

HPMS: Update

RPUG

Atlanta, GA

December 11, 2009

Agenda

- HPMS 2010+ Reassessment Status
- Brief New Data Model Description
- HPMS 2010+ Reassessment Pavement Data Items Update
 - Focus on distress items

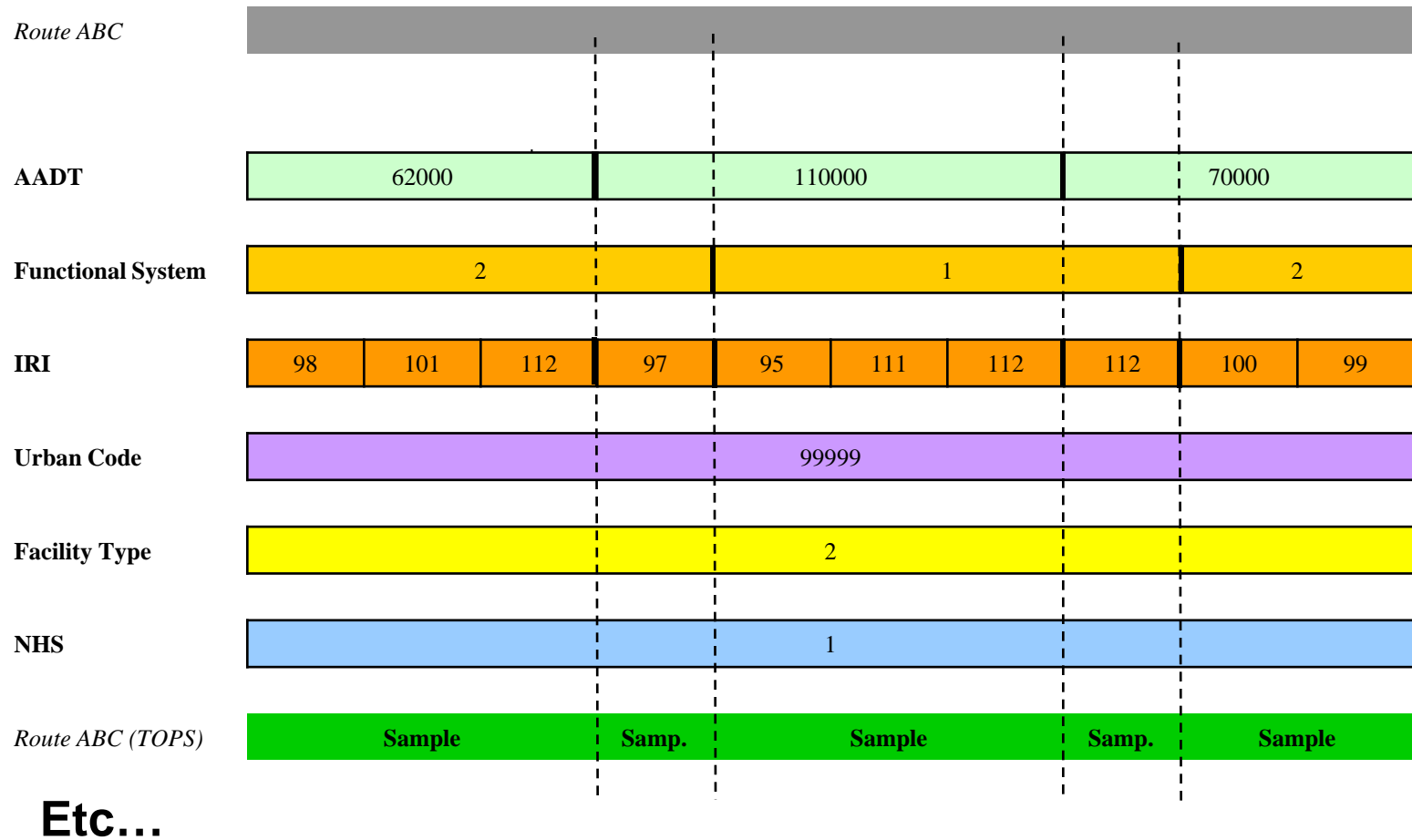
HPMS 2010+ Reassessment Status

- Revised *HPMS Field Manual*
 - Currently under development (2/2010 completion?)
 - Enhanced “general” pavement reporting guidance
 - 6 State panel input (CO, NC, NY, OR, SC, TX)
- HPMS 2010+ Training
 - To be developed in 2010
 - Pilot course (8/2010?)
- HPMS 2010+ submittal software (v. 8.0)
 - Currently under development
 - Test version early 2010(?)

HPMS Data Model (Geospatial)

- Utilizes State's own geospatial network
- Streamlines State HPMS data submittal process
 - FHWA receives State geo-coded data directly
- Intended to help improve data quality and enhance analytic capabilities
- Expands coverage of “linkable” HPMS data
 - Easier link to other data files and routable networks (FAF, NBI, Safety, etc.)

HPMS Data Model (Geospatial)



HPMS Pavement Data

- IRI/Date
- PSR: sample
- Surface_Type: sample
- Climate_Zone: sample (FHWA coded)
- Year_Last_Improv: sample
- Rutting: sample
- Faulting: sample
- Cracking_Percent: sample
- Cracking_Length: sample
- Year_Last_Construction: sample
- Last_Overlay_Thickness: sample
- Thickness_Flexible: sample
- Thickness_Rigid: sample
- Base_Type: sample
- Base_Thickness: sample
- Soil_Type: sample (FHWA coded)
- Binder_Type: Summary
- Dowel_Bar: Summary
- Joint_Spacing: Summary
- Paved/Unpaved: Summary for rural minor collectors & rural/urban locals only
- Various Metadata

Indicates estimates allowed for samples where measured values not available.

2-year reporting cycle/as needed except NHS IRI.

Estimates/Summary Data Coding Schema:

Functional Class	State Rural	State Urban	Off-State Rural	Off-State Urban
Interstate				
OFE				
OPA				
Min. Art.				
Maj. Coll./Urb. Min. Coll				

Surface Type

Code	Description
1	Unpaved
2	Bituminous
3	JPCP – Jointed Plain Concrete Pavement
4	JRCP – Jointed Reinforced Concrete Pavement
5	CRCP – Continuously Reinforced Concrete Pavement
6	Asphalt-Concrete (AC) Overlay over Existing AC Pavement
7	AC Overlay over Existing Jointed Concrete Pavement
8	AC (Bi Overlay over Existing CRCP)
9	Unbonded Jointed Concrete Overlay on PCC Pavements
11	Bonded PCC Overlays on PCC Pavements
12	Other

HPMS 2010+ Pavement Data Coding

Surface_Type		IRI	PSR	Distress Data Items			Cracking_Length	Thickness_Rigid	Thickness_Flexible
Code	Description			Rutting	Faulting	Cracking_Percent			
1	Unpaved								
2	Bituminous	avg. in/mi	1.0-5.0	avg. to nearest 0.1"		fatigue % area	transverse ft/mi	nearest 0.5"	
3	JPCP - Jointed Plain Concrete Pavement	avg. in/mi	1.0-5.0		avg. joint to nearest 0.1"	% cracked slabs		nearest 0.5"	
4	JRCP - Jointed Reinforced Concrete Pavement	avg. in/mi	1.0-5.0		avg. joint to nearest 0.1"	% cracked slabs		nearest 0.5"	
5	CRCP - Continuously Reinforced Concrete Pavement	avg. in/mi	1.0-5.0			punchout/long./patch % area		nearest 0.5"	
6	Asphalt-Concrete (AC) Overlay over Existing Concrete Pavement	avg. in/mi	1.0-5.0	avg. to nearest 0.1"		fatigue % area	transverse/reflective ft/mi	nearest 0.5"	
7	AC Overlay over Existing Jointed Concrete Pavement	avg. in/mi	1.0-5.0	avg. to nearest 0.1"		fatigue % area	transverse/reflective ft/mi	nearest 0.5"	
8	AC (Bi Overlay over Existing CRCP)	avg. in/mi	1.0-5.0	avg. to nearest 0.1"		fatigue % area	transverse ft/mi	nearest 0.5"	
9	Unbonded Jointed Concrete Overlay on PCC Pavement	avg. in/mi	1.0-5.0		avg. joint to nearest 0.1"	% cracked slabs		nearest 0.5"	
11	Bonded PCC Overlay on PCC Pavement	avg. in/mi	1.0-5.0		avg. joint to nearest 0.1"	% cracked slabs/punchout % area		nearest 0.5"	
12	Other (includes "whitetopping")	avg. in/mi	1.0-5.0						

Should be 0.1-5.0



IRI

- Required for all NHS sections annually (2-yr. cycle otherwise)
- Required for all Principal Arterials (including Interstate), sampled for rural Minor Arterials
- Report Mean Roughness Index (MRI) in in/mi
 - Average for the section
- Quarter-car
- Recommend AASHTO R 43-07

PSR

- No change from current HPMS
- Required on rural Major Collector & urban Minor Arterial and Collector samples
- Reported from to the nearest tenth from 0.0-5.0

Rutting

- Coded to nearest 0.1 inch
- Average for the section
- Recommend AASHTO R 48-08
- Recommend *LTPP Distress Identification Manual* as guide

Faulting

- Coded to nearest 0.1 inch
- Average for the section
- Recommend AASHTO R 36-04
- Recommend *LTPP Distress Identification Manual* as guide

Cracking_Percent

- Recommend AASHTO PP 44-01
- Estimate % sections area cracked—AC
- Estimate % cracked slabs for section— PCC
- Report to nearest 5% (min.)
- Recommend *LTPP Distress Identification Manual* as guide
- Ignore joint spalling
- Report all severities

Cracking_Length

- Recommend AASHTO PP 44-01
- Recommend *LTPP Distress Identification Manual* as guide
- Report total to nearest ft/mi
 - Transverse type for AC
 - Reflective type for composite (AC on top)
 - Ignore longitudinal cracks
 - Report all severities

General Issues

- FHWA will update *HPMS Field Manual* as changes occur (AASHTO specs., etc.)
- New HPMS reporting due June 15, 2010
 - Will allow old format just for 2010, encourage new geospatial format submittal if possible and partial if not complete
 - Only new format accepted in 2011

Conclusion

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