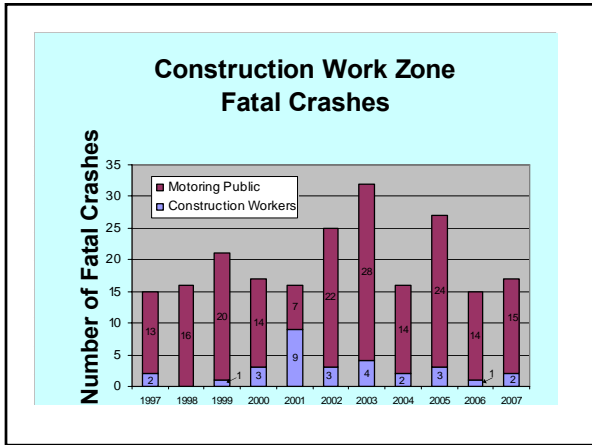
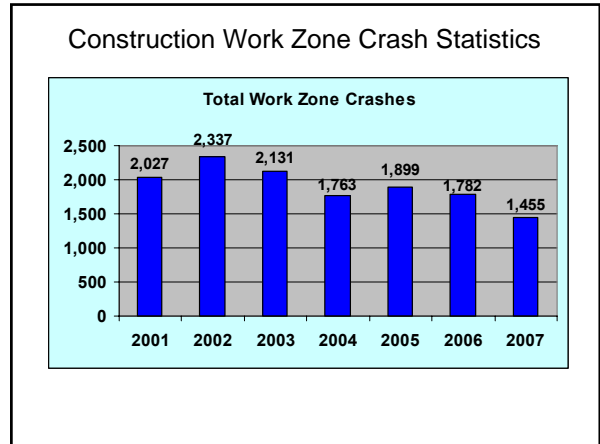


# Perspectives on Concrete

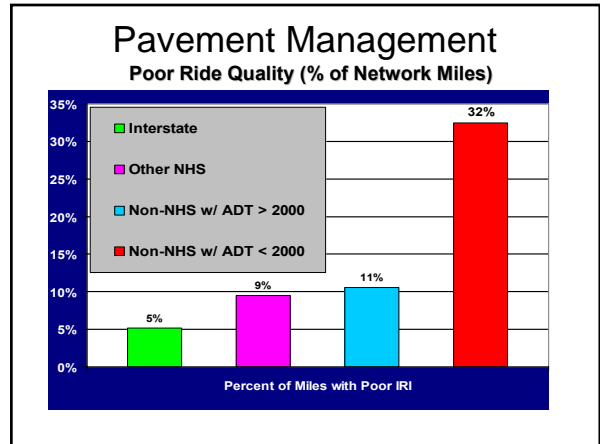
## ACPA and PennDOT

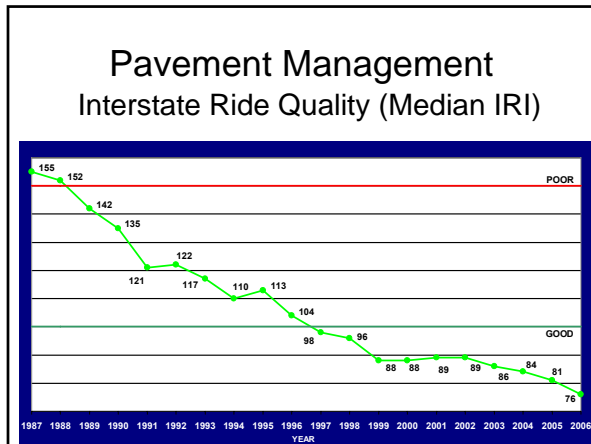
9<sup>th</sup> Annual Pennsylvania Concrete Conference  
January 30, 2008



- ## Topics
- Highway Administration Strategic Goals
  - Pavement Management
  - Concrete Initiatives
  - Concrete Pavement Confidence
  - 2008 Program Outlook

- ### Top 5 Highway Administration Strategic Goals
- Improve Bridges
  - Deliver Cost Effective, Timely Projects
  - Enhance Operations Efficiency and Security
  - Reduce Fatalities
  - Improve Effectiveness and Efficiency of Maintenance Operations





### Smoothness Bonus Payments

CY	Concrete Projects Paid Bonus	Total Bonus
2005	3	\$112,183.74
2006	3	\$96,370.59
2007	5	\$417,492.06
<b>TOTAL</b>	<b>11</b>	<b>\$626,046.39</b>

### Best 2007 IRI Smoothness

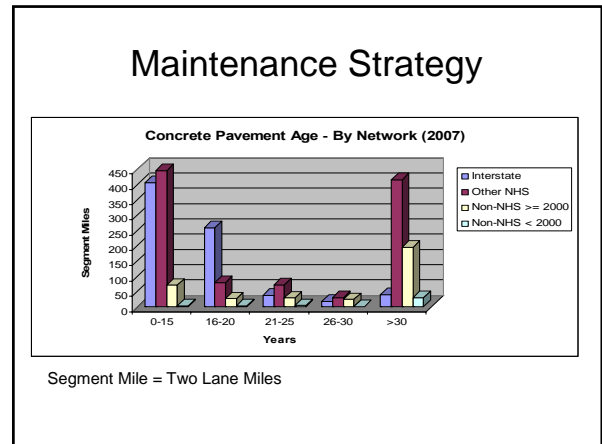
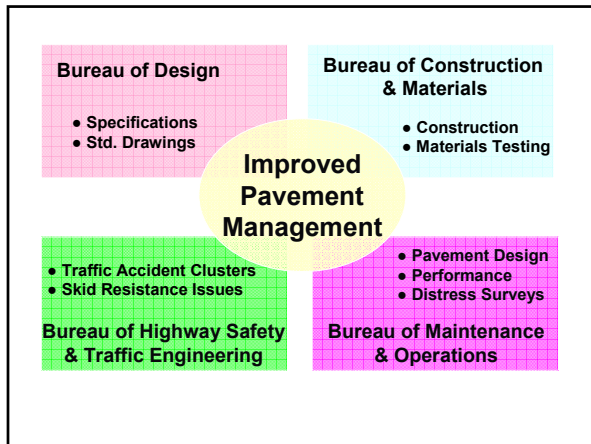
District	SR	Section	Total Payment	IRI Range
2-0	22	A09	\$ 96,520.00	35 to 68
5-0	78	ASR	\$ 9,500.00	35 to 69
5-0	78	11M	\$270,895.50	26 to 69
9-0	22	027	\$ 28,712.16	29 to 51
11-0	79	A12	\$ 11,864.40	48 to 57

- ### Pavement Management Strategic Goals
- Pavement Champion (**Single Neck**)
  - Construction and Material standardization
  - Standard pavement design process
  - Well defined maintenance strategies
  - Comprehensive performance measures
  - Pavement management training

### Pavement Management

- Best treatment to apply to a selected pavement section
- Maintenance and rehabilitation strategies at the right time
- Drive Continual Improvement

- ### Pavement Management
- **Keep Good Roads Good!!!**
  - Focus on higher level roadways first
    - Interstates
    - Other NHS
    - Non-NHS with ADT > 2000
    - Non-NHS with ADT < 2000
  - Do not neglect lower facilities
  - Balance rehabilitation and preservation



### Concrete Initiatives

- Entrained (Hardened) Air Report
- Concrete Pavement Restoration (CPR)
- Slab Cracking on Permeable Bases
- National Concrete Pavement Technology Center (Iowa State University)

### Entrained (Hardened) Air Report

#### Findings

- No Freeze-Thaw distresses identified
- Located 82 cores of the 128 sites observed

#### Conclusions

- The previous image analyzer testing method was not reliable in forecasting F/T performance

### Recommendations

1. Continue to collect testing data for information only and evaluate testing methods
2. Use roadway Segment/Offset for location of cores in CAMMS data
3. Improve future core location accuracy using handheld GPS technology
4. Establish a Pro Team to investigate pavement deterioration
5. No specification revisions are proposed from the results of this study

### Concrete Initiative

- Concrete Pavement Restoration (CPR)
  - PENNDOT - ACPA developed training
  - ❖ District Training - Winter Schools
  - ❖ ACPA Training - PA Concrete Conference

Year	Number of Projects
2005	57
2006	75
2007	194

### Slab Cracking in Concrete Pavement on Treated Base

- Results of August 2007 query of the concrete condition data in Roadway Management System:

Base Type	Total Miles	Total Segments	Total Slabs	Slabs with Trans. Cracks	% Total Slabs w/ Trans. Cracks
ATPBC & CTPBC	251.2	513	70,143	252	0.36

### Slab Cracking in Concrete Pavement on Treated Base

- Roadway condition data assessed for concrete pavements with treated bases
- Preliminary Conclusion:
  - Treated bases have helped reduce the amount of cracking vs. OGS bases

### Concrete Initiatives

- National Concrete Pavement Technology Center (NCPTC) at Iowa State University



✓ 515-294-5798  
 ✓ www.cptechcenter.org

Contact:  
 Iowa State University  
 Jim Grove, 515-294-5988  
 JIMGROVE@IASTATE.edu

NCPTC, Associate Director  
 Peter Taylor, 515-294-9333  
 PTAYLOR@IASTATE.edu

### 2007 Concrete Pavement Projects Opened to Traffic

- District 2-0
  - SR 22/322, Mifflin Co. & Juniata Co.
- Districts 2-0 & 9-0
  - SR 220 (I-99), Centre Co. & Blair Co.
- District 9-0
  - SR 22, Blair Co.

### US 22/322 Mifflin/Juniata Co.

Contractor: Walsh Construction Co. of Illinois  
 Project Cost: \$111 Million



### US 22/322 Mifflin/Juniata Co.

- US 22/322 Narrows ECMS# 4648
- Contractor: Walsh Construction Co. of Illinois
- Project Cost: \$111 Million
- Scope: Widening of existing US 22 to 4 lanes for approx. 6.5 miles. 175,852 SY of 12" depth concrete pavement
- Road opened to 4 lanes of traffic 9 months ahead of schedule
- Largest dollar highway contract awarded in Pennsylvania history

### US 220 (I-99) Centre/Blair Co.

Contractor: New Enterprise Stone & Lime  
Project Cost: \$34 Million



### US 220 (I-99) Centre/Blair Co.

- US 220 Bald Eagle to Port Matilda
- Contractor: New Enterprise Stone & Lime
- Project Cost: \$34 Million
- Scope: Approx. 9 miles of new four lane limited access paving and associated work items. 238,209 SY Concrete Pavement, 10" Depth
- Contractor's option for bituminous or concrete. Contractor chose concrete mainline with bituminous shoulders

### US 22 Truck Climbing, Blair Co.

Contractor: New Enterprise Stone & Lime  
Project Cost: \$9.6 Million



### US 22 Truck Climbing, Blair Co.

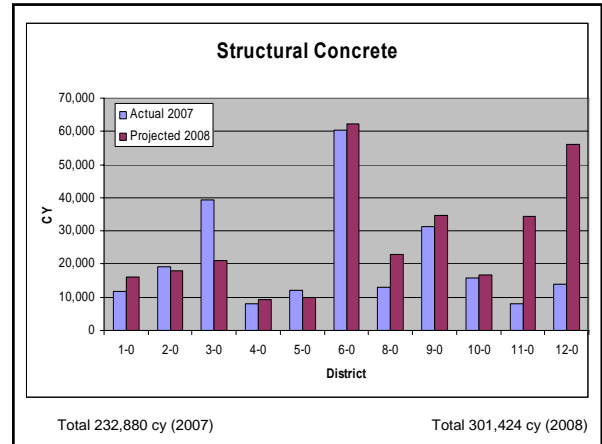
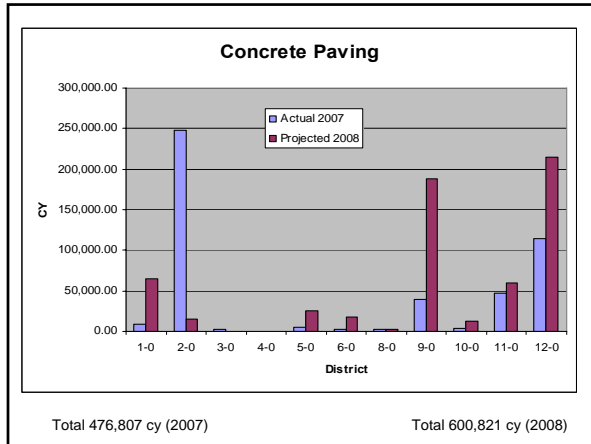
- SR 0022 Section 027 ECMS# 22042
- Contractor: New Enterprise Stone & Lime
- Project Cost: \$9.6 Million
- Scope: Removal & reconstruction of the truck climbing lane and right shoulder on 6 miles of westbound US 22. 77,400 SY of 12.5" depth concrete pavement.
- Design/build project
- Average IRI of 39

### Concrete Pavement Confidence

- **Longevity**
  - o 680 miles over 30 years
- **Performance Expectation (Design Life)**
  - o 924 miles under 15 years
- **Preservation (CPR)**
  - o 578 miles over 15 under 30 years
- **Contractor Responsibility**
  - o Attention to Details – QC / Workmanship
- **Perception issues**
  - o Cracking / Durability

### Project Lettings

- CY 2007
  - \$2.024 Billion
- CY 2008
  - \$2.024 Billion + \$1



### 2008 Construction Program Major Concrete Projects

District	SR	Sec	Est. Cost Range (\$)	Location
8	15	020	50M – 60M	PA 581 EB Lane Widening
11	579	A07	5M – 10M	North Shore Expressway
12	22	B10	25M – 30M	Westinghouse - Co. Line

Thank you for the opportunity  
to be here!