

HPMS Reassessment - Pavements

RPUG

Des Moines, IA

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Agenda

- HPMS pavement data uses/needs
- HPMS reassessment
 - Why?
 - Outcomes
 - New data model
 - Pavements (one of several reassessment elements)
 - Feedback (so far and future)

Uses of HPMS Pavement Data

- National pavement needs
 - *Status of the Nation's Highways, Bridges, and Transit: Conditions & Performance*
 - Models
 - Performance measure (NHS and STRAHNET)
- Other studies (public and private)
- Information can be found at:
www.fhwa.dot.gov

C&P Report

- *Biennial Status of the Nation's Highways, Bridges and Transit: Conditions and Performance* report to Congress:
 - Current highway physical conditions
 - Current highway operating performance
 - Future highway conditions and performance, based on alternative funding levels
 - Future highway investment requirements, to achieve certain performance goals

Why a Reassessment of the HPMS?

- Respond to current and future business needs
 - Where does FHWA want to be in 2010?
 - What types of reports and analyses will FHWA be asked to produce in the next 5-10 years?
- Respond to new data needs in SAFETEA-LU
- Capitalize on newer technologies
- Where possible, address resource constraints and institutional changes

HPMS Reassessment Vision

- For HPMS to meet the transportation community's data needs in 2010 and beyond.

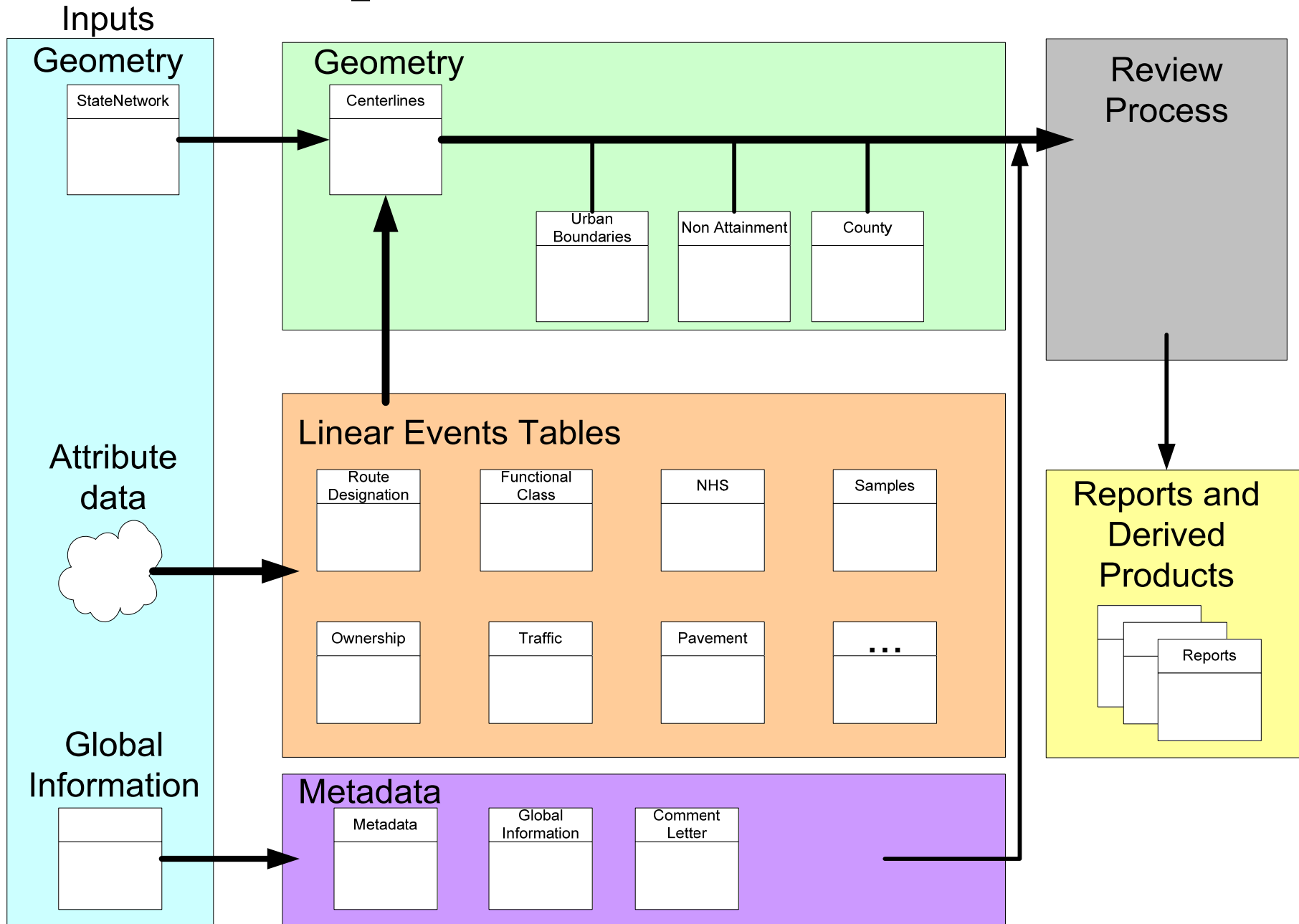
Reassessment Outcomes

- Improve HPMS to support customer business needs.
- Maximize use of existing, future, and other data sources.
- Enhance value of information to providers and customers.

Cross-Cutting Areas

- Process improvement
- Data quality, standards
- Revise existing data model
- Sampling (only minor changes this reassessment)
- Boundaries and functional classification

Proposed Basic Data Model



Specific Data Areas Being Addressed

- Safety
- **Pavements**
- Interchanges
- Freight
- Capacity

Pavement Data Needs

- Is IRI an adequate predictor of future pavement performance? Not by itself.
- Are other pavement distress data needed for accurate predictions?
 - Rutting
 - Faulting
 - Cracking
 - Are data available? For what systems?

Pavement Data Needs

- Enhanced FHWA pavement models
 - Based on additional data items
 - FHWA contractor study
- Consistency, Standards (AASHTO)
- IRI reported annually on NHS
 - Enhanced performance indicator data
- Metadata
 - To aid in interpreting, presenting, and addressing consistency of the data

Activities

■ Activities to date:

- Meetings with DOT users
- Development of issue papers
- Outreach workshops
- Webinars (including polls)

■ Future activities:

- Meeting with AASHTO
- Revise issue papers
- Write draft recommendations document
- Conduct **outreach** around recommendations document
- Finalize recommendations document

HPMS Reassessment Pavement Data Items

Data Item	Add/Delete/Change	Summary	Universe	Sample	C&P/HERS	Apportionment	Performance Measure	Other (HCATS&W)	Rural - Int	Rural - OPA	Rural - MA	Rural - Maj Coll	Rural - Min Coll	Rural - Local	Rural - NHS	Urban - Int	Urban - OFE	Urban - OPA	Urban - MA	Urban - Coll	Urban - Local	Urban - NHS
IRI	C		X		X		X X	X X	X ³					X	X	X	X					X
IRI Year	A		X		X		X X	X X	X ³					X	X	X	X					X
PSR				X	X		X				X							X	X			
Surf/Pave Type	C ¹			X	X		X	X	X	X	X					X	X	X	X	X		
SN/D	D			X	X		X	X	X	X	X					X	X	X	X	X		
Climate Zone				X	X		X	X	X	X	X					X	X	X	X	X		
Year of Surf Imp	D			X	X		X	X	X	X	X					X	X	X	X			
Rutting	A			X	X		X	X	X	X	X					X	X	X	X	X		
Faulting	A			X	X		X	X	X	X	X					X	X	X	X	X		
Cracking	A			X	X		X	X	X	X	X					X	X	X	X	X		
Year of Last Resurface	A			X	X		X	X	X	X	X					X	X	X	X	X		
Year of Last Construction	A			X	X		X	X	X	X	X					X	X	X	X	X		
Last Overlay Thickness	A			X	X		X	X	X	X	X					X	X	X	X	X		
Asphalt Thickness	A			X	X		X	X	X	X	X					X	X	X	X	X		
Concrete Thickness	A			X	X		X	X	X	X	X					X	X	X	X	X		
Base Type	A			X	X		X	X	X	X	X					X	X	X	X	X		
Base Thickness	A			X	X		X	X	X	X	X					X	X	X	X	X		
Soil Type	A ²			X	X		X	X	X	X	X					X	X	X	X	X		
Binder Type	A	X			X		X															
Dowel Bars	A	X			X		X															
Joint Spacing	A	X			X		X															

Notes:

1/ Additional pavement types.

2/ Software coded with State override option.

3/ Sample only.

Pavements

Current HPMS Data Items

- IRI (annual NHS) (universe for PAS and NHS)
- PSR (2-year cycle)
- SN/D (drop SN)
- Year of Surface Improvement (drop/change)
- Climate Zone (unchanged)

Pavements

New HPMS Data Items (Sample)

- IRI Year (annual NHS) (universe for PAS and NHS)
- Rutting (2-year cycle)
- Faulting (2-year cycle)
- Cracking (2-year cycle) (% area regardless of severity)
- Year of Last Resurface (update as needed)
- Year of Last Construction (update as needed)
- Last Overlay Thickness (update as needed)
- Asphalt Thickness (update as needed)
- Concrete Thickness (update as needed)
- Base Type (update as needed)
- Base Thickness (update as needed)
- Soil Type (update as needed) (AASHTO soil class w/ State override option)

Pavements

New Summary HPMS Data Items

- Binder Type (update as needed)
- Dowel Bars (update as needed)
- Joint Spacing (update as needed)

Pavements

Summary of Applicable Standards

- Roughness (IRI)
 - Currently in *HPMS Field Manual (Appendix E)*
 - AASHTO PP37-04
- Asphalt Rutting
 - AASHTO PP38-00
 - To be added to *HPMS Field Manual*
- Asphalt Cracking
 - AASHTO PP44-01
 - To be added to *HPMS Field Manual*
- Faulting
 - AASHTO R36-04
 - To be added to *HPMS Field Manual*

Special Issues Under Consideration

- Geospatial data submittal (new data model)
- IRI reporting to include structures/RR x-ings
- Modifying functional classification schema
- Dropping ITS data items from HPMS
- Collecting truck travel data for all NHS sections
- Mandatory reporting of motorcycle VMT data
- Adding ramps to reported public road mileage (pavement data items not needed)

HPMS Reassessment

Pavement Data Issue Champions

- Mark Swanlund (FHWA Office of Pavement Technology)
- Ross Crichton/Darren Timothy (FHWA Office of Legislative & Governmental Affairs)
- Bob Orthmeyer (FHWA Resource Center- IL)
- Pavement Issue Paper co-author: Robert Rozycki (FHWA Office of Highway Policy Information)

Pavement Reassessment Webinars (2)

- Invited FHWA, State, MPO, other HPMS/pavement issues interested parties
- July 7: ~88 attendees
- August 15: ~90 attendees
- Brief reassessment presentations, discussion
 - Focus on reporting, system coverage, and standards issues
- Polls

Webinar Poll Highlights

- 35 States participated out of 52 (both webinars)
- ~ 80-90% fully or partially follow *HPMS Field Manual* Appendix E guidelines
- Annual NHS IRI reporting: ~ 50-55% can or w/little difficulty
- ~ 80% report quarter-car, ea. wheelpath, then average for HPMS
- ~ 54-69% can at least partially follow AASHTO rutting standard
- ~ 50-52% can at least partially follow AASHTO faulting standard

Additional Information

- HPMS Web Site:

<http://www.fhwa.dot.gov/policy/ohpi/hpms/index.htm>

- Want feedback:

- HPMS Docket Site:

<http://dms.dot.gov/search/searchResultsSimple.cfm?numberValue=23638&searchType=docket>

Hint: from <http://dms.dot.gov> search for docket #23638.

CONCLUSION

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