Pennsylvania Asphalt Improvement Network (PASIN)

Presentation to NCAUPG/OAPC
Industry Objectives

- Ensure best quality pavements
- Assisting with QC/QA processes
- Improve the durability asphalt pavements
Currently

- Managing for pay
  - Driven by current acceptance method
- Not focused on process capability
PASIN–Quality Management System

- Managing for quality
- Process capability
- Process improvement
PASIN Participants

- Pennsylvania Department of Transportation
- Federal Highway Administration
- Pennsylvania Asphalt Pavement Association
- American Council of Engineering Companies
- PA Aggregate and Concrete Association
- AASHTO Materials Reference Laboratory
- Pennsylvania Turnpike Commission
- NECEPT
PASIN Implementation

1. Say what you do
2. Do what you say
3. Prove it
4. Improve it
PASIN QMS Elements

- Management review
- Customer focus
- Corrective and preventive actions
- Control of non-conforming product
- Control of documents
- Control of records
- Internal audits
- External audits
Activities to Date

• Baseline Assessment
• Conducted five pilot projects
  – First round - a struggle
  – PASIN implementation templates
  – Warranty link
AARs

- Increased profits
- Improvement in quality
- Senior management involvement
- Customer focus
- Corrective actions
Vision

- Quality Management System principles
- Standard operating procedures
- Culture change
  - Unplanned - results unpredictable
  - Planned - desired results
Culture Change – PennDOT

- Limited Involvement
- QA Staff-QC Plan Review
- District Staff-QC Plan Review
- QA – External Audits
- Inspector-Contractor Audits
Best Practices ~ FMEA

• Failure Mode and Effect Analysis
  – Failure causes
  – Effects analysis
• Derived by PASIN Core Team
• Refined by industry work groups
Best Practices

“Techniques, methodologies, processes or procedures that through experience and research, have proven to reliably lead to performance results recognized as exceeding those achieved by most organizations.”
Best Practices ~ Plant

- Results in...“asphalt pavement that is:
  - Consistent in quality
  - Maximizes durability”

- Total - 74

- New Best Practices
**Best Practices ~ Laydown**

- Improve laydown quality control
- Total - 42
- New Best Practices
Best Practices ~ Implementation Plan

❖ HMA PASIN Implementation Plan

Hot Mix Asphalt
PASIN Implementation Plan

Project Name and Number

Submitted by: Date: ___2008

<table>
<thead>
<tr>
<th>Organization</th>
<th>Name</th>
<th>Hot Mix Asphalt Implementation Plan</th>
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<tbody>
<tr>
<td>Contractor</td>
<td>Submitted by</td>
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<tr>
<td>PASIN Team</td>
<td>Approved by</td>
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PASIN Implementation

1. Say what you do
2. Do what you say
3. Prove it
4. Improve it
PASIN Implementation

PASIN Support:
- Quality Manager
- Management
- Plant personnel
- Paving personnel
- PASIN Implementation Team
- External certified auditors
Implementation Plan

- **Company Management Team**
  - Management
  - Production personnel
  - Paving personnel
Implementation Plan

Company Best Practices Support:

- Develop/modify processes to meet pilot requirements
- Develop and/or use required forms to assess process effectiveness
- Support training by Quality Manager
- Provide implementation information for internal and PASIN external auditors
Implementation Plan

 Contractor Internal Audit Team

- Manage internal audits
  - schedule, implement audits and keep records
- Publish audit report
- Communicate results of audits
  - company senior management
PASIN Implementation

PASIN Implementation Team:

- PennDOT
  - ADE
  - Bureau of Construction and Materials
  - Others
- PA Asphalt Pavement Association
- Consultants
Management Review
Management Review

(Source: PASIN Quality Manual – Section 5)

- **Management Commitment:**
  - Monitor motoring public satisfaction
  - Control QMS processes and products
  - Maintain and improve QMS
Management Actions:

- Establish a quality policy and measurable goals
- Ensure availability of resources
- Conduct periodic management reviews
- Communicate importance of satisfying customers’ needs
PASIN Quality Policy:

“We will satisfy those we serve by consistently designing, constructing and maintaining durable, high quality asphalt highways through the use of processes that have minimum adverse effect on surrounding communities and are continuously improved.”
Management Review (cont.)

(Source: HMA Plan Implementation Template)

❖ **Standard Agenda:**

- Quality goals
- Production goals
- Scheduling
- Resources
- QC test results
- Acceptance test results
- Audits
- Customer complaints
- Non-conformances
- Corrective and preventive actions
Management Review (cont.)

(Source: HMA Plan Implementation Template)

- **Introduction**
- **Methodology**

<table>
<thead>
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<td>Action Item</td>
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- **Quality Policy**
- **Quality Objectives**
- **Management Review Team Members**
- **Standard Management Review Agenda**
Internal Audits
Internal Audits

(Source: PASIN Quality Manual - Section 8)

- Internal audit plan
- Auditors from the company
- Coaching from the PASIN team
- Internal Audit Report
Internal Audits
(Source: PASIN Quality Manual - Section 8)

- Has the process been planned?
- Is the process carried out according to plan?
- Are the planned results being achieved?
Internal Audits

(Source: PASIN Quality Manual - Section 8)

- Are opportunities for improvement being identified and implemented?
  - By correcting non-conformities
  - By identifying root causes of problems and implementing corrective action
  - By identifying trends and the need for preventive action
  - By innovation
# Internal Audits

(Source: PASIN Quality Manual - Section 8)

- **Introduction**
- **Methodology**

## Implementation Plan

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<tr>
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<th>Responsibility</th>
<th>Timeframe from NTP Date</th>
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- **Auditor Qualification**
- **Auditor Training, Approved Auditors**
- **Audit Plan**
- **Audit Schedule**
Corrective and Preventive Actions
Corrective and Preventive Actions

(Source: PASIN Quality Manual - Section 8)

- Problems or potential problems
  - Identify
  - Record
  - Analyze
  - Resolve
  - Prevent
Corrective and Preventive Actions

(Source: PASIN Quality Manual - Section 8)

Action:

- Establish a Corrective & Preventive Action Reporting System that specifies the use of a formalized problem solving approach of a degree appropriate to the magnitude of the problem.
Corrective and Preventive Actions

(Source: PASIN Quality Manual - Section 8)

- Introduction
- Methodology (Root Cause Analysis)

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- Corrective Actions
- Preventive Actions
- Closure Tracking and Verification
Internal Audits

(Source: PASIN Quality Manual - Section 8)

❖ Example Audit Plan

- Scope
- Organize the audit team
- Determining the starting and ending points of the audit (Process Flow Diagram)
- Review company documentation
- Develop and Approve audit checklists
- Schedule audit
- Complete audit reports
Most Important

- Management Review
- Internal Audits
Every employee involved knows what they are responsible for as well as what everyone else is responsible for.
Questions?