Domestic Scan 18-01 - Successful Approaches for the Use of Hydrodemolition For Partial Depth Removal of Bridge Decks

Rehabilitation of bridge decks is a recurring task for almost all agencies responsible for maintaining a road network. The task typically entails disturbance of traffic operations, exposure of workers to active traffic, and environmental remediation. Technology, procedures, and practices that can improve agencies' ability to reduce the time required and associated risks and adverse impacts for deck replacements can have widespread benefits. Several state transportation agencies are finding that hydrodemolition is offering such benefits. Learning and disseminating the lessons of these agencies' experience can accelerate the technology's adoption and support refinement and standardization of practice, particularly with regard to challenges associated with environmental restrictions, water sources, water disposal, and applications to deeper decks.

This scan will meet with users of hydrodemolition and document their specific applications: The team will seek to examine bridges undergoing hydrodemolition as well as bridges that have undergone past hydrodemolition deck replacements to study both the hydrodemolition process and long term performance of bridges that have been subject to a partial deck replacement. The team will explore various aspects of the hydrodemolition process, gathering perspectives of agencies, contractors, and consultants experienced in hydrodemolition. Agencies known to have used of this technology that may be approached for study by the scan team include the Illinois Department of Transportation, Michigan Department of Transportation, New York State Thruway Authority, and Utah Department of Transportation.

## The scan will consider information such as the following points:

- Design criteria and details, construction specifications and staged-construction approaches utilized on projects specifying hydrodemolition
- Wastewater permitting, control, collection, reuse or disposal
- Special considerations regarding reinforcement steel location and protection, existing patch materials, other existing or latent field conditions or damage caused by the operation
- Limitations with regard to removal depths, if any
- Preferred overlay materials
- Relative costs for design, construction, maintenance, and inspection of bridges which have been subject to hydrodemolition
- Lessons learned and suggestions for improvement

This scan is anticipated to be conducted as a Type 1- Traveling Scan. The scan report will provide current information on successfully utilizing hydrodemolition to bridge preservations and rehabilitation projects by sharing both successes and lessons learned in planning, designing, specifying, permitting, construction and performance to all agencies considering the use of this technology in their bridge preservation strategies. The scan results are likely to be of interest to several AASHTO committees including the AASHTO Committees on Bridges and Structures, Construction, Maintenance and Materials, and possibly Environment and Sustainability.

**Original Scan Proposal Title:**
Hydrodemolition For Partial Depth Removal of Bridge Decks

**Scan Team Membership**


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**Execution Schedule**

| Milestone | Anticipated Date |
|---|---|
| Chairs and Team Members Identified | July 2018 |
| Desk Scan Completed | November 2018 |
| Prescan Meeting Held | November 2018 |
| Scan Conducted | May 2019 |
| Draft PowerPoint submitted by SME | June 2019 |
| Draft Report Delivered to NCHRP and Panel | August 2019 |
| Final Report Delivered to NCHRP | January 2020 |

**Estimated Scan Cost:** $200,000
Anticipated Duration: 2 week (type 1 scan)

*Last Reviewed/Revised Oct 10,2018*