

2004  
*Construction Management Scan*

*2007 AASHTO Subcommittee on Materials  
Lincoln, New Hampshire  
August 14, 2007*



# Presentation Overview

- Objectives & Methodology
- Observations and Implementation
- Quality Plan – Research Problem Statement

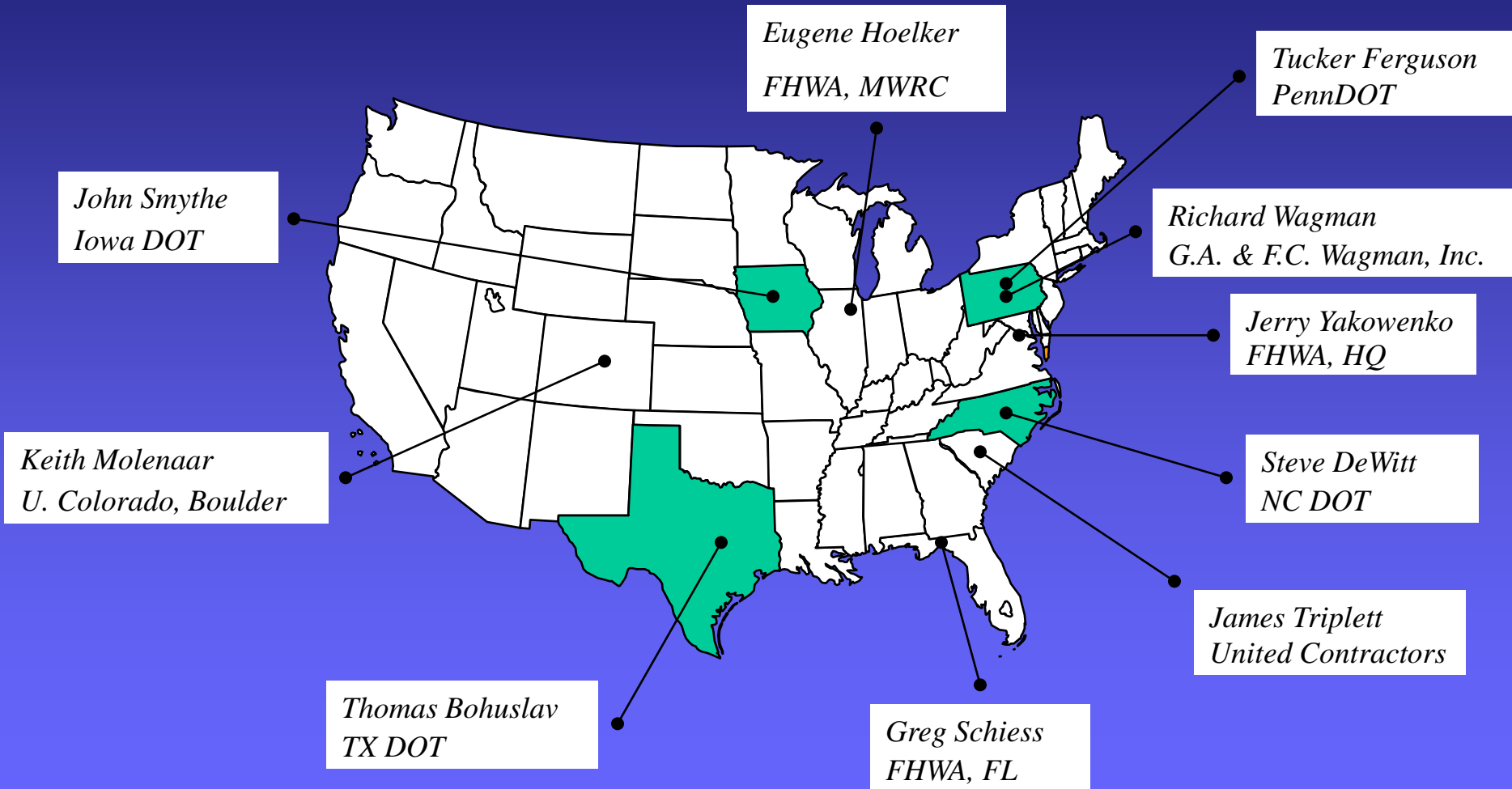
# Scan Objective

“Examine international construction management procedures with a focus toward ensuring appropriate project delivery, contract compliance and quality assurance”

# Scan Motivation

- U.S. highway industry challenges
  - Decreasing agency workforce
  - Inadequate funding
  - Opportunities for innovations and efficiencies
- Changing U.S. project delivery/procurement
  - Design-build delivery
  - Best-value procurement
  - Public-private partnerships
  - Maintenance and warranty requirements

# Scan Team Locations



# *Where did we go?*

## Toronto, Canada

- Ontario Ministry of Transport
- Ontario Road Builder's Association

## Munich, Germany

- Bavarian Road Ministry
- Auring Highway A99 Project

## Cologne, Germany

- Westfalen Road Ministry
- A3 Expansion Project

## England, Highways Agency

- Highways Agency
- A500 Stoke Pathfinder Project

## Edinburgh, Scotland

- Scottish Executive
- Glasgow M77 DBFO Project

## The Hague, The Netherlands

- Ministry of Transport
- Finnish Road Administration
- Sytwende Project

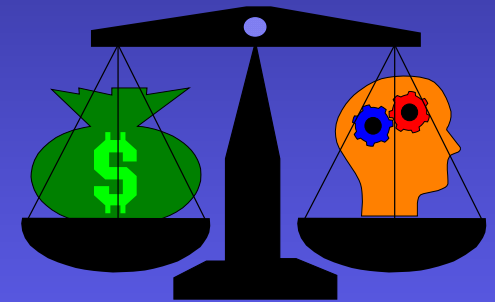


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# Procurement

- Team witnessed full spectrum of procurement methods
  - Low Bid
  - Best-Value
  - Qualifications Based Selection
- Best procurement systems align team goals and set framework for success





# Risk Allocation and Management

- Detailed and integrated risk analysis techniques
  - Highways Agency Risk Management (HARM) in England
  - Public & Private Sector Comparator in The Netherlands
- Strategic use of alternative delivery methods to allocate risks appropriately

# Quality Plans

- Quality based contractor selection
- ISO certification in all countries
- Quality plan developed in proposal and incorporated into contract
- Contractors self-monitor quality plan – owner/third party audits



# Implementation Efforts

- Construction Management ETG
- Strategic Plan
- 1<sup>st</sup> International Conference on Transportation Construction Management
- Risk Manual and Risk Workshops
- Innovative Contracting w/AASHTO SOD
- Quality Management Plan Research

# Implementation

- Website for reports, pilot studies, conference dates and presentations

[http://www.fhwa.dot.gov/programadmin/  
contracts/cmetg.cfm](http://www.fhwa.dot.gov/programadmin/contracts/cmetg.cfm)

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- ✓ Objectives & Methodology
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- Quality Plan – Research Problem Statement
  - In cooperation with the Subcommittee on Construction

# Quality Systems for Highway Construction

- Defining a Quality System
  - Plans, specifications, diary, inspection reports, materials reports, non-conformances, etc.
- Examples: ISO, US Army COE, FAA, etc.
- NCHRP 20-7 is currently inventorying these examples

# Quality Systems for Highway Construction

- Goals:
  - Paperless (needed for claims)
  - Sharing (contractors do more, both parties need to see information)
  - Integrated (need for a master plan for all of the elements of a quality plan)
  - Scalable (one size does not fit all)

# Quality Systems for Highway Construction

- Database Program and System
  - Software is a big component
  - Needs to be owned by the agency
  - Needs to be off the shelf and tailored
  - Examples: Expedition, PROLOG, Constructware, SiteManager



# Quality Systems for Highway Construction

- NCHRP Research Problem Statement
  - For innovative contracting we need to define the elements of a quality system.
  - The quality system needs to be paperless, integrated, scalable, and have the ability to be shared.
  - DOT Materials and Construction personnel will be working from the same master plan.
  - Vendors will have guidance to develop the key software we need.

Questions?