

# Warranty Contracting

## What does the world have in store for us?

John D'Angelo

FHWA

Office of Pavement Technology

# Action Drivers

- What is the driver behind all our actions?
  - Highway systems that perform well.



Rutting

# Fatigue Cracking

A photograph of a road showing fatigue cracking in the asphalt surface. The cracks are visible as a network of small, interconnected lines. The text "Fatigue Cracking" is overlaid in yellow.

# Low Temperature Cracking





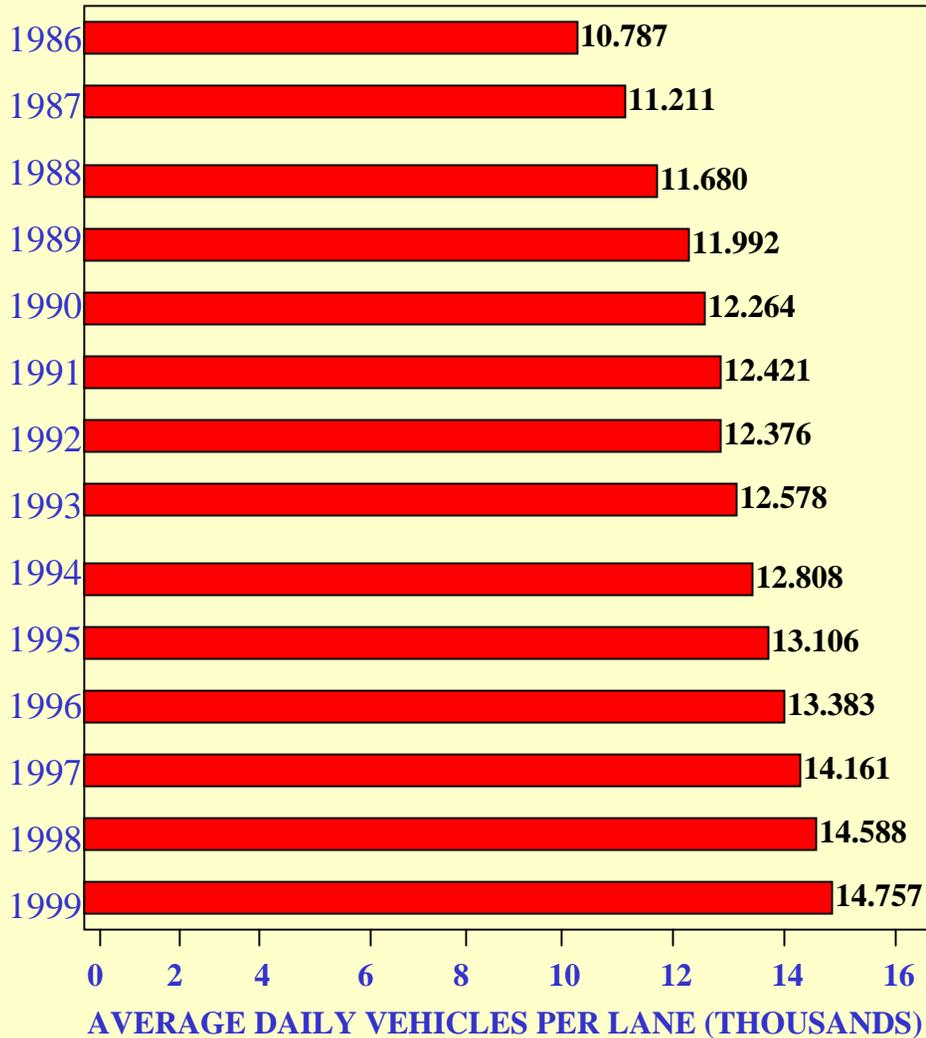
**What is the cost of poor performance?**

# Vehicle Operating Costs

- Driving on roads in need of repair and improvement cost motorists additional vehicle operating costs (VOC).
- Nationally, motorists pay \$222 each in extra VOC per year.
- **\$ 41,500,000,000 per year !**

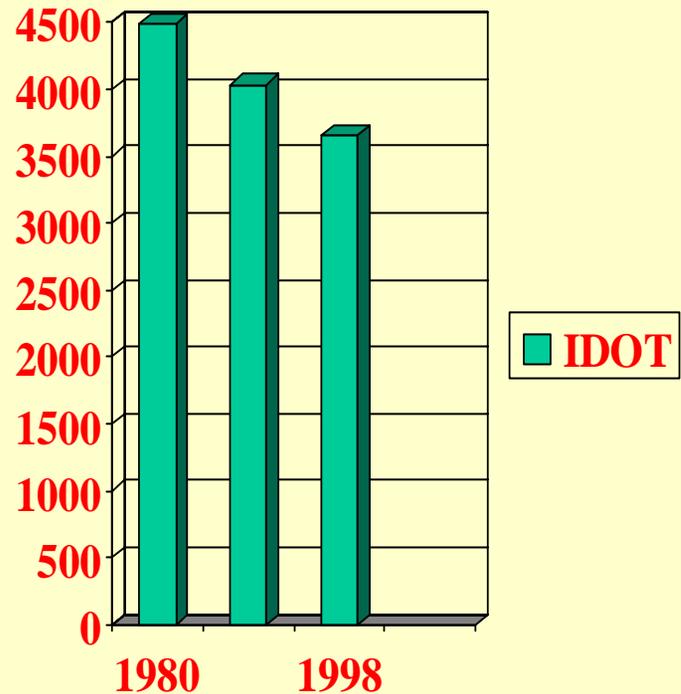
# Highways are More Congested

AVERAGE DAILY VEHICLES PER LANE

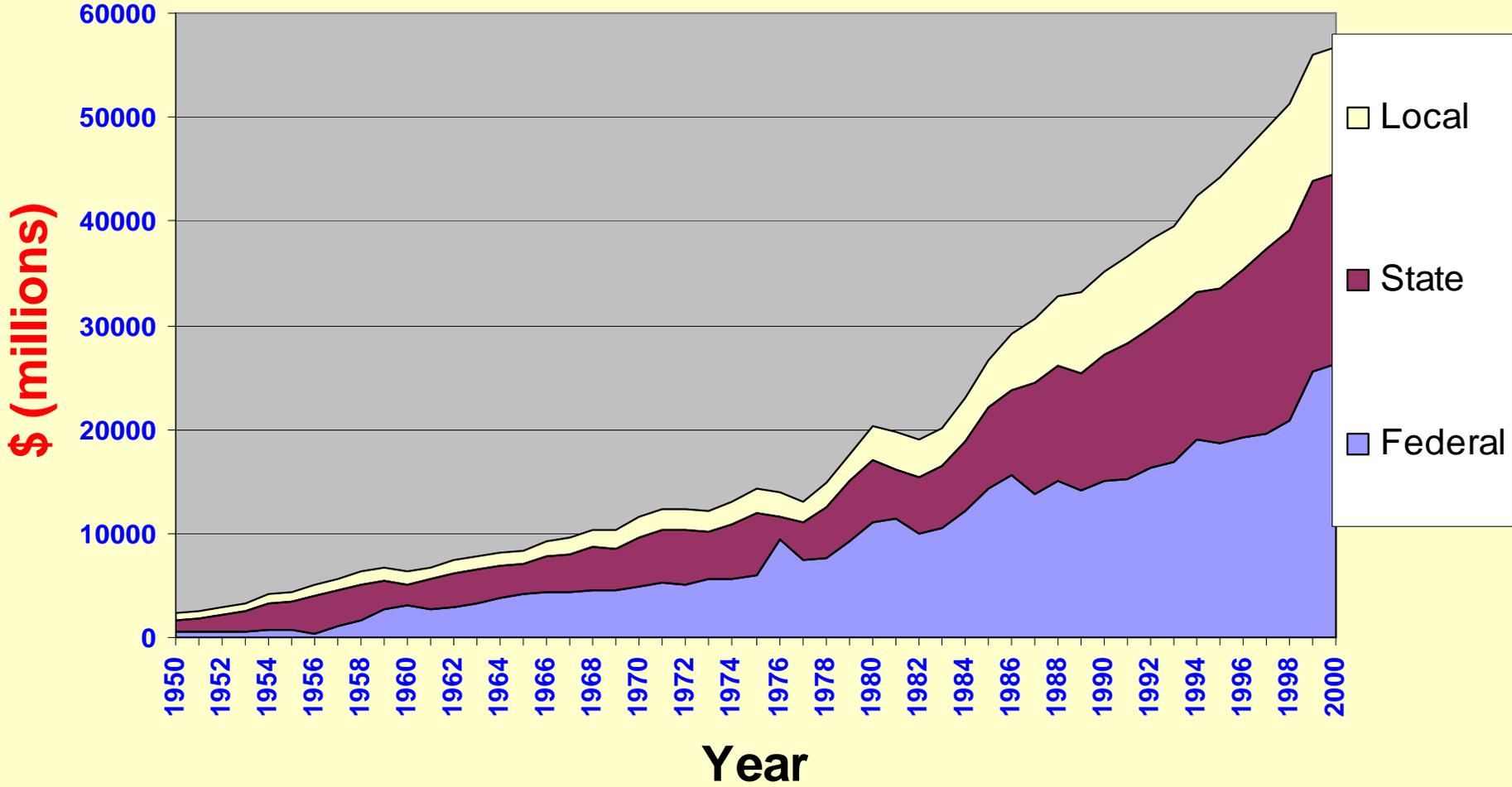


# States Reduce DOT Employees

- IOWA – Last 20 Years
- 18.5% Reduction in Employees
- Highway Spending Triples



# Capital Outlay



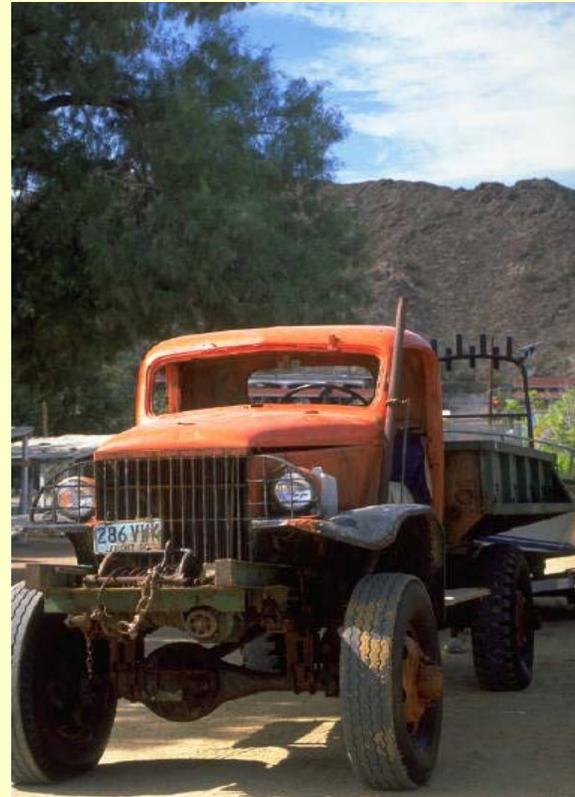
# CONTRACTING METHODS MUST CHANGE

- Fewer State DOT Employees
- More \$\$
- Higher Public Expectations
  - More Congestion
  - Still too Many Fatalities



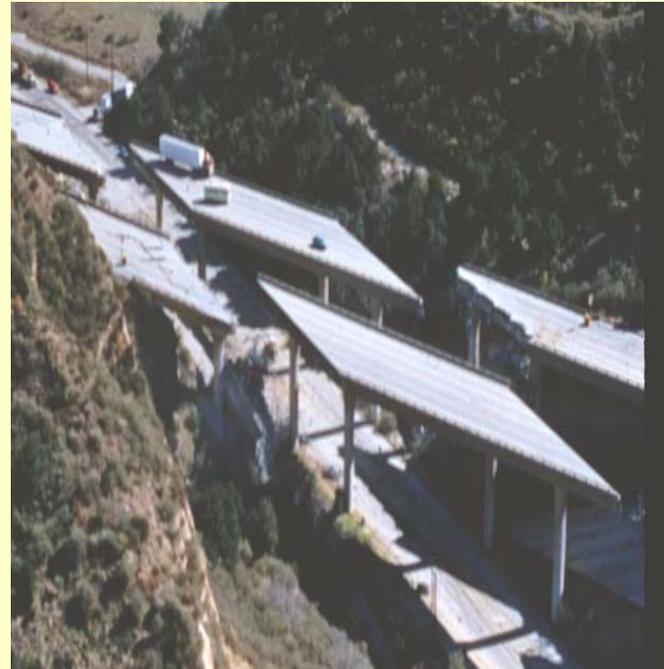
# Contract Administration “Before 1990”

- One Size Fits All
  - **100% Complete Plans, Specifications, & Engineering**
  - **All Qualified Bidders**
  - **Award to Lowest Bidder**
  - **No Warranties**



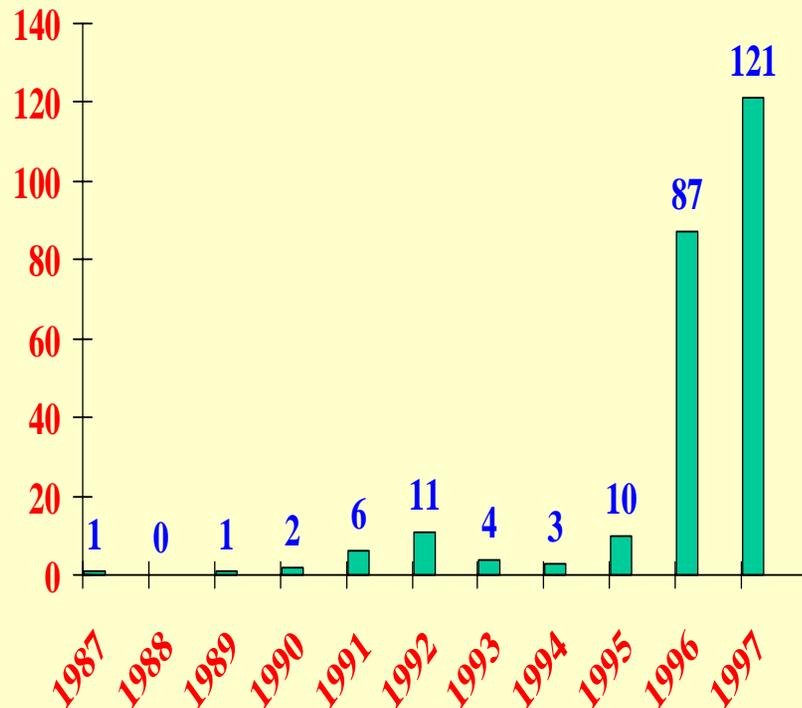
# Evolution of Alternative Contracting in the US

- TRB Circular 386  
“Innovative Contracting Practices” (1988)
- FHWA Special Experimental Project - 14 (1990)
- FHWA “Main-Streams” most AC methods (1995)

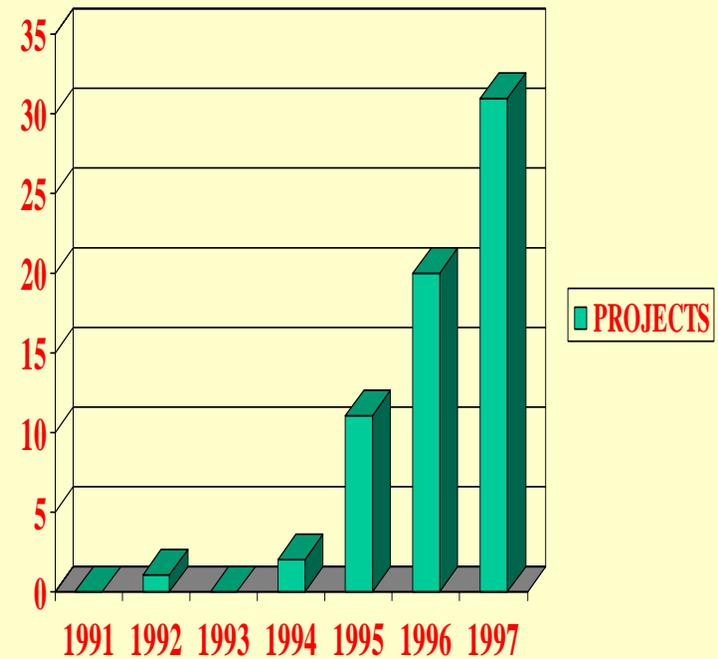


# Alternative Contracting in 1990s

## Warranties

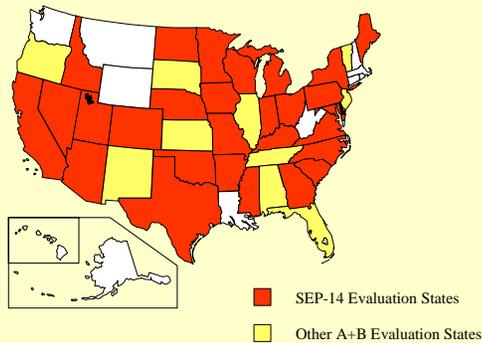


## Design-Build

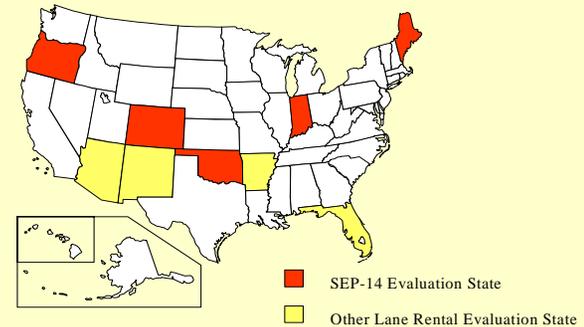


# Alternative Contracting in US TODAY

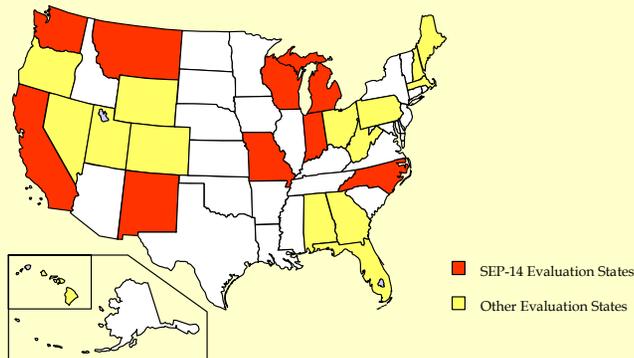
**Cost-Plus-Time Bidding Evaluation States**



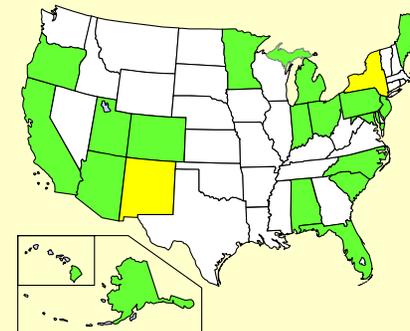
**Lane Rental Evaluation States**



**Warranty Evaluation States**

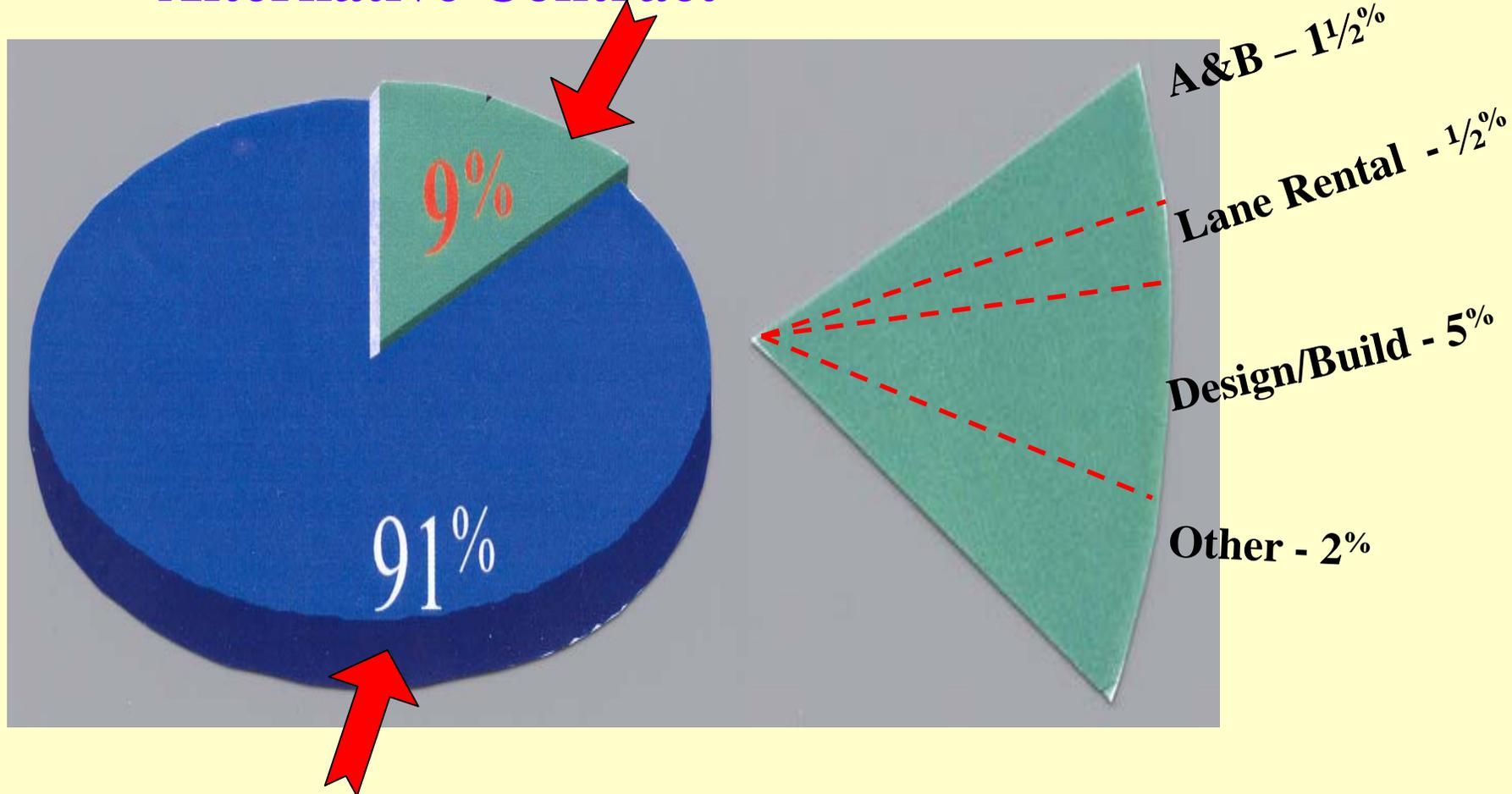


**States Currently Using Design-Build Under SEP-14**



# Current Contract type in U.S.

**Alternative Contract**



**Low Bid Award**

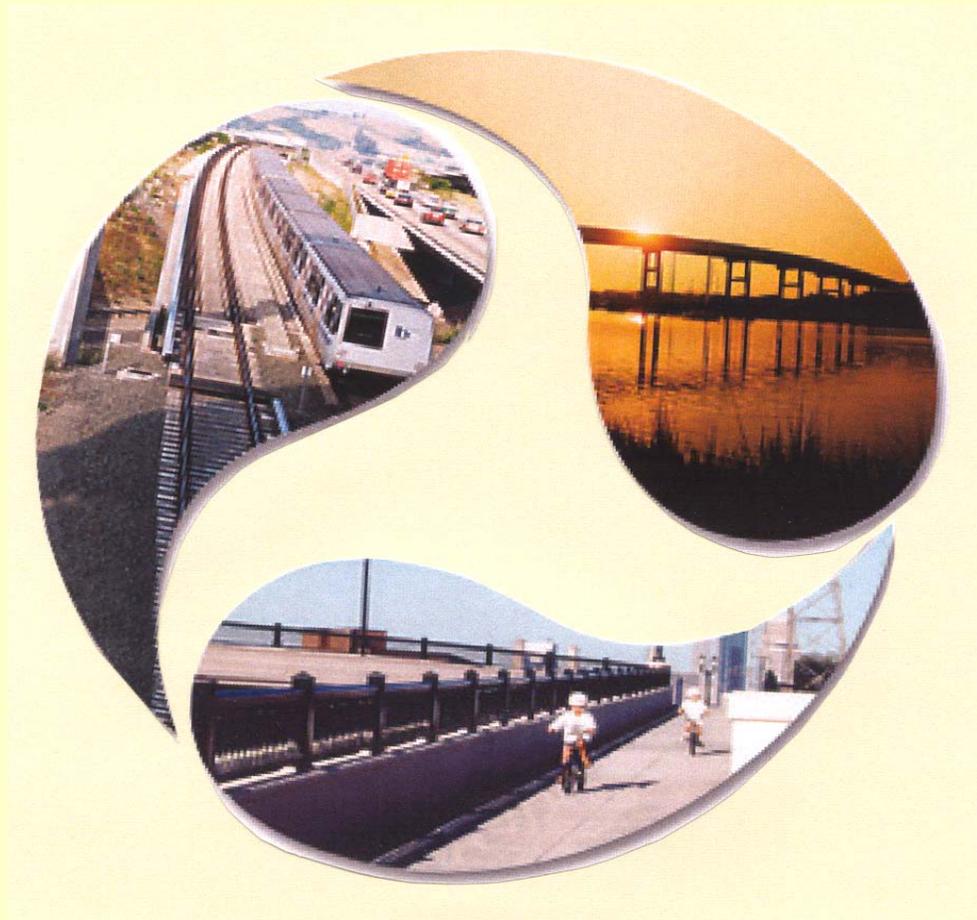
# How do we make the needed changes?

- Learn from the experience of others.
- Create trial projects.
- Give up our old ways.



# CONTRACT ADMINISTRATION SCAN

## JUNE 2001



# WHY EUROPE?

- Benefit from their expertise
- Learn new methods
- Learn how to improve “old methods”
- Share experiences

# Drivers for Change in Europe

- Inadequate Public Funding
- Claims Environment
- Cost Overruns
- Slow Delivery/  
Delays
- Growing Needs
- Adversarial Relationships
- Inadequate Staff
- Perceived Lack of Maintenance Efficiency
- Political Discontent
- User Frustration
- EU Relationships
- Create Innovation in Delivery

# EUROPE



# New Ideas from European

**Alternative  
Financing**

**Concessions**

**Contracting  
Techniques**

**Performance  
Contracting**

**Design-Build**

**Active Asset  
Management**



# European System

- Program
  - Shadow Tolls for DBOM & DBFO
  - Public Private Partnership projects
  - Numerous Private Financing Initiatives
  - Many Long Term Concession Contracts

# European System

- Combined Network and Maintenance Contract
- High Use of Incentives
- Very Strong Performance Contracting program in the Building Sector
- Innovative Asset Management System

# Primary Findings

- Europe is Better Leveraging the Private Sector Efficiencies and Strengths
- User Focus with Equitable Transfer of Risk
- A Higher Level of Trust Exists Between Public and Private Sectors
- Most Tools Are Directly and Immediately Implementable

# Contracting Techniques

## Procurement

- Transparent Uniform Process Enhances Competition
- Use of Best Value in All Types of Procurement
- Business Culture and Quality More Important than Technical Qualifications and Cost
- Confidential Negotiation Process - BAFO

# Contracting Techniques

## Contract Types

- DB, DBFO, & DBM
- AMPM
- Joint Development
- Concessions
- Target Pricing
- Two Phase Contracts
- Framework Contracts
- Strategic Partnering
- Alliancing
- Integrated Supply Chain Management
- Managing Agent Contract (MAC)
- Private Finance MAC

# Design-Build

- Standard Method in Europe
- Outcome (Value) Specifications
- Early Contractor Involvement
- Higher Level of Partnering
- Life Cycle Cost Award (ROI & NPV)
- Maintenance
  - 30-year Concessions to Owners
  - 5-10 year Product Warranties in DB

# Concessions

- Strategic Construction Plan through Concessions Program
- Operations through Concession Program
- Concession through Public, Quasi-Public or Private Company
- Variable Private Sector Equity Required
- Private Finance Initiatives

# Performance Contracting

## Warranty/Maintenance Contract Issues

- Materials and Workmanship Warranted for at Least 1-year w/some longer 5-years
- Widespread Use of 10-year Maintenance Contracts without Additional Warranties
- 30 Years Concessions in lieu of Warranties

# Performance Contracting

## Quality Control/Quality Assurance

- Contractor QC Alone with Some Owner Contracted QA
- Use of Stop or Control Points
- Use of Penalty Points and Quality Audits in Lieu of Heavy Owner Inspection
- Use of Penalty Card System Based Upon Failure to Respond to Warning Notices

# Performance Contracting

## Performance Specifications

- Used Most Widely in Maintenance Contracts
  - Operating and Turn-back Levels Specified
- Concessions Agreements Exclusively Use Operating and Turn Back Performance Levels

# Asset Management

## Techniques Used

- 2-year Assessment of Maintainable Items
- Annual Condition of Pavement and Bridges
- Condition Assessment Is Used in Budget Development

## Asset Valuation

- Depreciation Standards are Not Used
- Assets Valued at Replacement Cost

# Asset Management

## Outcomes of Asset Management

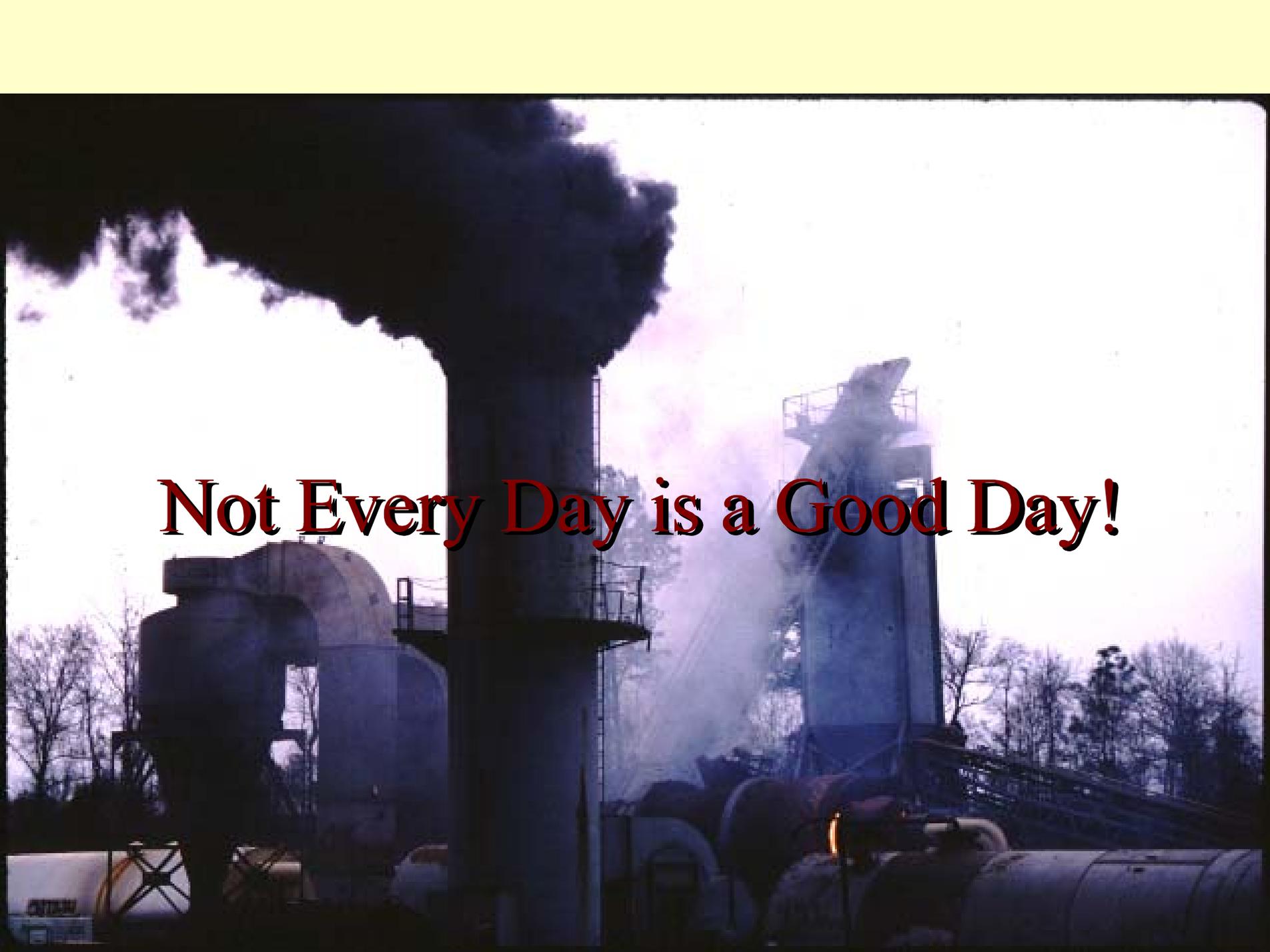
- Move to Outsourcing as a Predominant Method
- Managing Agent Contract (MAC)
- Long-term Contracts (5-10 Years)
- Concessionaire Developing Asset Management Program in Lieu of the Owner

# European Asphalt Warranty Scan planned for Sept. 2002

- Scan goals to determine:
  - Methodologies used to determine risk assessment for the government agency and contractor.
  - Methodologies for administration of warranty contracts.
  - Methodologies to select criteria to account for traditional performance indicators of rutting, fatigue cracking and low temperature cracking.

# European Warranty Scan planned for Sept. 2002

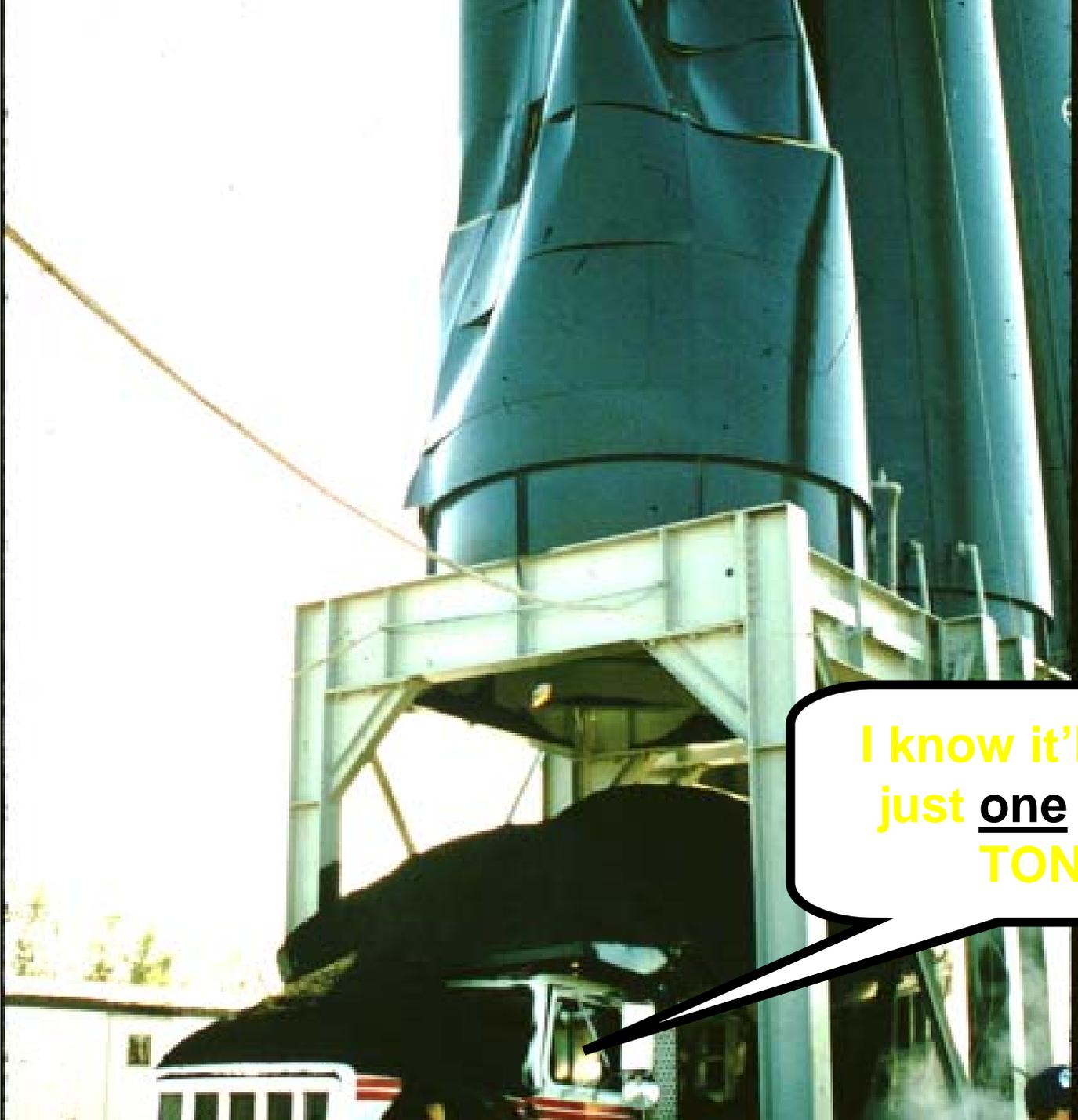
- Scan goals to determine:
  - Practices to maintain prescribed levels of asphalt pavement smoothness and skid resistance.
  - Criteria used in successful asphalt pavement warranties.
  - Pavement performance prediction tools.



***Not Every Day is a Good Day!***



Or even half good



I know it'll hold  
just one more  
**TON!**

# Conclusions

- US Highways Agencies Should Better Utilize Private Sector Efficiencies & Strengths
- A Higher Level of Trust Must Be Established in Our Industry
- Pilot Projects Should be Implemented to Test the Tools & Techniques Uncovered on the Scan

**Thank You**