

## NCHRP 20-68A – “US Domestic Scan Program”

### Scan 13-03 Leading Practices in Use of FRP Composites in Transportation Infrastructure

#### **Description of Scan:**

Fiber Reinforced Polymer (FRP) composite materials have been researched and demonstrated in the structural applications for more than 25 years. Among transportation agencies, FRP materials have been used for bridge decks, beams, piling, buried structures, concrete reinforcing, post-tensioning, and for repair and strengthening of existing structures, but not much as a primary structural material. Other industries and agencies—notably the U. S. Navy—reportedly are studying and using FRP more extensively.

A scan on the state of the practice will inform the transportation industry on successful applications of FRP within or adaptable to DOTs. The scan team made up primarily of bridge engineers from state DOTs could meet with representative from various agencies and document applications such as:

- Maine DOT to discuss their “ Bridge in a Backpack” technology
- Michigan DOT to discuss their use of FRP post-tensioning and reinforcing
- West Virginia DOT & New York State DOT to explore their use of FRP for Pile and column repair and strengthening
- Caltrans to document emergency earthquake repair applications
- Ohio DOT, NYSDOT & West Virginia DOT to discuss FRP deck applications
- The Naval Facilities Engineering Service Center’s ongoing research in FRP for bridge applications

Information to be gained would be:

- Types of FRP applications used
- Project plans and specifications
- Materials and bid cost data
- Performance history
- Suggestions for improving procedures
- Identify barriers to more wide spread use
- Lessons learned

A synthesis of this information can be developed after the scan for distribution to an audience of State DOTs and FHWA offices, other Federal and local agencies, FRP industry manufacturers, university researchers, consultants, county and local DOT's. A scan of this subject would provide insights on the use of FRP for the AASHTO Subcommittee on Bridges and Structures, the AASHTO Subcommittee on Materials and others.

**Original Scan Proposal Title(s):** DSP 13-16 State of the Practice in FRP Composite in Transportation Infrastructure

*Last Reviewed/Revised April 2, 2013*

## Execution Schedule

<b>Milestone</b>	<b>Anticipated Date</b>
Chairs and Team Members Identified	November 2013
Desk Scan Completed	March 2014
Prescan Meeting Held	March 2014
Scan Conducted	June 2014
Draft PowerPoint submitted by SME	July 2014
Draft Report Delivered to NCHRP and Panel	September 2014
Final Report Delivered to NCHRP	December 2014

**Estimated Scan Cost:** \$150,000 (\$140,000 – type 2, \$125,000 – type 3)

Anticipated Duration: 1-1/2 weeks (6 days – type 2, 3 days type 3)

*Last Reviewed/Revised October 23, 2013*