

***Developing New Business and
Operational Guidance Ensuring
Timely and Quality HPMS Data
Submittal (“Checklist”)***

**2017 HIS
Arlington, VA
10/30/2018**



HPMS Project – Objectives

- Improve timeliness and quality of submittals
- Establish a business process template that States can use to organize themselves for updating and submitting HPMS
- Improve FHWA's understanding of State challenges and obstacles in meeting requirements
- Build relationships between FHWA, SMEs, and HPMS coordinators
- Reduce burden on FHWA to identify and resolve HPMS quality issues
- Improve accuracy and validity of highway needs forecasts

Specific Checklist Goals

- Help agencies create, maintain, and sustain HPMS process that is:
 - Efficient– process replicated with little effort.
 - Logical– activities support subsequent ones. Communication is clear and direct; little/no duplication of effort.
 - Practical– streamlined process; within available resources.

Challenges

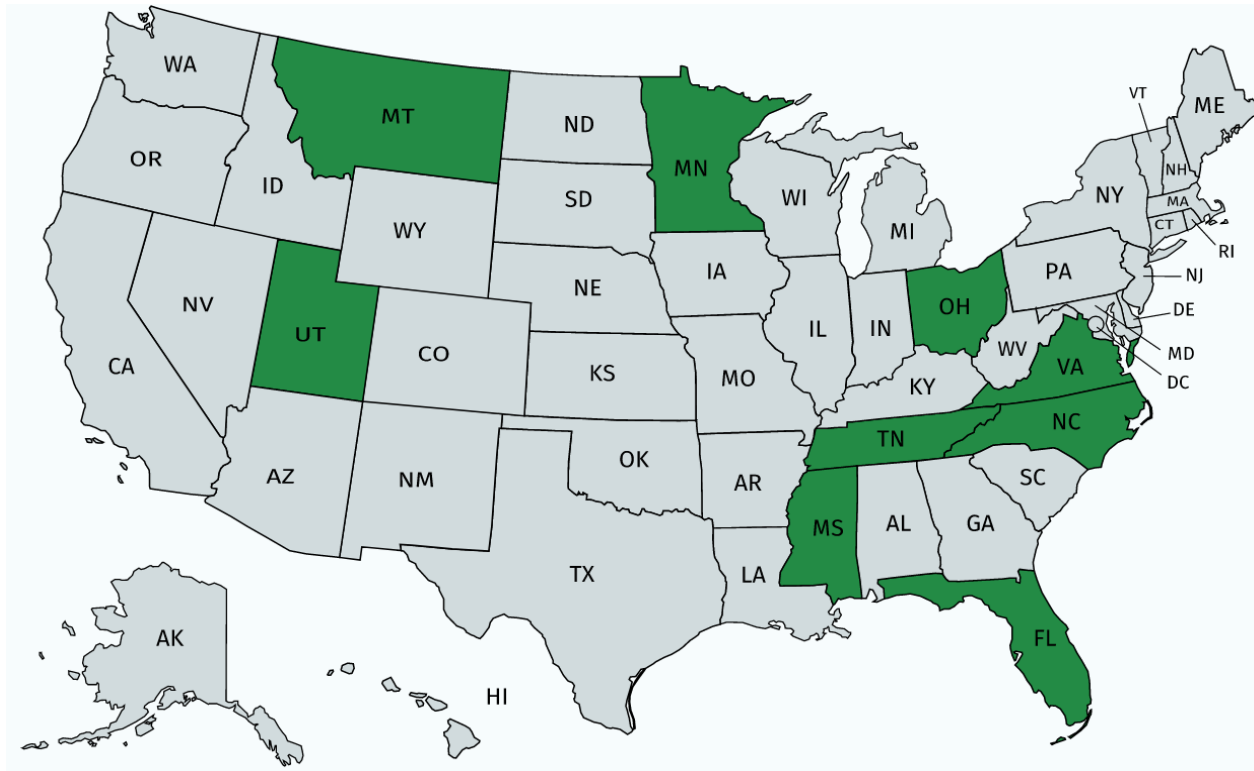
- HPMS is a subsidiary use of State data
- State DOT data collection cycle may not correspond with HPMS cycle
- State DOT mileage certification process can be time consuming
- HPMS coordinators rely on other departments and sources for much of their data

HPMS Coordination Points



Expert Panel Outreach

- 9 States:
 - Diversity in rural/urban mix, size, organizational makeup...



Expert Panel Success Factors

- HPMS development a year-round effort
- HPMS development a complex continuous function needing management strategies
- Commitment to timely, high-quality submittals exists
- Strong coordination across agency divisions
- Adequate staff
- Successful agencies have good data and good systems
- Clear schedules and roles apparent
- Single person/unit organizes and tracks process
- Continuous improvement culture exists
- Upper management support of HPMS process

HPMS Checklists

- **HPMS business process checklist**
 - HPMS Team
 - HPMS Coordinator Authority
 - Timing & Schedule
 - Documentation of process and conflict resolution
 - Data Collection QA/QC
 - Institutionalization of HPMS process
- **HPMS self-certifying data quality checklist**
 - Linear Referencing Systems
 - Data Assessment and Quality Control
 - Traffic Data
 - Pavement Data
 - Sample Adequacy

HPMS Coordinator

- Minimum 3-5 years agency experience in research, traffic monitoring, database management, GIS, or pavement management.
- Ability to coordinate with, manage, and organize individuals and processes needed to create HPMS. Extends to upper management, technical staff, contractors, planners, engineers, and FHWA division coordinator.
- Understanding of HPMS context as fundamental element of national transportation policy and analysis

Timing & Scheduling

- Have a schedule of data collection, processing, validation, and submission that is communicable to all parties.

Process Documentation

- Organizational structure, coordination, and scheduling.
- Database structure, data collection, validation, and submittal process.
- Reviewed and updated regularly to capture changes as needed.
- Should be easy to follow.
- Conflict identification, resolution, and improvements.

Management & Coordination

- Internal and external party coordination affects quality and timeliness.
- Establish protocols (monthly calls/meetings etc.) w/ FHWA division coordinator.

QA/QC & Validation

- States employ various QA/QC methods and tools.
- In-house and field staff used for validation.
- HPMS software validations.

Institutionalizing HPMS

- Enterprise-wide commitment to HPMS process needed.
- Applied to all levels of an organization (leadership to staff).
- An agency culture that is promoted and adopted by all HPMS stakeholders.
- Leadership support that provides resources.

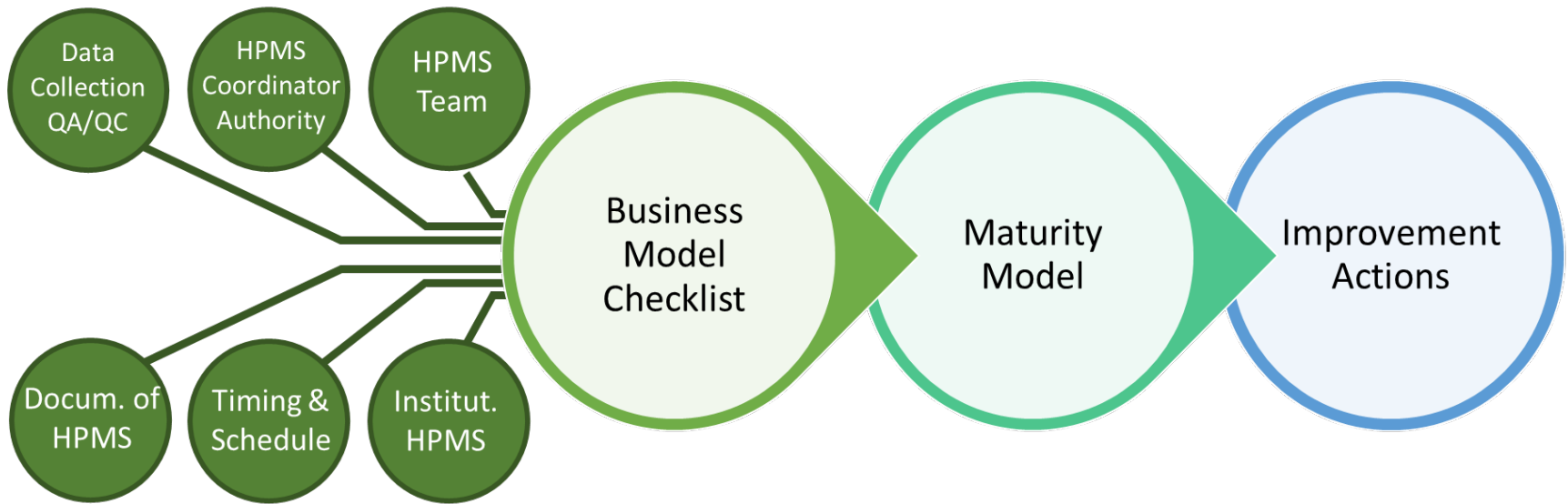
Self-Certifying Business Model Checklist

- Background – designed based on results of the expert panel outreach effort. Should be relatively easy and quick but well documented. Applies to business and organizational aspects rather than technical guidance on data collection, formats, validation, etc.
- 6 categories:
 - HPMS Team
 - HPMS coordinator authority
 - Timing and Schedule
 - Documentation of HPMS process and conflict resolution
 - Data collection QA/QC
 - Institutionalizing the HPMS process

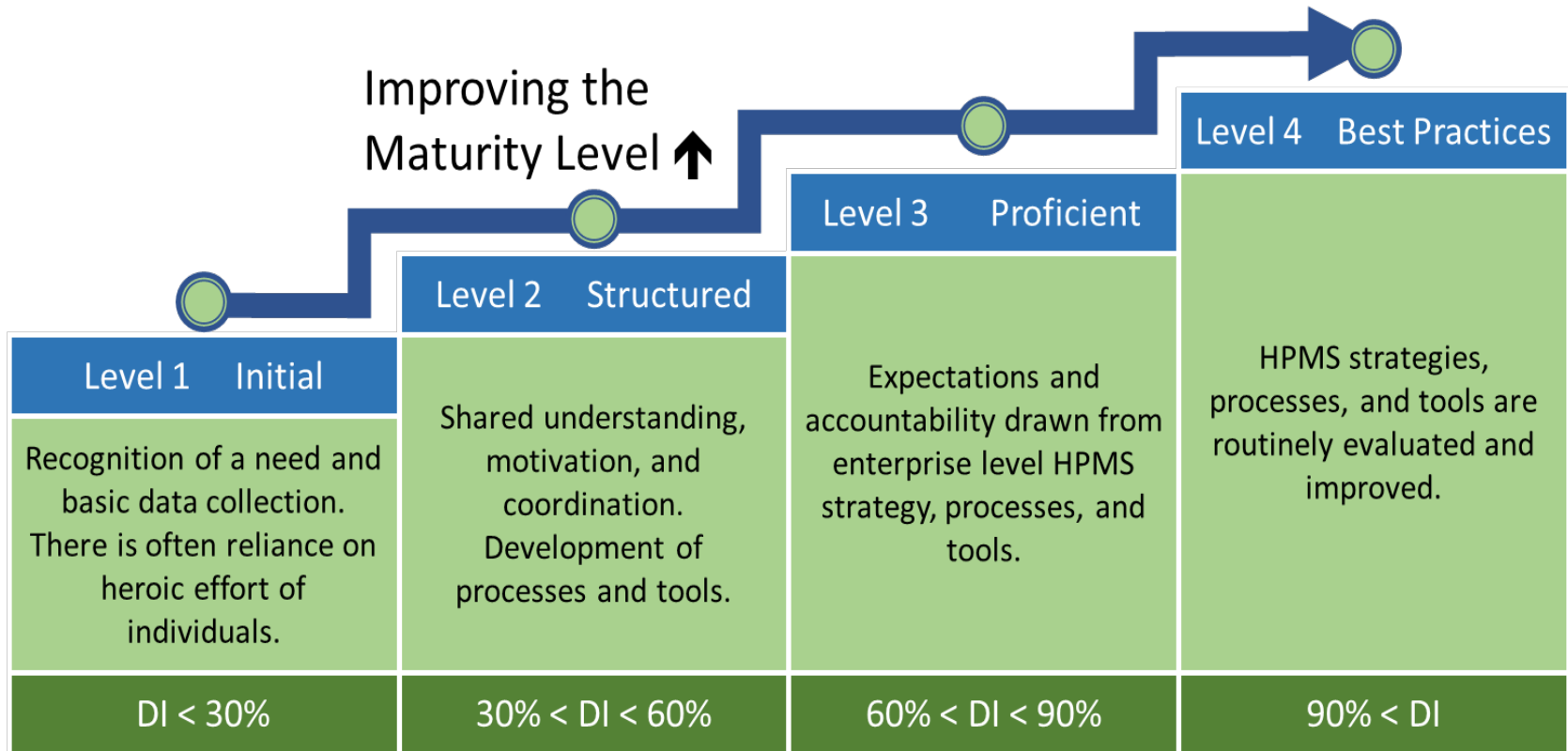
Business Model Checklist Format

- Each HPMS process dimension: series of Yes/No questions.
- Score based on questions rolled up to cumulative dimension score to determine maturity level as compared to best practices.
 - The total cumulative dimension score (TCDS) is converted to Dimension Index (DI) of 0-100% of the maximum cumulative dimension score (MCDS) for each dimension that, in turn, determines the maturity level of that dimension.
 - $Dimension\ Index\ (DI) = \frac{Total\ Cumulative\ Dimension\ Score\ (TCDS)}{Maximum\ Cumulative\ Dimension\ Score\ (MCDS)}$
- **Similar model format for Data Quality Checklist**

Self-Certifying Business Model Checklist Process

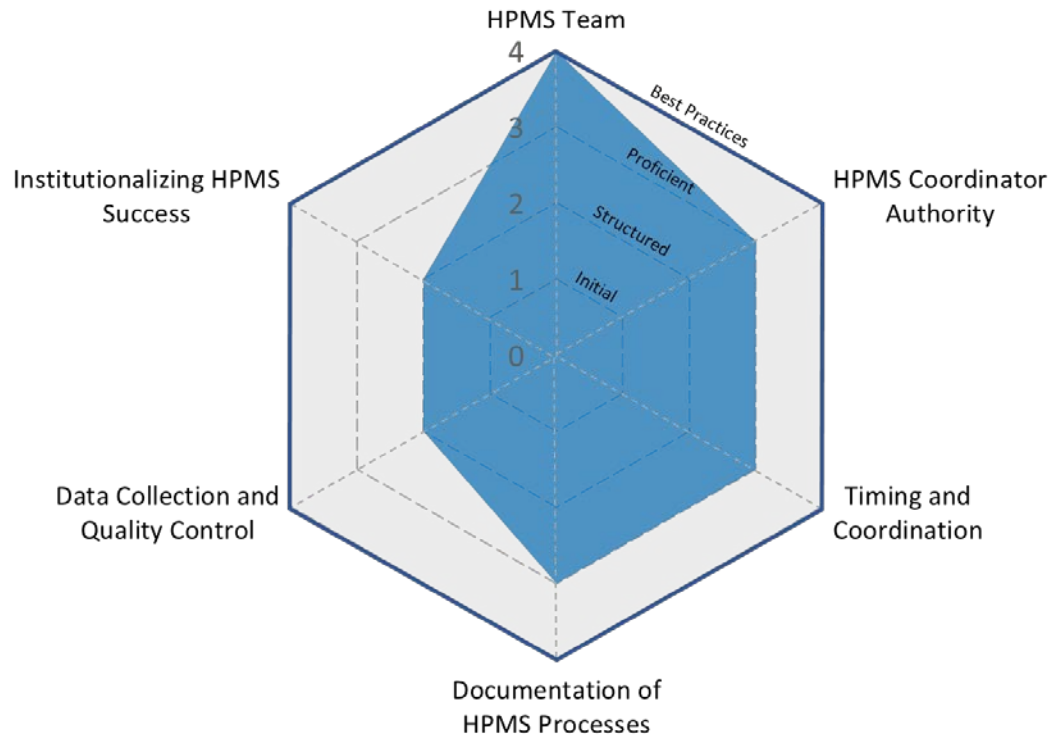


HPMS Maturity Model



HPMS Maturity Model Example

- HPMS Team Level 4 (Best Practices)
- HPMS Coordinator Authority Level 3 (Proficient)
- Timing and Schedule Level 3 (Proficient)
- Documentation of the HPMS Process Level 3 (Proficient)
- Data Collection QA/QC Level 2 (Structured)
- Institutionalizing the HPMS Process Level 2 (Structured)



Improvement Actions

- Improvement plan: consider resource availability, current state of agency practice (maturity level), timeline for implementation, responsible parties, should be specific to agency size, complexity, and structure.
- Successful implementation:
 - Setting goals and objectives
 - Obtaining internal commitment
 - Develop a change strategy
 - Link change strategy to other agency businesses
 - Establish HPMS roles & authorities
 - Evaluate change effectiveness

Moving Forward

- Available on HPMS website:
<https://www.fhwa.dot.gov/policyinformation/hpms.cfm>

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