



# Perspectives on Concrete

## ACPA and PennDOT

**8<sup>th</sup> Annual Pennsylvania Concrete Conference  
January 31, 2007**



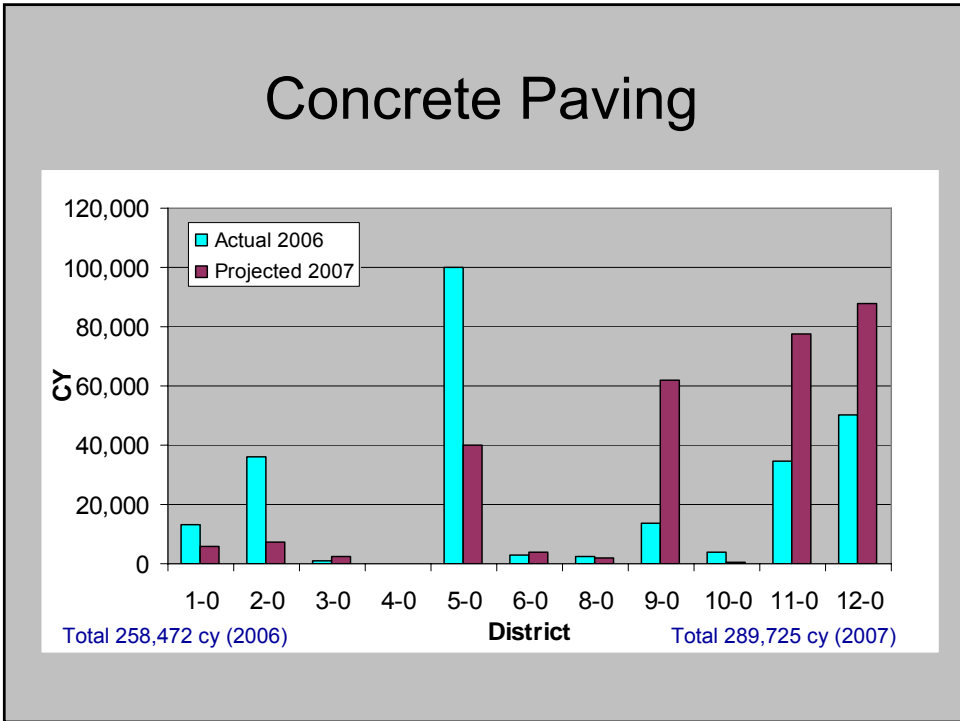
## Topics

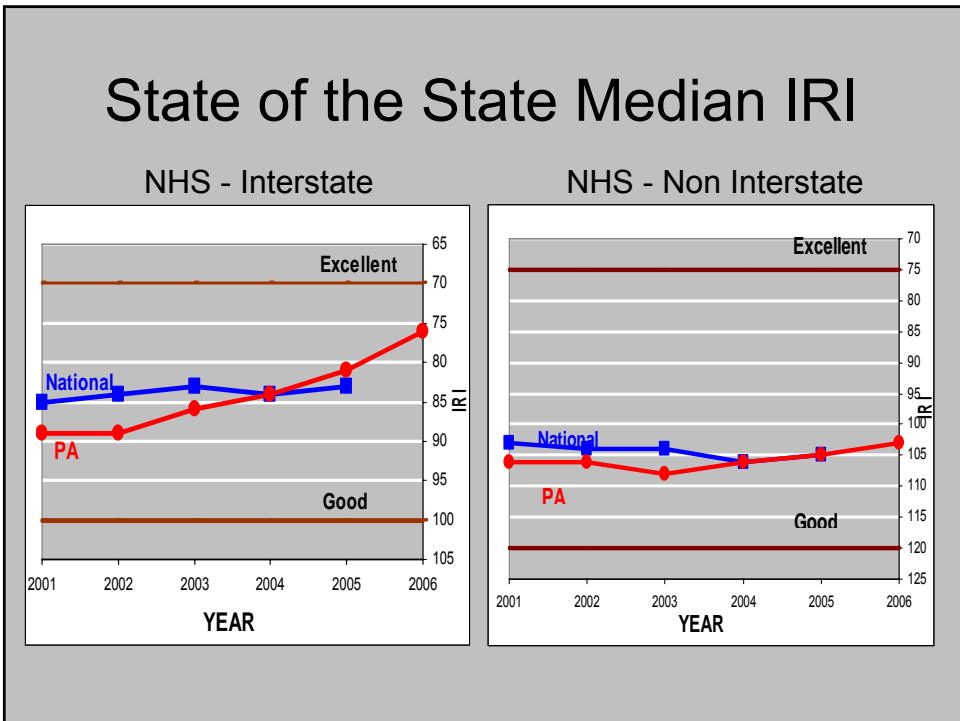
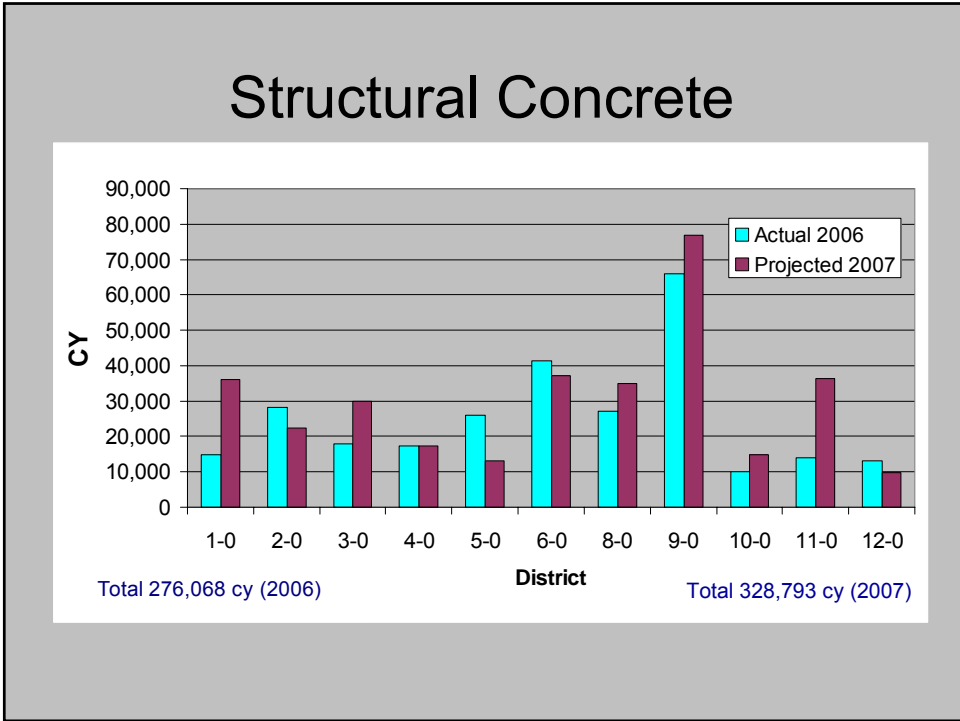
- **2007 Program Outlook**
- **Pavement Surface Trends**
- **Asset/Pavement Management/Preservation**
- **Concrete Testing**
- **Current Initiatives**
- **Challenges**

## 2007 Program Outlook

- **CY 2006**
  - \$1.697 Billion
  - ❖ \$528 Million for Bridges\*
- **CY 2007**
  - \$1.600 Billion
  - ❖ \$500 Million for Bridges\*

\* Does not include Flood Projects

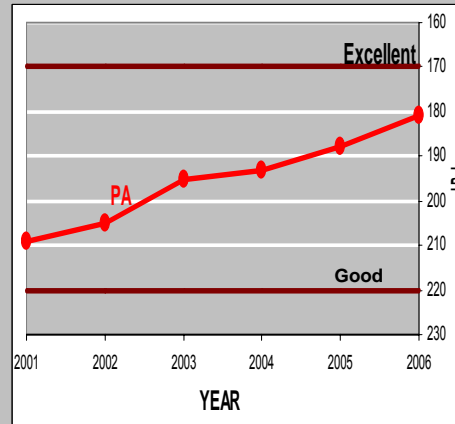
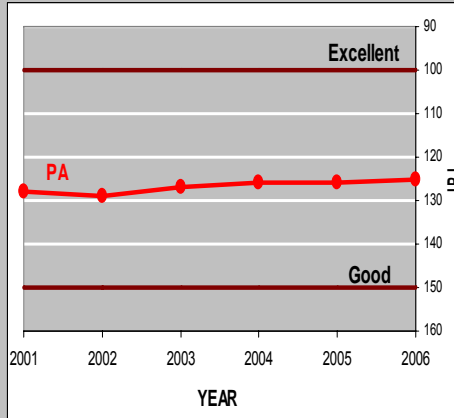




## State of the State Median IRI

Non-NHS w/ ADT ≥ 2000

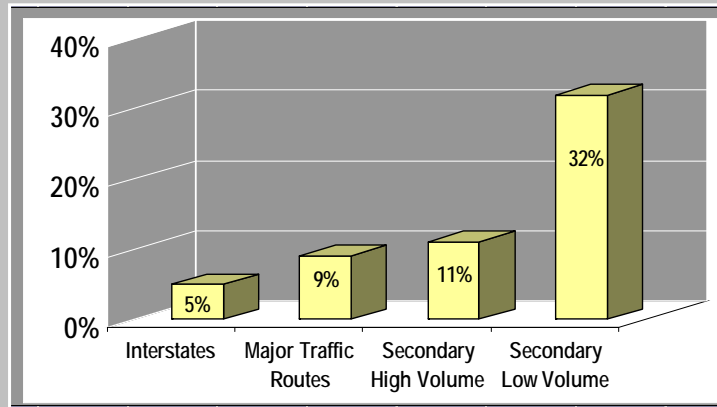
NON-NHS w/ADT<2000



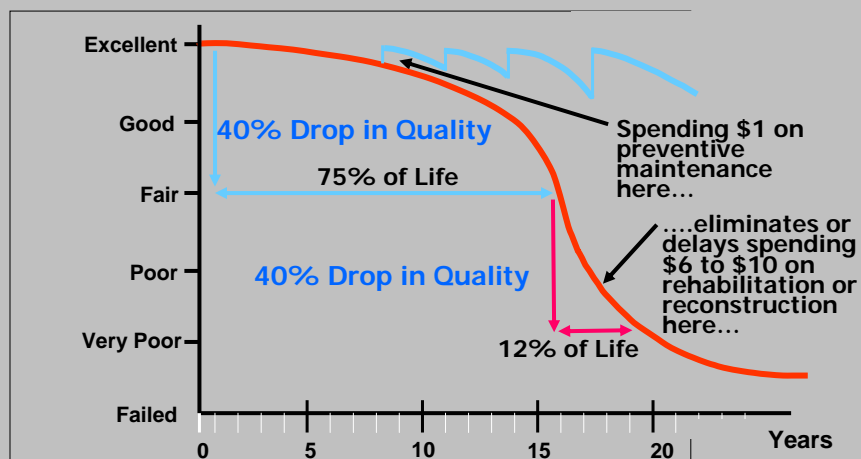
## Smoothness Bonus Payments

CY	Concrete Projects Paid Bonus	Total Bonus
2005	3	\$112,183.74
2006	3	\$96,370.59
TOTAL	6	\$208,554.33

## Poor Pavement Conditions

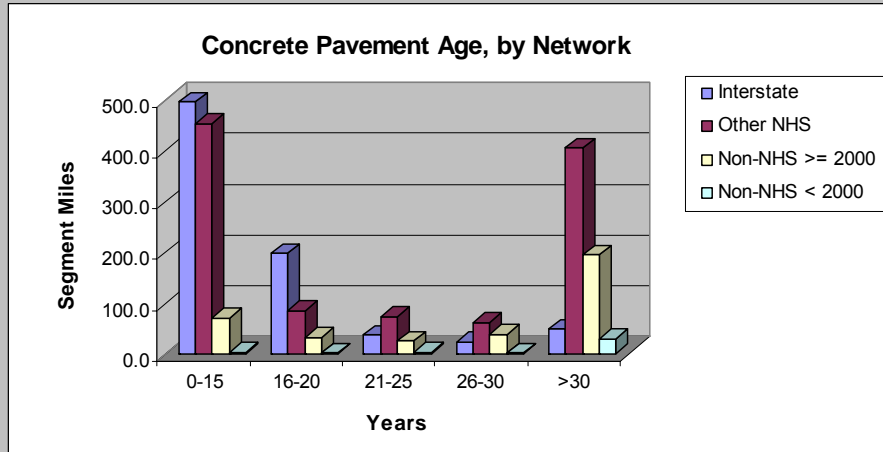


## Invest at the Right Time



Source: FHWA

## System Preservation



Segment Mile = Two Lane Miles

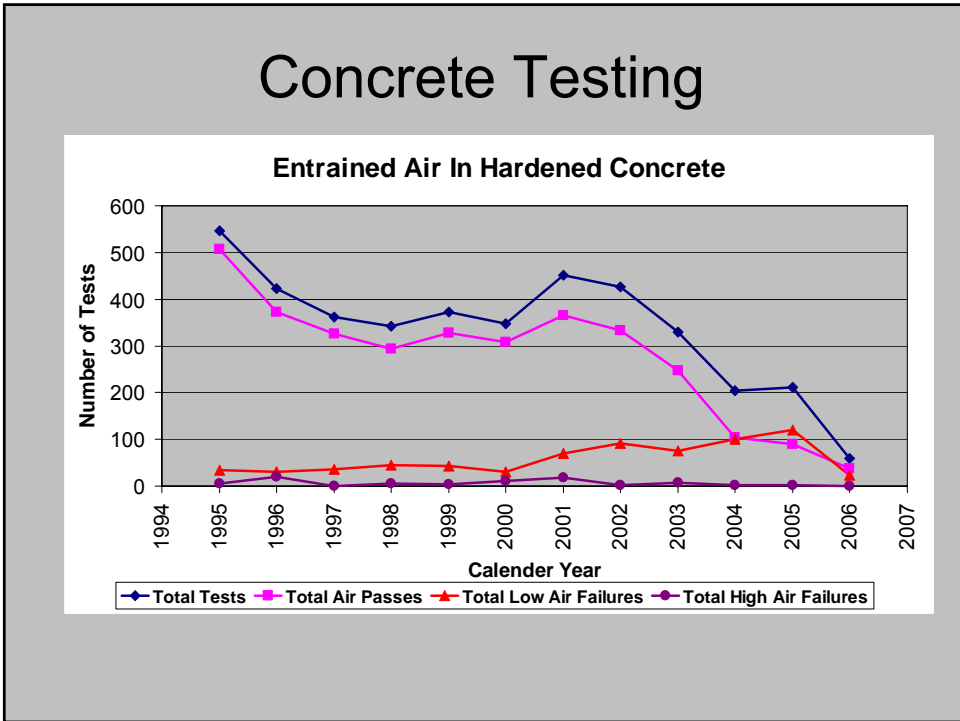
## Asset Management Strategy

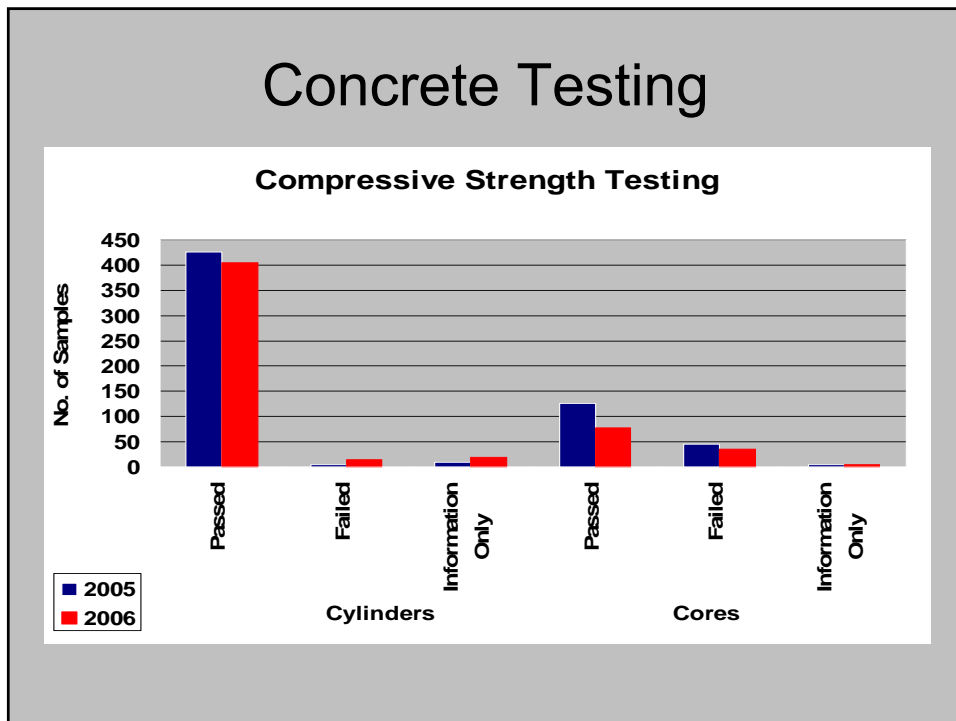
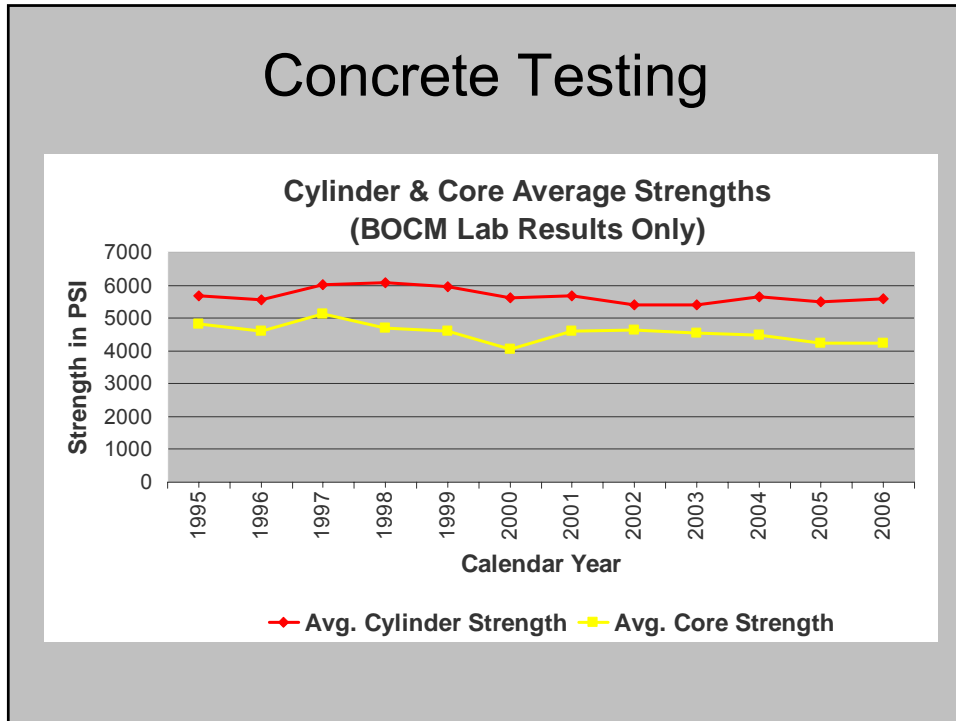
- High-level Concrete Roadways (Restoration)

<u>Activity</u>	<u>Frequency</u>
– Joint sealing / Spall repair	5 years
– Concrete patch	Year 15, 20 & 25
– Diamond grinding	Year 10 to 20
– Slab stabilization or Overlay	Year 20 to 30

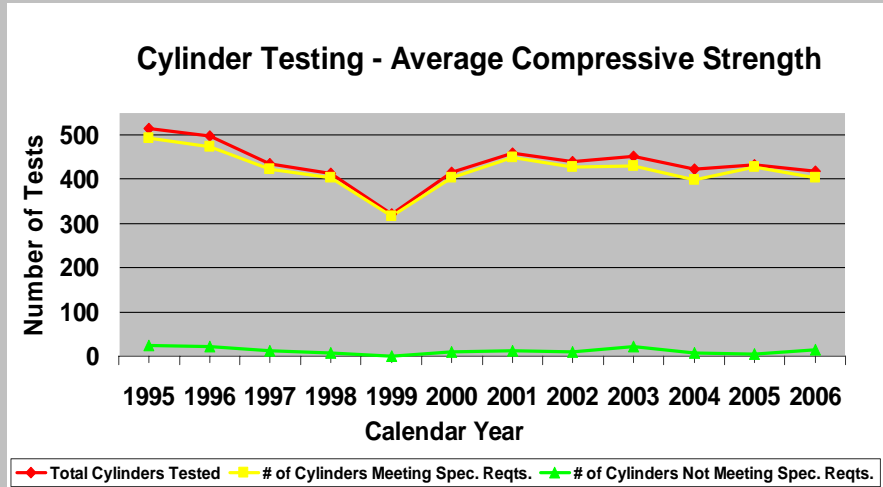
## Interstate Preservation

- \$370M Annually
  - Roadway & Bridges
- Asset Management Addressing Both Preservation and Rehabilitation
- Effectiveness Metrics

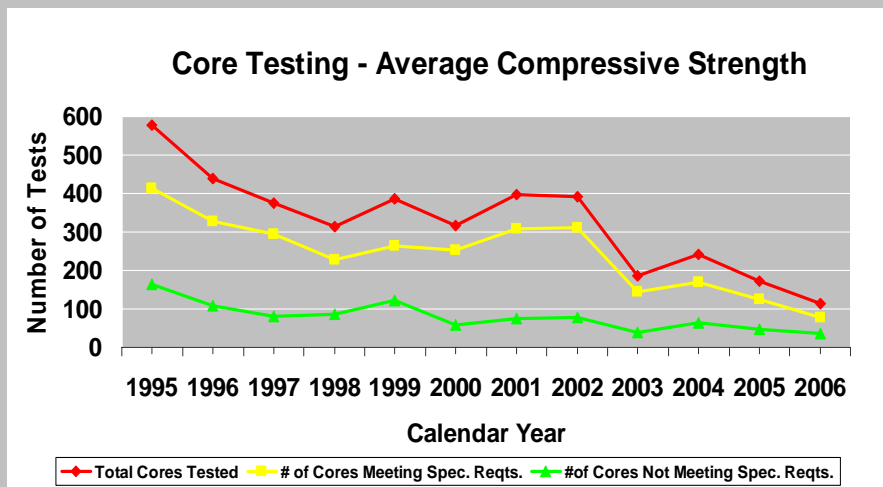




## Concrete Testing



## Concrete Testing



## Operational Improvements

- RC Standards have been revised for
  - reinforced concrete patching
  - alternate tie bar placement scheme (RC-20)
  - Both male and female keyways are now permitted
- Crack repair procedures revisions to Pub. 408 Sec. 501 Table A.

## Current Initiatives

- Concrete Pavement Restoration (CPR)
  - PENNDOT- ACPA developed training
    - ❖ District Training - Winter Schools
    - ❖ ACPA Training – Eastern & Western location

Year	Number of Projects
2005	57
2006	75

## Current Initiatives

- Inconsistency Publication 408
  - Section 501 & 506, Entrained Air (Hardened)
    - ❖ Both Sections revised, Entrained Air (Hardened) test results for information only

## Current Initiatives

- Concrete Freeze-Thaw Durability and Performance Group
  - Determine pavement performance based Hardened Air test results
    - ❖ Participants from FHWA, Concrete Industry & PennDOT
    - ❖ Complete study by May 31, 2007

## Current Initiatives

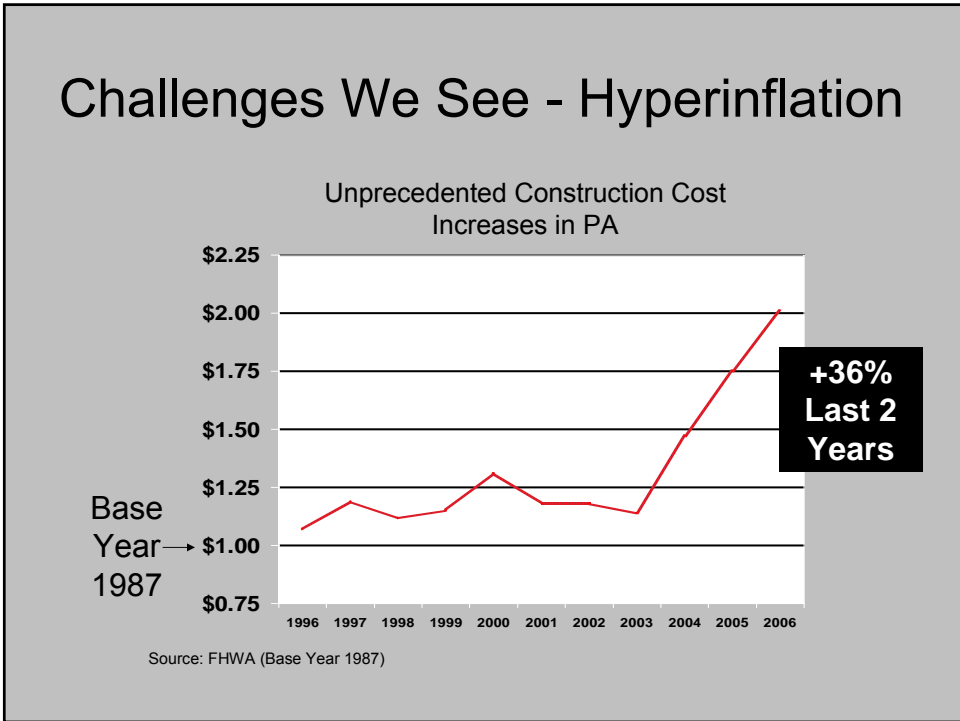
- Concrete Technician Certification Program
  - New Program Guidelines - Publication 536
  - Class Instructors, BOCM – QA Divisions
  - Estimated Savings \$237,600
    - ❖ Industry & PennDOT (combined total)

## Current Initiatives

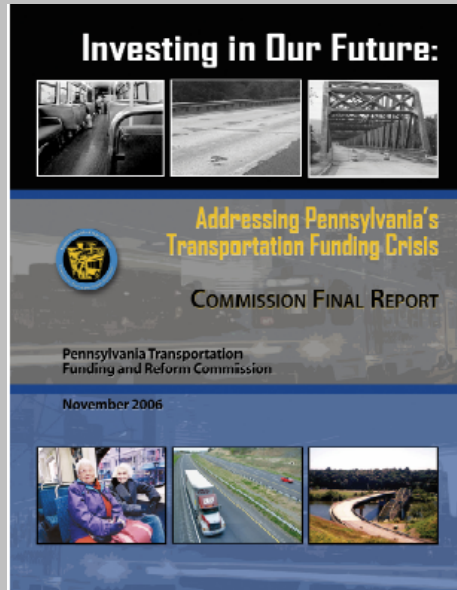
- Alternate Bidding
  - One Project Bid in 2006
    - ❖ District 2-0 S.R. 220 Sec. B12
  - Limited Projects Anticipated in 2007
  - Criteria for Project Lettings:
    - ❖ Both industries must be made aware of the upcoming Alternate Design Bid project
    - ❖  $(C = \text{User Cost} + \text{Annual Maintenance Cost} + \text{Maintenance Cost})$

## Future Initiatives

- Warranty / Guarantee
  - More Attention to Details
  - Performance Expectation
  - Yearly Operational Review
  - Contractor Maintenance Responsibility
  - Establish Reasonable Warranty Life



## Challenges – Investment Needs



## TF&RC Overall Findings



- Need for more revenue is real
- Opportunities exist for reform
- Guiding principles drive recommendations
- No new revenue without reforms

## Investment Needs



- Additional annual investment for state highways and bridges

Highway Preservation	\$461 million
Bridge Preservation	\$249 million
Capacity Management	\$115 million
Safety	\$38 million
Capacity Expansion	\$150 million
<b>Total</b>	<b>\$1.013 billion</b>

## Investment Results



- **\$461 Million Highway Preservation**
  - Eliminate Poor Ride Quality on:
    - ❖ All Highways > 2000 ADT
    - ❖ 50% of Highways < 2000 ADT
- **\$249 Million Bridge Preservation**
  - Reduce the % of SD bridges to the national average in 17 years

## COMMISSION RECOMMENDATIONS Reforms and Efficiencies



- Rightsizing and Smart Transportation
- Streamlined Project Delivery
- Strict Asset Management Practices
- Capacity Linked to Land Use

**\$120 Million**



Thank You for the Opportunity  
to be Here