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
Where did we go?

Toronto, Canada
- Ontario Ministry of Transport
- Ontario Road Builder's Association

Munich, Germany
- Bavarian Road Ministry
- Aubing 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

Finnish Road Administration
Presentation Overview

✓ Objectives & Methodology
  • Observations and Implementation
  • Quality Plan – Research Problem Statement
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
• 1st 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
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✓ Objectives & Methodology
✓ Observations and Implementation
  • 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?