THE STORY OF PAY FOR PERFORMANCE (PFP) & QC/QA

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What is PFP?

- It is a method for accepting HMA

Materials Acceptance

- In order to receive Federal funds the Department must have a process to accept materials. For HMA we have used;
  - QC/QA
  - ERS
  - PFP
  - ??

Other Acceptance Programs

- Rebar
  - Annual (re)certification testing
  - Random jobsite sampling
  - 2 failures, decertified
- Prestress
  - Materials tested for every pour
  - Not following QC plan or low strength results in an unaccepted product
- Trees
  - 1 year warranty

Why Use PFP Instead of QC/QA?

- In November of 2009 the FHWA directed IDOT to move away from QC/QA due to several shortcomings.
- With 2010 contracts nearing letting, a choice was made to implement PFP statewide on a few, District select projects over 8,000 tons.
- Moving forward, a method(s) of acceptance meeting FHWA requirements will be needed for all projects.


HIKERS and BIKERS
Move to the side of
the road when a
vehicle approaches

IT'S A TRAP!!!

Summary of 2010 PFP Projects

	Projects	Tonnage	Binder Mixes
Projected	36 (40 w/ carryover)	647,023 (697,533 w/ carryover)	6
Constructed	31 (35 w/ carryover)	446,638	4

- 5 Districts 100% Jobsite Sampling
- Disputes:
  - 18 Mix
  - 45 Cores
- Final Pay:
  - High = 102.9% Low = 92.0% Ave = 98.84%
  - High = 102.9% Low = 89.3% Ave = 98.76%

2010 PFP Assessment

- Dept. was pleased to accept all 35 projects.
- Spec is balanced:
  - ½ of data above and ½ below 100%
  - Ave pay at 99%
- Contractor & Dept. test results compared upward of 97% of time.

Spec. Revisions for 2011

- PFP will continue to be excluded from shoulders, temporary pavements & patching.
- If ramps are included it will be indicated in the plans.
- Deleted table listing old and new PFP supporting documents.

Quality Control by the Contractor:

- Added requirement that Contractor QC results be submitted to Engineer within 24 hours of sampling.
- Deleted Corrective Action Limits table.
- Deleted requirement of notifying Engineer when corrective action limits are exceeded.

Initial Production Testing:

- Added: "The Engineer will make Dept. test results of initial production testing available to the Contractor w/ in two working days from the receipt of the samples."
- Clarified that cores must be 4-inch.
- Added requirement that cores be taken same day unless otherwise approved by the Engineer.

Dispute Resolution:

- Requirements to Dispute
  - Split results to District prior to receiving District results
  - Exceed Precision Limits.
- Requirements waived if Contractor agrees to pay Lab Fees for Dispute Testing.
- Replaced individual Dust & AC Precision Limits with a single Precision Limit for Dust/AC ratio (0.2)

Dispute Resolution:

- Reduced Precision Limit for VMA to 1.4%
- Clarified that all BMPR results (parameters) for a sample replace all District results.
- Provided clarification as to how results will be analyzed to determine who pays testing fees.

Acceptance by the Engineer and Basis of Payment:

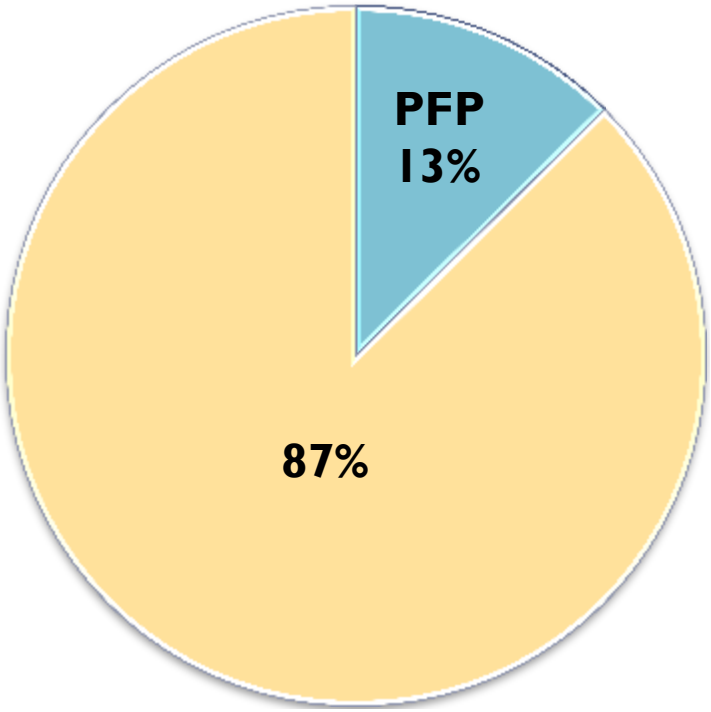
- Quantifying amount of mix/pavement to be removed when criteria exceeded
  - Density Intervals every 0.2 mile
  - For mix - Engineer will need to rely on QC test results to use 105.03 to determine what can remain in place until guidelines can be developed.
- Removed 92% penalty cap / pay floor.

PFP Implementation Schedule
(as outlined in 2/11/10 memo from Christine Reed)

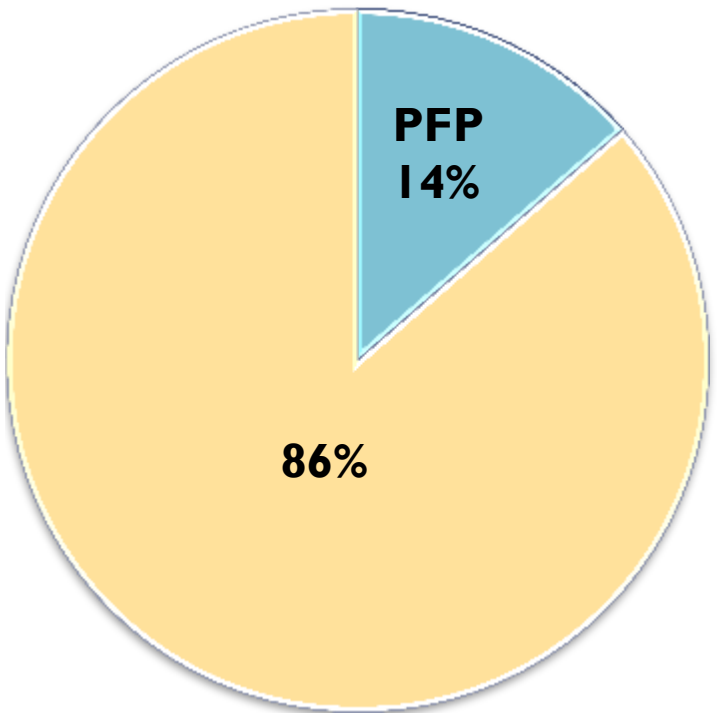
- 2011
  - Min. 50% of all Interstate or Supplemental Expressway
    - ≥ 8,000 tons / mix
- 2012
  - All Interstate & Supplemental Expressway
    - ≥ 8,000 tons / mix

2010 PFP Projects vs. Total HMA Tonnages/Projects

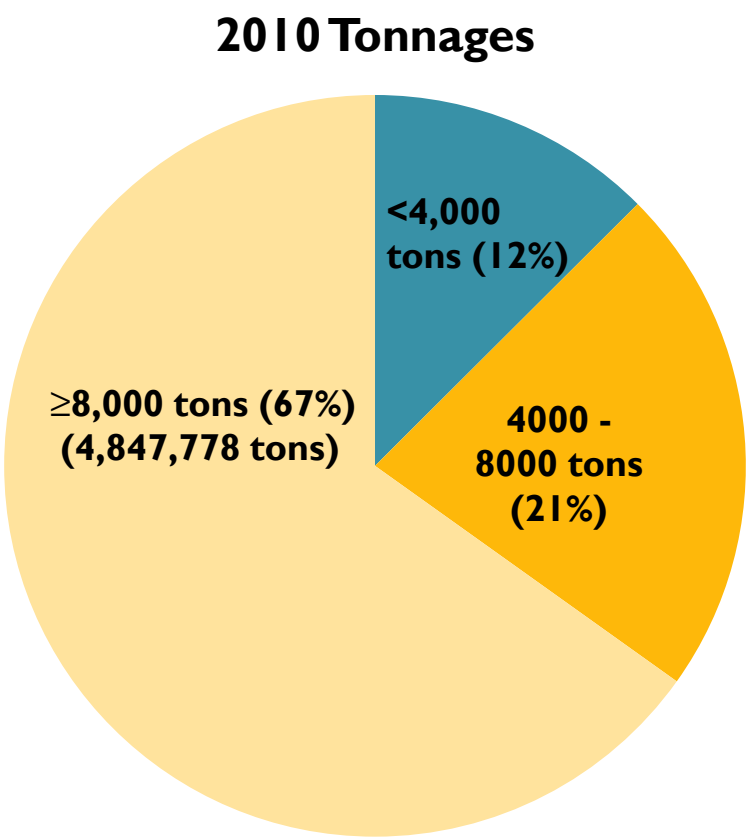
2010 **Tonnage**
≥8,000 tons
(4,847,778 total)

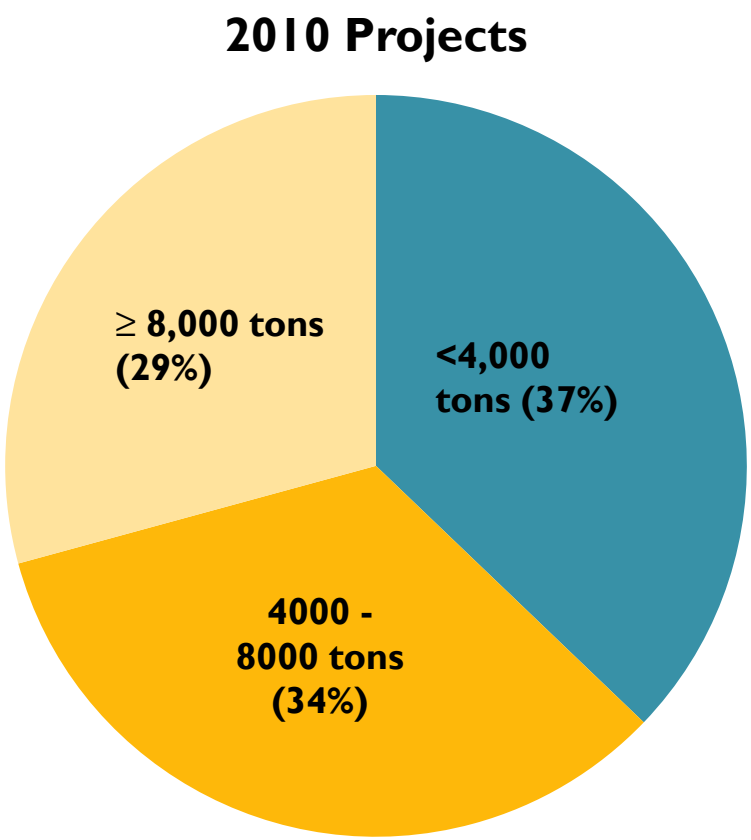


2010 **Projects**
≥8,000 tons
(254 total)



2010 Total HMA Tonnages/Projects





Where Does Acceptance Go From Here?

- Industry proposals – reduce risk
  - Restrict PFP to full depth and interstate overlays greater than 8,000 tons
  - Specify an MTD
  - Use contractor test results
  - Eliminate time lag of pay determination by testing side-by-side
- Department desires
  - Select projects with biggest bang for buck
  - Match testing to staffing
  - Simplify while maintaining FHWA approval

A New (& Improved) Program

- **PFP Lite**
- **Testing**
  Excellence in
  Every
  Ton of
  HMA
- **QCP – Quality Control for Performance**

QCP - Spec

- Step based pay w/out PWL statistics.
- Pay Parameters – Voids, VMA, Dust/AC & Density.
- Would apply to:
  - Mixes of any quantity
  - Shoulders & temporary pavements
- Would delete most Std Spec articles currently deleted in PFP.

Definitions

- Sublot – 1000 tons unless otherwise approved by Engineer.
- Density Interval – 0.2 mile.
- Lot – 4 Sublots or 5 Density Intervals (1 mile)
- Density Test – Core random long. & trans., outer 1' (minus 2") on unconfined edge included by adding 2% to density.

Sampling

- Mix
  - Engineer witnesses Contractor sampling
  - Department secures split samples

Sampling

- Density
  - Engineer identifies sample locations according to random density procedure
  - Engineer witnesses Contractor coring
  - Department secures split samples

Testing

- Contractor tests all 4 mix sublots & 5 density intervals.
- Department tests 1 mix sublot & 1 density interval per Lot.
- QC & QA sample test results must compare based on precision limits.

Pay

- Based on Contractor test results.
- If precision limits are exceeded:
  - Dept tests all sublots or density intervals for Lot
  - Dept tests results used for pay for that Lot.
- If pay is based on Dept test results for more than 2 consecutive Lots, the cause needs to be investigated.

Final Pay

$$\text{Pay} = \text{Voids}_{20} + \text{VMA}_{20} + \text{Dust/AC}_{20} + \text{Density}_{40}$$