Common Ground:
Construction Management Practices in Canada and Europe

International Technology Exchange Program

Bringing Global Innovations to U.S. Highways

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U.S.Department of Transportation
Federal Highway Administration

Introduction

Reaching beyond its borders, the United States can benefit from a wealth of progressive practices now enhancing highway project delivery, contract compliance and quality assurance worldwide. The international highway community has developed innovative construction management procedures in alternative procurement and contracting environments, and a team of highway experts from the Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO), academe and industry recently assessed advances underway in:

Toronto, Canada • Cologne and Munich, Germany • Manchester, England

Edinburgh and Glasgow, Scotland • The Hague, Netherlands • Helsinki, Finland

The participating public and private sector leaders researched, documented, and are now promoting the implementation of international best practices that can push the state of the art within the U.S. highway industry.

Team members gained fresh perspectives on the highway industry's current challenge to thrive in a new spirit of partnership and common, customer-focused goals. This brochure summarizes the U.S. Construction Management Scan Team's recent recommendations. The complete 2005 report is available from the Office of International Programs, FHWA-HPIP, Room 3325, Washington, DC 20590 or international@fhwa.dot.gov.

Backdrop, Observations and Key Findings

Construction management involves the oversight of risks and resources in the implementation of a highway project. It is an essential element of the success of any project, and evolving industry roles and the adoption of alternative project delivery methods are prompting changes in the conventional construction management practices used by public agencies.

Critical components of these new methods include the evolving relationships among public agencies, contractors, and private engineering firms, which are transforming risk allocation processes, quality control/quality assurance, and general contract administration procedures. Emerging delivery methods include the use of non-traditional procedures such as design-build contracts, public-private arrangements, maintenance and warranty requirements, and use of third-party consultants to perform contract management.

European and U.S. transportation communities face similar political, financial, and resource challenges. However, key procurement and construction management techniques found during this study could promote better alignment between project team members and customers. The scan team discovered a more spirited effort of long-term partnership and collaboration between public and private sectors and witnessed heightened customer awareness among industry members.

Canadian and European agencies have developed construction management systems that promote the alignment of team goals through the use of integrated risk analysis techniques that support the strategic application of alternative delivery methods. These concepts thread through the project life cycle, from procurement systems that set the framework for success to contract payment systems that reinforce trust.

Recommendations

The team's recommendations offer a challenge to highway construction professionals: change current construction management practices to promote teamwork and more collegial relationships. This change should occur in collaboration with industry and should benefit both large and small engineering firms, contractors, and suppliers.

Align Team Goals to Customer Goals

Develop procurement practices, contract provisions, and construction management methods that better align the goals of the customer, owner, and contractors. The industry should move toward integrating teams that are formed early and focus on customer goals throughout the project development and construction life cycle.

Develop Risk Assessment and Allocation Techniques

Establish more effective risk assessment processes that begin at the scoping stage and continue through construction management. These processes should determine risks and assign them to the party best able to manage them.

Strategically Apply Alternative Delivery Methods

Choose delivery methods that better align goals and allocate risk. Instead of a one-size-fits-all design-bid-build environment, alternative delivery methods should be considered to promote early industry involvement and better life cycle design solutions.

Enhance Qualification Rating Processes

Develop consistent quality rating processes to facilitate quality-based selection. All of the international participants in this scan highlighted accurate and timely rating processes as critical to construction management success.

Use Qualifications in Procurement

Increase the use of best value procurement, considering price, qualifications, time, and technical approach. The use of qualifications in procurement will encourage long-term partnerships and the associated efficiencies.

Pilot Early Contractor Involvement

Test a system of contractor qualification-based selection to deliver a project from the planning and/or environmental process through construction using a target price contract. The early contractor involvement process is a wholesale change from the current way of doing business in the United States. It should be developed with industry support and thoroughly tested.

Apply Alternate Bids/Designs in Procurement

Increase the use of alternate bids in our low-bid environment, provided the bidders are being evaluated on a fair and transparent basis. Alternative bidding procedures can achieve better value for money and can be used for design-bid-build, design-build, and other delivery methods.

Conduct Preproposal Meetings

When design alternates are being considered, conduct confidential preproposal meetings to allow proposers to validate the acceptability of innovative concepts. This system is currently being used on design-build projects in the U.S and could be extended and refined for all methods of project delivery.

Apply More Contractor Quality Management

Encourage enhanced contractor quality management systems with strong agency quality assurance processes. Contractor-initiated quality plans can be competed during procurement and written into each project contract. Consider using quality management process certifications when appropriate.

Use Appropriate Alternative Payment Methods

Assess the feasibility of alternative payment methods like contractor invoicing, milestone payments, and lump-sum payments, techniques currently used in the U.S. on design-build projects. This concept can be expanded to traditional design-bid-build projects and a variety of methods designed for different project types and customer goals.

Consider Alternative Application of Life Cycle Responsibility

Deliver better products, boost innovation, and eliminate redundant quality processes with long-term warranties on critical components of appropriate projects. Qualify items within the contractor's control.

Implementation

The scan team is committed to implementing its recommendations within the highway community in the coming months and years. Tools include an expert technical group, pilot studies, and conferences/ workshops.

Expert Technical Group

An expert technical group consisting of AASHTO and FHWA representatives has been formed to prioritize implementation steps, coordinate with various industry associations, designate lead States for implementation, and assist these States in developing guidelines, training programs, presentations, and information exchange programs. This effort is anticipated to continue through 2009. For more information, contact:

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Pilot Studies

Many of the innovative recommendations will require pilot studies across the country, developed in conjunction with appropriate stakeholders, with results documented and shared. Team members plan to pilot a number of these recommendations, and more participation is invited and welcome. For more information, contact:

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Conferences and Focused Workshops

The team plans to share its findings and recommendations at upcoming Transportation Research Board and AASHTO conferences, and is organizing a series of focused workshops. For more information on the conferences and workshops or on FHWA's international programs, please visit http://construction.colorado.edu/cmscan and www.international.fhwa.dot.gov.

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