2015 MPPP ANNUAL MEETING

Pavement Preservation in Kansas

Blair Heptig

Substantial Maintenance Program

- "1R Program"
  - Dedicated funds for pavement preservation
    - Typically $180 million / year
  - Address 1,200 to 1,400 miles out of more than 10,000 mile highway system each year
  - Protect the public's investment in its highway system by preserving the "as built" condition as long as possible

Project Development to Construction

- Multi-year process
  - For projects constructed in summer 2015…
    1) Distress Survey → spring 2013
    2) Candidate projects from Pavement Management System (PMS) → fall 2013
    3) Districts select locations and preferred actions → winter 2013-2014
    4) Actions finalized during 1R tour → spring 2014
    5) Project letting → fall 2014
    6) Construction → summer 2015

1) Distress Survey

- PMS generates an annual report showing the percentage of the system in good (PL 1), fair (PL 2) and poor condition (PL 3)

- Performance Level used as a simple measure to help determine where preservation funds should be spent
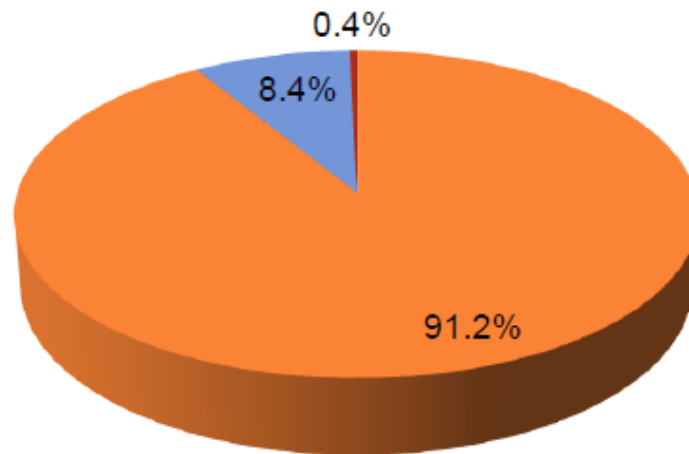
1) Distress Survey

- ## Where we started

Goals (Interstate Highways)		
Years	% Good	% Poor
Existing 1983	49	14
1983-1996	>72	<5
1997-Present	>85	<3
Goals (Non-Interstate Highways)		
Existing 1983	43	19
1983-1996	>72	<5
1997-Present	>80	<5

- ## Now

2015 Kansas NOS Condition Survey Report

Statewide

- Performance Level 1 - 91.2%
- Performance Level 2 - 8.4%
- Performance Level 3 - 0.4%

0.4%
8.4%
91.2%

Midwestern
Pavement Preservation Partnership

1) Distress Survey

- PL based on Distress State
  - Distress State
    - Three digit number, where each digit represents the level of a certain pavement condition
    - First digit: indicator of roughness on all pavement types based upon the IRI
    - Second digit: indicator of joint distress on rigid pavements or transverse cracking on flexible pavements
    - Third digit: indicator of faulting on rigid pavements or rutting on flexible pavements

1) Distress Survey

Performance Levels Assigned to each Distress State

| DS Code	PCCP	Composite	F.D. Bit	P.D. Bit
111, 112	1	1	1	1
113	1	1	1	2
121, 122	1	1	1	1
123	1	2	2	2
131, 133	2	2	2	2
211	1	1	1	1
212	1	1	1	2
213	1	1	2	2
221	1	2	2	2
222	1	2	2	2
223	2	2	2	2
231-233	2	2	2	2
311	2	2	3	3
312, 313	3	3	3	3
321 - 323	3	3	3	3
331 -333	3	3	3	3

2) PMS Candidate Projects

- PMS uses Network Optimization System to assist in project selection
  - Pulls data from the Pavement Management Information System
    - Distress history, type of pavement, functional class, traffic and other relevant information
  - Models determine the action (or no action) for each one mile segment to produce the optimal benefit to statewide PL
  - Desired performance or fixed budget mode
  - Mileage allotments for each District

2) PMS Candidate Projects

- PMS generates a candidate list of projects (recommendations for years 1, 2 and 3)
- Candidate list sent to Districts for review
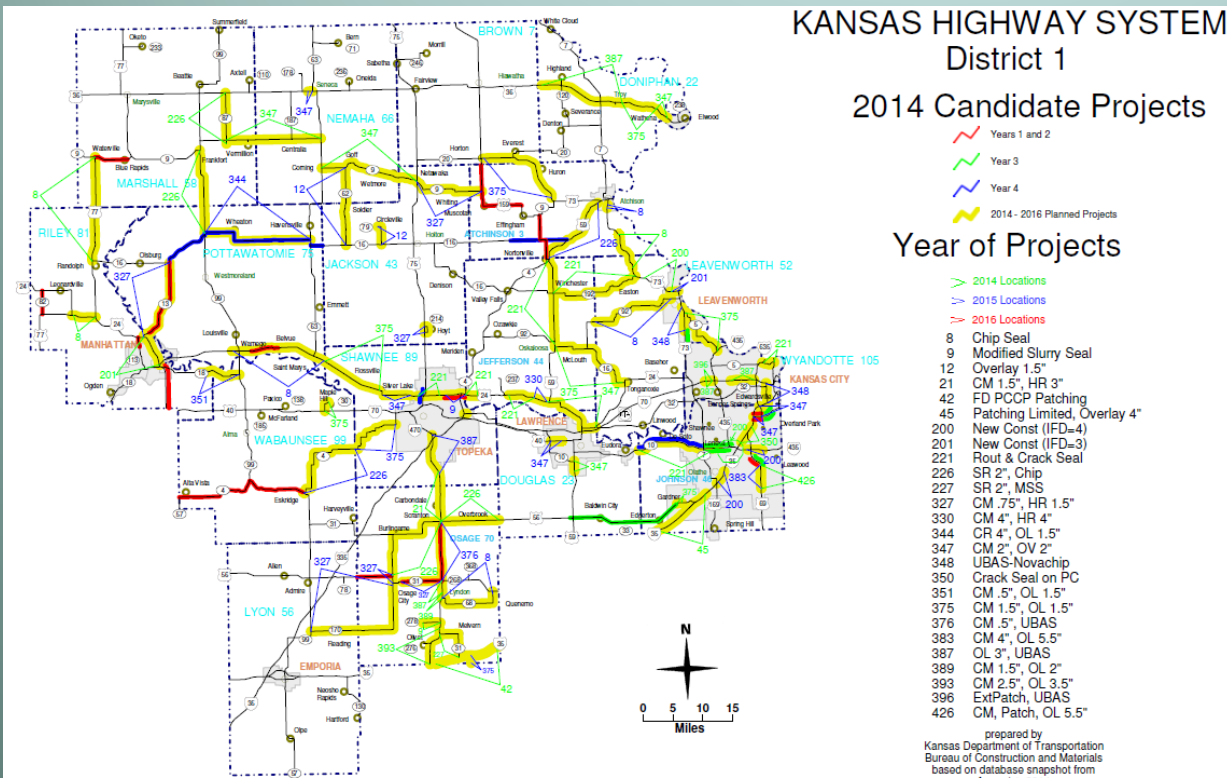
3) District Locations and Actions

- Districts must select 40% of the locations in the first year recommendations, 60% of the locations in the first 2 years, and 70% of the locations in the first 3 years

- District personnel review the list and select locations (according to criteria listed above) for mileage allotted

3) District Locations and Actions

- Districts indicate preferred preservation action which may differ from the action recommended by PMS (similar cost though)
  - Cold milling
  - HMA overlay
  - Hot in-place recycling
  - UBAS
  - Chip seal
  - Crack seal
  - Microsurfacing
  - Cold in-place recycling
  - Diamond Grinding
  - PCCP Patching

4) Finalize Actions

- 1R tour
    - Personnel from Districts and HQ (Bureau of Construction & Materials) drive each of the selected locations and come to an agreement on the appropriate action. Also work out some project specific details (mix requirements, striping, traffic control, etc.)
    - Also ensure preservation action still appropriate for project being constructed that summer

5) Project Letting

- Districts generate a "402" for each project
  - Contract document
    - Bid items
    - Quantities
    - Typical sections
    - Standard drawings
    - Project notes
- Letting
- Award Contract

6) Construction