



**State of the Practice – U.S.**

The International Association of Foundation Drilling

# Influence on Micropile Design and Construction

- Federal Highway Administration (FHWA) – **GUIDANCE**  
**(FHWA-NHI-05-039)**

*to*

- American Association of State Highway and Transportation Officials (AASHTO) – determines specifications and acceptance criteria for state departments of transportation

*Institutionalized standards trickle down to influence*

- Private sector
- Commodotized sub-sector is unaffected wasteland

# Current Issues in the Industry

- **Working Platforms**
- **Corrosion – FHWA, Scope of research in development**
- **Hollow Bar Non-Acceptance**
- **National Cooperative Highway Research Program (NCHRP) micropile project ongoing – Dr. Erik Loehr** *(to develop reliability-based geotechnical resistance factors for axially-loaded micropiles and related specifications)*

# Preliminary Output of NCHRP Study

- **Load test data from over 600 micropile load tests – mostly proof tests (all types except Type C)**
- **Using the data to update the AASHTO presumptive micropile bond resistances. Will recommend greatly reducing the number categories for presumptive design.**
- **Data collected suggest there is limited difference in bond resistance for different micropile types.**
- **Intend to recommend three alternative design options with appropriate resistance factors**

# Three Design Categories

- **Design using presumptive values for bond resistance without load testing with appropriately low resistance factors**
- **Design using predictive values for bond resistance derived from soil/rock strength measurements for selected ground conditions with intermediate resistance factors, similar to what is done for drilled shafts.**
- **Design based on load tests, with different resistance factors based on different numbers of tests.**