



## Western Bridge Engineers' Seminar

# Successful Strategies In QA/QC of Design Plans

Kevin Thompson, PE  
Director of West Coast Operations

Michael Wright, PE, PMP  
Vice President



ARORA and ASSOCIATES, PC

# Disclosure

---

This scan is being conducted as a part of NCHRP Project 20-68A, the U.S. Domestic Scan program. The program was requested by the American Association of State Highway and Transportation Officials (AASHTO), with funding provided through the National Cooperative Highway Research Program (NCHRP). The NCHRP is supported by annual voluntary contributions from the state Departments of Transportation. Partial support for selected scans is provided by the U.S. Federal Highway Administration or other agencies. Each scan is selected by AASHTO and the NCHRP 20-68A Project Panel to address a single technical topic of broad interest to many state departments of transportation and other agencies. The purpose of each scan and of Project 20-68A as a whole is to accelerate beneficial innovation by (a) facilitating information sharing and technology exchange among the states and other transportation agencies and (b) identifying actionable items of common interest.

Further information on the NCHRP 20-68A U.S. Domestic Scan program is available at <http://144.171.11.40/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=1570>



ARORA and ASSOCIATES, PC

# Background

NTSB Investigation.....  
“Insufficient Procedures  
for Review and Approval  
of Plans”

NTSB Recommends  
FHWA/AASHTO  
Develop a better QC/QA  
Program



AASHTO Responds with a Synthesis of DOT  
“Best Practices in Bridge Design and Plan Review”



ARORA and ASSOCIATES, PC

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

Program was requested by AASHTO, with funding provided by State DOT's and managed through NCHRP.

This scan “Successful Strategies in QA/QC of Design Plans” was selected and conducted as a part of NCHRP Project 20-68A, the U.S. Domestic Scan program .

The Domestic Scan Selection and Process.....



ARORA and ASSOCIATES, PC

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

---

This scan “Successful Strategies in QA/QC of Design Plans”  
Was selected to:

- Review current design QA/QC practices – focus on the practices used by state DOT’s
- To “**identify and share**” successful strategies that can be adapted



# Scan Team

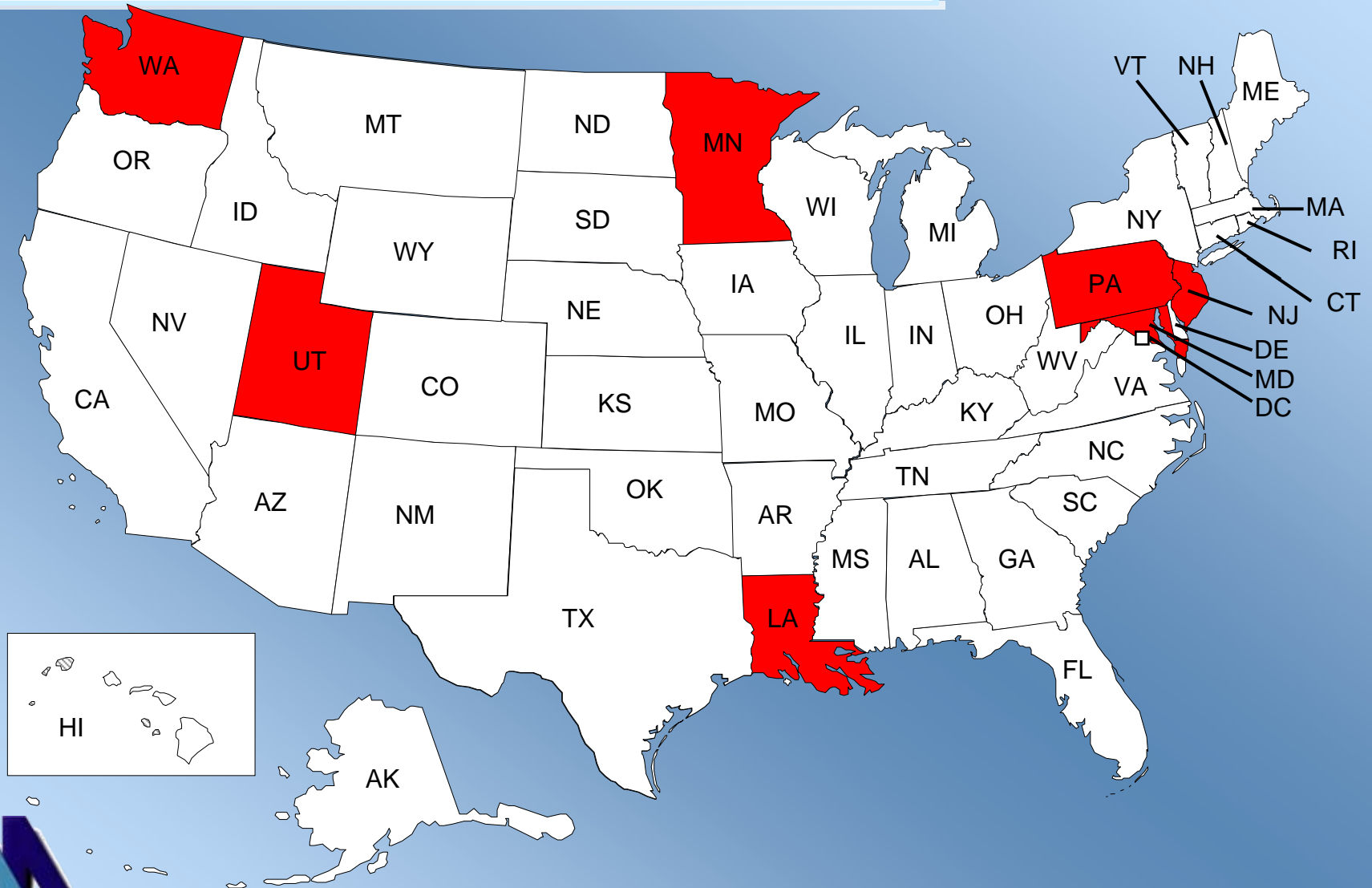


Robert Healy, MD      Richard Dunn - NJ      Hossein Ghara, Chair - LA  
Nancy Boyd, WA      Michael Wright      Carmen Swanwick, UT      Kelly Rehm, SME      Tim Swanson, MN



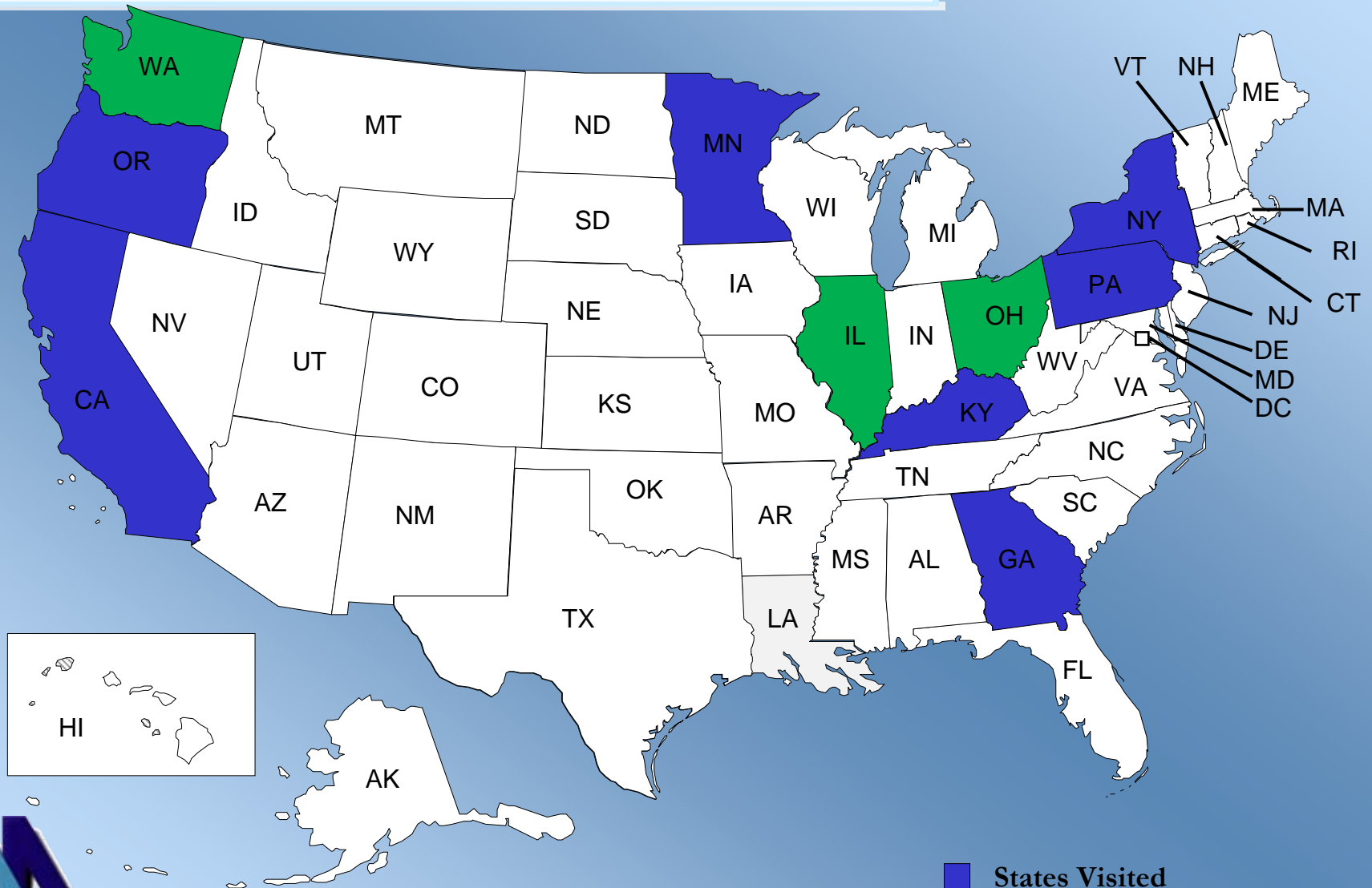
ARORA and ASSOCIATES, PC

# State Representation on Team



ARORA and ASSOCIATES, PC

# Host Agencies



- States Visited
- Remote Meeting



ARORA and ASSOCIATES, PC



# Successful Strategies

---



# Recommendation

---

The Scan Team recommends that FHWA provide QA/QC guidelines that all States should have in place for highway and bridge design. The guidelines should require states to have written documentation of their QA/QC program and procedures for review of both in-house and consultant work. These guidelines, however, should be flexible so that they can be adapted to fit the needs of the individual States.



# Results

---

- Guidance on QC/QA in Bridge Design In Response to NTSB Recommendation (H-08-17)
- AASHTO Guide to Quality in Preconstruction Engineering



# Future Research

---

What are the marginal benefits of incremental increases in QA/QC?

“If one spends another hour reviewing plans, how much quality does that add to the project?”

What is the optimum level of QA/QC?



# Additional Information

---

## NCHRP Domestic Scan Program

Google search on “domestic scan” :

TRB, NCHRP 20-68A, US Domestic Scan Program Home Page

- Business plan
- Descriptions of all scans
- Scan 09-01 report will be posted here by the end of 2011

Arora and Associates, PC:

- Kevin: [kthompson@arorapc.com](mailto:kthompson@arorapc.com)
- Mike: [mwright@arorapc.com](mailto:mwright@arorapc.com)
- Website: [www.arorapc.com](http://www.arorapc.com)



ARORA and ASSOCIATES, PC

# Questions



ARORA and ASSOCIATES, PC