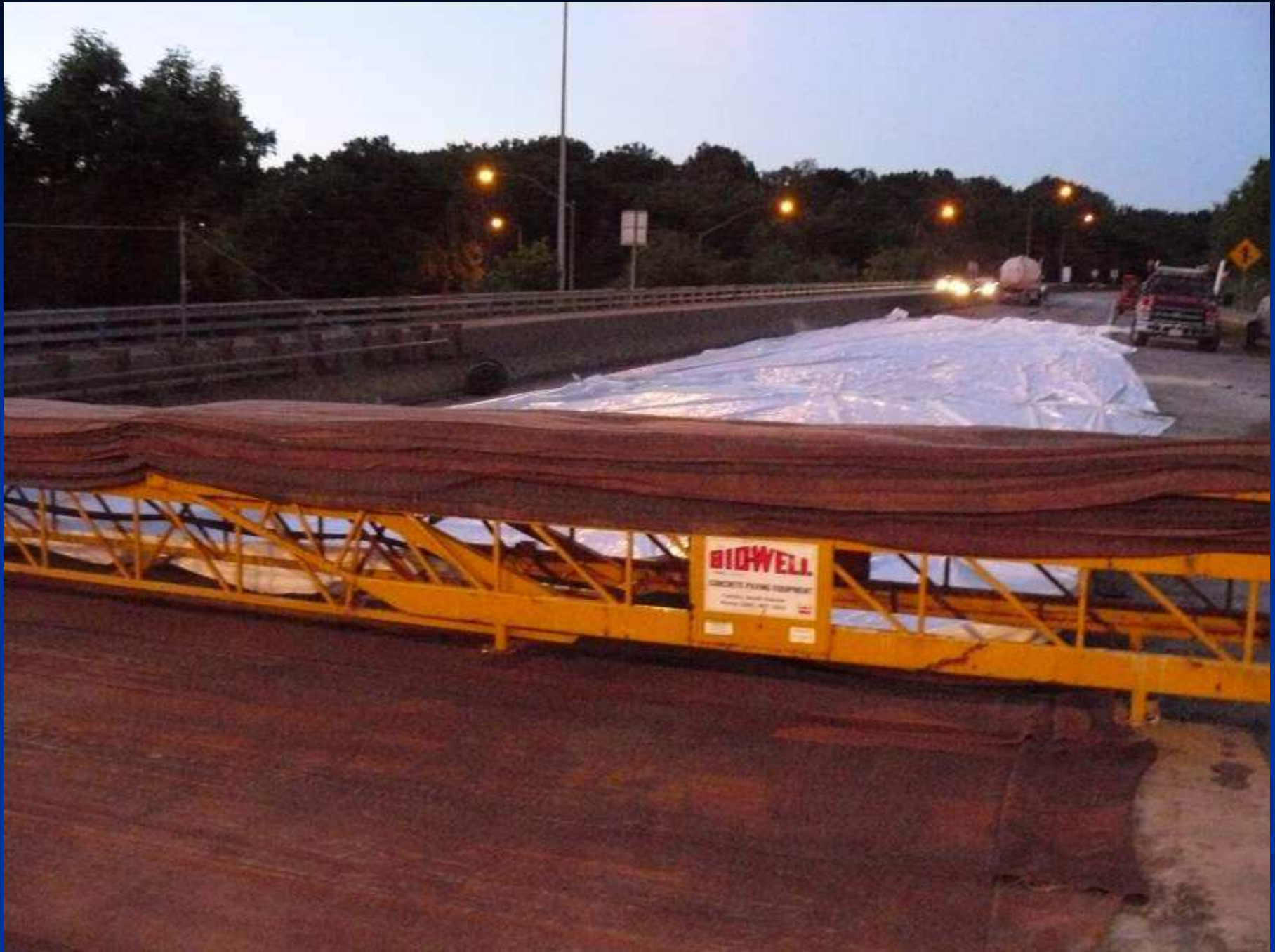














TYPICAL OVERNIGHT SCHEDULE:

- 7:00 pm – Lane Closures
- 7:15 pm to 8:15 pm - Mechanical Milling
- 7:30 pm to 8:30 pm - Light Handchipping
- 8:30 pm to 9:30 pm - Hydrodemolition
- 9:00 pm to 10:00 pm - Cleanup
- 10:00 pm to 12:00 am - Finish Machine Setup + dry runs
- 12:00 am to 2:00 am - Pour VESLMC
- 2:00 am to 5:00 am - Cure VESLMC
- 5:00 am to 6:00 am - Cleanup + Temporary Stripes
- By 7:00 am - Open to Traffic







