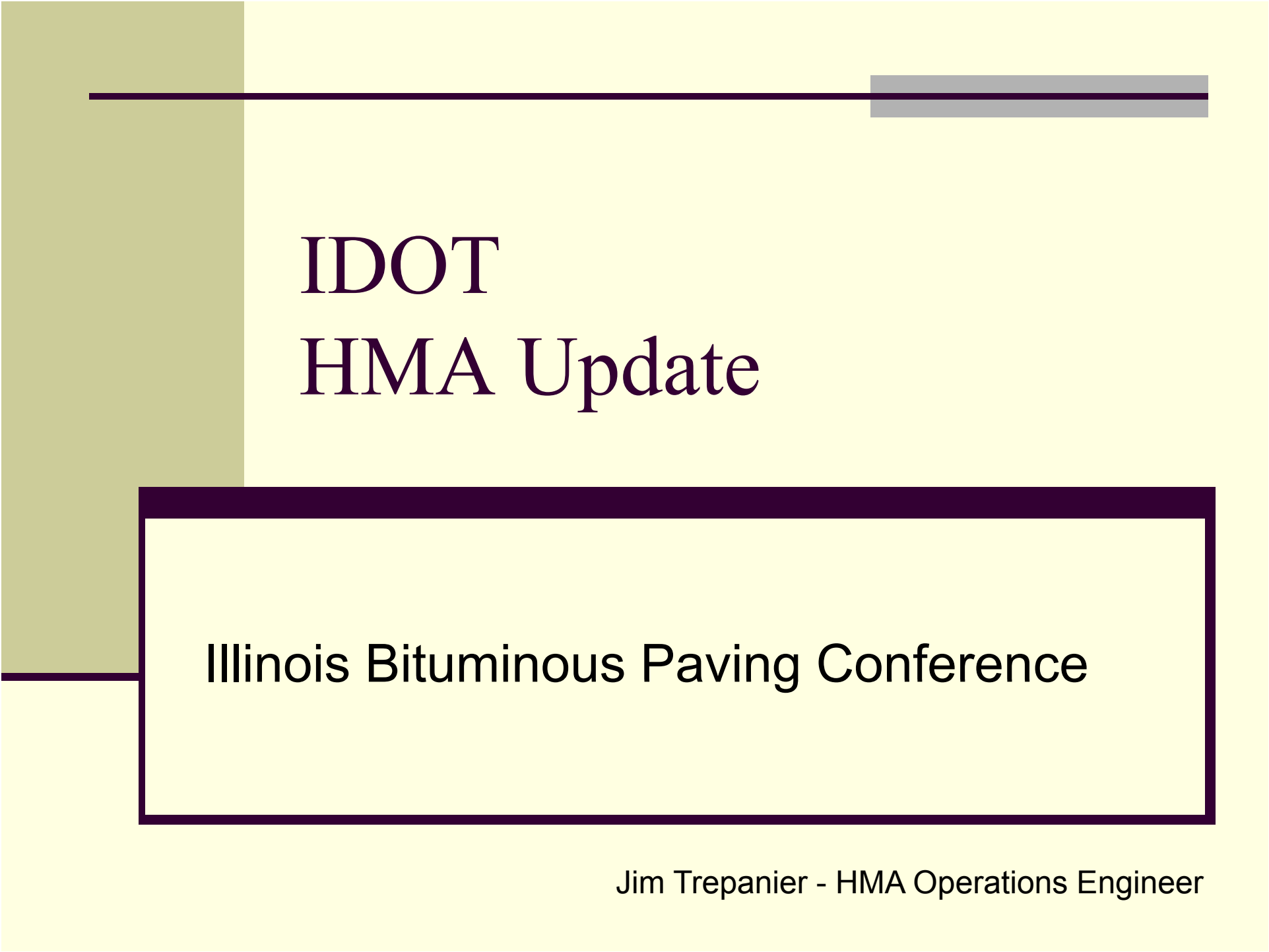




IDOT HMA Update

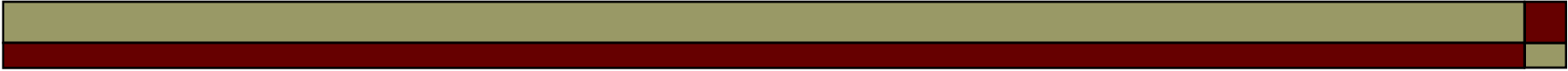
Illinois Bituminous Paving Conference

Jim Trepanier - HMA Operations Engineer

Topics

- Interstate Rutting Study
- Pavement Preservation
- Profile Equipment Verification (PEV)
- Pay for Performance
- AASHTO Site-Manager
- PG Binder Usage
- Specifications

Interstate Rutting Study

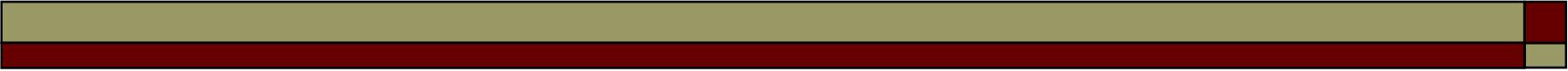


Sections selected based on:

- ❑ Premature rutting
- ❑ Age (typically ≤ 10 years)
- ❑ Van rut data (> 0.25 in.)
- ❑ Visual observation
- ❑ Suggested by District
- ❑ Proximity to Springfield

District #5 Sections Cored:

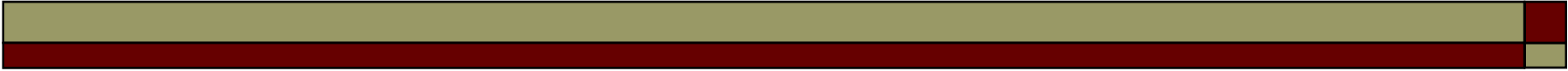
- I-55
 - Contract 86963 - N. of Bloomington (2002)
 - Section w/ rutting
 - Section w/ no rutting
 - ERS Contract 86993 - S. of Bloomington (2001)
 - Contract 86992 - adjacent to ERS w/ same conditions (2002)
 - Section w/ rutting
 - Section w/ no rutting
- I-74
 - Contract 86721 - E. of Bloomington (1997)
 - Section w/ rutting
 - Section w/ no rutting



District #6 Sections Cored:

- I-55
 - Contract 92806 – N. of Spfld. (1998)
 - Contract 72072 – 37 miles N. of Spfld. (1999)

- I-72
 - Contract 72003 – E. of Spfld (2000)
 - Contract 92806 – E. of Spfld (1997)



District #8 Sections Cored:

- I-55
 - Contract 96720
 - Contract 96721
 - Contract 76A84

The Results

Dist. 5 - ERS Companion Project

Surface BWP

	Rutting	No rutting
Uncond. Strength	101.6	119.6
Cond. Strength	83.1	98.9
TSR	0.82	0.83
Strip Rating	3.0/2.0	3.0/2.0
Density	91.9	92.8*
Dust / AC	1.39	1.49

Dist. 5 - ERS vs Companion Project Surface BWP

	Companion w/ rut	ERS
Uncond. Strength	101.6	88.2
Cond. Strength	83.1	95.0
TSR	0.82	1.08
Strip Rating	3.0/2.0	3.0/2.0
Density	91.9	93.1*
Dust / AC	1.39	1.06

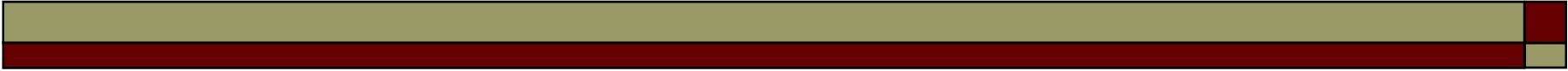
Dist. 5 - ERS Companion Project

Binder BWP

	Rutting	No rutting
Uncond. Strength	51.1	74.1
Cond. Strength	35.9	60.3
TSR	0.70	0.81
Strip Rating	3.0/2.2	2.8/2.0
Density	94.1	95.8*
Dust / AC	1.47	1.46

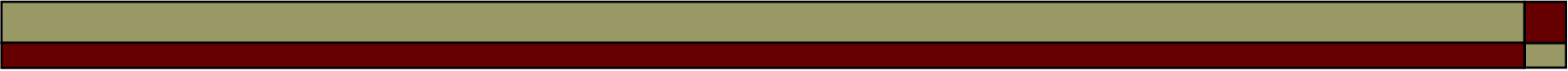
Dist. 5 - ERS vs Companion Project Binder BWP

	Companion w/ rut	ERS
Uncond. Strength	51.1	52.9
Cond. Strength	35.9	56.4
TSR	0.70	1.07
Strip Rating	3.0/2.2	3.0/2.5
Density	94.1	93.0
Dust / AC	1.47	1.41



District #5 Observations - Surface

- ❑ All had potential for stripping based on visual strip ratings after conditioning
- ❑ Appears difference between rutted & non-rutted sections in same contract was higher density in non-rutted sections
- ❑ Companion project to ERS was made more susceptible to moisture damage due to out-of-control dust & lower density



District #5 Observations - **Binder**

- All had low tensile strengths w/ & w/out conditioning
- All had high visual strip ratings after conditioning
- All had failing TSR's except the ERS & no-rut area of companion project
- All had excessive Dust/AC ratios making mix even more susceptible to moisture damage

Pavement Preservation



PP Projects Since FY05



- Projects Constructed to Date:
 - 6 A-1 Bituminous Surface Treatments
 - 15 Single-Pass Micro-Surfacing
 - 23 Two-Pass Micro-Surfacing
 - 5 Single-Pass Slurry Seals
 - 14 Cape Seals (A-1 BST + 1-Pass Micro)
 - 8 Half-SMART (Lev. Binder + A-1 BST)**

** No longer allowed with appropriated funding.

PP Performance



- BMPR Still Trying to Track Projects
- Performance Mixed
- Continue Emphasis on Project Selection
(Right Treatment, Right Pavement, Right Time)
- Continue to Stress Importance on Construction Quality
(No Drag Marks/Ripples, Chip Loss, etc.)
- Perform Best when Constructed in Spring
(Better Curing of Emulsion)

PP Future



- Continue programming \$800,000 per district.
- Funding still limited to four treatments (chip seal, slurry seal, micro-surfacing, and cape seal)
- Special Provisions available on internet through Bureau of Design & Environment (BDE Special Provisions).
- Revised guidelines will be included with BDE Manual update in 2010.

Profile Equipment Verification (PEV)



PEV



- Required for projects w/ Zero Blanking Band Specification
- Held annually at Rantoul Airport typically in April
- Those certified will receive a reminder
- Also a Notice in “Letting You Know”

2008 PEV



- Held at Rantoul Airport in April 2008:
 - 28 Contractor Profilers Tested
 - 26 Contractor Profilers Approved
 - 16 California-Type Profilographs
 - 10 Inertial (Laser) Profilers



- Contact Person:

Jim Meister

ATREL

University of Illinois Urbana-Champaign

(217) 893-0302, Ext. 232

jfmeiste@uiuc.edu

Pay for Performance

District #1

A stylized, dark teal silhouette of a mountain range is positioned in the bottom right corner of the slide, extending from the right edge towards the center.

District #1

- ◆ Inserted the PFP Spec in 3 Contracts:
 - IL 31 11,464 Tons of N90 F SCS
 - ◆ Curran Contracting Co
 - IL 53 14,408 Tons N90F SCS
 - ◆ K-Five Construction Co
 - IL 43 30,230 Tons N90F SCS
 - ◆ K-Five Construction Co
 - ◆ Delayed Until 2009

Specification Features

- ◆ PWL Pay Parameters:
 - Voids = 30%
 - VMA = 30%
 - Density = 40%
- ◆ Pay Based on Dept. Testing
- ◆ District #1 Modifications:
 - Step Based Disincentive for Dust/AC
 - D1 limited penalty to 8%
 - Truck Sampled

Production

- ◆ Both Contractors initially tested 100% of IDOT samples in addition to req'd 1/day
 - ◆ Contractors testing was relaxed once they became comfortable w/ IDOT results
 - ◆ District 1 committed to providing results ≤ 48 hrs
 - ◆ All results were available prior to next production day
- 
- A stylized silhouette of a mountain range in shades of teal, located in the bottom right corner of the slide.

IL 31 – Curran Contracting

Individual Pay Factors			
	Voids	VMA	Density
N	13	13	33
Average	3.95	15.26	93.72
Std Dev	0.823	0.325	1.469
PWL	92	100	94
PF	99.0	103.0	100.0
Combined Pay Factor			100.6

IL 53 – K-Five Construction

Individual Pay Factors			
	Voids	VMA	Density
N	14	14	51
Average	4.36	14.92	94.0
Std Dev	0.497	0.391	1.09
PWL	99	100	100
PF	102.5	103	103
Combined Pay Factor			102.9

Results Summary

IL 31 Pay Factor IDOT 100.6
Contractor 101.7

IL53 Pay Factor IDOT 102.9
Contractor 102.1

**No Dust:AC Penalties on either
job!!**

**No Contractor Challenges on either
job!!**

District Observations

- ◆ One contractor replaced a paver on the suspicion of a problem
- ◆ Both contractors elected to have 3 vibratory rollers in case of problems
- ◆ One contractor canceled paving when inclement weather predicted without District prompting

Future of PFP in District #1?

- ◆ Based on successful outcome and positive contractor reaction the District will increase the number of PFP projects for next year in addition to completing the IL 43 job.

AASHTO – Site Manager



AASHTO

Trns Port – SiteManager

- Off the shelf software for construction and materials management supported by AASHTO
- Improvements made yearly in base software and provided to those using it.
- Scheduled to be Web Based in 2010

SiteManager Status

- Funding sources have been secured
- Actual contract work should start shortly after first of year
- What does all this mean?

Front loaded Materials effort

- Focused oversight groups to be formed to oversee direction
- Care AC will be one of very first efforts to develop needed interfaces to get information to mainframe
- RE Visual, PCC and Aggregate interfaces to follow as needed
- Central Office data screen development

Construction ICORS

- Start slow with some concurrent efforts with Materials
- By end of second year of effort will switch primary to replacement of ICORS

Impacts

- Technology
 - Need connectivity improvements in field offices
 - May need to fit more staff with laptop cellular Internet cards rather than hard line connection
 - Will be coordinated with BIP

Future

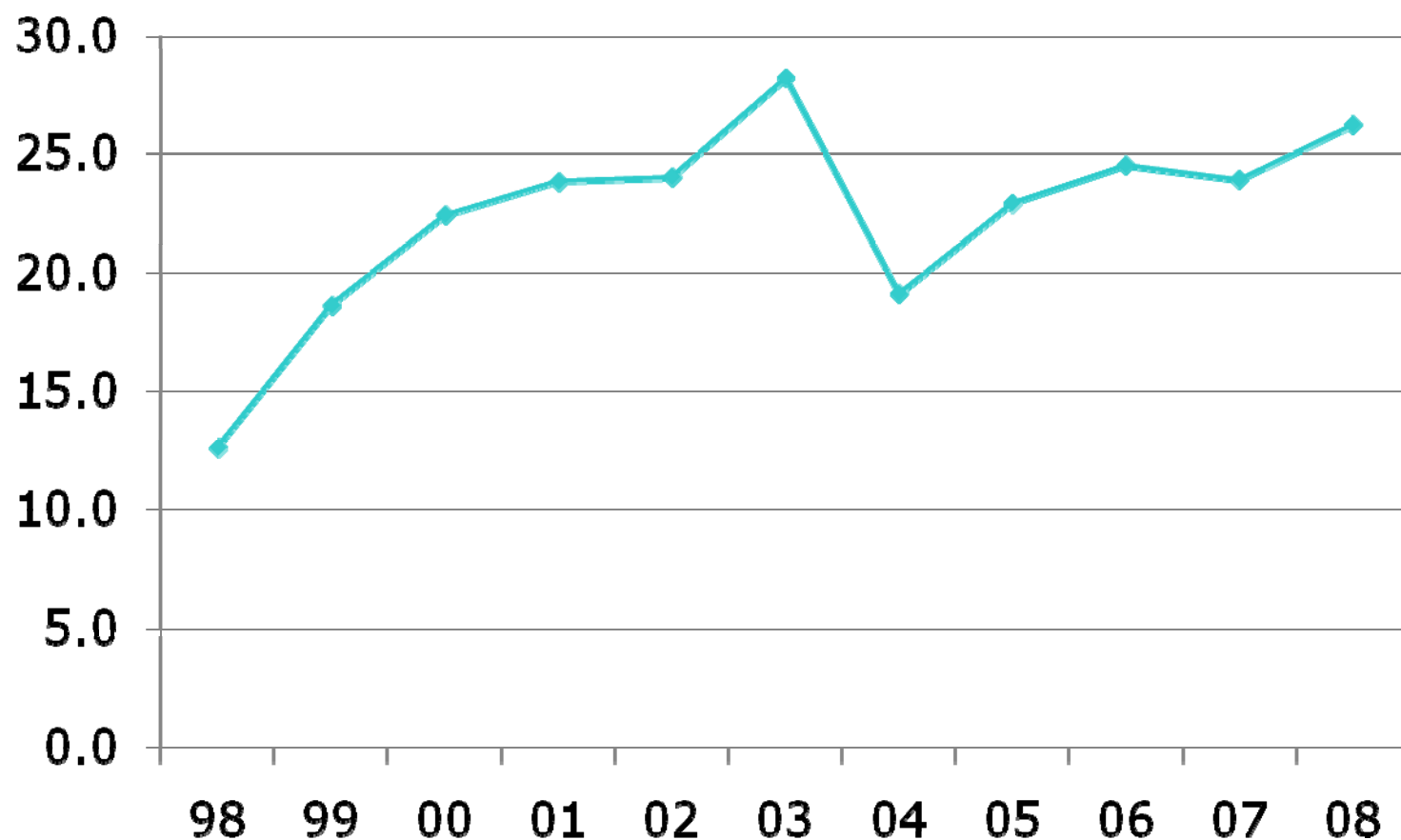
- Districts will be involved and provide input into what will be retained from MISTIC/ICORS (or not) to streamline work
- SiteManager is a major opportunity to look at what is truly required and change the way we work



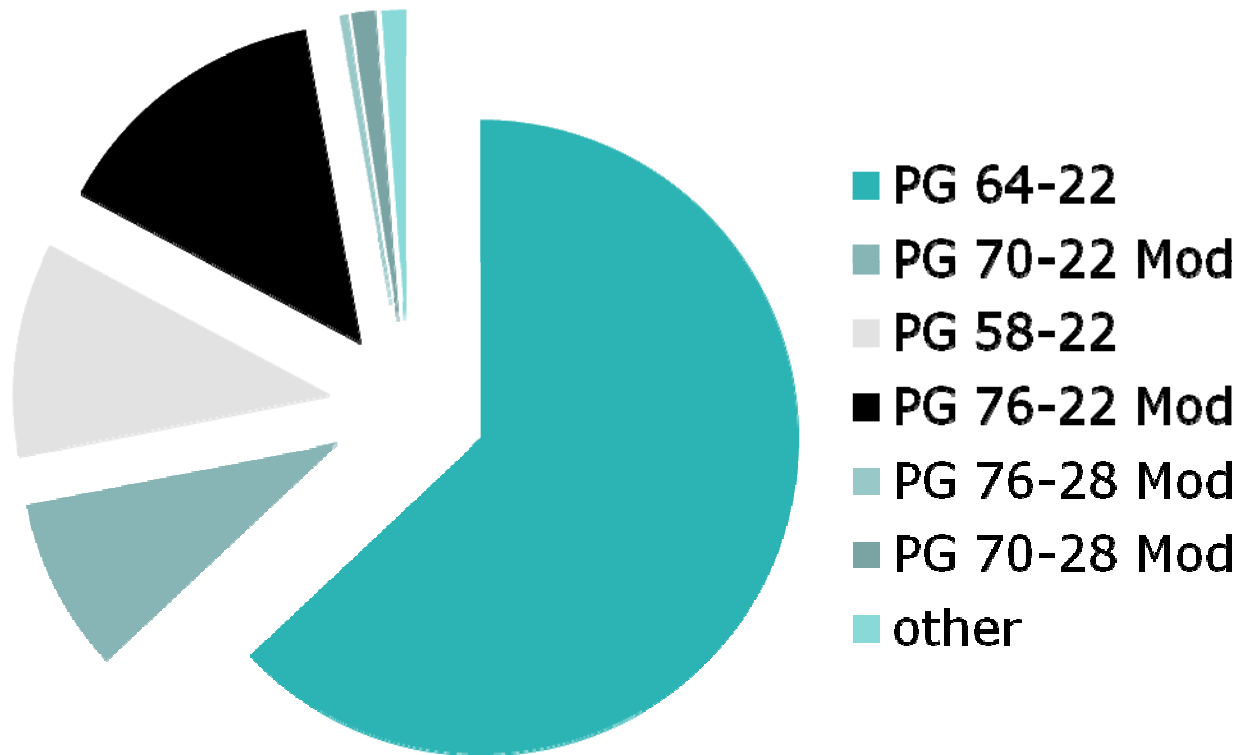
PG Binder Usage



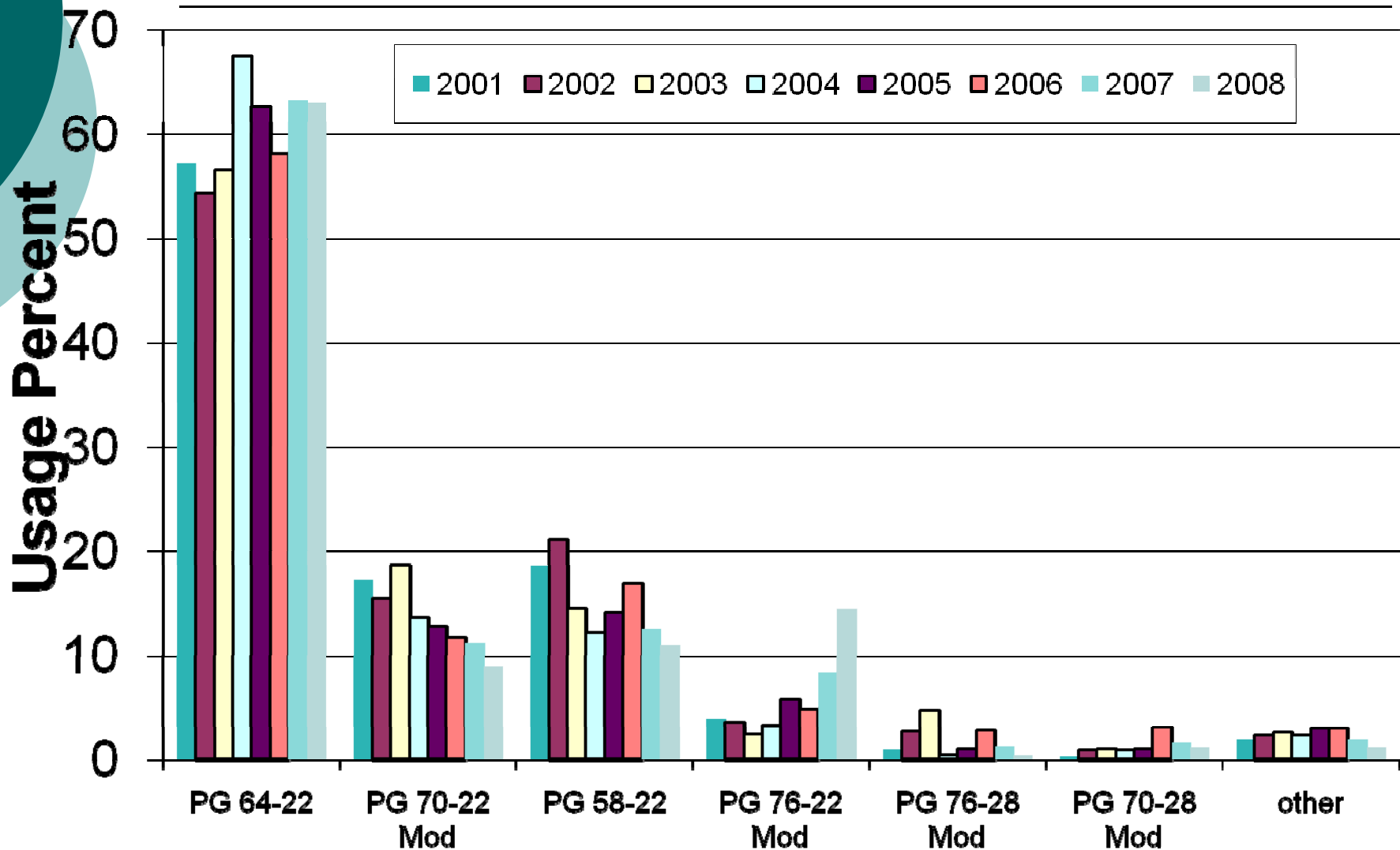
Percent Polymer Usage 1998 to 2008



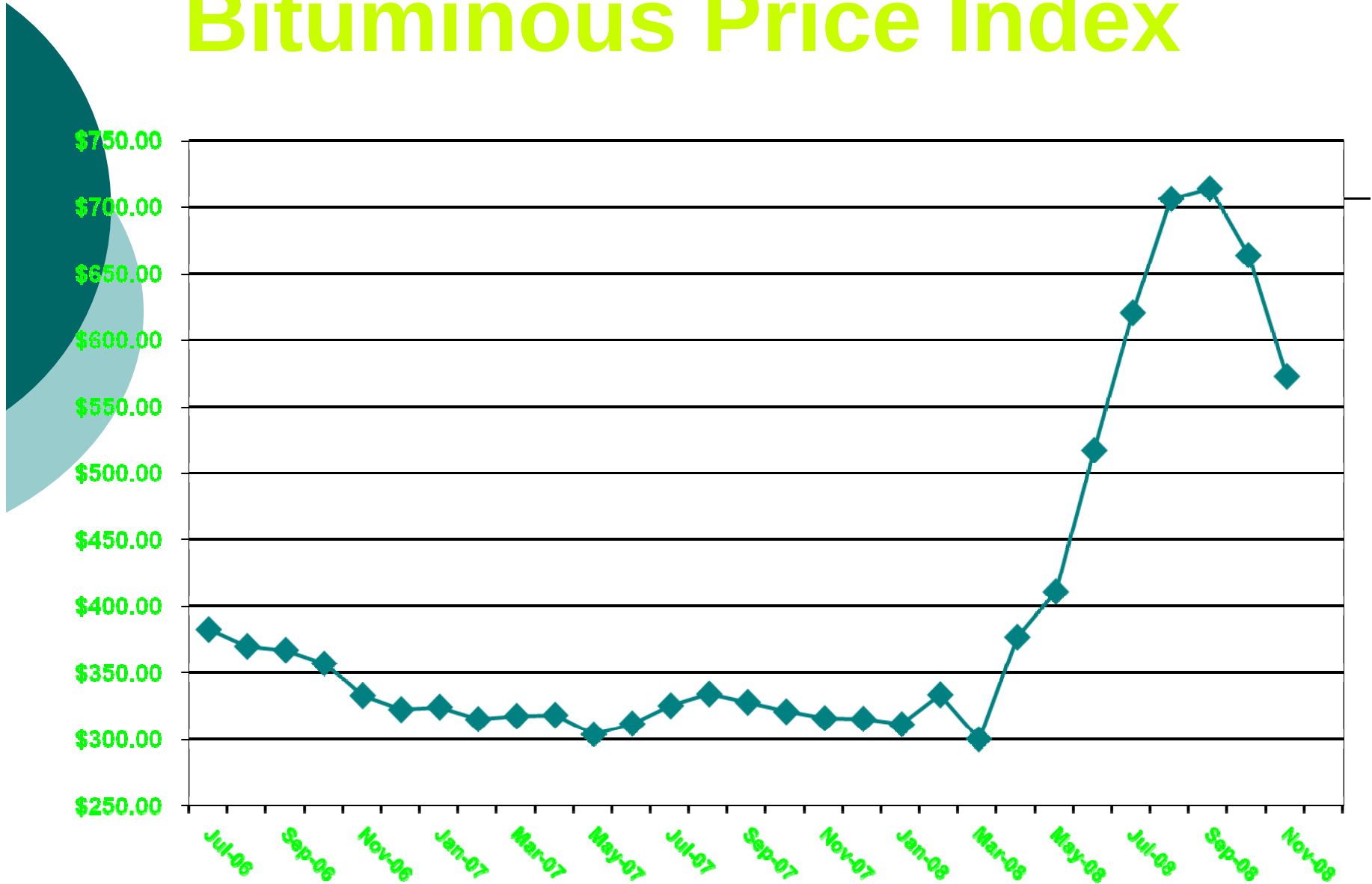
Percent Binder Grade 2008



2001 to 2008 Grade Usage



Bituminous Price Index



Specification Update

2009

Longitudinal Joint Density Specification

- Still not a statewide BDE insert
- Has been revised to the following & used as on a on a trial basis
 - Unconfined Edge Density $\geq 90\%$ w/ edge distance equal to lift thickness
 - Edge densities stand alone, remaining densities averaged
- Currently BMPR Special Provision
- Effective Statewide?????

RAP (FRAP)

- 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
- BDE insert April 2009 letting

Increased QC Testing for large production days

- Discontinue reduced voids testing frequency after 2nd day of production for projects $\geq$ 1200 tons
- BDE Inserted special provision

Questions?

