

SPS-2 Concrete Pavement Preservation Experiment TPF-5-(291)

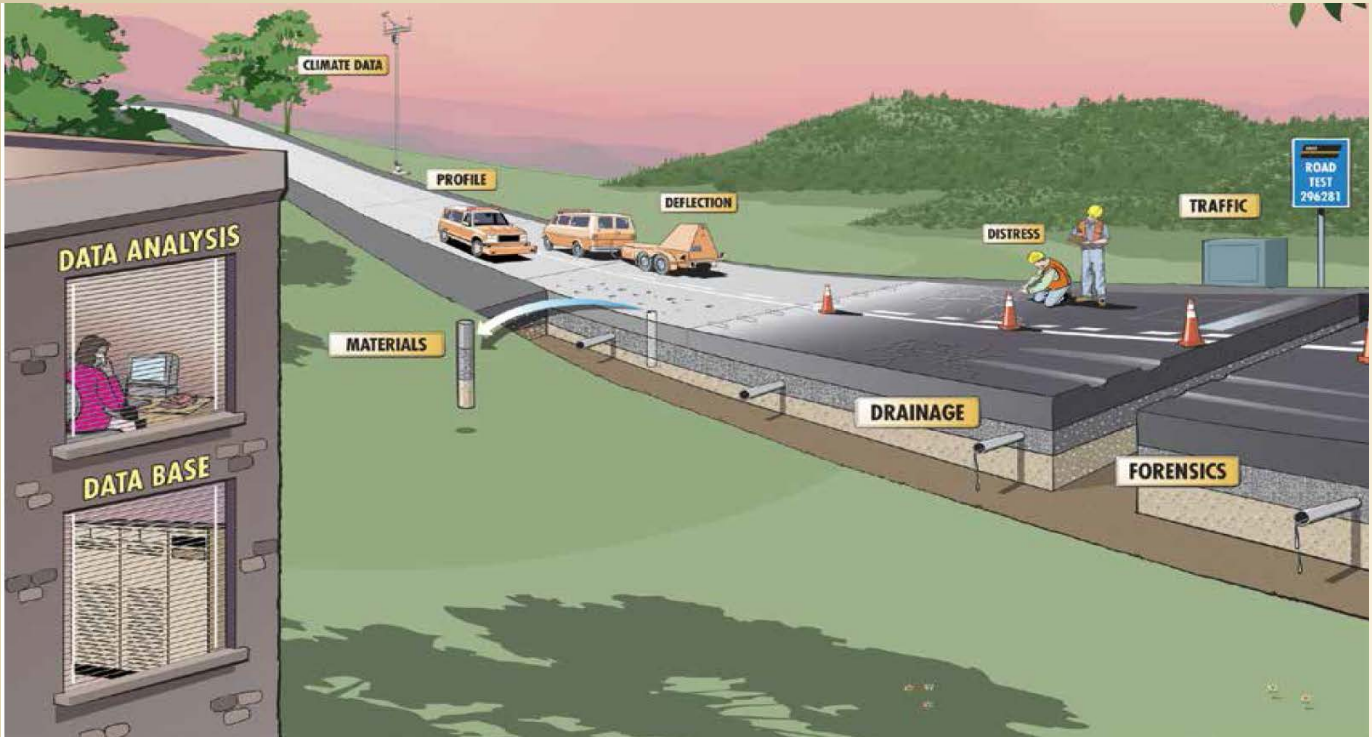
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Long Term Pavement Performance (LTPP)



SPS-2: Strategic Study of Structural Factors for Rigid Pavement

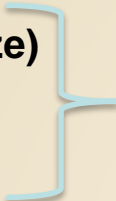
- Concrete Thickness (8" & 11")
- Base Type (LCB, DGAB, PATB)
- Flexural Strength (550 psi & 900 psi)
- Slab Width (12' & 14')
- Edge Drains (with PATB)



5 design factors

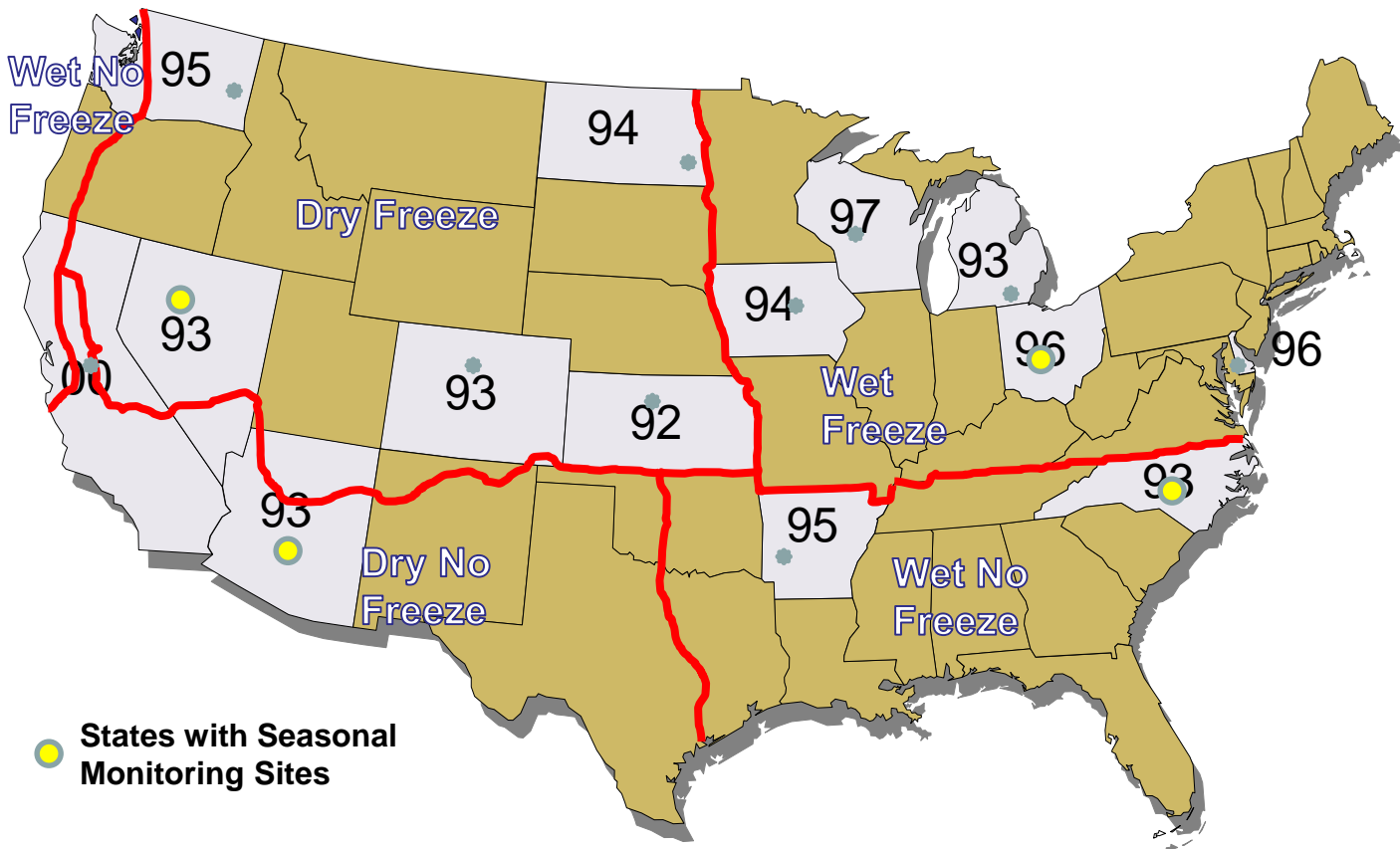
• Site Factors

- Temperature (freeze & no-freeze)
- Precipitation (wet & dry)
- Subgrade (fine & coarse)



3 site factors

States Constructing LTPP SPS-2 Experiment



Seasonal Monitoring Sites and SPS-8 Experiment

- **Seasonal Monitoring Sites**: “...variations in pavement response and material properties due to the separate and combined effects of temperature, moisture and frost/thaw variations.”
 - Four SPS-2/SM Projects: AZ, NC, NV, OH:
- **SPS-8**: The effect of climatic factors and subgrade type on pavement sections incorporating different designs and subjected to very limited traffic as measured by the ESAL accumulation
 - Six SPS-2/8 Projects: AR, CA, CO, OH, WA

Structural Factors of Jointed Plain Concrete Pavements: SPS-2— Initial Evaluation and Analysis

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Development of an SPS-2 Pavement Preservation Experiment: TPF-5-(291)

Arizona California Colorado
Georgia Kansas North Carolina
Washington

Project Unfolds in Two Phases:

- **Phase 1 focuses on assessing what sections exist, what data is available, and to identify what can and cannot be studied on the remaining test sections**
 - **Six Month Study by Nichols Consulting**
 - **Analyze selected SPS-2 sites with Pavement ME and compare predicted performance to actual performance**
 - **Tech Days – various sites**

- **Phase 2 will be the development and implementation of the preservation experiment that will be developed after the conclusion of the Phase 1 effort**

Phase 1 Opportunities

- Conduct a Tech Day At Selected SPS-2 Location
 - Host workshop and field review of site
 - During field review all participants rate test sections and recommend strategies (ETG panel will participate in all field reviews)

Phase 1 Opportunities

- Conduct a Tech Day at Selected SPS-2 Location
 - Participants can compare their own evaluations to group evaluations and ETG
 - Each state identifies current and future Issues— living SPS-2 sites

Non Traditional Phase 2 Opportunities

- Passing of the baton to a new generation of engineers
- Great training opportunity
- Bring to bear the best minds on determining preservation strategies

Non Traditional Phase 2 Opportunities

- Renew and sustain interest in future SPS-2 evaluations
- Generate awareness of and Tech Transfer for SPS-2 performance—
impact of design features
- Engage all of the industry to develop the best experiment

What are Potential Opportunities?

- Life extension of concrete pavement
- Development of PMS triggers for concrete preservation
- Improved ride quality
- PCCP design life verification

What are Potential Opportunities?

- Comparison of structural capacity to remaining service life
- Sealant research
- Texture durability
- Changes in material properties over time

What are Potential Opportunities?

- Measurement of solar reflectance
- Rolling resistance measurement
- Evaluation of joint opening movement data from SMS sites
- Curl and warp analysis

What are Potential Opportunities?

- Development of the best preservation techniques and materials
- Evaluation of non-destructive test devices

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TPF-5-(291)

If you would like to participate or have questions regarding this pooled fund study, please contact Jeff Uhlmeyer or Lu Saechao.