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# Long Term Pavement Performance

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**Federal Highway Administration**



**LONG TERM**  
**pavement**  
PERFORMANCE



# LTPP's GOAL

To Provide Data and Answers to

WHY and HOW

Pavements Perform as they Do.





# LTPP Studies

## In-service Pavements Studies

- General Pavement Studies (**GPS**)
  - Existing Pavement
- Specific Pavement Studies (**SPS**)
  - New Pavements
- Seasonal Monitoring Program (**SMP**)
- Dynamic Load-Response Study (**DLR**)





# General Pavement Studies

- GPS-1 → Asphalt Concrete (AC) on Granular Base
- GPS-2 → AC on Bound Base
- GPS-3 → Jointed Plain Concrete Pavement
- GPS-4 → Jointed Reinforced Concrete Pavement
- GPS-5 → Continuously Reinforced Concrete Pavement
- GPS-6 → AC Overlay on AC Pavements
- GPS-7 → AC Overlay on Portland Cement Concrete (PCC) Pavements
- GPS-9 → Unbounded PCC Overlays on PCC Pavements





# Specific Pavement Studies (SPS)

- SPS-1** → Structural Factors for Flexible Pavements
- SPS-2** → Structural Factors for Rigid Pavements
- SPS-3** → Preventative Maintenance Effective for Flexible Pavements
- SPS-4** → Preventative Maintenance Effective for Rigid Pavements
- SPS-5** → Rehabilitation of AC Pavements
- SPS-6** → Rehabilitation of Jointed PCC Pavements
- SPS-7** → Bonded PCC Overlays on Concrete Pavements
- SPS-8** → Environmental Effects in the Absence of Heavy Loads
- SPS-9** → Validation of SHRP Asphalt Specification and Mix Design (Superpave)
- SPS-10** → Overlay of Asphalt with Warm Mix Asphalt





# LTPP in Ohio

LTPP Experiment	Total Original LTPP Test Sections	Total Studied LTPP Test Section	LTPP Test Section	Total Original LTPP Test Sections	Total Studied LTPP Test Section
GPS-3	2	2	SPS-1	14	14
GPS-4	2	2	SPS-2	19	19
GPS-5	2	2	SPS-4	8	8
GPS-6C	0	1	SPS-8	4	4
GPS-6S	0	6	SPS-9N	3	3
GPS-7A	1	1			
GPS-7B	0	2			
GPS-7C	0	4			
GPS-7S	0	3			
GPS-9	3	3			





# LTPP in Ohio

LTPP Test Section	Original Experiment	Changes to Experiment	LTPP Test Section	Original Experiment	Changes to Experiment
0104	SPS-1	GPS-6S	3013	GPS-3	GPS-7B, 7S
0111	SPS-1	GPS-6C	3801	GPS-3	GPS-7C
0112	SPS-1	GPS-6S	4018	GPS-4	GPS-7C, 7S
0159	SPS-1	GPS-6S	5003	GSP-5	GPS-7C
0160	SPS-1	GPS-6S	5010	GPS-5	GPS-7B
0901	SPS-9	GPS-6S	7021	GSP-7A	GPS-7S
0903	SPS-9	GPS-6S	9006	GPS-9	GPS-7C







# GPS 6 & 7's in Ohio

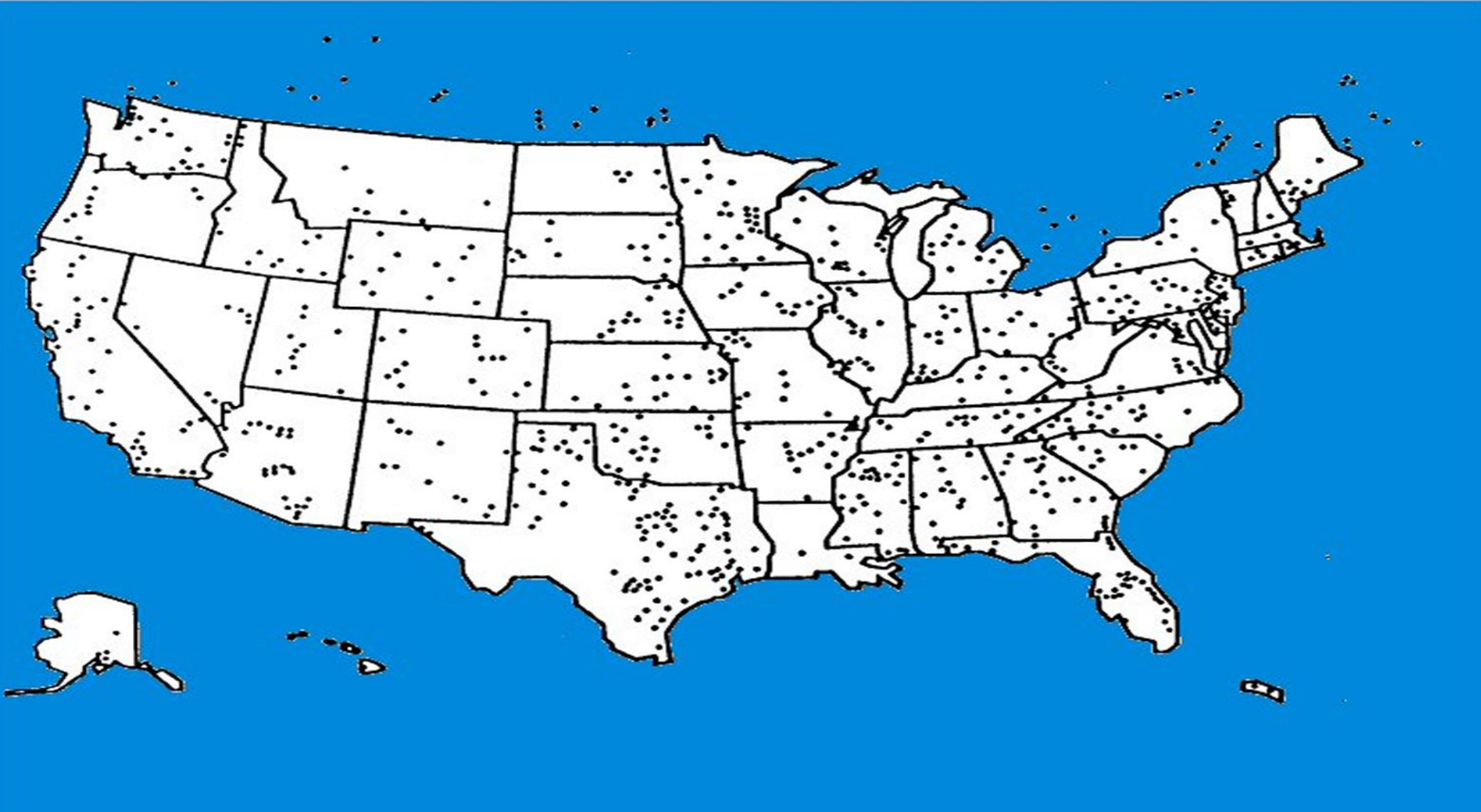
- GPS-6C - AC Overlay with Modified Asphalt Cement on AC Pavement, No Milling
- GPS-6S - AC Overlay on AC Pavement with Milling and/or Fabric Pretreatment
- GPS-7A - Existing AC Overlay on PCC Pavement
- GPS-7B - AC Overlay with Conventional Asphalt Cement on PCC Pavement, with CPR or No Pretreatment
- GPS-7C - AC Overlay with Modified Asphalt Cement on PCC Pavement, with CPR or No Pretreatment
- GPS-7S - AC Overlay on PCC Pavement with Pretreatment







# LTPP Sites in North America





# Data Collection

- ◆ Manual Distress Survey
- ◆ FWD
- ◆ Longitudinal Profile
- ◆ Texture
- ◆ Transverse Profile
- ◆ Materials
- ◆ Traffic
- ◆ Weather (MERRA, VWS & AWS)





# Material Reference Library

- ◆ Storage of Materials from LTPP Experiments
- ◆ Material used on Research Projects of National Significance







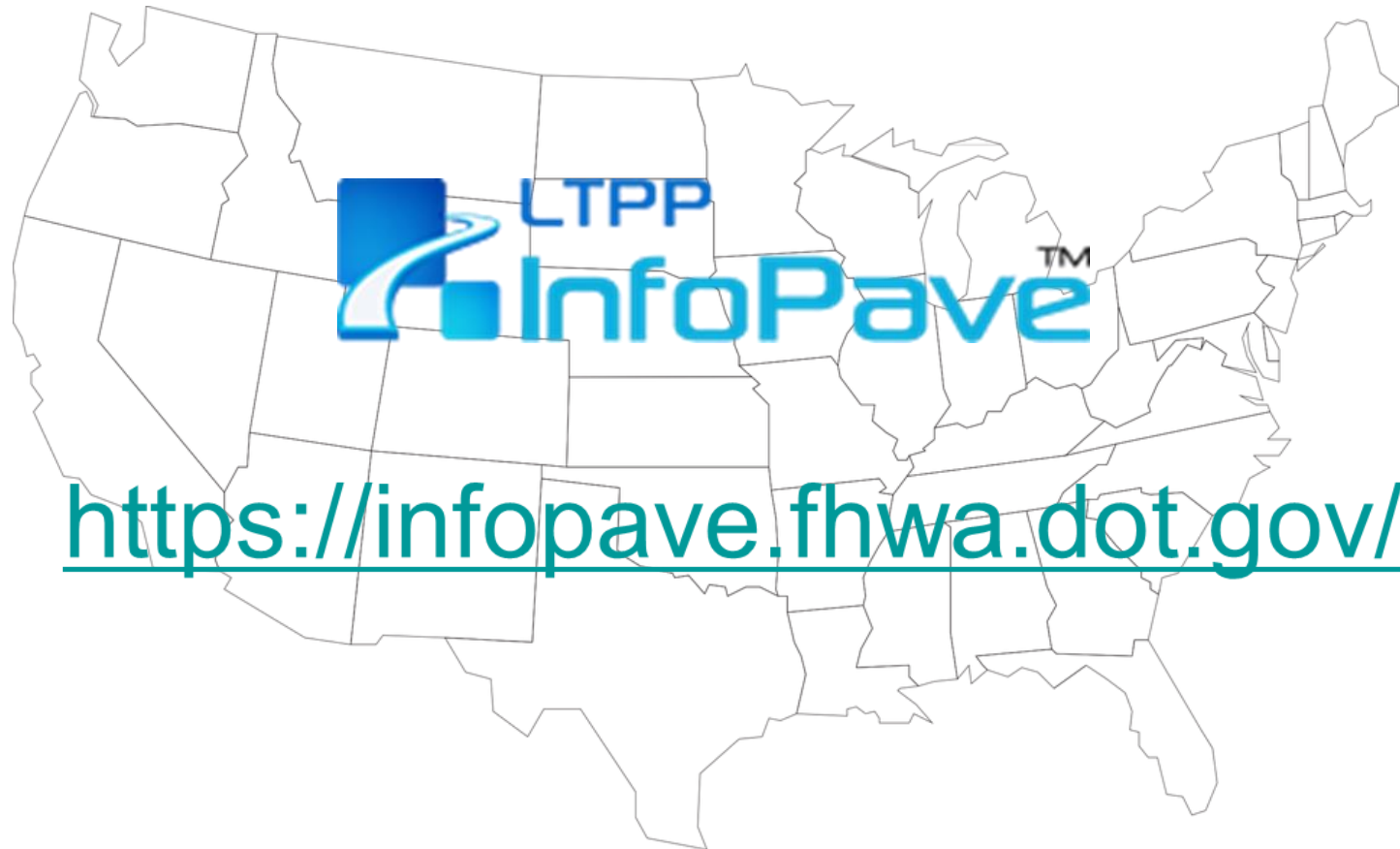
# LTPP Information Management System

- ◆ Data Collected by Data Collection Contractor(DCC)
- ◆ DCC enters Data into LTPP IMS and QCs Data
- ◆ Technical Support Service Contractor(TSSC) manages IMS and QCs data
- ◆ Data uploaded annually into InfoPave





# Disseminating LTPP Data



<https://infopave.fhwa.dot.gov/>





# LTPP Products

Most Recent Additions:

- ◆ LTPPBind
- ◆ MERRA Weather
- ◆ New Traffic Data Set
- ◆ Environmental Effects on Pavements Report (SPS-8) Available





# The Future of LTPP







# Questions and Comments

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