

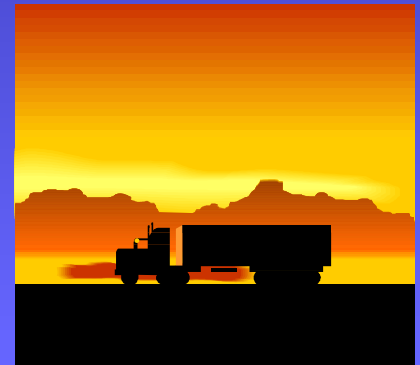
Innovative Contracting Practices For Pavement Projects

*2003 Southeastern States
Pavement Management and Design Conference
Louisville, Kentucky
June 22-25, 2003*

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Preview

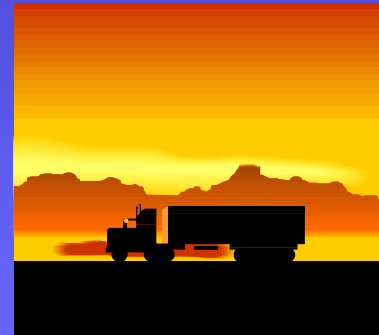
- Status of Transportation Legislation
- SEP-14 background
- Warranties
- Alternate Pavement Type Bidding
- Design-Build
- Asset Management / System Preservation Contracts
- References
- Conclusion



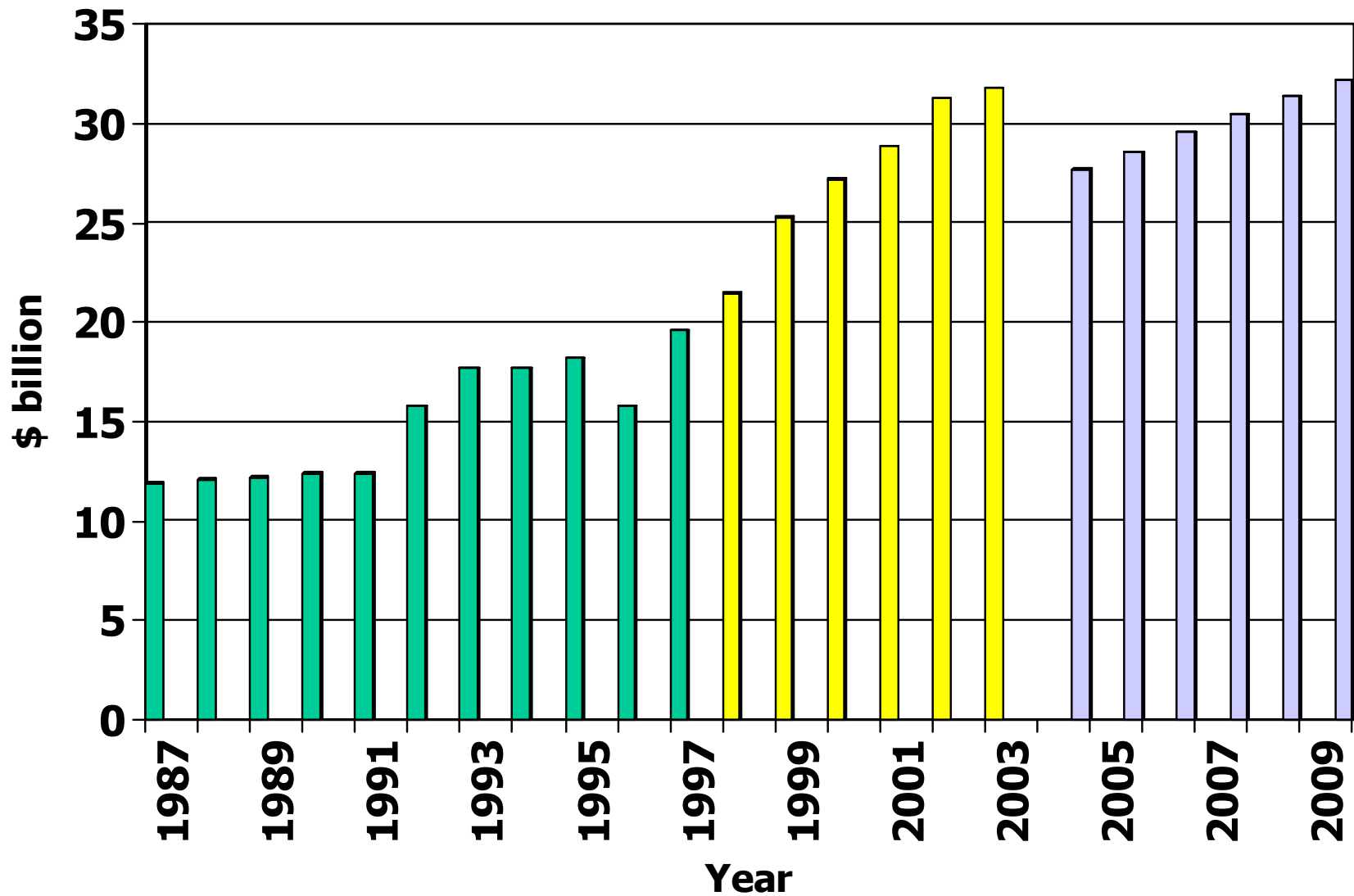
SAFETEA

(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)



■ Other Acts ■ TEA-21 ■ Proposed SAFETEA



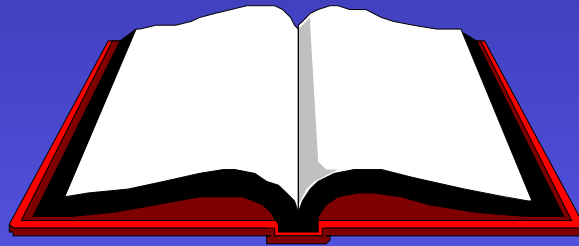
Special Experimental Project No. 14 Innovative Contracting

- 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



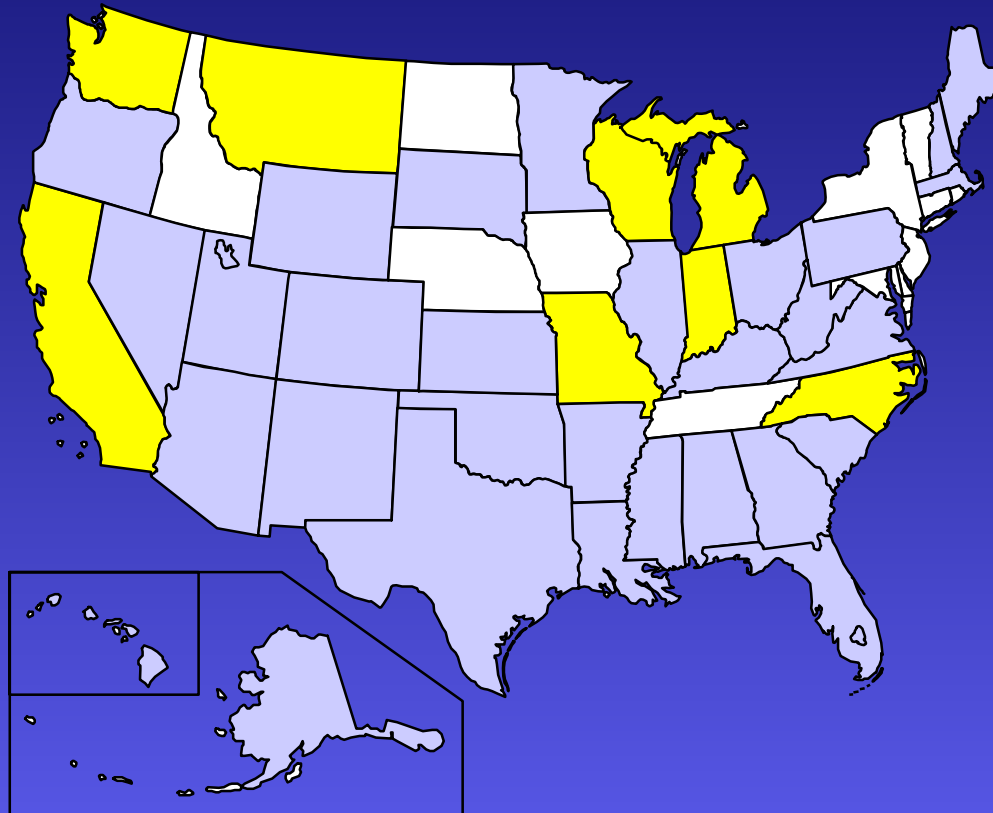
Warranties for Federal-aid Contracts



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

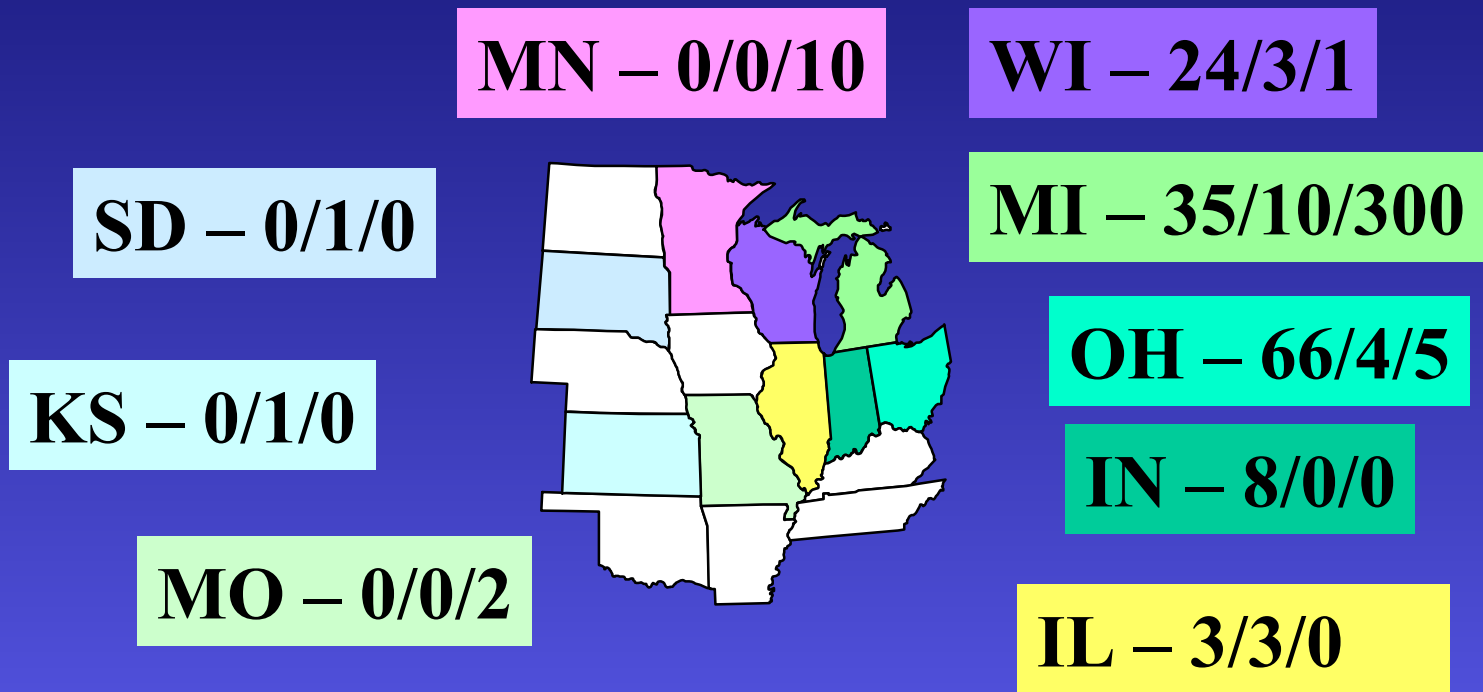
- 23 CFR 635.413
 - Must be for a specific product or feature
 - Not for routine maintenance
 - Must be for items within the control of the contractor

Warranty Evaluation States



- SEP-14 Evaluation States
- Other Evaluation States

*Current Use of Pavement Warranties In Mid-Western States **



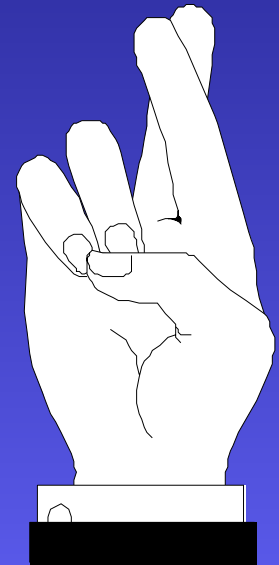
*2001 FHWA MWRC survey -

(<http://www.fhwa.dot.gov/programadmin/contracts/index.htm>)

State - HMA / PCCP /
Preventive Maintenance

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

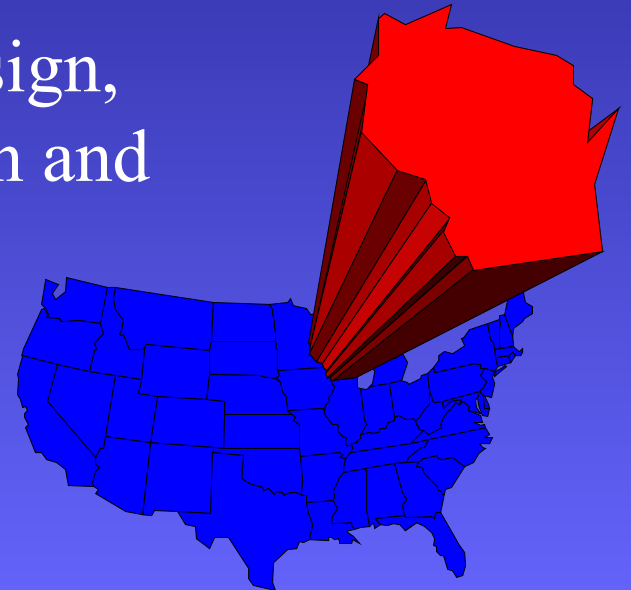


Asphalt Warranty Criteria

	Alligator Cracking	Bleeding / Flushing	Block Cracking	Delamination	Disintegrated Areas	Edge Cracking	Edge Raveling	Longitudinal Cracking	Longitudinal Distortion	Patching	Potholes	Ride Quality	Rutting	Scabbing	Shoving / Slippage Areas	Skid resistance	Spalling	Surface Raveling	Transverse Cracking	Transverse Distortion	Weathering	Zipper Cracking	Total
AL	X	X	X		X	X		X			X	X	X	X	X	X		X	X				14
CA	X	X	X			X		X					X					X	X				8
CO	X	X	X	X	X	X		X			X	X	X		X			X	X		X		14
FL	X				X	X		X			X	X	X		X				X				9
IN								X				X	X			X			X				5
ME	X	X	X		X					X	X		X		X				X				9
MI	X	X	X		X					X	X	X	X						X			X	10
MO								X			X		X				X	X	X				6
OH		X		X				X		X			X					X					6
WI	X	X	X		X	X	X	X	X	X			X					X	X	X			13
Total	7	7	6	2	6	5	1	8	1	4	6	5	10	1	4	2	1	6	9	1	1	1	

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



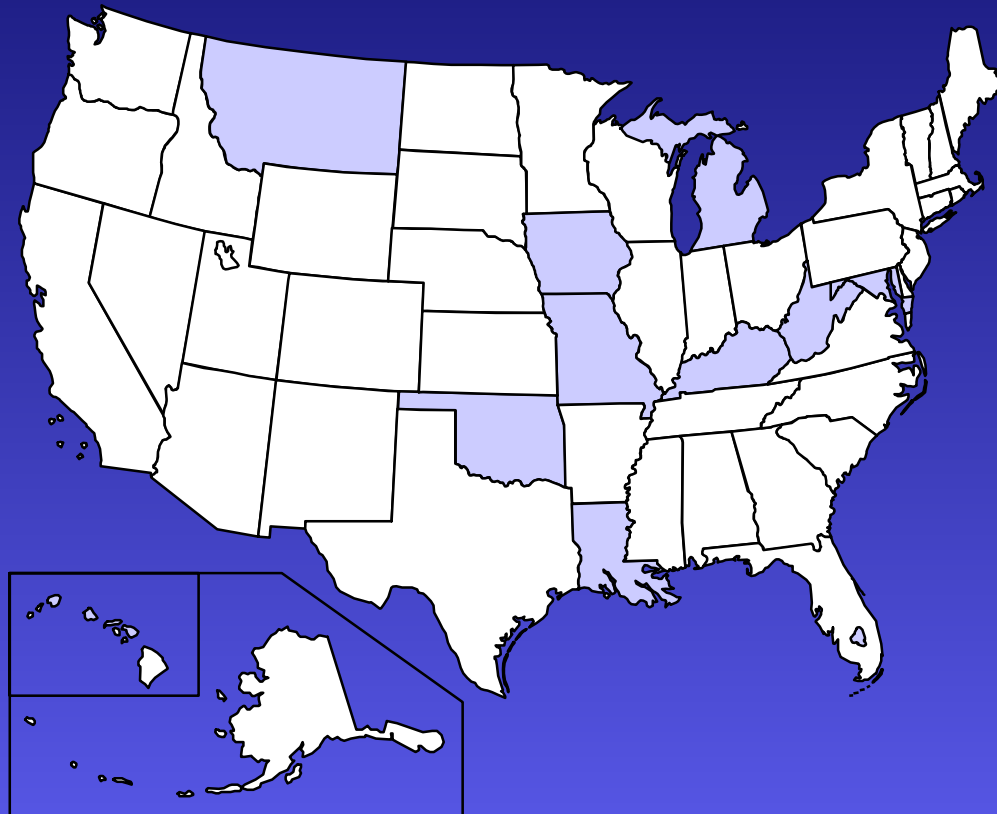
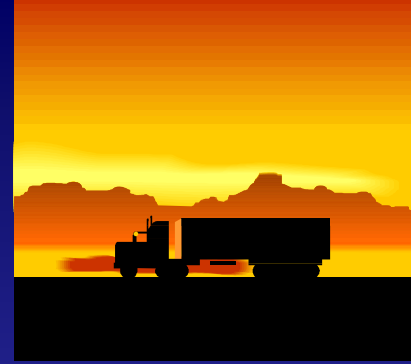
■ Warranty - Average IRI ■ Non-Warranty State Average IRI

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**

Wisconsin DOT, Five-Year Progress Report, June 2001,
<http://www.dot.wisconsin.gov/library/research/docs/finalreports/tau-finalreports/warranties.pdf>

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

SHOW ME STATE

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

Year 6	\$500,000
Year 7	\$1,000,000
Year 8	\$1,500,000
Year 9	\$2,100,000
Year 10	\$2,900,000

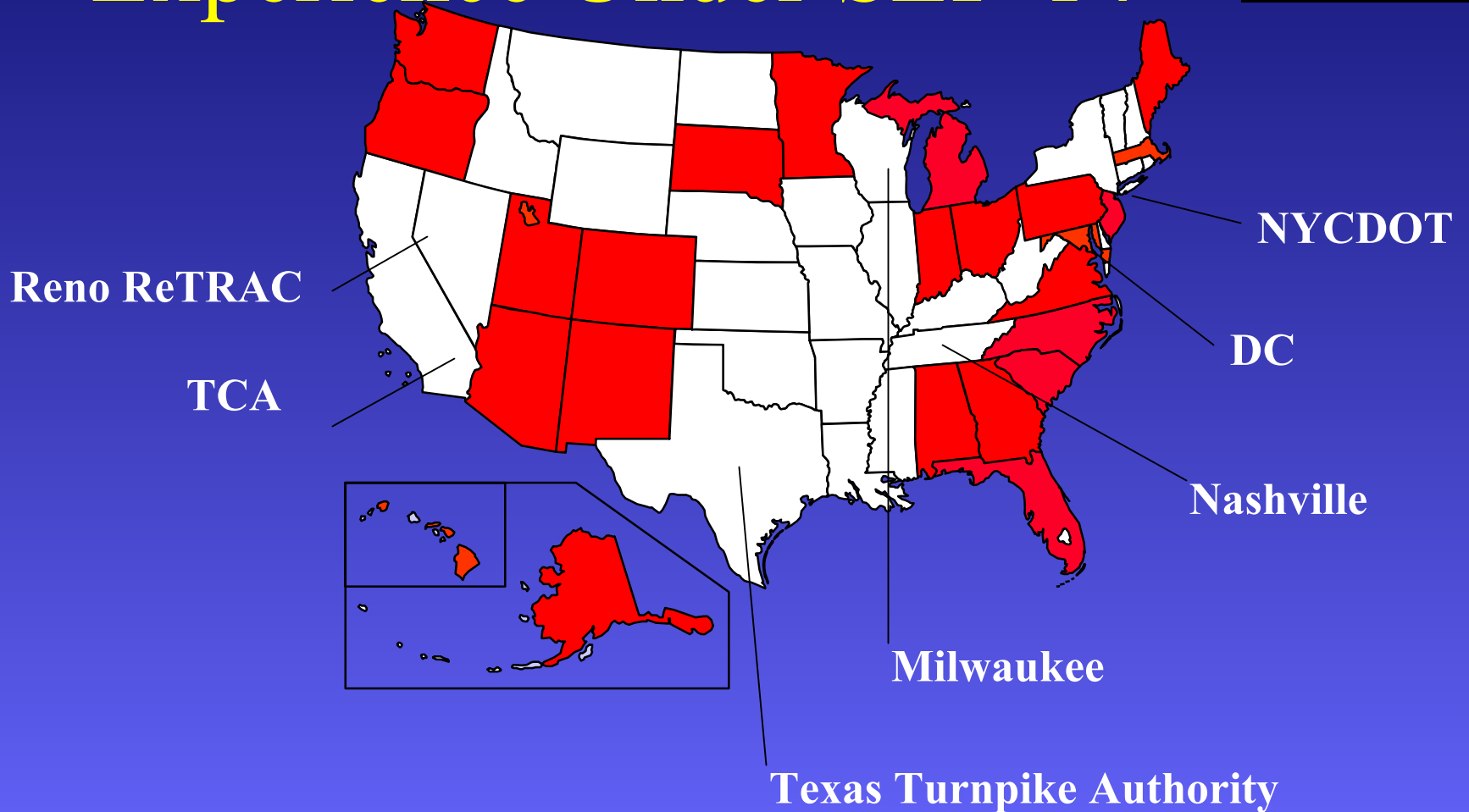
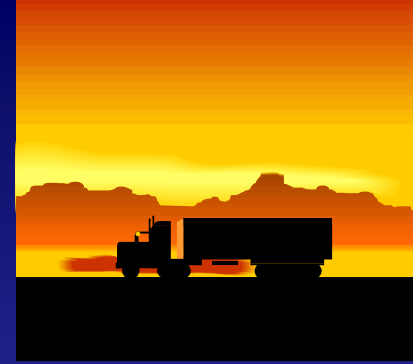


Kentucky A+B-C System for Alternate Pavement Bidding

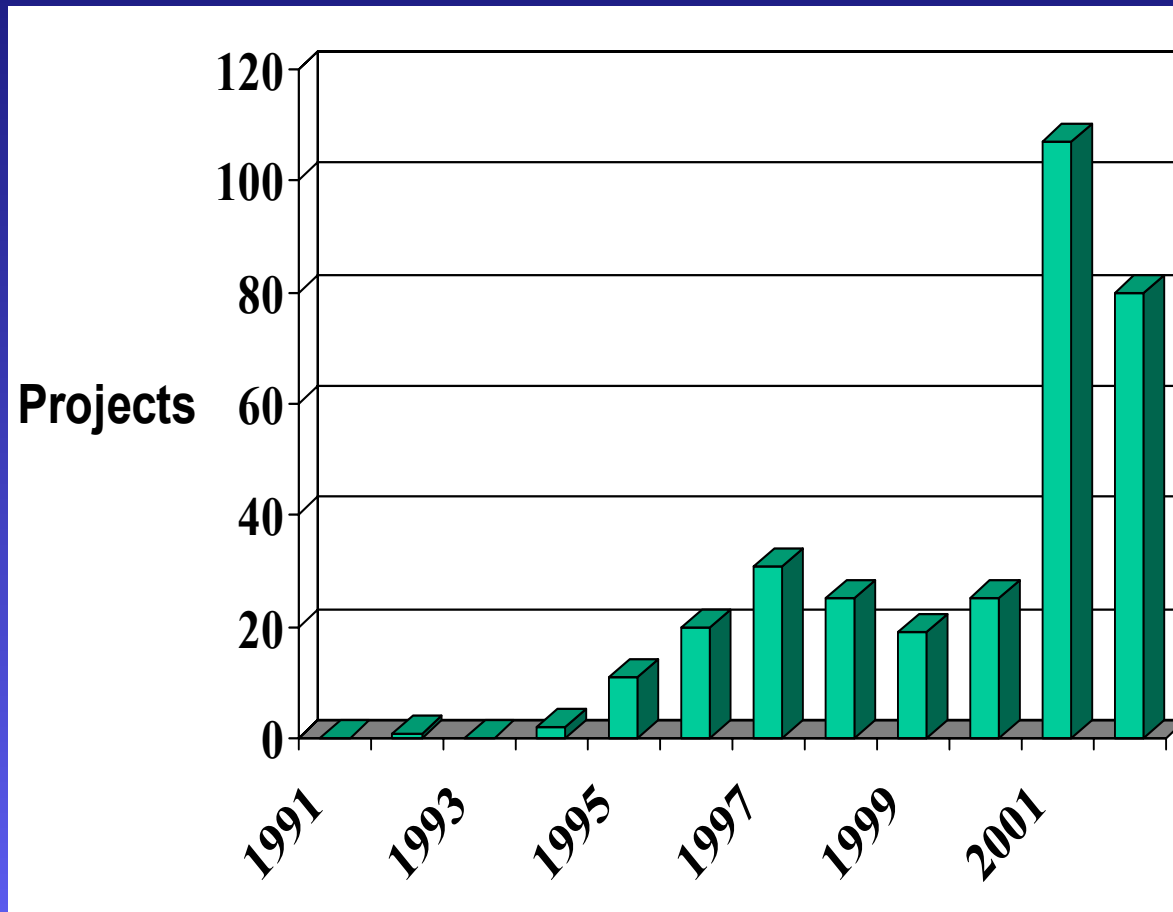
- I-275 Pavement Warranty
- Alternate pavement designs based on an equivalent 40 year design
- Warranty and Time were not factors in award

1	A (base bid)	Time (CD)	Warranty (YR)
1	\$23.13 M	380	10
2	\$25.58 M	450	10
3	\$26.30	450	10

FHWA's Design-Build Experience Under SEP-14



SEP-14 Design-Build Projects



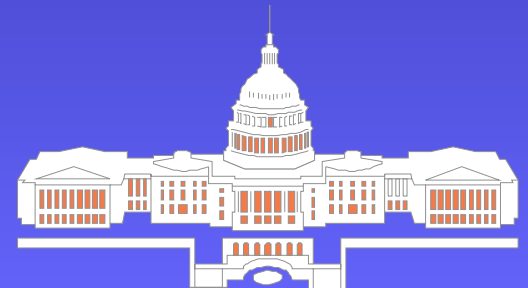
December 2002 FHWA SEP-14 data

<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*

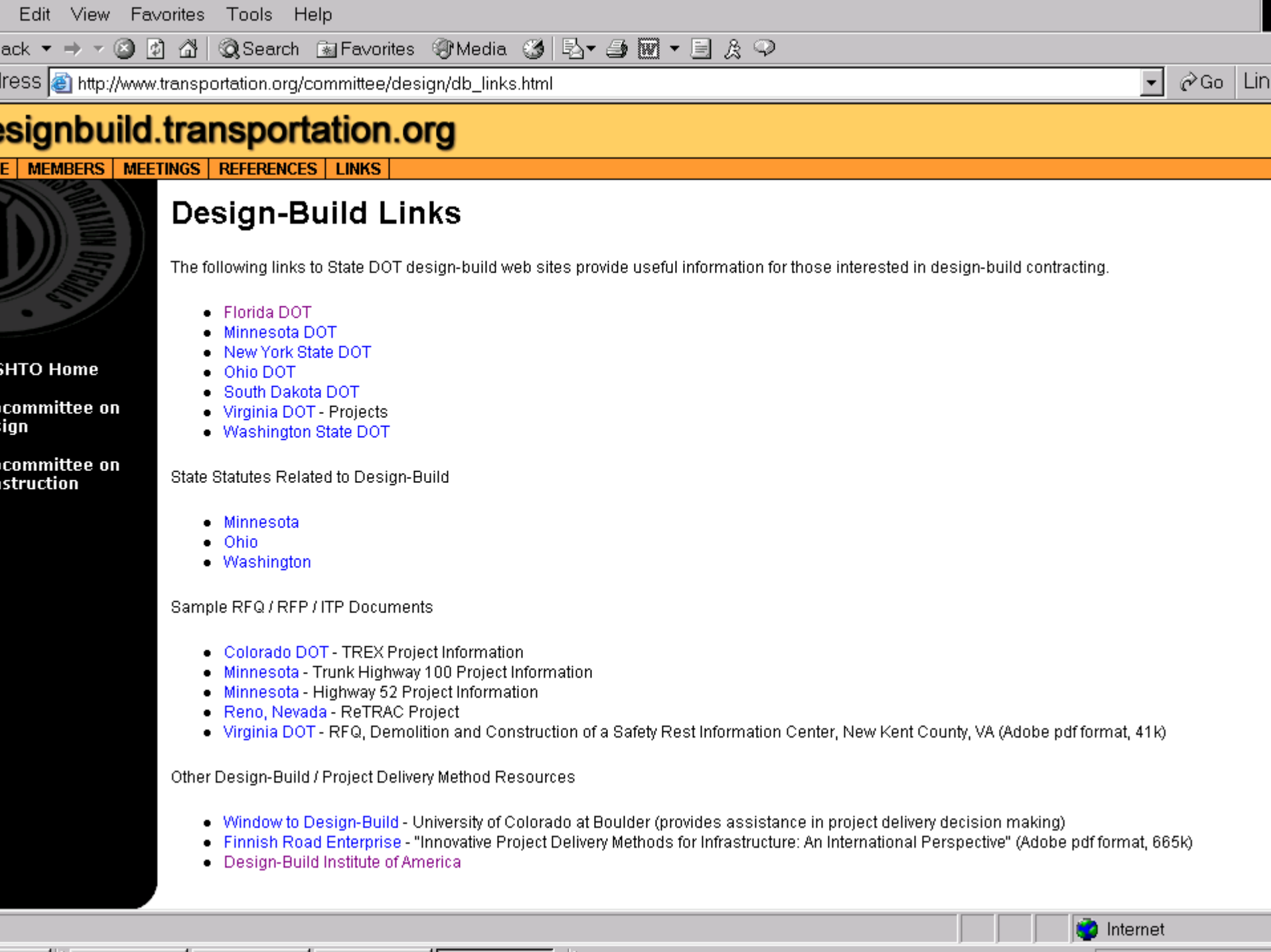
Pavement Design in Design-Build

- Varies from State-State; project – project
- Florida DOT —FDOT Design-Build guidelines – March 3, 2003; section 5.5
http://www11.myflorida.com/construction/Design%20Build/DB%20Rules/DesignBuildGuidelines_Feb.%202003.doc
- WSDOT Design-Build guidelines – Nov. 7, 2001; section 416 Pavement Design;
<http://www.wsdot.wa.gov/biz/InnvContract/db/DBGuide110701.pdf>

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



designbuild.transportation.org

DBIA Home
 Design-Build Institute of America
 Design-Build Institute of America
 Design-Build Institute of America

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](#)

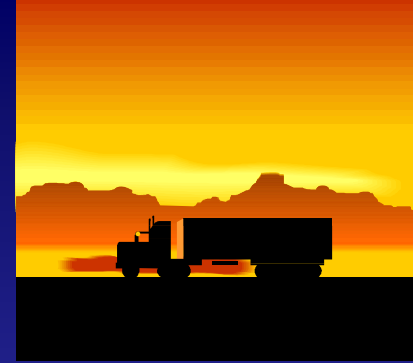
Sample RFQ / RFP / ITP Documents

- [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 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

- FHWA Contract Administration web page
(<http://www.fhwa.dot.gov/programadmin/contracts/index.htm>)
- 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