

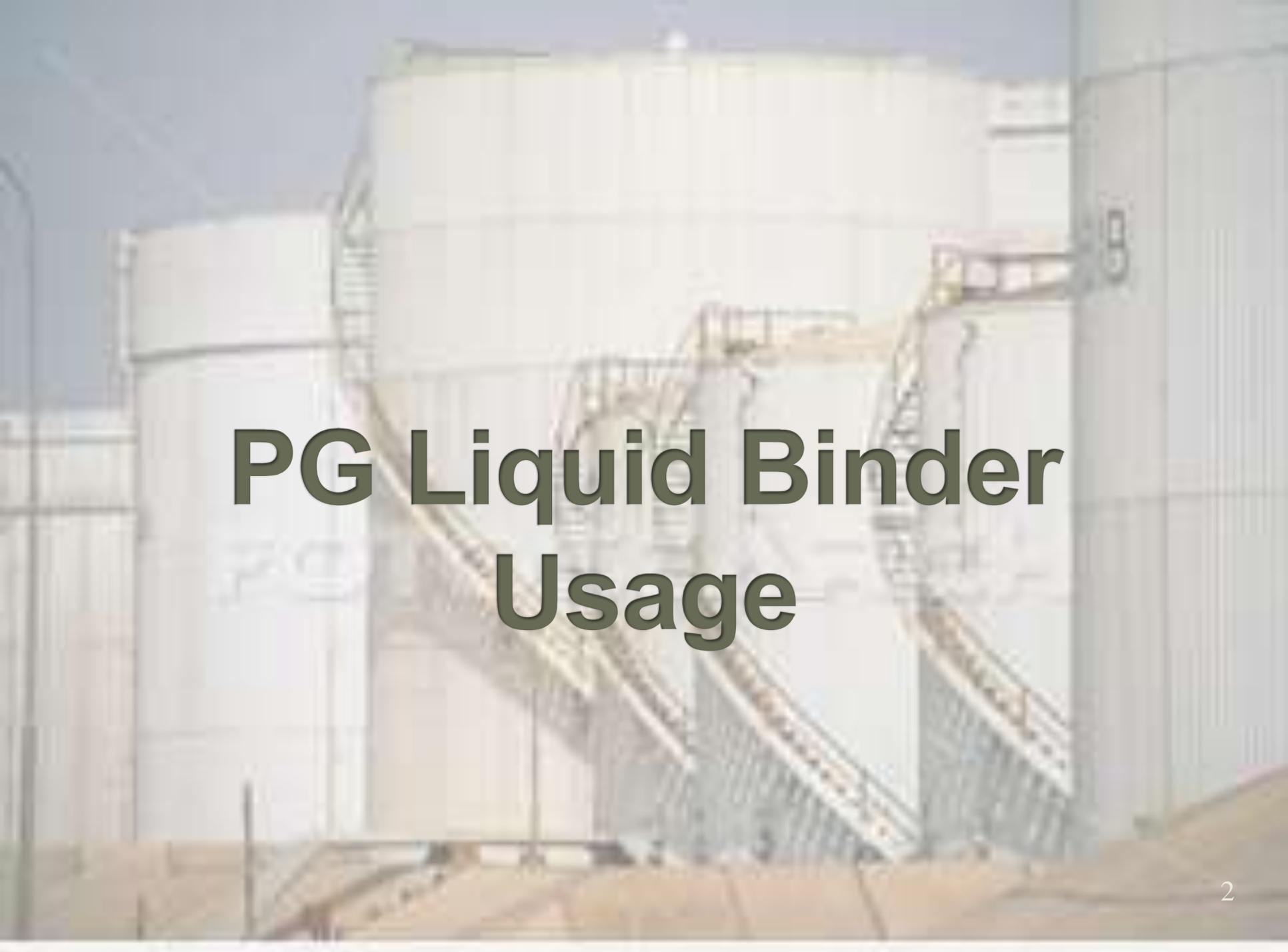
The background of the slide is a blurred photograph of a road construction site. In the center, a large piece of yellow machinery, possibly a paver or spreader, is visible. Several workers in safety vests and hard hats are scattered around the site. The scene is outdoors with trees and a clear sky in the background.

IDOT HMA Update

William R. Frey, P.E.

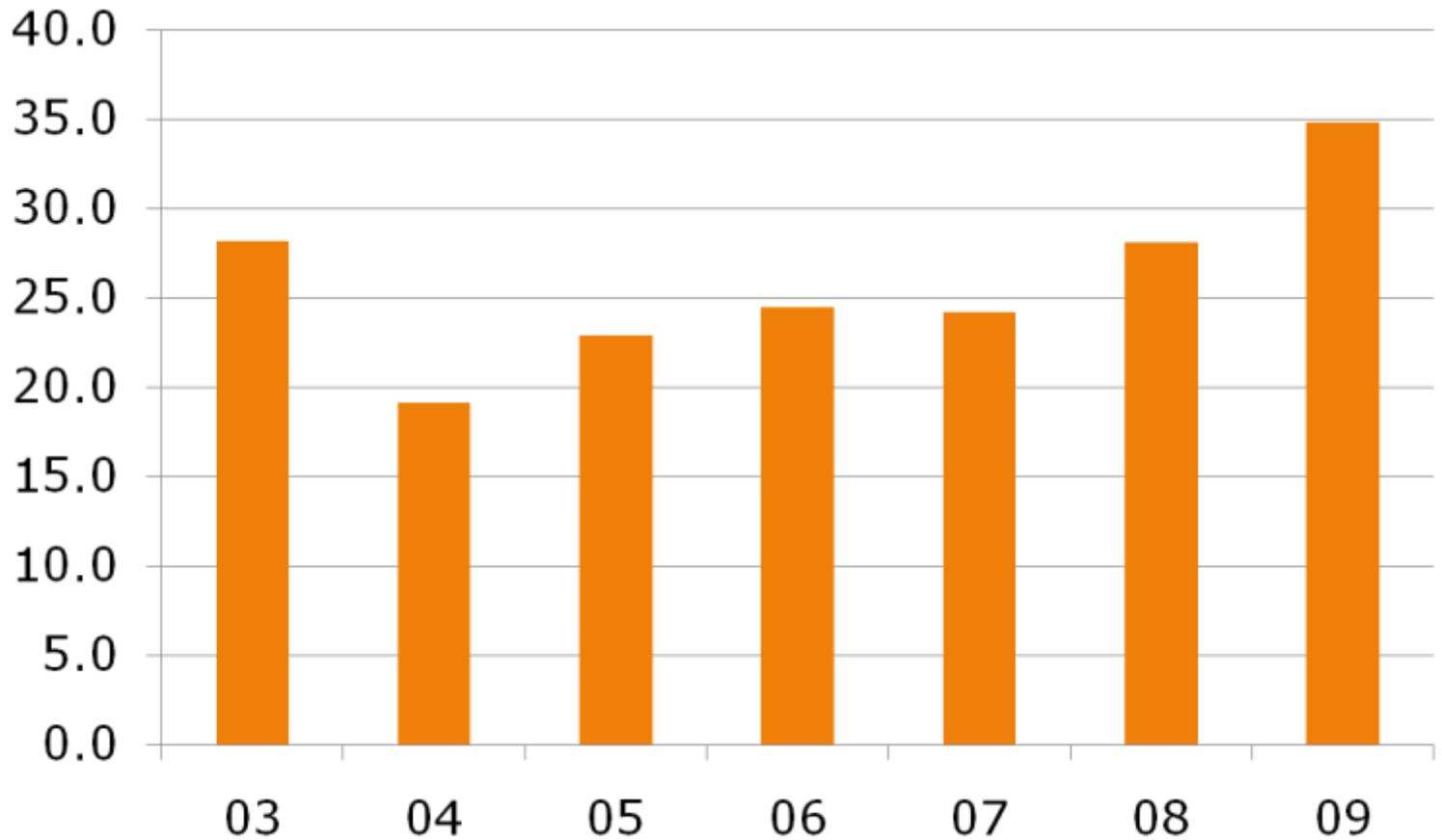
Deputy Director, Assistant to the Chief Engineer
Illinois Department of Transportation

Illinois Asphalt Paving Association

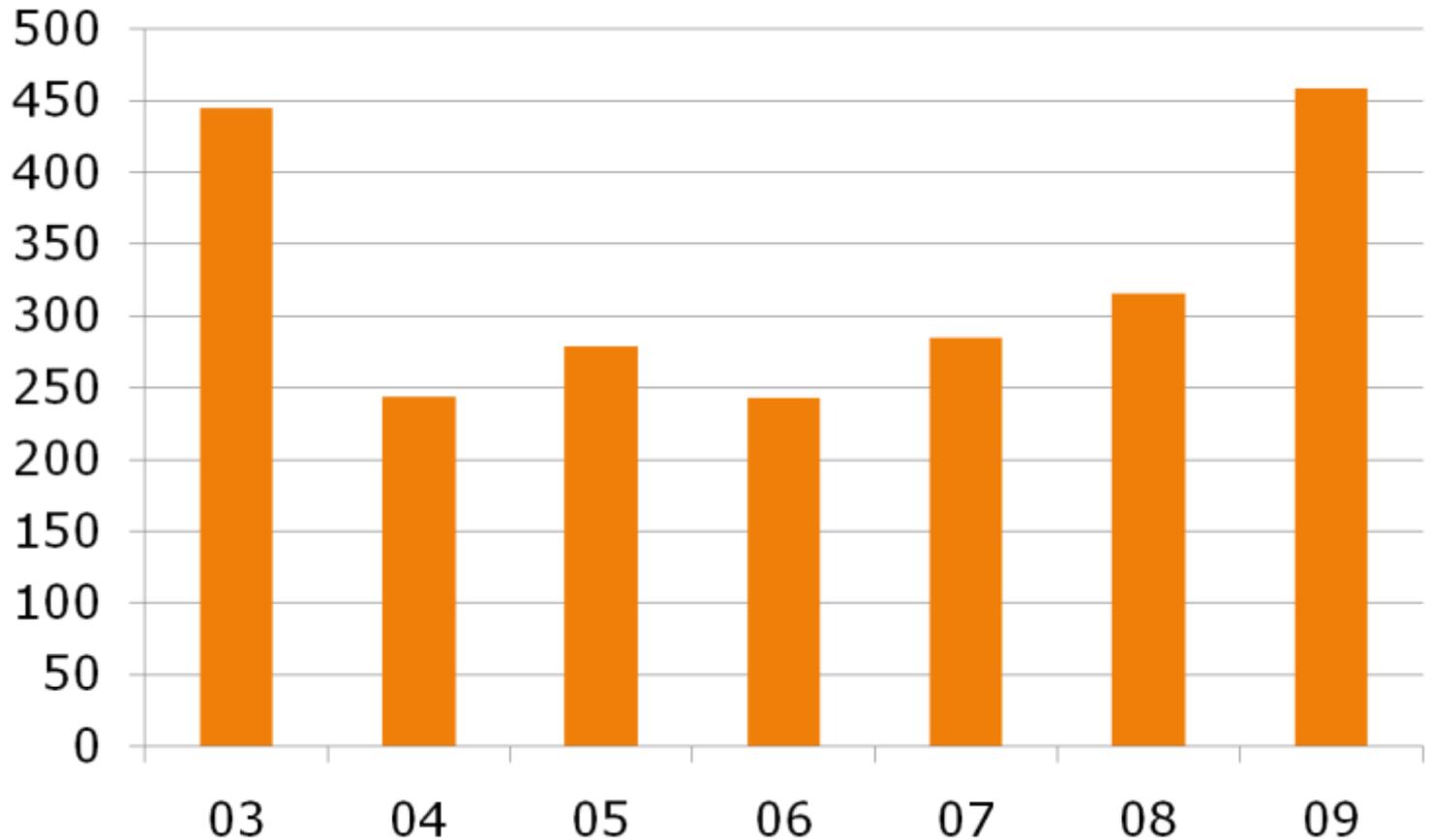


PG Liquid Binder Usage

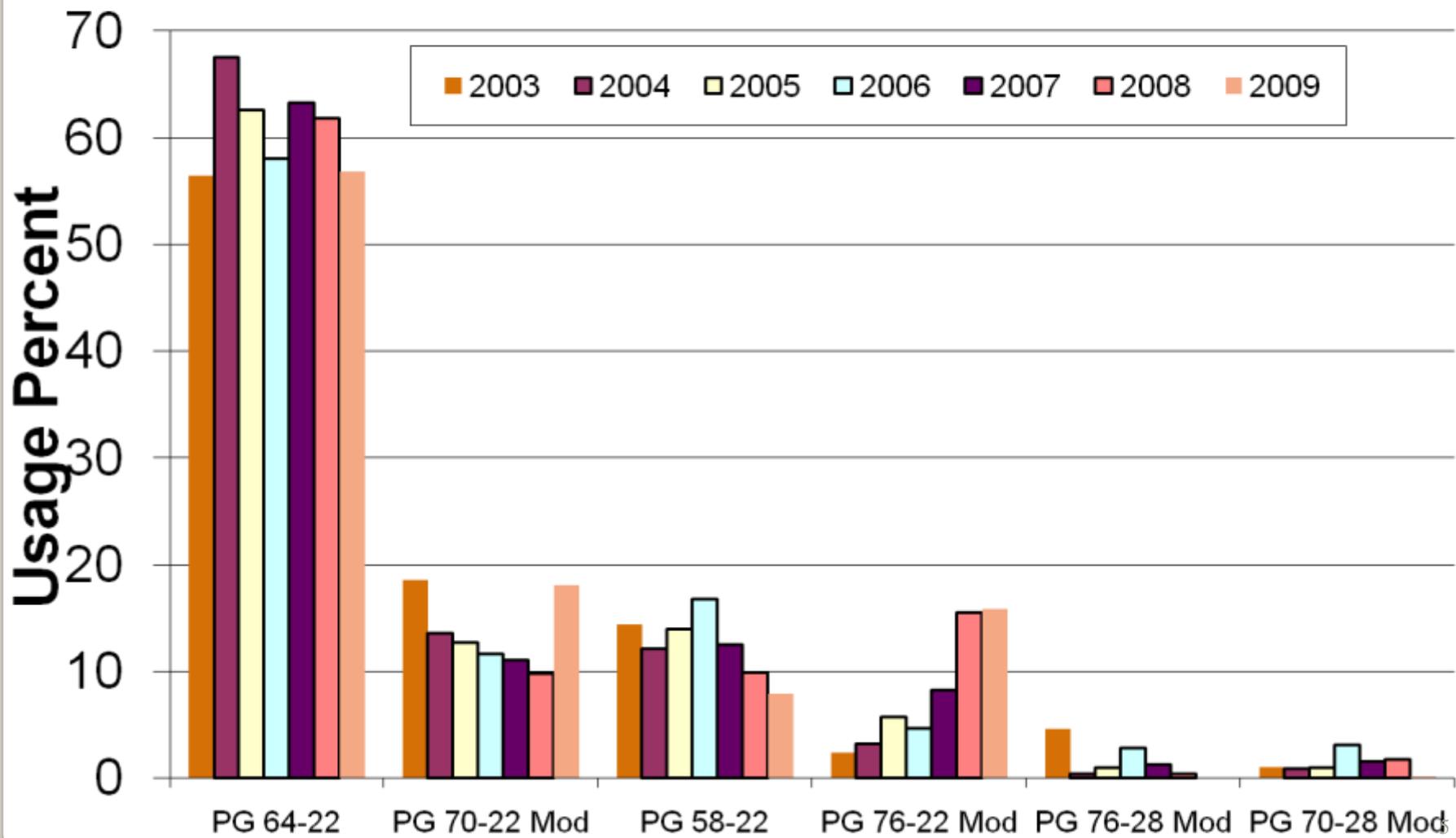
Percent Polymer Usage 2003 to 2009



Tons of Binder Used (in thousands)

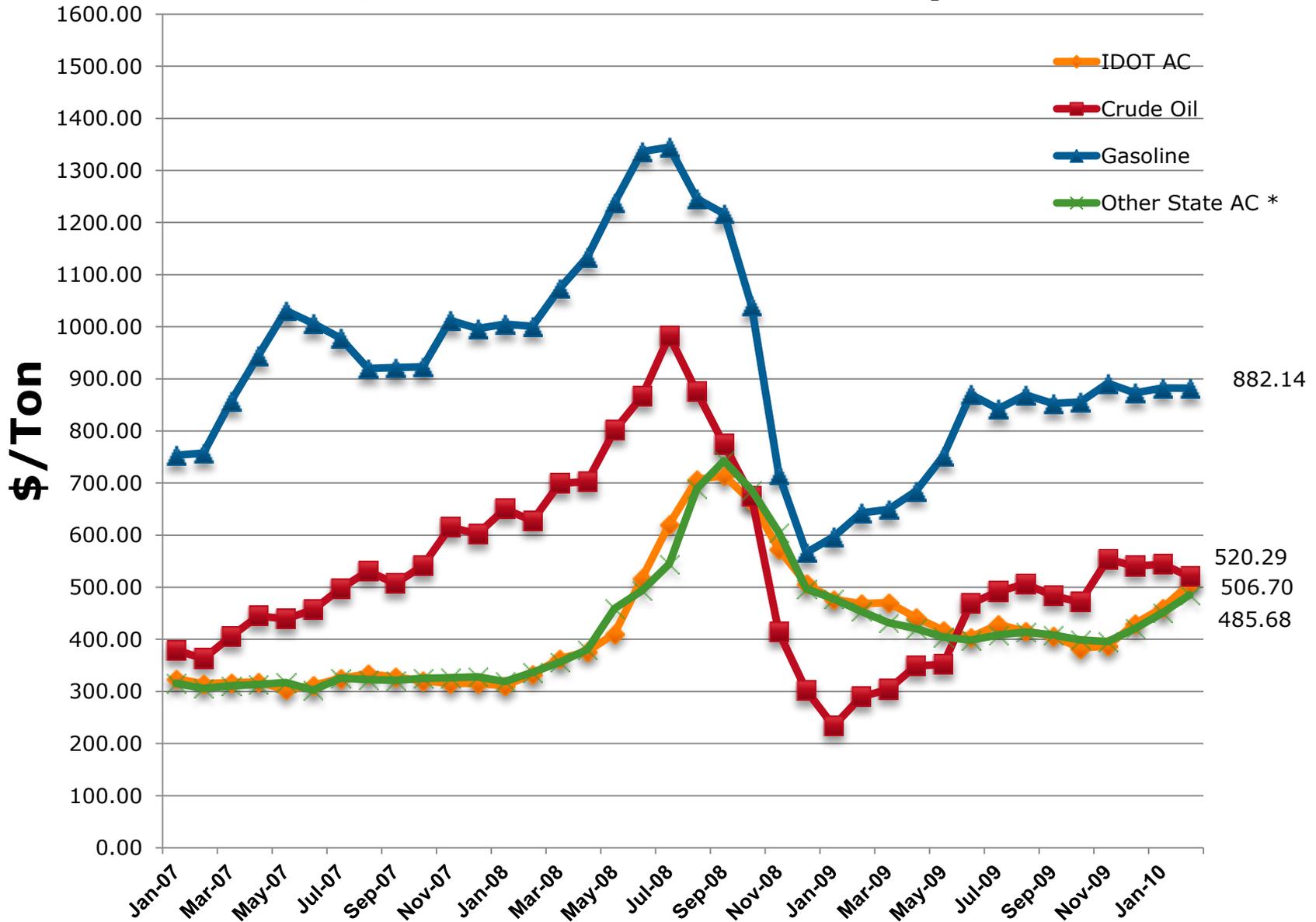


2003 to 2009 Grade Usage



AC Price Index

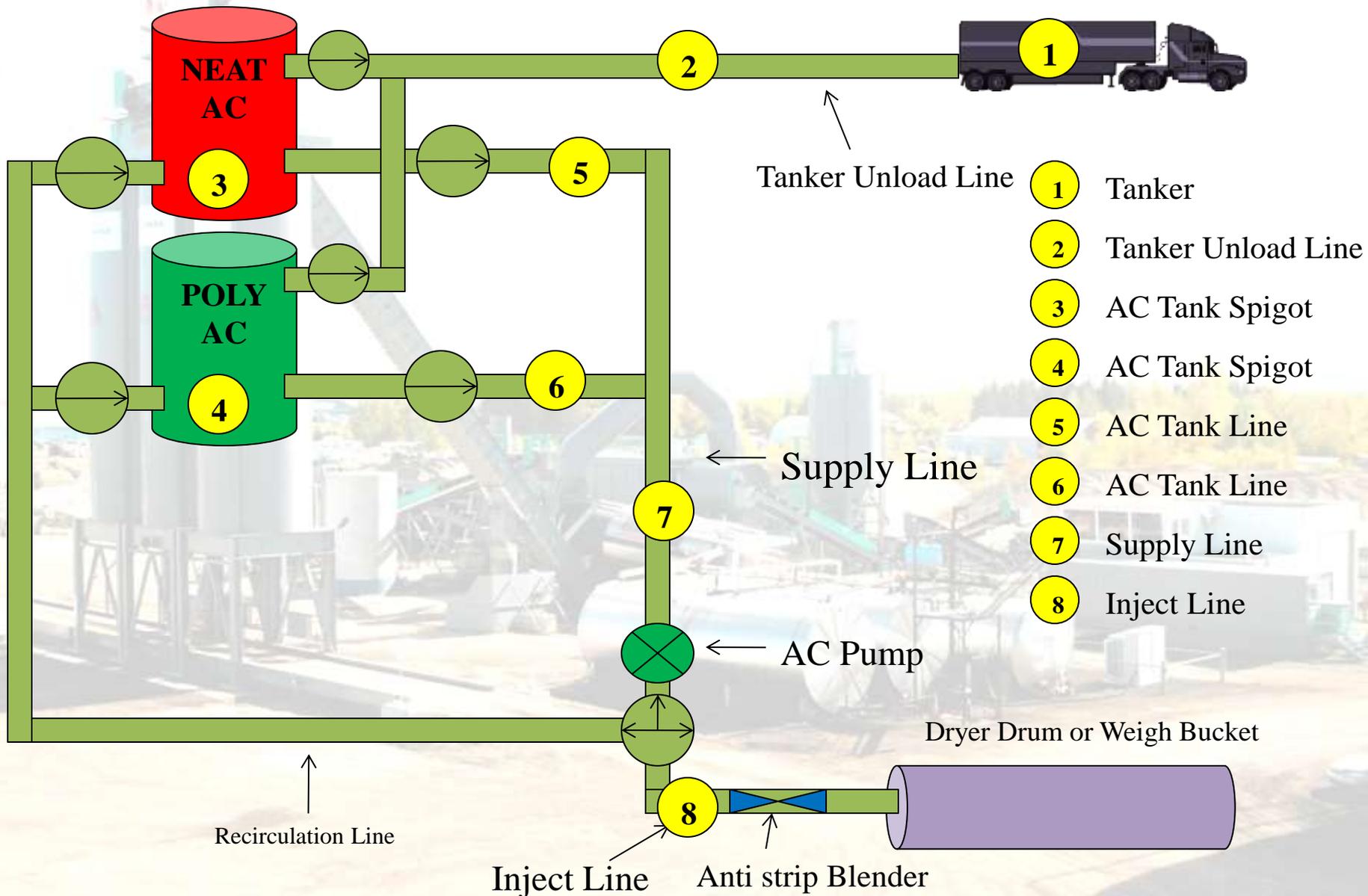
AC/Oil/Gasoline Price Comparison



Liquid AC Sampling at HMA Plants



Sampling Points – Let's Count the Ways



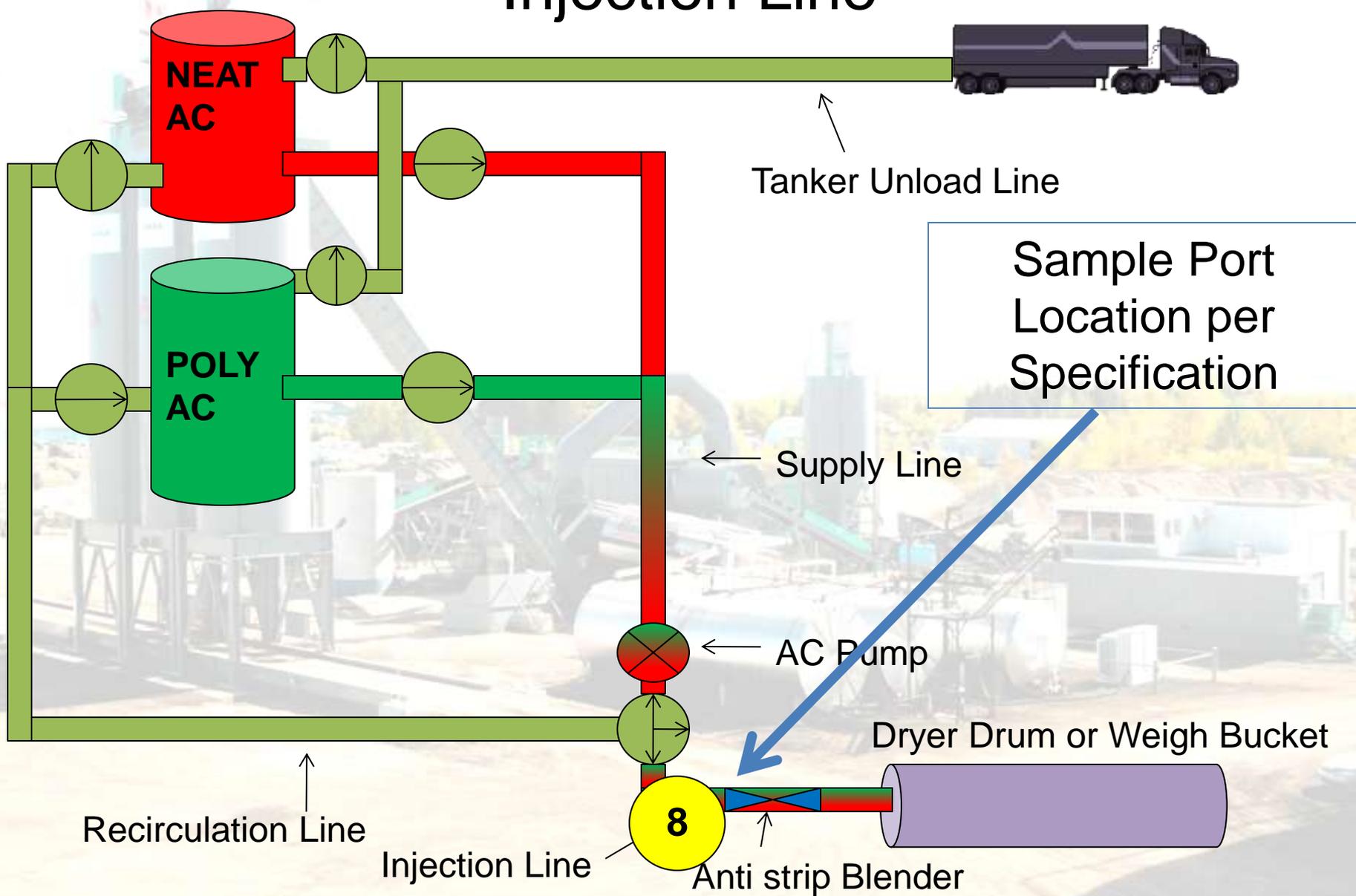
Samples

- Best sample location is....
 - Representative of what is going into mix
 - Taken just prior to incorporation into mix
- If no sample port – needed per Art 1102.01

Sampling

- Must label all sample locations on plant
 - Tank 1, 2
 - Line 1, 2 and so on
- Sample frequency
 - Doubling to at least 1/week
- Witnessing
 - Contractor supplied samples not allowed
 - Contractor assistance by physically taking sample appreciated
 - Must be witnessed by State

Sample at closest point to the mix - at Injection Line



Material Acceptance for HMA



Evolution of Acceptance

- ▣ Method Specifications
 - Served well till 1980's
- ▣ QC/QA Specifications
 - Served well past 20+ years
 - Educated and trained industry
 - Transferred responsibility of mix to contractor
 - System worked while facing staff reductions

NEXT STAGE

Pay for Performance (PFP)

Pay for Performance

- ▣ Adjusts Contractors pay +/-
 - Based upon quality provided
 - IDOT selects sample time/location
 - IDOT Secures and test samples
- ▣ All is independent of Contractor
- ▣ Meets all Federal codes

Implementation Goals

- ▣ 2010
 - At least one PFP project per district
- ▣ 2011 to 2013
 - Roll out period
 - IDOT builds and trains staff
 - Equip labs
 - Refines procedures/specs
- ▣ 2014 – All projects over 8,000 tons



Longitudinal Joint Density Specification

Longitudinal Joint Density Specification

- Joints
 - Traditional low density area
 - Weak link - first location to pothole
- IDOT / Industry developed Longitudinal Joint Density Specification
- Became effective January 2010 letting
- Look for it in projects this summer



FRICTION AGGREGATE AVAILABILITY

“F” MIX AGGREGATES

- ✘ Steel Slag

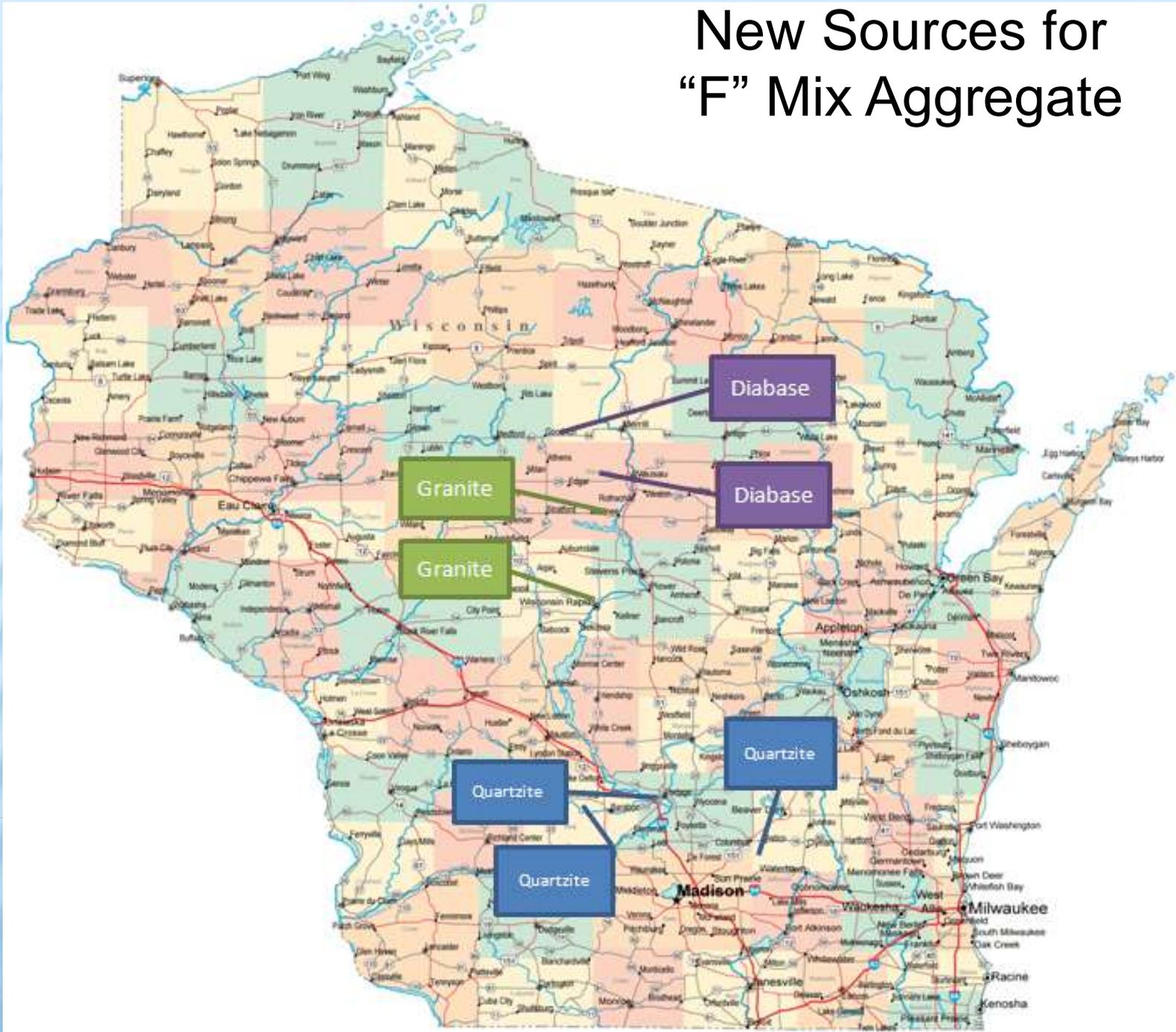
- + Traditional high friction aggregate
- + Steel mills shut down
- + Very limited supply

- ✘ IDOT explored and tested new sources

- ✘ Seven Wisconsin sources being added

- + Diabase (2)
- + Granite (2)
- + Quartzite (3)

New Sources for “F” Mix Aggregate



RAP Update



What Is RAP Aggregate Quality?

- ⦿ New aggregate going in:
 - Surface: Only A or B quality allowed
 - Binder: A, B or C quality
 - Shoulders: A, B, C or D quality
- ⦿ Once milled tracking quality is difficult
- ⦿ Mixed piles could have multiple qualities

Solution

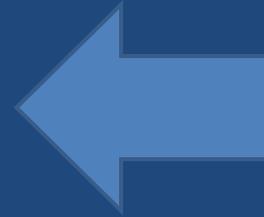
- ⦿ Test RAP aggregate for quality
 - Traditional quality test do not work
 - AC coating interferes with test
- ⦿ Recently developed procedures for assigning aggregate quality of RAP

RAP Aggregate Quality Process

- ⦿ Crush/screen pile up to 5,000 tons
- ⦿ Sample – Multi locations and blend
- ⦿ Extract AC off aggregate
- ⦿ Send aggregate sample to Springfield for testing
- ⦿ If passes aggregate assigned “B” Quality

RAP Aggregate Quality Micro Deval Test

Sample +
with Water





Before

Note sharp edges



After

Rounded edges

A close-up photograph of a large pile of dark, broken asphalt shingles. The shingles are fragmented into various sizes and shapes, showing the layered structure of the material. The overall color is a dark, mottled grey and black. The text "Recycled Asphalt Shingles (RAS)" is overlaid in the center in a bright green, bold font.

Recycled Asphalt Shingles (RAS)

Recycled Asphalt Shingles (RAS)

1) Waste from manufacturing

- Tabs/End runs
- Out of specification material – color & coating

2) Tear-offs from reroofing - old shingles

- Single layer: 20+/- years old
- Double layer: 35-45 years old
- Triple layer: 50-70 years old
- Very hard asphalt
- Asbestos????

2009 RAS Efforts

- Demo Project – Manufactures waste
 - District #1
 - Gallagher Asphalt
 - Bishop Ford
- 5% RAS in SMA binder & surface
 - 20% replacement of asphalt binder
 - Sections using PG76-22 & PG70-22
 - Moisture, strength & rheology testing being tested by District #1, U of I & BMPR

Future of RAS at IDOT

- Manufactured Waste
 - Statewide RAS Spec being developed
 - Contractor may propose use anytime
- Tear-Off Shingles - Tollway took lead with ILEPA
 - Established a “Beneficial Use” of waste product
 - Tollway policy developed
 - Uses a self-testing program by processor for asbestos

Tear-Off Future at IDOT

- Asbestos concern
 - Bad taste from bridge deck waterproofing systems that contained asbestos
 - Final owner of asbestos responsible for clean up
 - 1 ton asbestos RAS = 100 asbestos HMA mix
- Self testing programs are very weak
- IDOT needs to be made whole if processor allows asbestos in RAS/roadway
- Will allow once asbestos risk addressed

WARM MIX ASPHALT

WARM MIX ASPHALT CONTRACTOR'S PROPOSAL

- ✘ Currently all projects let as HMA
- ✘ Contractor may propose a Warm Mix
- ✘ District will review
- ✘ Contractor will be asked to address a number of key issues – Production, Haul time, mix changes, RAP%...
- ✘ If RAP increased state may be due a credit

FUTURE OF WMA

- ✘ Contractors seem excited about using – especially foam
 - + Foaming technology installed state wide
 - + Fuel savings
 - + Improved worker health/conditions
- ✘ BMPR tracking projects
- ✘ As technology proves out – will work with industry to develop standard specifications

LEGISLATIVE IMPACTS

Senate Bill 51

Senate Bill 54



Questions??