IDOT HMA Update

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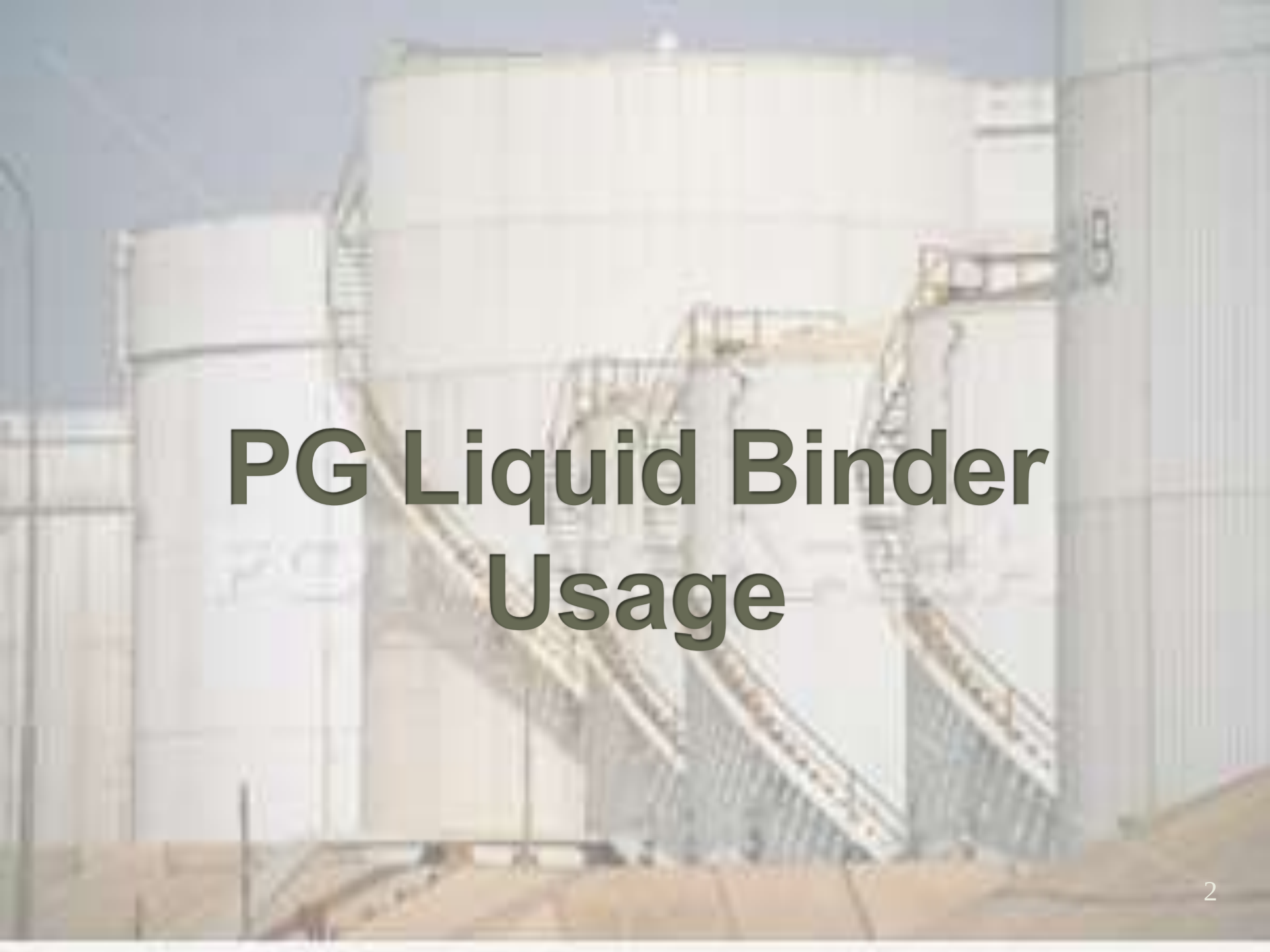
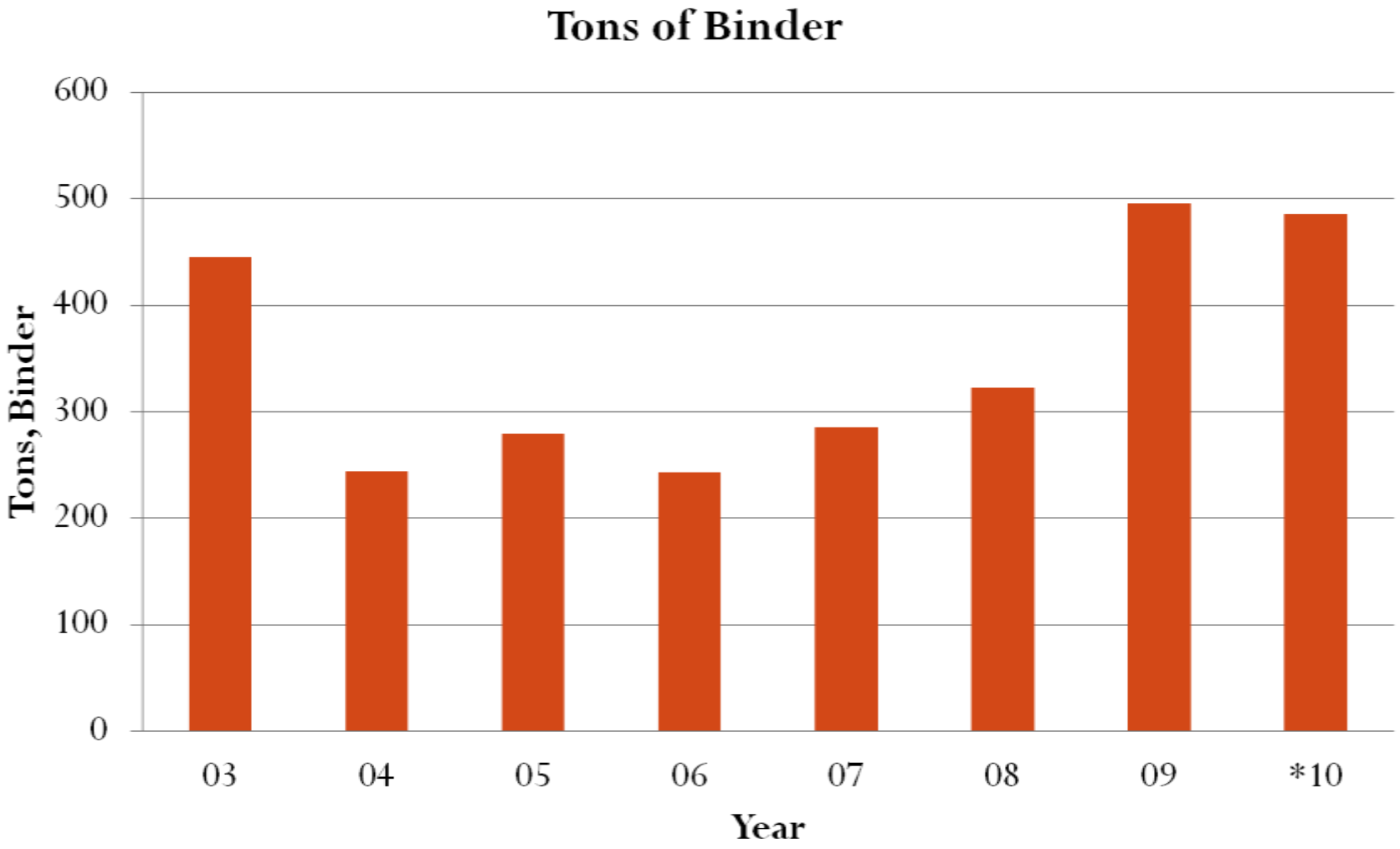
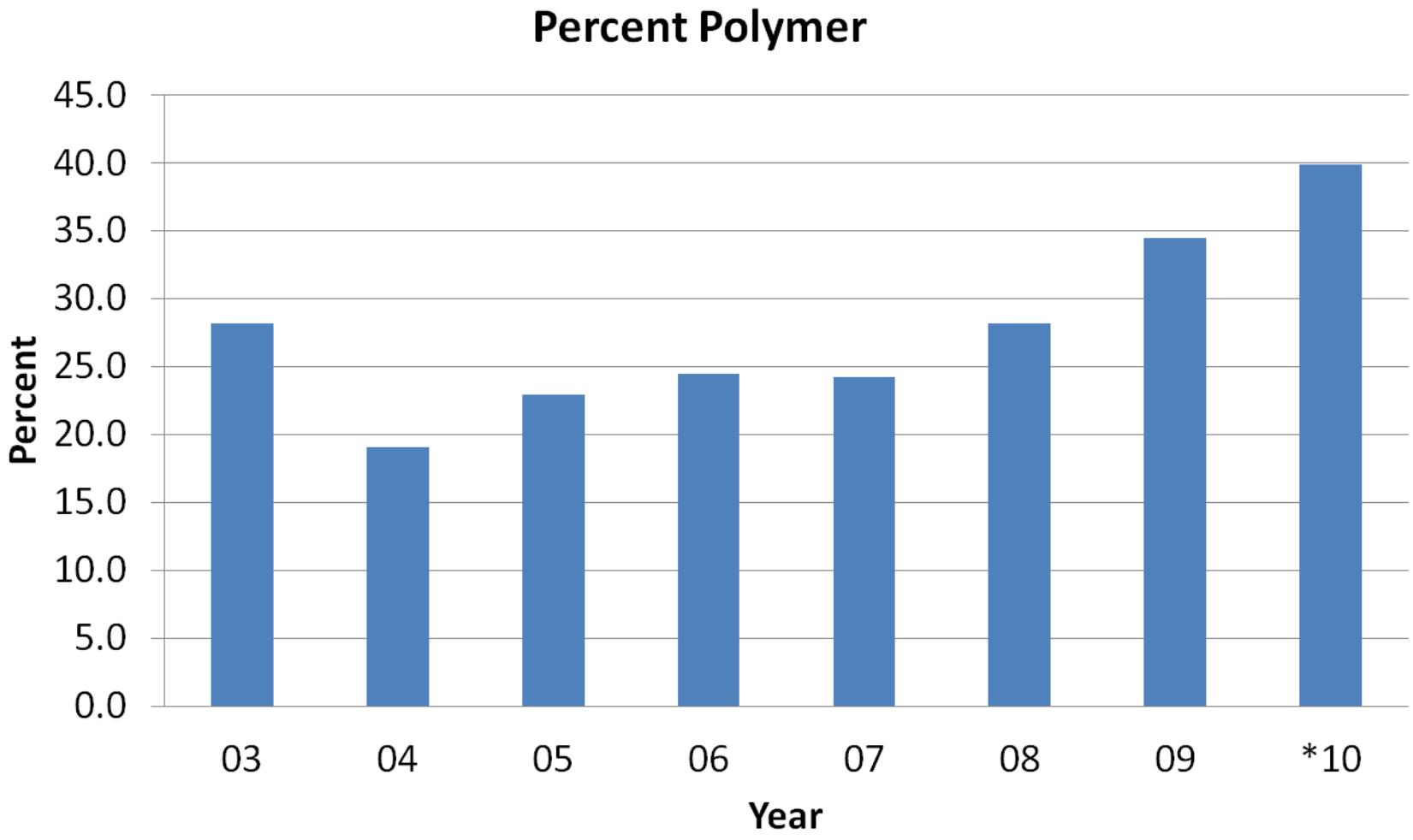


PG Liquid Binder Usage

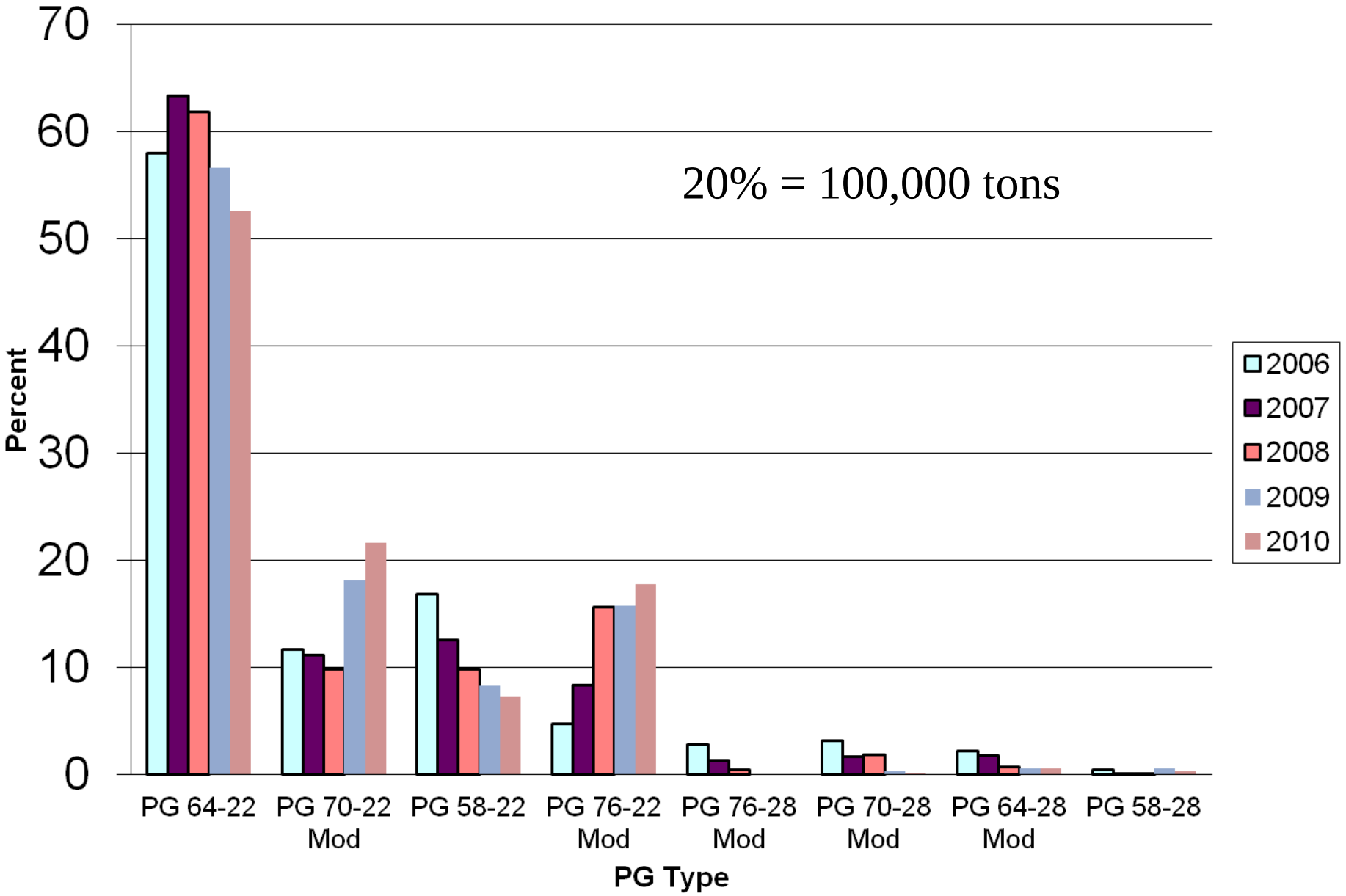
PG Binder Used in 2010 (thousand tons)



% Polymer Usage - 2003 to 2010



% Grades Used - last 5 years

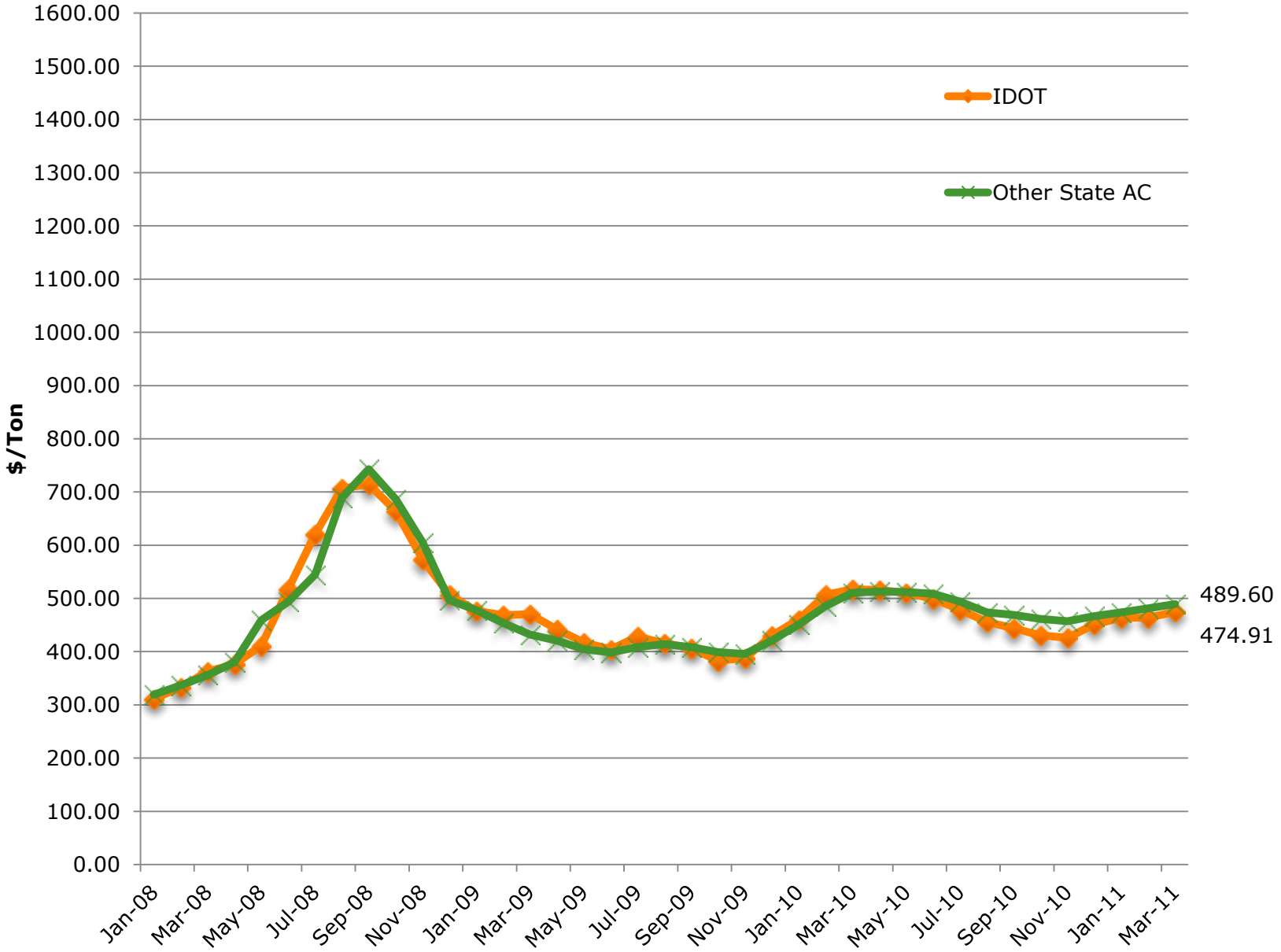


AC Price Index

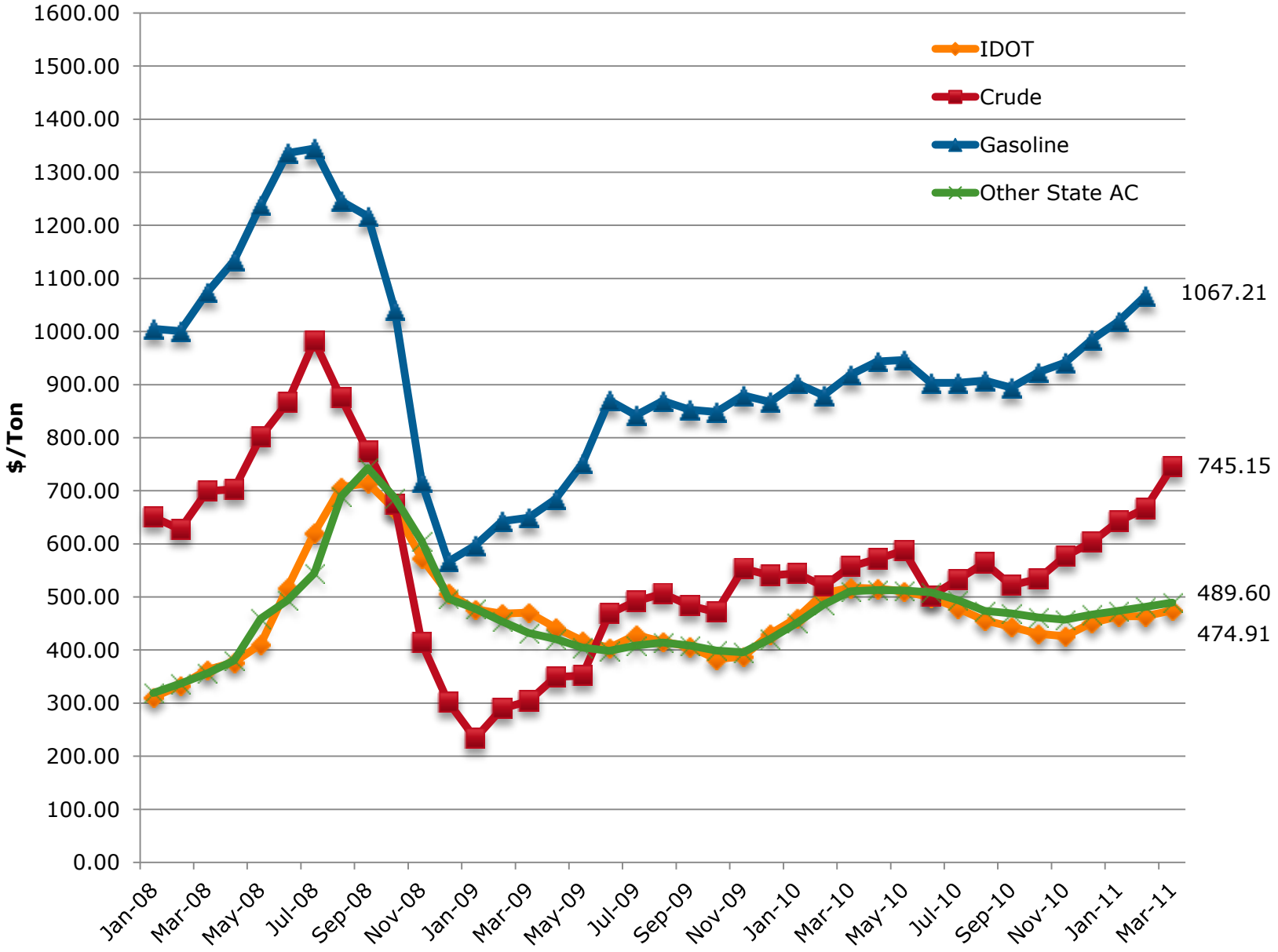
IDOT AC Price Index Bases

- Based upon largest suppliers of previous year
- Prices submitted as of first of each month
- Average = Index
- BMPR Policy Memo 1-08.0
  - PERFORMANCE GRADED ASPHALT BINDER ACCEPTANCE PROCEDURE

AC/Crude/Gasoline Price Comparison

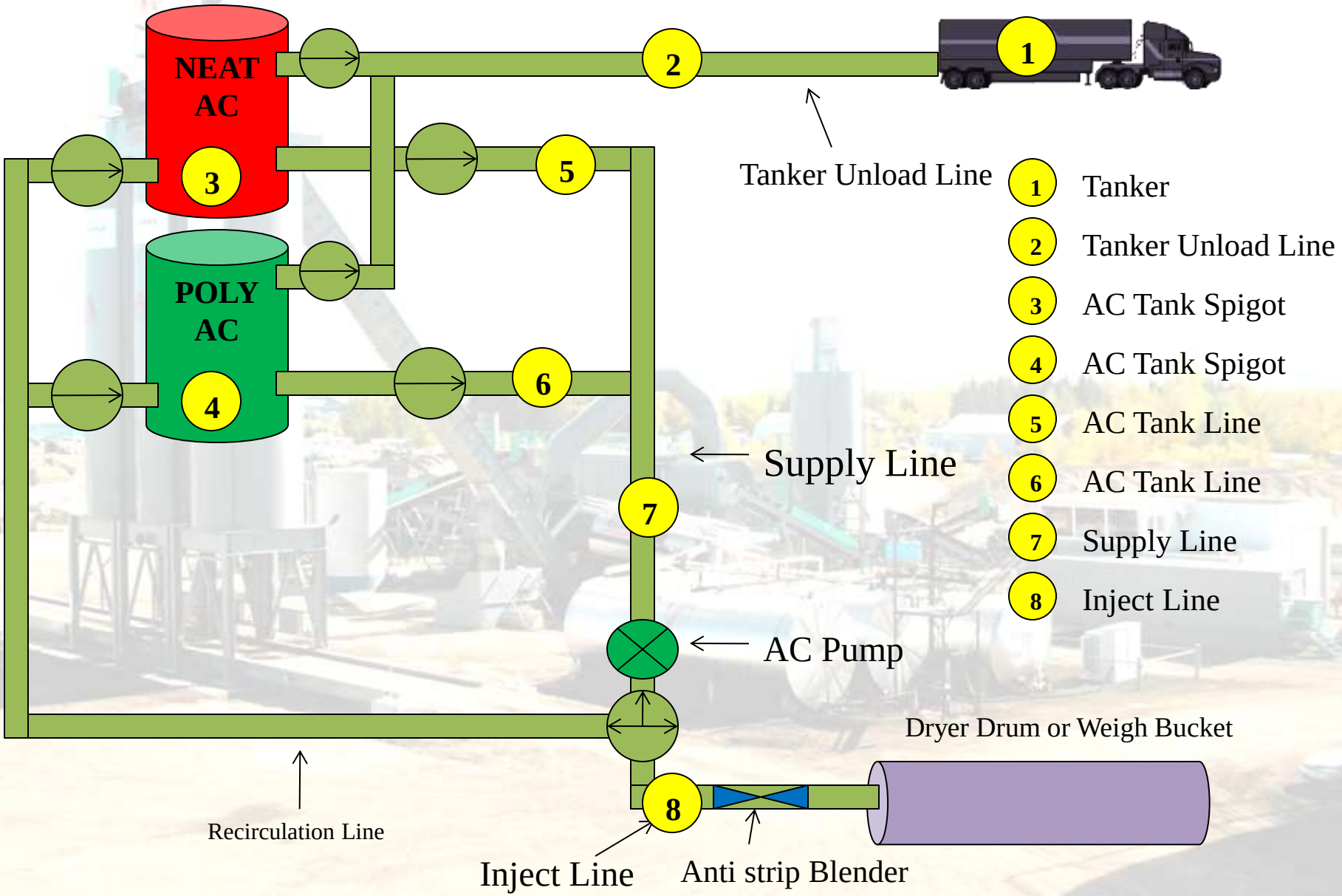


AC/Crude/Gasoline Price Comparison

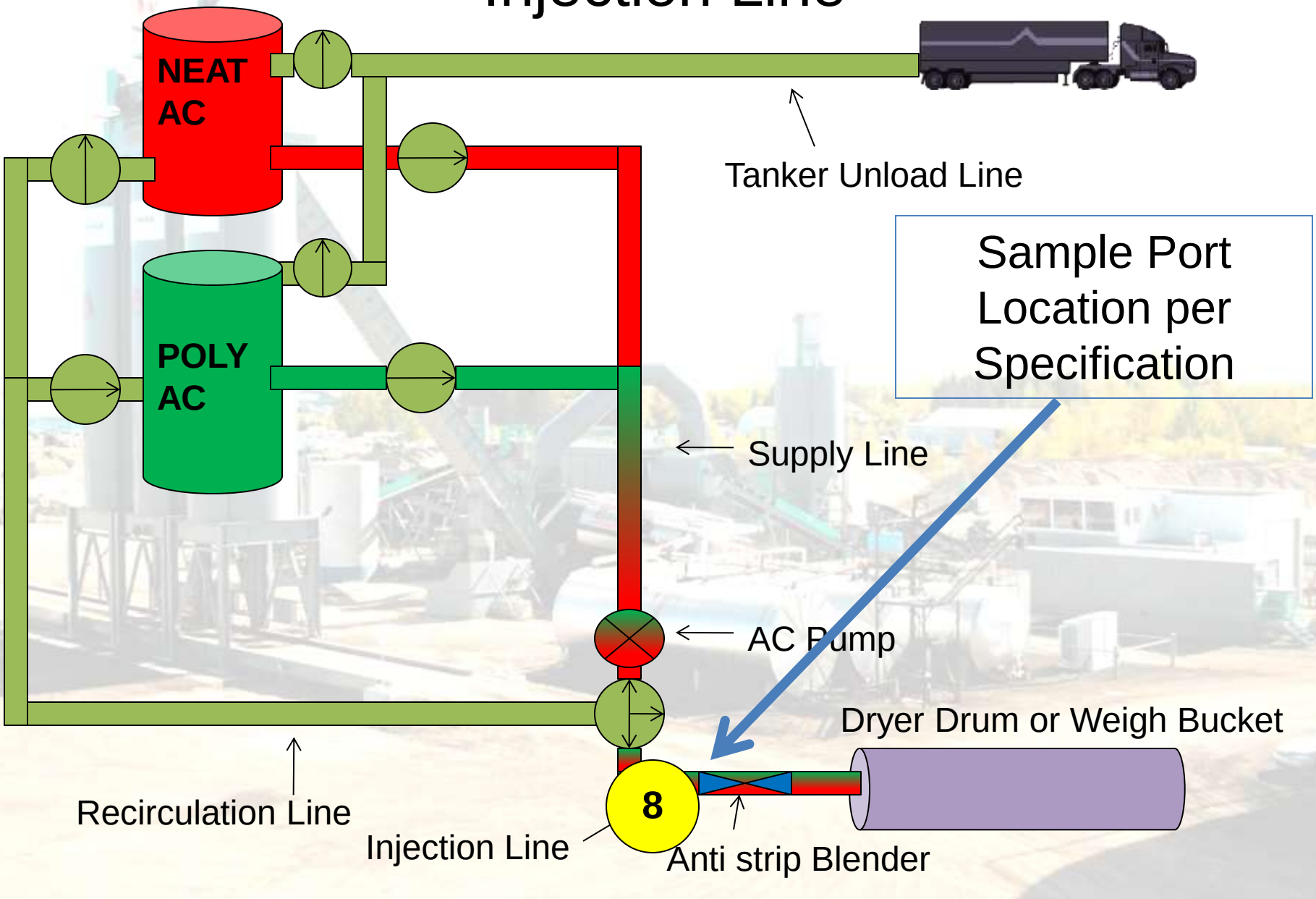


Liquid AC Sampling at HMA Plants

Sampling Points – Let's Count the Ways



Sample at closest point to the mix - at Injection Line



District PG Investigative Field Samples

As of 12/31/10

District	Sample Total	Off Test	% Off Test
1	654	12	1.8
2	215	4	1.9
3	121	1	0.8
4	223	0	0
5	176	0	0
6	227	2	0.9
7	209	1	0.5
8	249	7	2.9
9	122	2	1.6

FINE MIX ASPHALT

Fine Mix HMA

- Less large stone on large stone
- Relies on crushed fine on fine fractions
- Larger stone floats in matrix to help reduce AC content
- Why?
  - Better compaction – especially at joints
  - Less permeable
  - Longer life

Future Roll Out Fine Graded

- Slow – more trials 2011
- Collect data on lay down
  - Permeability
  - Density
  - Hamburg
- Review
- Possible trial project in each District for 2012


Safety Edge


30°

Safety Edge at IDOT

- Including in new contracts
  - Starting with State Contracts
  - LRS to follow
  - For pavements with no shoulder up to 3’ shoulder
- Want to see proven devices used
  - Strike off plates not allowed per spec
  - Must compact and produce consistent durable edge
  - If can’t produce desired edge – deduct tonnage from pay if material is wasted.

Warm Mix Asphalt

Hot Warm

Pre Exp. Feature Work Plan 7

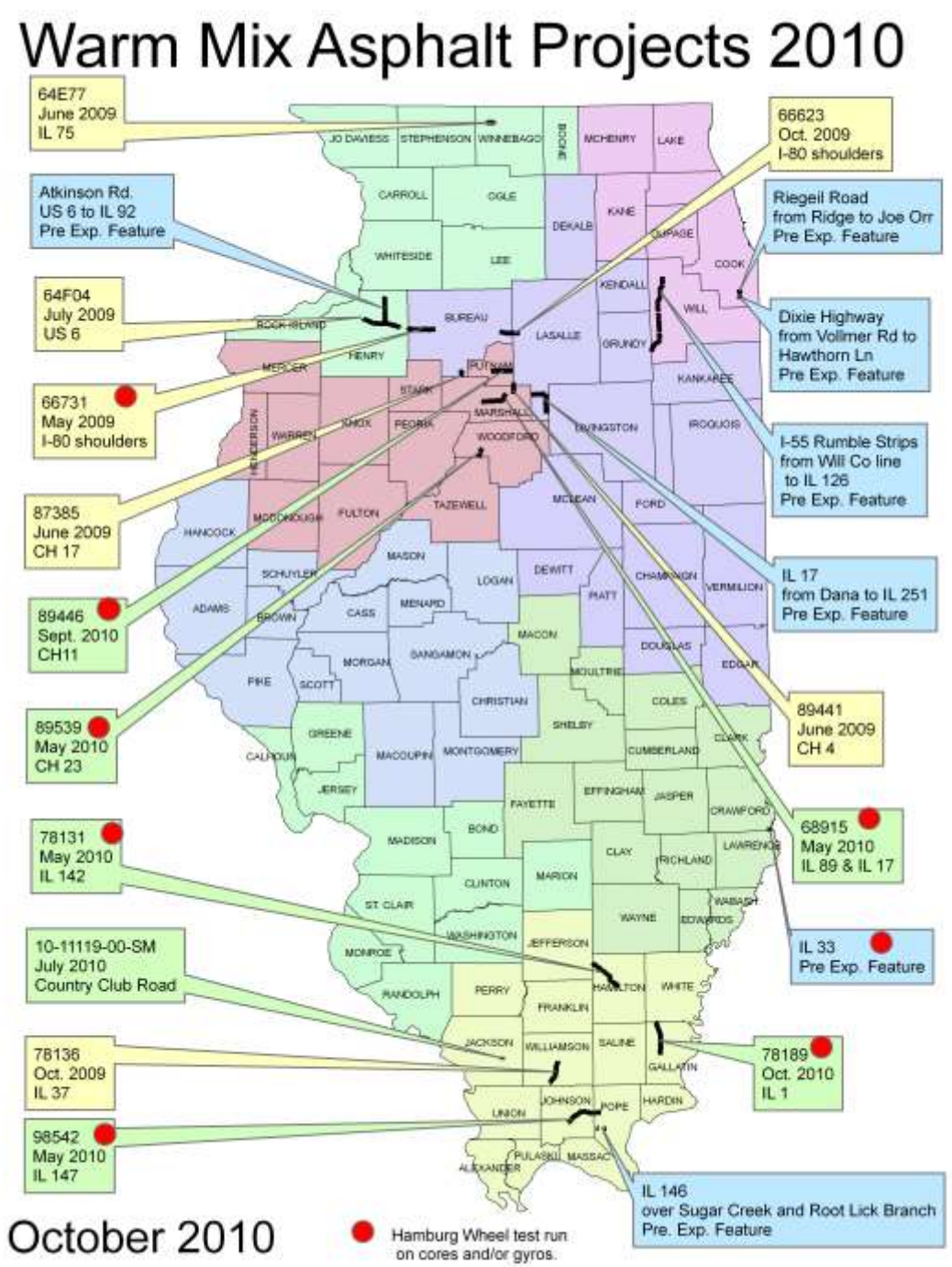
2008-2009 WMA Projects 7

2010 WMA Projects 7

Total number of warm mix contracts 21

Over 50,000 tons WMA

● Hamburg Wheel Testing



Background

Drivers

- Federal Highway Administration Every Day Counts Innovation Initiative, Industry, and Environmental Sustainability

Goal:

- Generation of Permissive Use Specification
- Specification to allow use of additives as well as foaming technology
- Additives (mineral, chemical, or organic) to be selected from “Pre Approved” list maintained by BMPR

Permissive Use Specification

- Embrace WMA
- Allow bidding up front
- Allow approved additives plus foam
- Start with N_{70} and below

Time Frame

- Drafting permissive use specification
- May/June - Comments and discussion incorporated from Districts, FHWA, and Industry - BMPR Spec
- July - Submit to Design and Environment
- Effective Jan. 1, 2012
- Bulk of 2011 - Contractor’s Proposal


Reclaimed Asphalt Shingles
(RAS)

HB 1326 HA 03
SB 1543 SA 01

- Shingles - No land filling within 30 miles of recycler
- CDD: Credit of 2 for 1 tons shingles recycled for 75% recycle goal
- ILEPA to manage asbestos program
- Requires allowing shingles in state highway construction
- Shall meet or exceed maximum percentage of shingles allowed by Tollway
- Maximize the use of recycled aggregates and other constituents in the mix

More HA 3/SA 01

- Reduce carbon footprint
- Extend the paving season
- Regional Engineers to report at hearings annually
  - Usage
  - Cost savings
  - Performance
- HMA Producer
  - Shall not use shingles unless asbestos tested
  - Must meet ILEPA Section 22.54 if doing own processing

RAS Status

- Specification developed last year for state wide use
  - Revised – Effective March 1, 2011
- Policy developed last year
  - BMPR Policy Memo issued August 13, 2010
  - Requires testing of all tear off material for asbestos
  - Current versions differs from Tollway's 1 test/250 ton
- Harmonization effort with Tollway
  - Legislation has effort on hold pending outcome
  - Asbestos testing final issue
- Consultant on board to assist IDOT on asbestos

SB 1735
HB 1283

SB 1735/HB 1283

- Department QC/QA training program materials to be available to apprenticeship programs
  - Course curricula
  - Teaching slides
  - And other materials to teach classes
- Third party testers provided with 10 days notice
- Department to certify as able to teach/train own members

RAP/RAS Maximum Shift

Percent AC Replacement

- Specification becoming complex
  - RAP Percent
  - RAS Percent
  - When to grade bump?
- Greatly increasing amount of recycled material
- Changed percent RAP replacement to liquid “binder” replacement
- BMPR RAP spec revised 3/1/11

Old
Usage of FRAP

HMA Mix	Level 1 Max % FRAP		
N Design	Binder/LB	Surface	Poly Mod
30	35	35	10
50	30	25	10
70	25	20	10
90	20	15	10
105	10	10	10

New
Binder Replacement

HMA Mix	Level 1 Max % Binder Replacement FRAP+RAS		
N Design	Binder/LB	Surface	Poly Mod
30	35	35	10
50	30	25	10
70	25	20	10
90	20	15	10
105	10	10	10

Increasing usage of FRAP+RAS

HMA Mix	Level 2 Max % Binder Replacement FRAP+RAS		
N Design	Binder/LB	Surface	Poly Mod
30	40	40	10
50	40	30	10
70	30	20	10
90	30	20	10
105	30	15	10

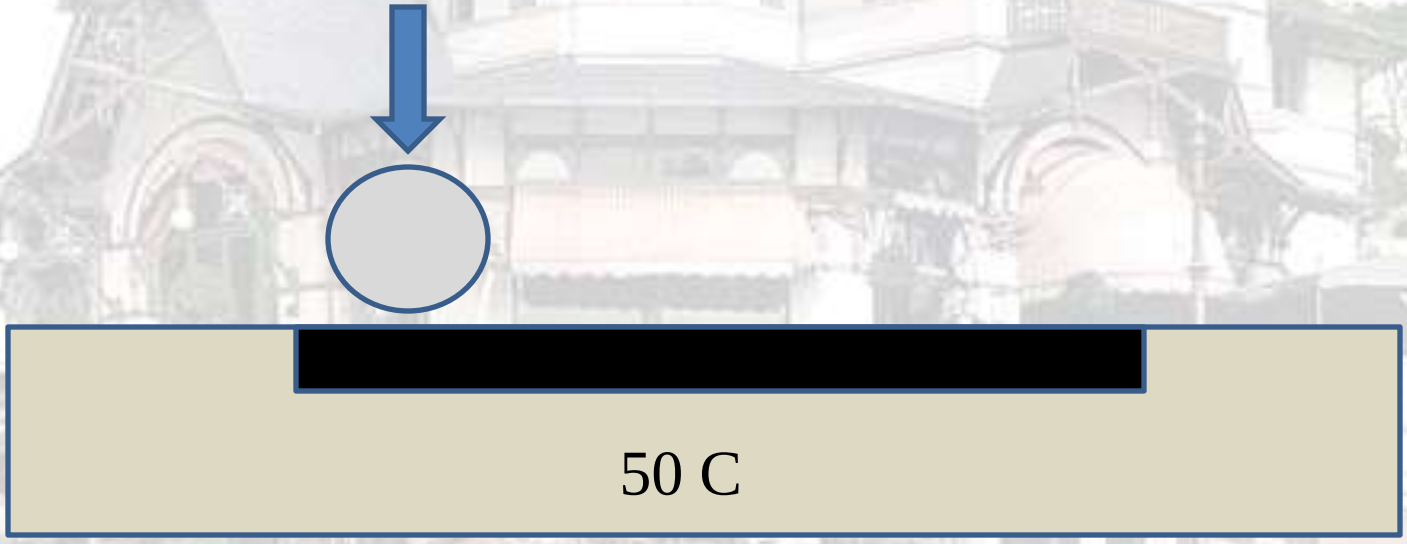
Use Hamburg Wheel if over Level 1

Hamburg Wheel

Hamburg Wheel

50 Passes/Minute

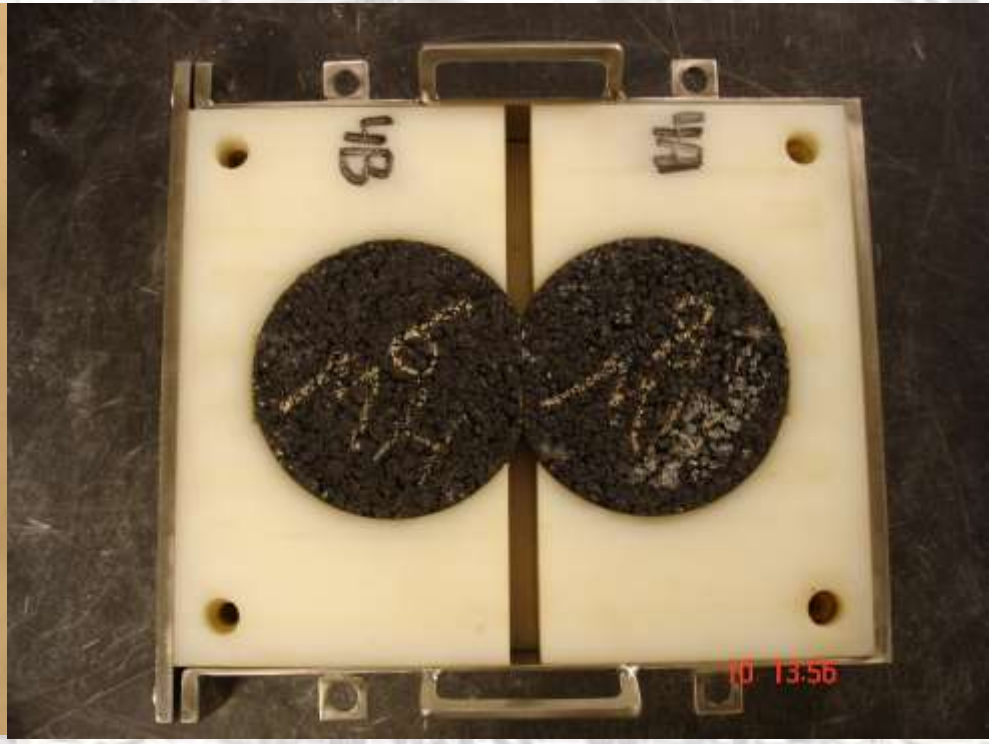
158 Lbs

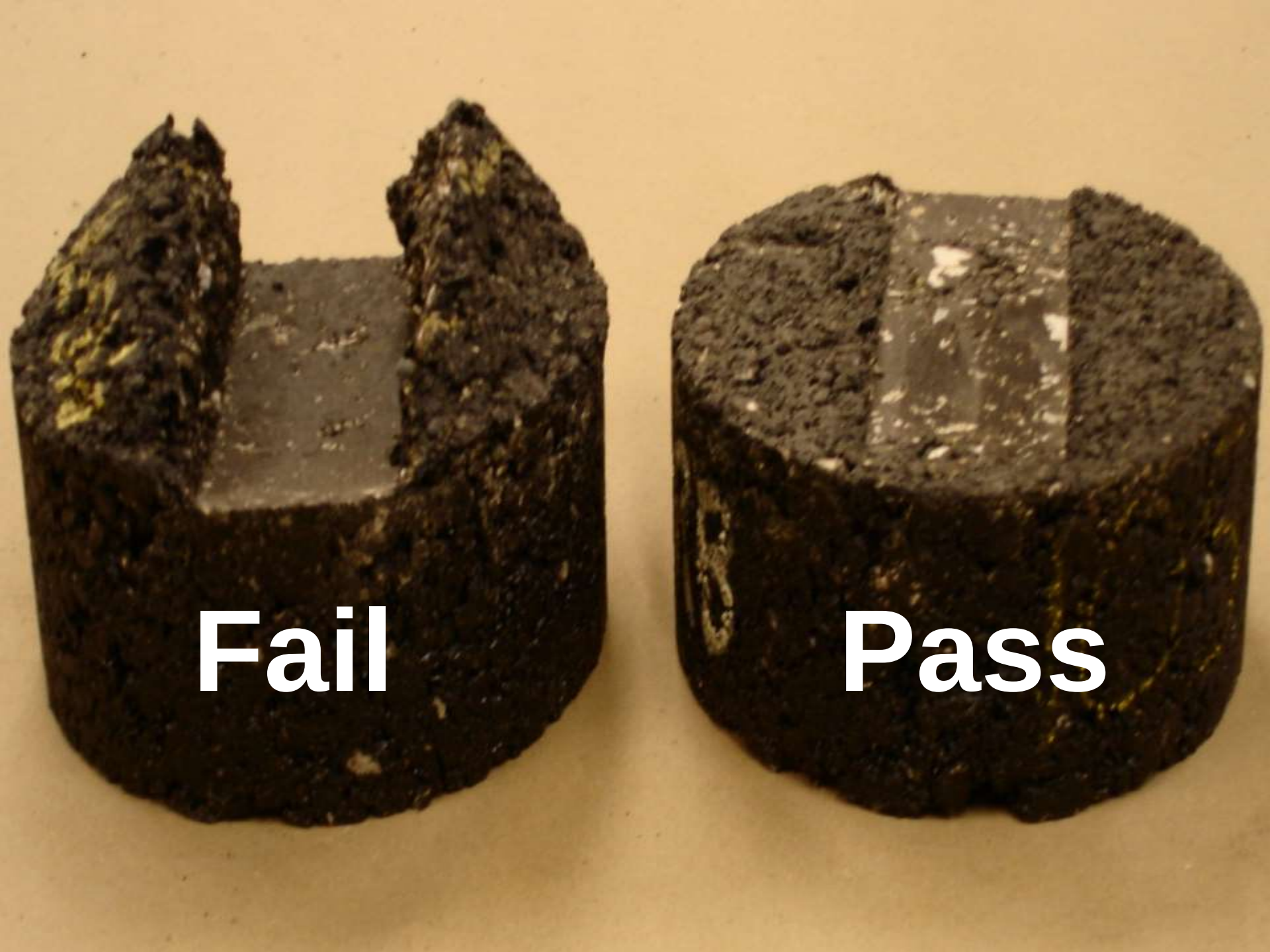


AASHTO T-324


Hamburg!
10 13:24

Specimen Prep




Fail
Pass

SLOW Implementation Schedule

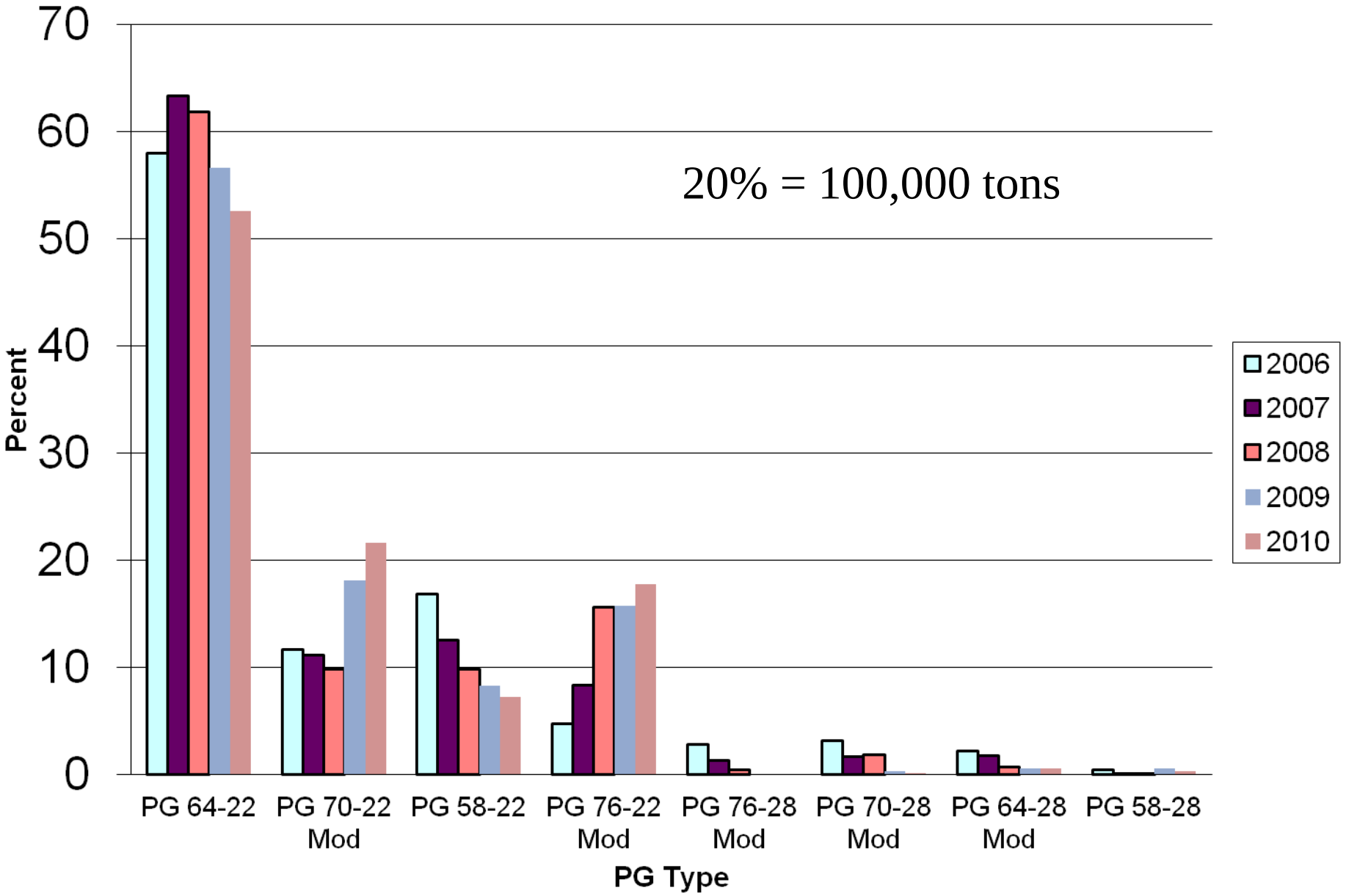
- 2011
  - High Replacement RAP and RAS
  - Permissive use Warm Mix
- 2012 - 2013
  - Other New mixes (fine graded) and Renewals
- 2014 on
  - Full Implementation


Grade Bumping

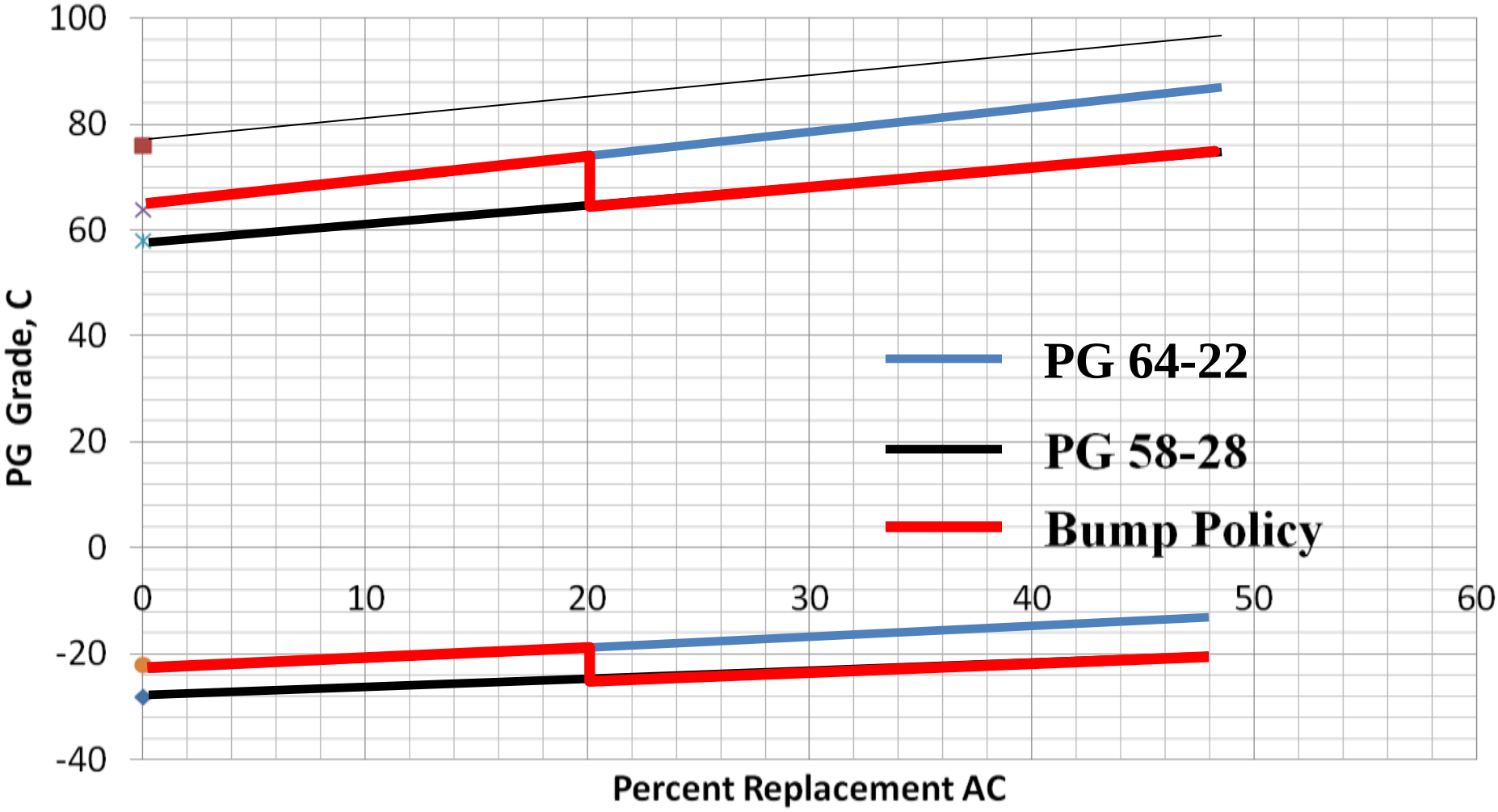
Grade Bumping is Critical

- Low amounts of AC replacement can be tolerated with little or no impact
- Around 20% replacement mix properties are impacted
  - Grade bumping policy
    - Above 20% - Double bump down
    - PG64-22 to PG 58-28
  - If not followed – shorter pavement life due to cracking

% Grades Used - last 5 years



PG Grade vs. Replacement AC



Life Cycle Cost Audit

Audit

- 20 ILCS 2705/2705-590
  - Requires Life Cycle Costing (LCC) on all projects over $500,000
  - Award construction to lowest LCC
  - Models based upon data
  - If don’t have data may use other similar states data
- Audit to determine if IDOT following law

The End


Questions??