

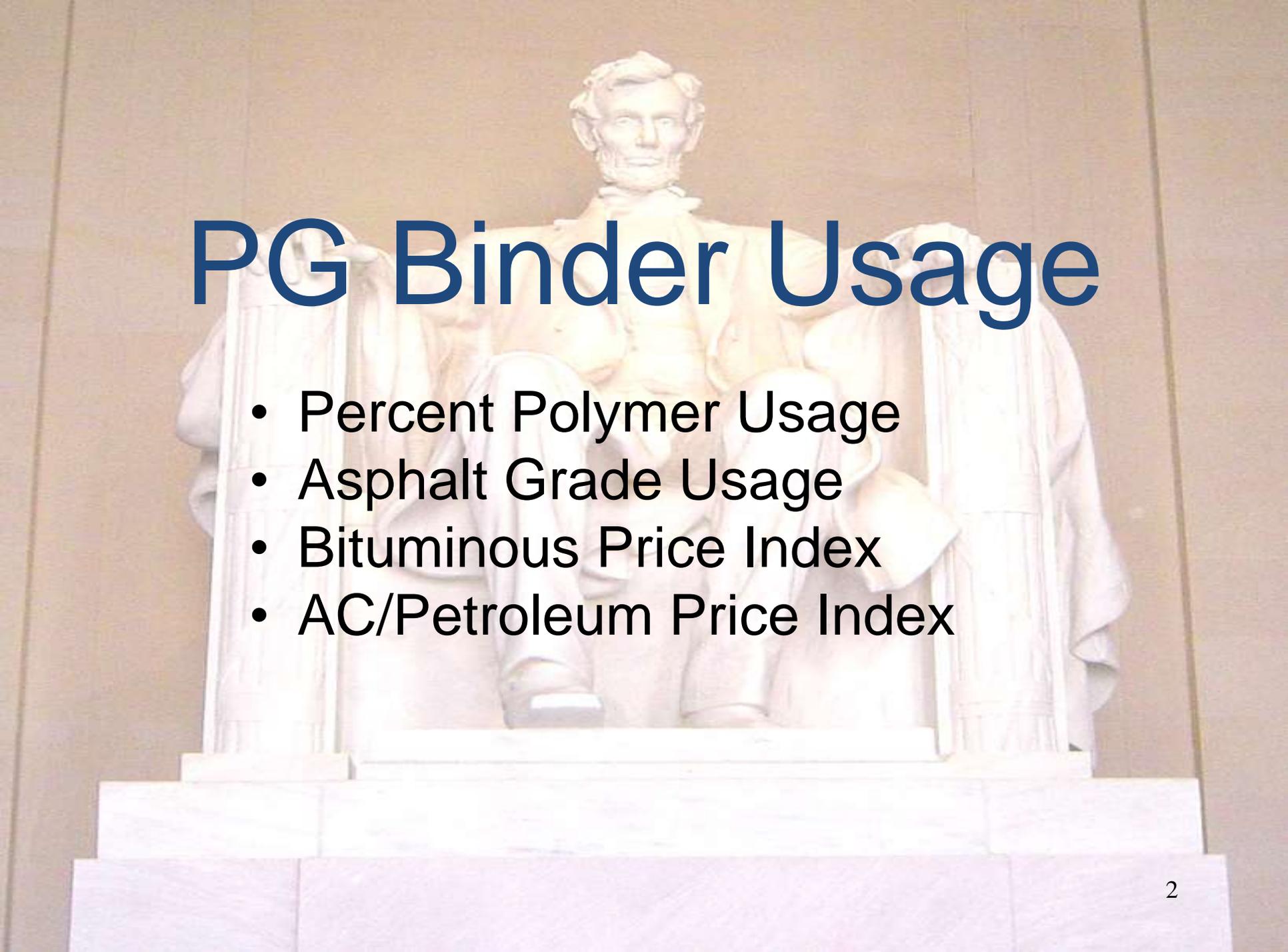
# **IDOT HMA Update**

**Christine M. Reed, P.E.**

Director Division of Highways  
Illinois Department of Transportation

**Illinois Asphalt Paving Association**

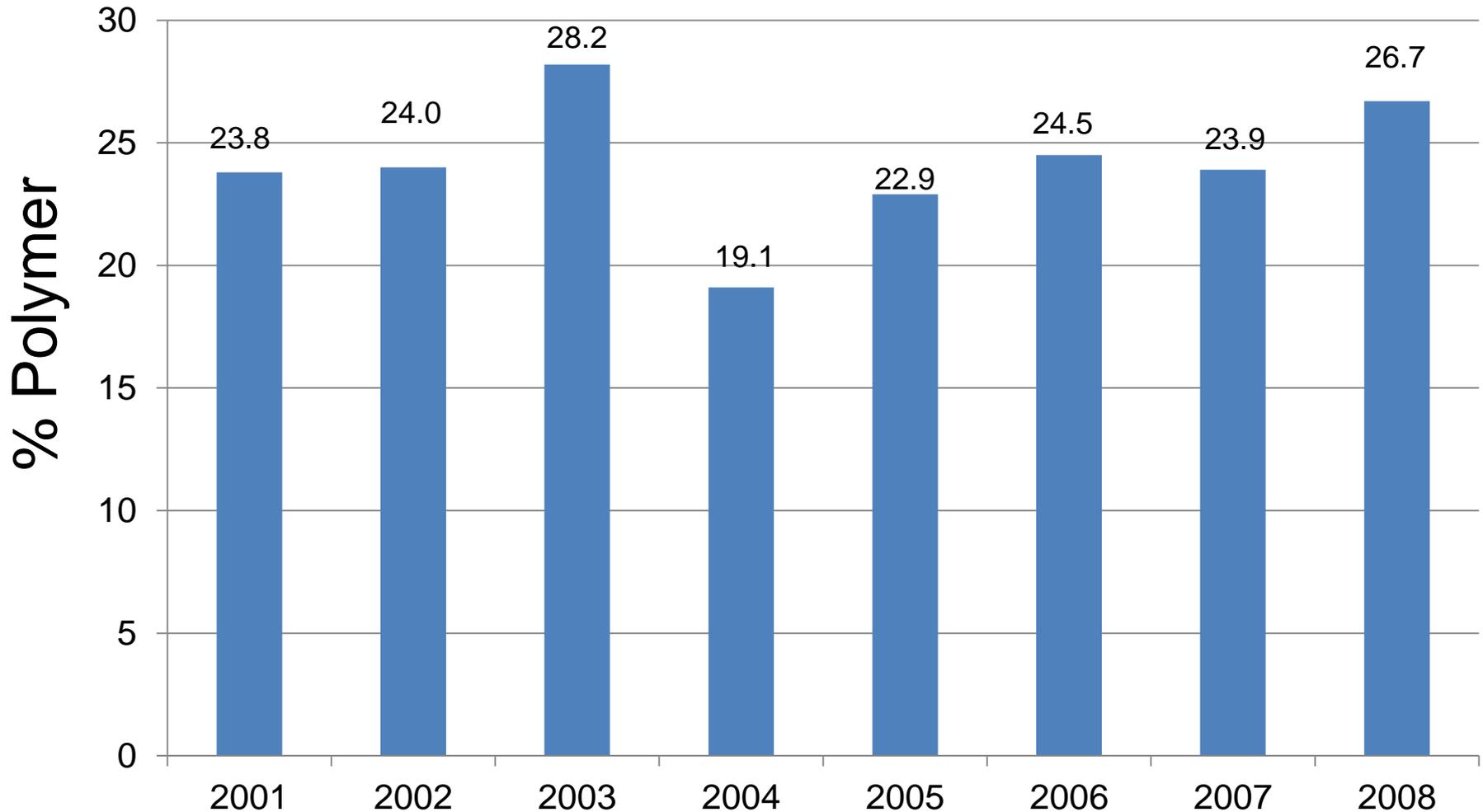
Annual Meeting  
March 9, 2009

A large, white marble statue of Abraham Lincoln, seated and facing forward, is the background of the slide. The statue is set on a multi-tiered white marble pedestal. The background behind the statue is a light-colored, vertically-paneled wall.

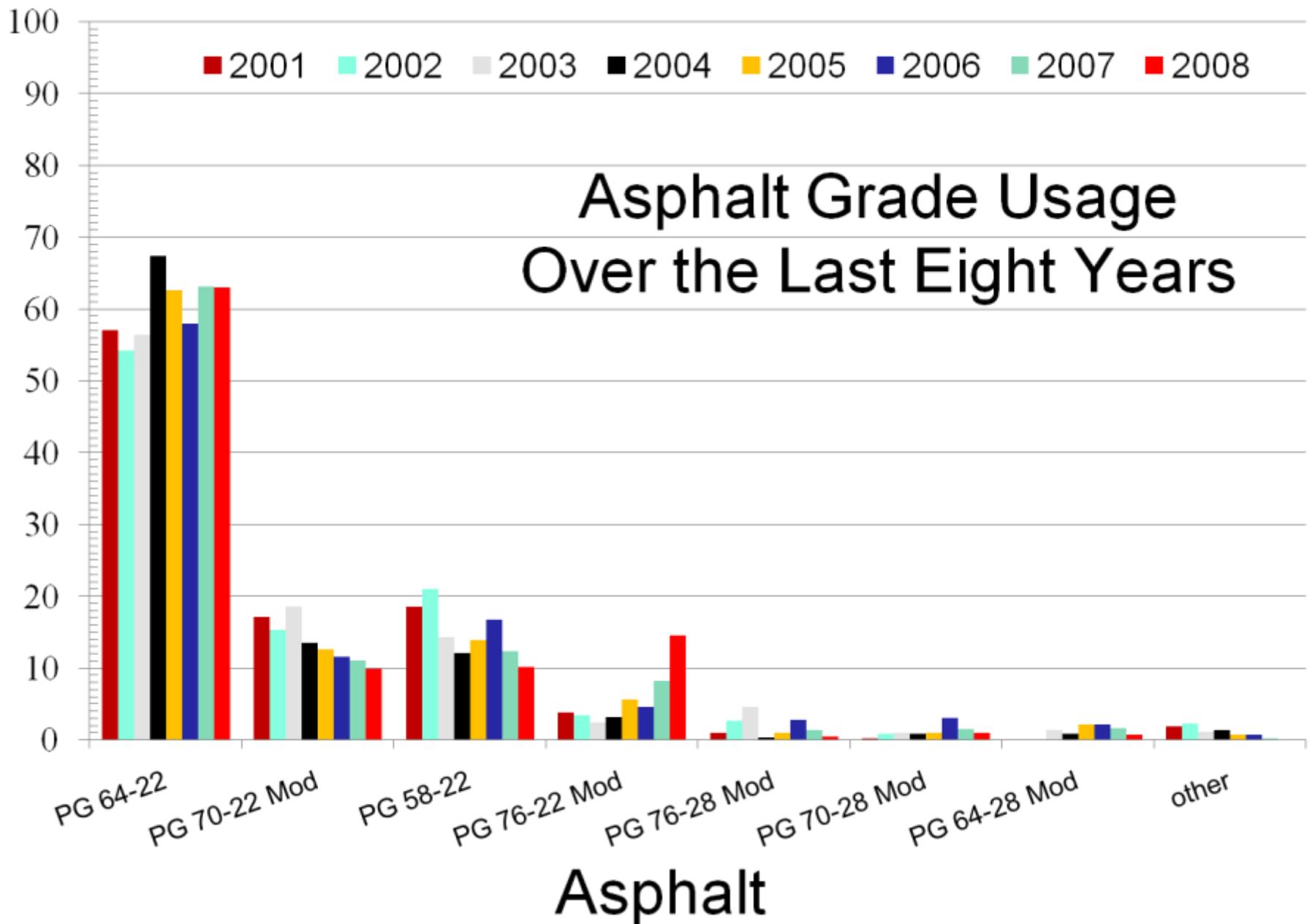
# PG Binder Usage

- Percent Polymer Usage
- Asphalt Grade Usage
- Bituminous Price Index
- AC/Petroleum Price Index

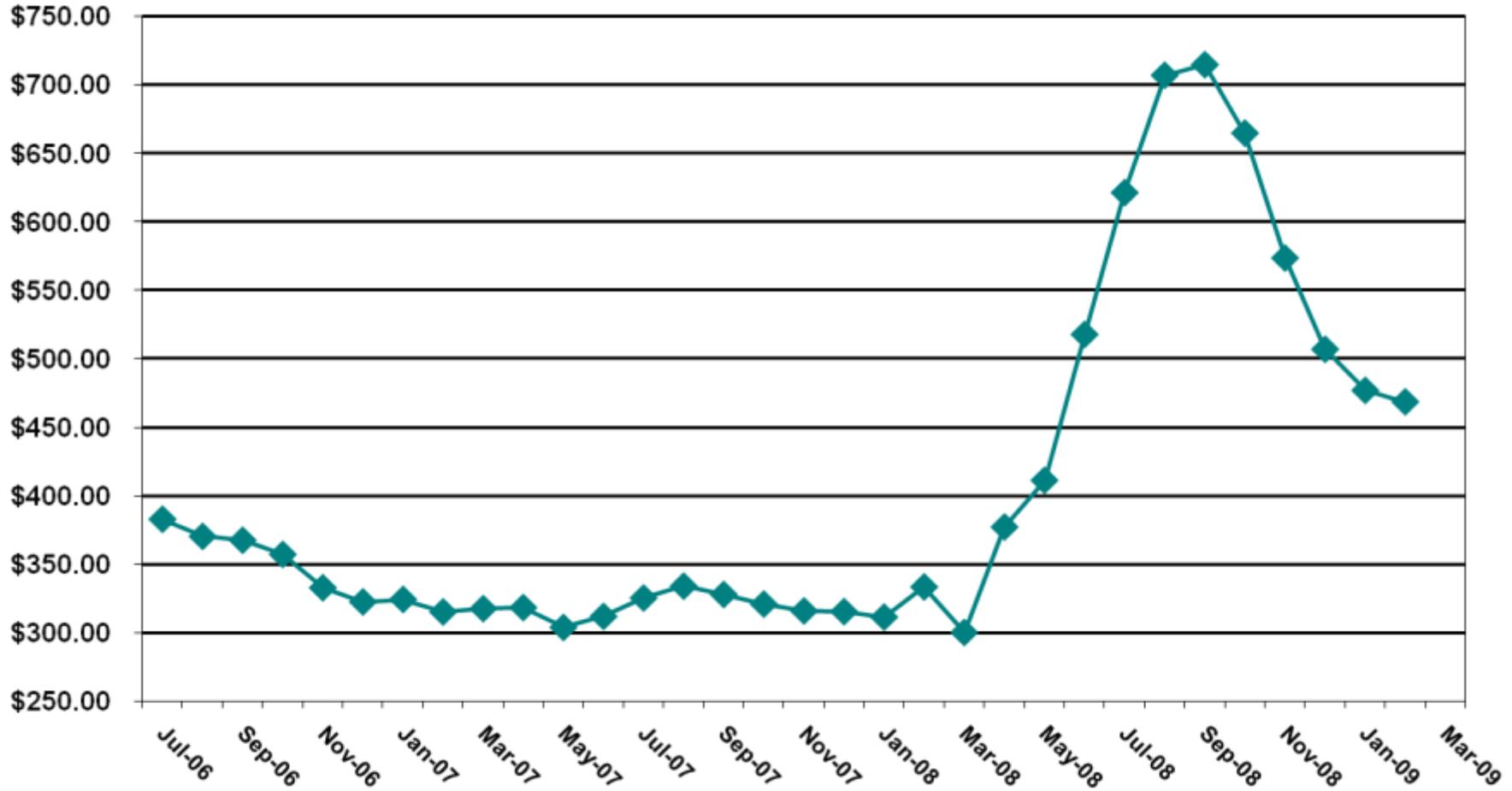
# Percent Polymer Usage Over the Last Eight Years



# Asphalt Grade Usage Over the Last Eight Years

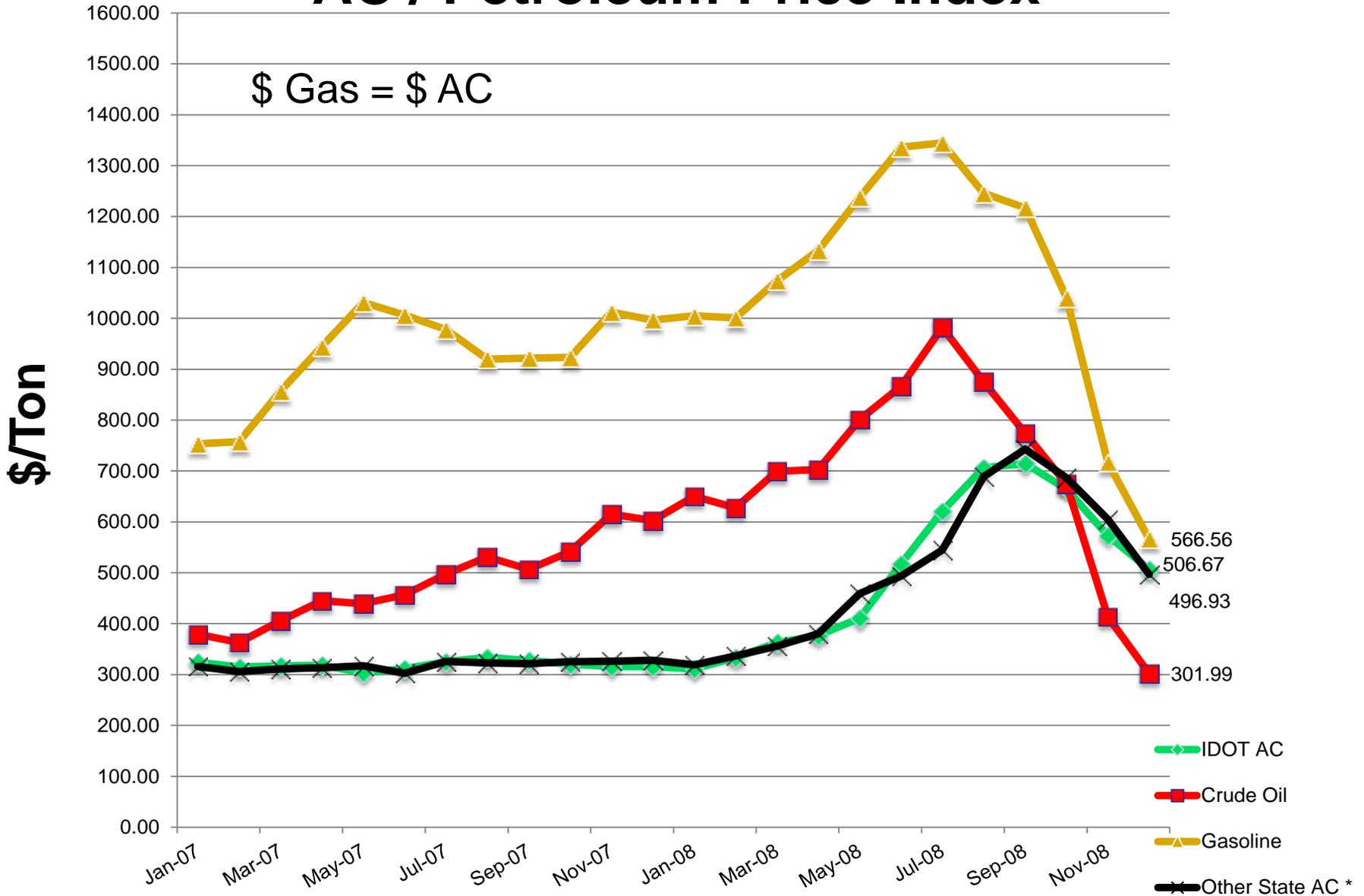


# Bituminous Price Index



# AC / Petroleum Price Index

\$ Gas = \$ AC



# Green Movement Impacts to HMA

- RAP
- WMA
- Tire Rubber

# RAP Update

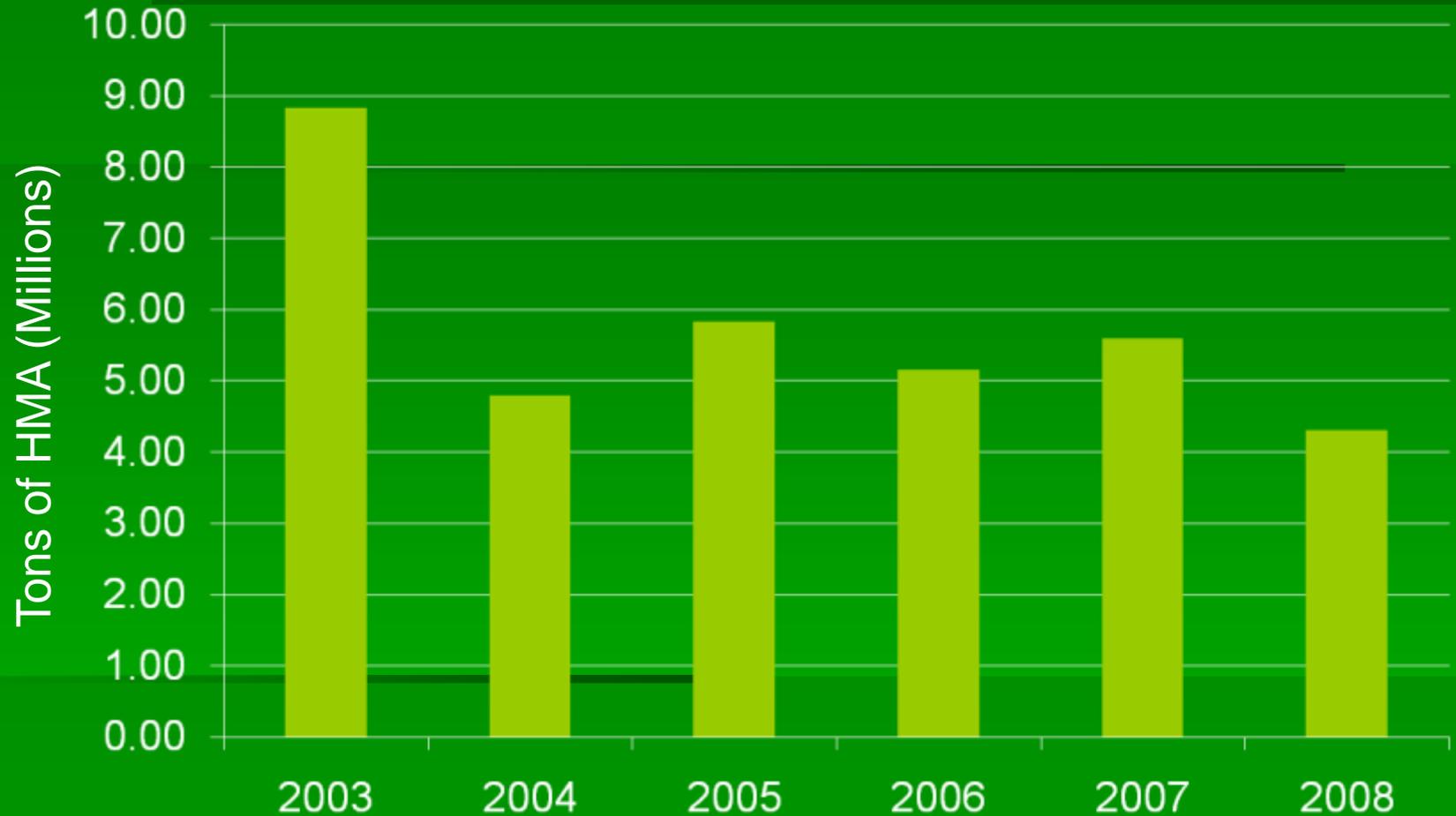


# 2008 Max RAP % Changes

<b>N-Design</b>	<b>Binder/ Level Binder</b>	<b>Surface</b>	<b>With Polymer</b>
<b>30</b>	<b>30</b>	<b>30</b>	<b>NA</b>
<b>50</b>	<b>25</b>	<b>15</b>	<b>10</b>
<b>70</b>	<b>15/25*</b>	<b>10/15*</b>	<b>10</b>
<b>90</b>	<b>10</b>	<b>10</b>	<b>10</b>
<b>105</b>	<b>10</b>	<b>10</b>	<b>10</b>

\*RAP Max Percentage 3/8" Top size

# Production History w/RAP Percent



**% RAP**

**8.3**

**10.2**

**7.7**

**8.8**

**10.3**

**9.3**

# RAP Usage

- **Still have issues**
- **District 1 area still has significant RAP surplus**
- **High RAP Mixes difficult to control with single feed**
- **Would like industry to move to fractionation with 2 or more bins**

# Aggregate Quality of RAP

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- Quality Issue
  - Surface A or B quality
  - Binder A, B or C quality
  - Shoulders A, B, C or D quality
- Tracking quality is difficult
- Mixed piles could have multiple qualities
- Recently developed procedures for assigning aggregate quality of RAP

# Aggregate Quality of RAP

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- Quality determination procedures:
  - Crush/screen pile up to 5,000 tons
  - Sample – Multi locations and blend
  - Extract AC off aggregate
    - Trichloroethylene
    - N-Propyl Bromide (a bit safer)
  - Send aggregate sample to Springfield for testing
  - If passes assigned “B” Quality to aggregate

# RAP Aggregate Quality Micro Deval Test

Sample +  
with Water





# Before

Note sharp edges



# After

Rounded edges

# Latest RAP Spec

- Encourages Fractionated and Warm Mix Asphalt (WMA)
- Added Options for:
  - Fractionated RAP (FRAP)
    - Allows higher RAP percentages
  - Warm Mix Asphalt (WMA)
    - Reduced grade bumping:
      - > 20% - Single grade bump
      - > 30% - Double grade bump
- Department has provided tools - up to industry to increase usage

# Warm Mix Asphalt

- WMA – Contractor's proposal
- Key elements:
  - Technology to be used will be reviewed
    - Limiting “wax” type modifiers to overlays due to impacts to PG grading of asphalt
    - Haul time concerns for water based systems
  - Still must meet specifications
    - Density
    - Mix properties

# Ground Tire Rubber Modified AC

- Developing Spec for use on State jobs
  - Based upon approved PG 64-22
  - Add 10% approved Ground Tire Rubber
- Will be specified as “64-22 GTR 10”
- Will not be running PG grading on final product as test are not valid (rubber particles give false readings)
- Will be used as a replacement for SBS 70-22

# Full Depth AC and Rubblization Design Updated

Generally:

- Included in Bureau of Design and Environment Manual
- Working to update both Design and Selection Processes

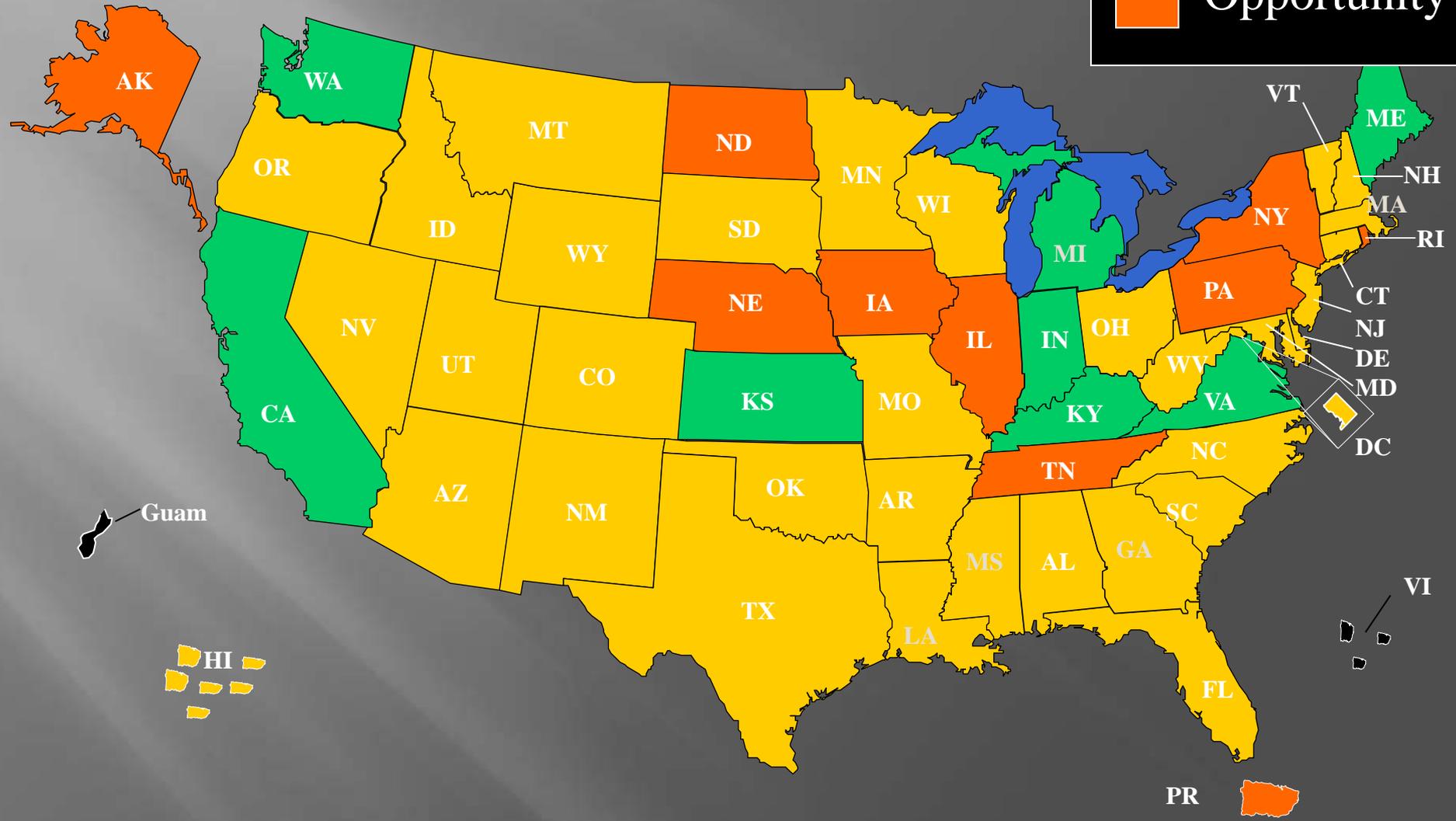
# FHWA Technical Advisory (TA)

- ▣ Recent Meeting w/ FHWA (DC & IL) & IAPA
  - Concern that a recent national survey identified IL's QC/QA as having fraud risk.
  - Increased pressure on Illinois to change HMA QA.
  - IDOT will work w/ FHWA to develop a plan for improvement.



# Ratings of State QA Systems

Green	Advanced
Yellow	Intermediate
Orange	Opportunity



12/17/2008

21

21

# HMA Pay for Performance

- New roles for Construction and Materials
  - Mix may be sampled behind paver at random locations
  - Department must witness
  - Immediately take possession or securely seal it
- Security of samples must be maintained
- Dist 1 moving forward quickly with trials
- Downstate expect 1-2 projects for 2009

# Pay for Performance (PFP)

- PFP is ERS w/ pay based on Dept. test results
- PFP does address all of FHWA's concerns
- District #1 awarded 3 PFP contracts & constructed 2 in 2008
- Positive experience on 2 constructed:
  - Extra vib. roller on both projects (better density)
  - Voluntarily replaced paver on 1 project
  - Voluntarily called off paving w/ forecast of rain on 1 project

# Pavement Warranties

## ● Legislative Mandate (1999):

- 20 Contracts

- 10 Contracts to have 30-year life cycle

- 5-years in length

- Transfers risk from the Department to the contractor.

# Warranty Projects by Project Type

<b>Project Type</b>	<b>Number of Projects</b>
<b>HMA Overlay</b>	<b>3</b>
<b>Full Depth HMA (20-yr.)</b>	<b>2</b>
<b>Full Depth HMA (30-yr.)</b>	<b>7</b>
<b>Concrete (20-yr.)</b>	<b>3</b>
<b>Concrete (30-yr.)</b>	<b>12</b>
<b>Concrete (40-yr.)</b>	<b>1</b>
<b>TOTAL</b>	<b>28</b>

# Warranty Repairs

**HMA**

**Sealing (3 projects)**

**Patching (1 project)**

**PCC**

**Patching (3 projects)**

# Warranty Future

- **Three projects with warranties expiring in 2009.**
- **Remainder do not expire until 2010 or 11.**
- **Will continue to monitor sections.**
- **No future plans to warranty new projects at this time.**



# Thank You



Lincoln's Home