Innovative Contracting Practices
For Pavement Projects

2003 Southeastern States
Pavement Management and Design Conference
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Preview

- Status of Transportation Legislation
- SEP-14 background
- Warranties
- Alternate Pavement Type Bidding
- Design-Build
- Asset Management / System Preservation Contracts
- References
- Conclusion
SAFETEA
(2003 Transportation Reauthorization Legislation)

• Safe, Accountable, Flexible and Efficient Transportation Equity Act of 2003
• http://www.fhwa.dot.gov/reauthorization/index.htm
  – section-by-section analysis
  – DOT press release,
  – Testimony
  – fact sheets
  – authorization tables
  – other material
Recent Apportionment of Federal-Aid Highway Funds (TEA-21 and other Acts)

Year
1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009

$ billion
0 5 10 15 20 25 30 35

Other Acts  TEA-21  Proposed SAFETEA
Special Experimental Project No. 14
Innovative Contracting

• Initiated 2/13/90
• Objective - Evaluate project specific contracting practices which
  – Maintain product quality
  – Reduce life cycle cost
• Initial practices proposed for evaluation
  – Cost-plus-time Bidding
  – Lane Rental
  – Warranty Procedures
  – Design-Build
• Other techniques
Warranty - a definition

An assurance by the seller that the product will perform as specified for the buyer for a specific period of time
Warranties for Federal-aid Contracts

1991 ISTEA allows states to use warranties on Non-NHS projects

- 23 CFR 635.413
  - Must be for a specific product or feature
  - Not for routine maintenance
  - Must be for items within the control of the contractor
Warranty Evaluation States

- SEP-14 Evaluation States
- Other Evaluation States
Pavement Warranty Evaluation States
Current Use of Pavement Warranties In Mid-Western States *

MN – 0/0/10
WI – 24/3/1
MI – 35/10/300
OH – 66/4/5
IN – 8/0/0
IL – 3/3/0
SD – 0/1/0
KS – 0/1/0
MO – 0/0/2

*2001 FHWA MWRC survey - State - HMA / PCCP / Preventive Maintenance
(http://www.fhwa.dot.gov/programadmin/contracts/index.htm)
Length of Warranties

- Asphaltic Concrete / Rubberized Asphalt (3 - 20 yr) AL, AR, CA, CO, FL, GA, IL, IN, KY, LA, ME, MI, MO, MS, OH, OK, OR, NM, SC, TN, UT, WA, WI
- PCC Pavement (5-10 yr) CO, IL, KS, ME, MI, MS, OH, SD, UT, WA, WI
- Asphaltic Crack Treatment (2 yr) MI
- Bridge Components (5-10 yr) OH, WA, ME
- Bridge Painting (2-10 yr) IN, MA, ME, MI, OH, NH
- Chip Sealing (1-2 yr) CA, MI, OH
- ITS Buildings (2-3 yr) VA, NC
- Landscaping, Irrigation (1 yr) WY
- Microsurfacing (2 yr) CO, MI, NV, OH
- Pavement Marking (2-6 yr) FL, MT, OH, OR, PA, UT, WV
- Roofing (10 yr) HI
## Asphalt Warranty Criteria

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Wisconsin Asphaltic Concrete Warranty Use

- Five Year Warranty
- 24 projects from 1995 - 2000
- WisDOT provides pavement thickness, type of base
- Contractor responsible for: mix design, material selection, QC, construction and maintenance for 5-years
- Reduced WisDOT inspection
Wisconsin DOT
Warranty and Non-Warranty Ride Values

[Graph showing IRI values against pavement age with data points for New, 3, 6, 9, 12, 15, 18, 21, 24 years. Legend: Warranty - Average IRI, Non-Warranty State Average IRI.]
Comparison of WisDOT Unit Prices

- **Standard AC unit price** (1995-1999 contracts; including tack coat, quality management, state maintenance, with delivery costs)  $28.05 / ton
- **Warranty AC unit price** (average of 18 contracts; 1995-1999; including training, use of conflict resolution team, distress surveys and report, extra tests for disputes and traffic counts)  $24.34 / ton

Alternate Pavement Type Bidding

FHWA Position: FHWA policy requires States to have a pavement type selection process; however, alternate pavement type bidding is allowed under SEP-14
Missouri Alternate Pavement Type Bidding

- 1996 - 5 Projects (3 AC, 2 PCC)
- Mix results, industry concerns regarding fairness (report available)
- Tabled further projects
- Positive - assisted in refining pavement type selection process
Louisiana DOT&D

- A+B+C bidding
  - A  initial construction cost
  - B  adjustment for construction time
  - C  adjustment for life-cycle costs

- As of 6/2/2003, 7 projects (4 won by AC, 3 by PCC)

- Propose to use on all projects with no greater than a 20% differential in LCC
Kentucky A+B-C System for Alternate Pavement Bidding

- **A** = traditional bid for work
- **B** = bid for cost of time to complete the project (includes RUC)
- **C** = bid for length of warranty (5 yr. Minimum) based on RUC

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<td>$2,100,000</td>
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<td>Year 10</td>
<td>$2,900,000</td>
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Kentucky A+B-C System for Alternate Pavement Bidding

- I-275 Pavement Warranty
- Alternate pavement designs based on an equivalent 40 year design
- Warranty and Time were not factors in award

<table>
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<th>A (base bid)</th>
<th>Time (CD)</th>
<th>Warranty (YR)</th>
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<td>$26.30</td>
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FHWA’s Design-Build Experience Under SEP-14

- Texas Turnpike Authority
- Nashville
- DC
- Milwaukee
- NYCDOT
- Reno ReTRAC
- TCA
- Texas Turnpike Authority
SEP-14 Design-Build Projects

Projects

1991 1993 1995 1997 1999 2001

December 2002 FHWA SEP-14 data
http://www.fhwa.dot.gov/programadmin/contracts/sep14a.htm
TEA-21 Design-Build Legislation
Section 1307

- By June 9, 2001 FHWA must develop design-build regulations
- Notice of Proposed Rule Making published 10/19/01;
- Final Rule Published 12/10/2002; effective 1/9/2003.
- States can use design-build without HQ approval for “Qualified Projects”
  - ITS projects > $ 5 million
  - Other projects > $50 million
- SEP-14 will continue for smaller projects
- By June 9, 2003 FHWA must report on effectiveness
NPRM Commenters (42)

- 14 STDs (MO, NJ, CA, WI, NY, FL, SC, VA, MT, CO, TX, WA, UT, IL)
- 13 Associations (AASHTO, AASHTO VE TF, ASCE, AGC, DBIA, ACEC, ARTBA, DPC, COFPAES, NSPE, PECG, NASBP)
- 2 Local Public Agencies (Orange North, Transportation Corridors Association)
- 13 “representatives from government and industry”:
  - 4 Construction Contractors (Peter Kiewit & Sons, Shamrock Paving, Sundt Construction, John Crone)
  - 3 Consultants (Nancy Smith, Tom Warne, General Machine Corp.)
  - 6 Individuals/other government reps (Edda Rosso, Johnnie Burns, Elaine Valdez, Michael Garza, PECG, CA BTHA)
Section 1307(f) Report to Congress

A. an assessment of the effect of design-build contracting on *project quality, project cost, and timeliness of project delivery*;

B. recommendations on the *appropriate level of design for design-build procurements*;

C. an assessment of the impact of design-build contracting on *small businesses*;

D. assessment of the *subjectivity used in design-build contracting*
Pavement Design in Design-Build

- Varies from State-State; project – project
- **Florida DOT** – FDOT Design-Build guidelines – March 3, 2003; section 5.5
- **WSDOT Design-Build guidelines** – Nov. 7, 2001; section 416 Pavement Design;
AASHTO Design-Build Task Force

- Joint Task Force with participation from Subcommittees on Design and Construction
- Provided significant comments on the FHWA NPRM
- RFQ/RFP Procurement Guideline research project
- Design-Build Current Practices Report
- Web site: http://www.transportation.org/committee/design/tf_designbuild.html
Design-Build Links

The following links to State DOT design-build web sites provide useful information for those interested in design-build contracting.

- Florida DOT
- Minnesota DOT
- New York State DOT
- Ohio DOT
- South Dakota DOT
- Virginia DOT - Projects
- Washington State DOT

State Statutes Related to Design-Build

- Minnesota
- Ohio
- Washington

Sample RFQ / RFP / ITP Documents

- Colorado DOT - TREX Project Information
- Minnesota - Trunk Highway 100 Project Information
- Minnesota - Highway 52 Project Information
- Reno, Nevada - ReTRAC Project
- Virginia DOT - RFQ, Demolition and Construction of a Safety Rest Information Center, New Kent County, VA (Adobe pdf format, 41k)

Other Design-Build / Project Delivery Method Resources

- Window to Design-Build - University of Colorado at Boulder (provides assistance in project delivery decision making)
- Finnish Road Enterprise - "Innovative Project Delivery Methods for Infrastructure: An International Perspective" (Adobe pdf format, 665k)
- Design-Build Institute of America
Asset Management / System Preservation Contracts

- Provides all maintenance services (preventive and routine) through a long-term contract
- Some are performance-based, lump sum contracts
- FL – 7 yr, 920 lane miles
- OK – 3 yr, 72 lane miles
- TX – 1, 386 lane miles
- VA – 1,250 lane miles, 1996 – 5 yr, extended in 2001
DC Total Asset Management Contract

- 5-year, $70 million contract
- Optional one-year extensions
- Performance Based
- Best value selection
- National Highway System assets covered include:
  - Tunnels (4 major, 4 minor)
  - Pavement
  - Bridges
  - Roadside (curbs, gutters, sidewalks, retaining walls)
  - Traffic Safety (guardrails, barriers, attenuators, pavement markings, signs and lighting)
DC Performance Standards for Pavements

- **IRI**
  - roads reconstructed in past 5 years - IRI<181
  - roads not reconstructed in past 5 years
    - % in good condition must increase
    - % in poor condition must decrease

- **Pavement Condition Index**
- **Skid >40**
- **Number of unsealed cracks**
- **Number of Potholes**
Innovative Contracting Resources

- Utah State University Innovative Contracting Web Site (www.ic.usu.edu)
- AASHTO Primer on Contracting for the 21st Century (http://transportation.org/committee/construction/references.html)
In Conclusion . . .

- FHWA will continue to allow and support the use of non-traditional contacting methods as long as they are procured in a competitive manner
- SEP-14 will continue as a vehicle to share best practices