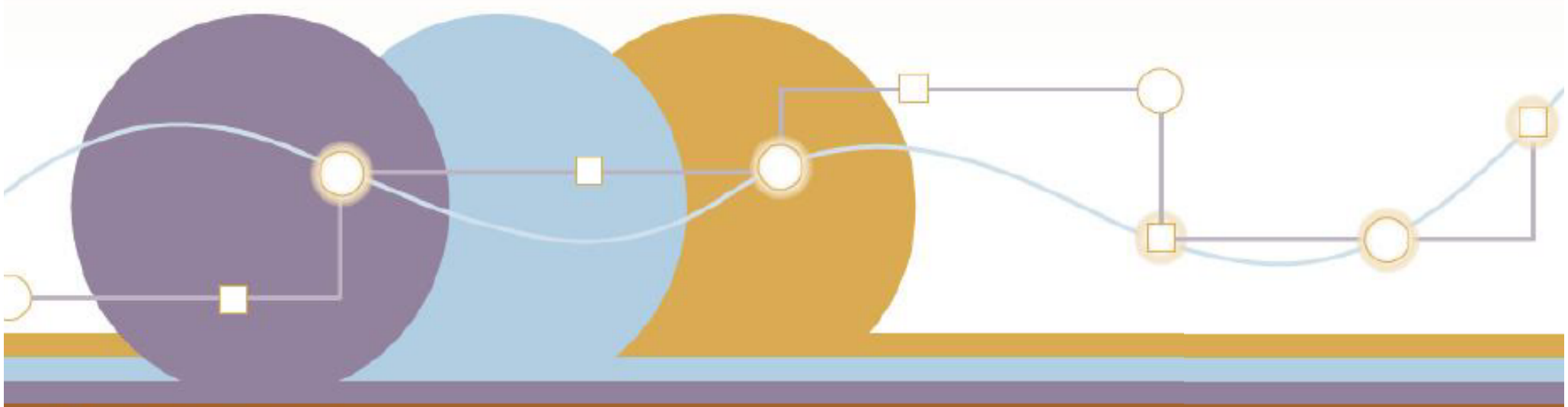
Mobility and Congestion Performance Data Peer Exchange

Action Planning Using the CMM

May 9 & 10, 2016
Portland, OR



U.S. Department of Transportation
Federal Highway Administration

Purpose

- Work with your colleagues and partners to determine actions that will improve your agency's ability to manage mobility and congestion performance programs
- Use the guidance developed for the TPM Capability Maturity Model to:
  - Assess current capabilities, then
  - Determine the steps that need to be taken to improve data management and collaboration for mobility and congestion performance

Action Planning

1. Select level of maturity
2. Consider actions that apply to your agency pair
3. Identify priority actions for improvement
4. Complete improvement evaluation form for each action (finish as many as you can)

Handouts: Exercise

Action Planning Exercise

In this exercise you will identify 3-4 high priority improvements and develop a plan for implementation.

Step 1: Select level of maturity

For each subcomponent, use the Capability Maturity Model tables to select the level that best fits your agency pair. Fill in the matrix below for both agencies in your pair.

Step 2: Consider actions that apply to your agency pair

Use "Actions to move to next level" in third column of CMM tables, as well as ideas stemming from discussions during breakout sessions (separate handout) to jot down some potential actions for each subcomponent.

Subcomponent	DOT Maturity	MPO Maturity	Actions
C.1 Data Quality			
C.2 Data Accessibility			
C.3 Data Standardization & Integration			
C.4 Data Collection Efficiency			
C.5 Data Governance			
D.1 Data Exploration and Visualization			
D.2 Performance Diagnostics			
D.3 Predictive Capabilities			

1

Step 3: Identify priority actions for improvement

Select 3-4 actions from the matrix and list below by subcomponent. Adjust them to reflect your agency context.

Subcomponent	Action

Step 4: Complete improvement evaluation form for each priority action

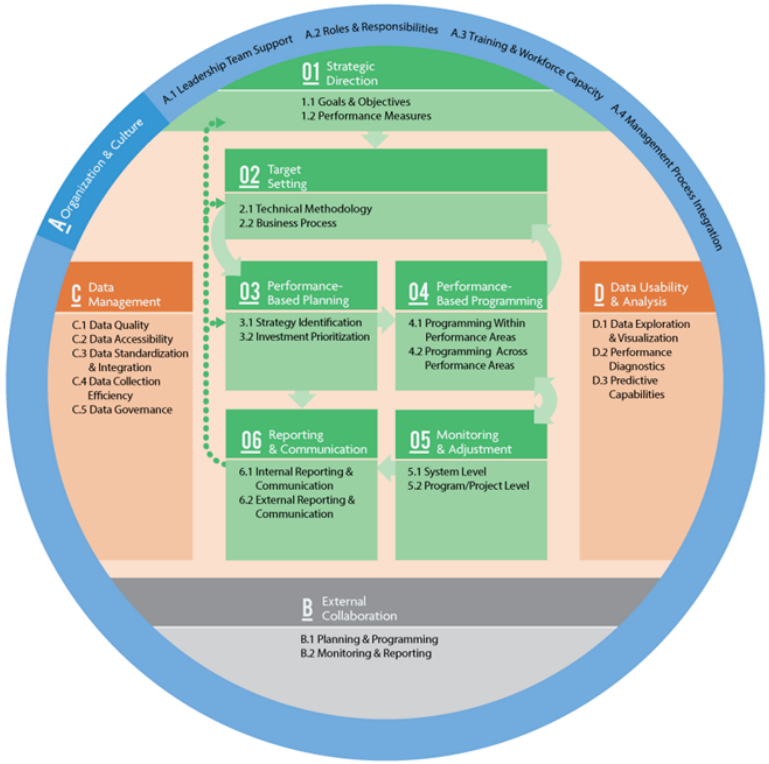
Use the "Data Improvement Action Plan" handout.

2

Handouts: CMM Tables

Capability Maturity Model Tables

TPM Framework



Data Subcomponent Maturity Levels and Actions

Component C. Data Management

Definition: Established processes to ensure data quality and accessibility, and to maximize efficiency of data acquisition and integration for performance management.

C.1. Data Quality

Definition: Processes and organizational functions to define, measure, and ensure data is accurate, complete, timely, consistent with requirements and business rules and relevant for a given use.

Level	Description	ACTIONS to move to next level:
INITIAL (Level 1)	Performance data quality issues that are identified are addressed on an ad-hoc basis rather than through a systematic process. Metrics for data quality have not been established and quality expectations have not been discussed.	Initiate an effort to develop data quality standards based on anticipated uses for each performance data set.
DEVELOPING (Level 2)	Data quality metrics and minimum acceptable standards are being defined for performance data sets - considering accuracy, completeness, consistency, and timeliness. Data quality assurance and validation methods are being developed.	Define and document data quality standards and protocols for data quality assurance and certification.
DEFINED (Level 3)	Data quality metrics and standards have been defined and documented for performance data sets. Baseline data quality has been measured and a plan for data quality improvement is in place. Business rules for assessing data validity have been defined. Standard protocols for data quality assurance and certification or acceptance have been established.	Share information about the quality of performance data sets with data users. Implement data quality assurance and certification processes.
FUNCTIONING (Level 4)	Users of performance data have an understanding of their level of accuracy, completeness, consistency and timeliness. Standard data quality assurance processes are routinely followed. New data collected are reviewed against historical data to identify unexpected changes warranting investigation. Data collection personnel are trained and certified based on demonstrated understanding of standard practices.	Automate data quality assessment and cleansing processes, and modify data entry applications (where practical) to validate data at the point of input. Regularly assess data quality processes to identify improvements.
SUSTAINED (Level 5)	Data quality assurance processes are regularly improved based on experience and user feedback. Data validation and cleansing tools are used to identify and address missing or invalid values. Business rules for data validity are built in to data entry and collection applications.	

CMM: Capability Maturity Model

Definitions

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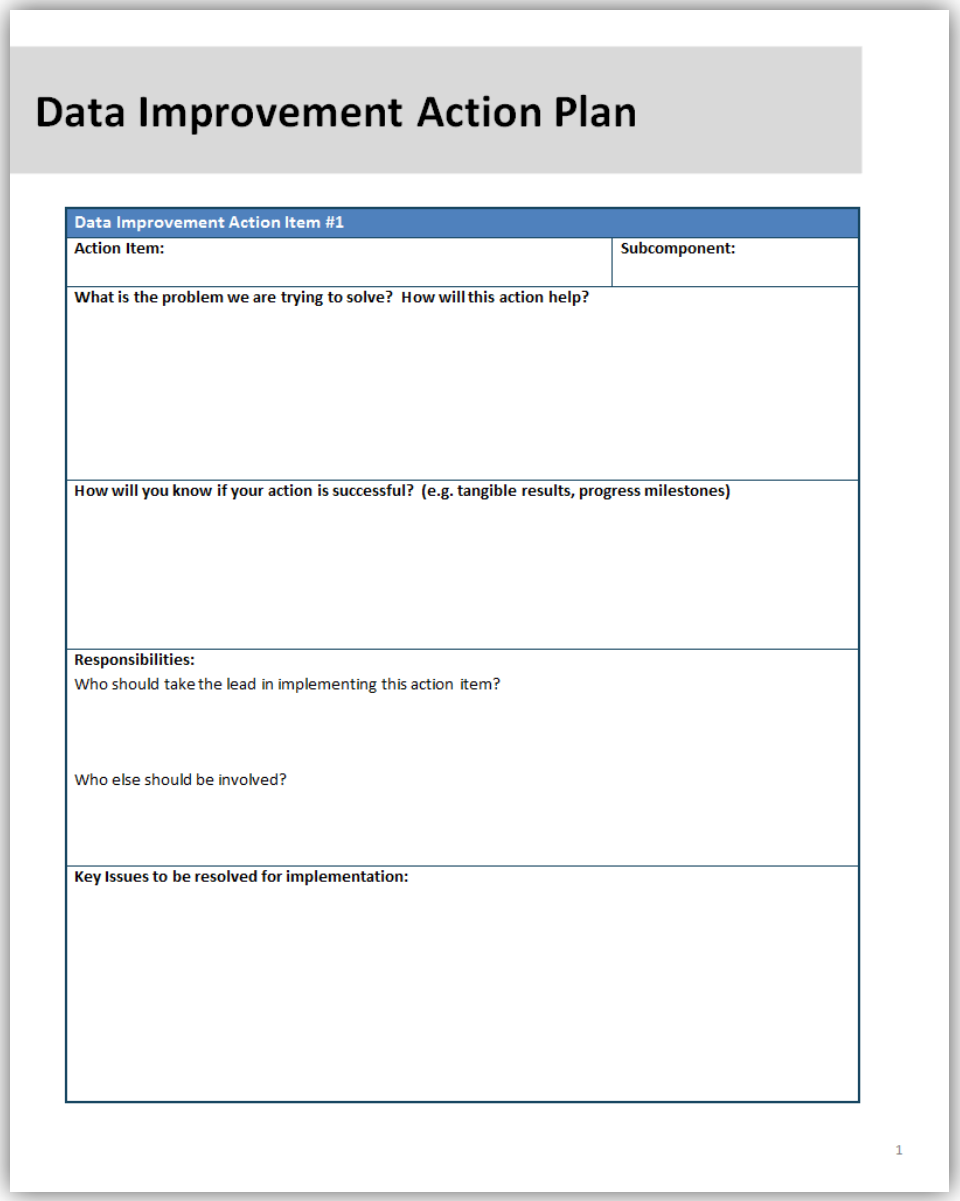
5 maturity level descriptions

Actions to move to the next level (for levels 1-4)

Handouts: Action Plan



Data Improvement Action Plan

Data Improvement Action Item #1	
Action Item:	**Subcomponent:**
What is the problem we are trying to solve? How will this action help?	
How will you know if your action is successful? (e.g. tangible results, progress milestones)	
Responsibilities: Who should take the lead in implementing this action item? Who else should be involved?	
Key Issues to be resolved for implementation:	

1

Example

Action Planning Exercise

In this exercise you will identify 3-4 high priority improvements and develop a plan for implementation.

Step 1: Select level of maturity

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Step 2: Consider actions that apply to your agency pair

Use "Actions to move to next level" in third column of CMM tables, as well as ideas stemming from discussions during breakout sessions (separate handout) to jot down some potential actions for each subcomponent.

Subcomponent	DOT Maturity	MPO Maturity	Actions
C.1 Data Quality	2	3	– Define and document data quality standards and protocols – Share information about quality of data with data users – Implement data quality assurance and certification processes
C.2 Data Accessibility	1	2	– Initiate an effort to improve reporting and query capabilities – Meet with different data users to understand needed data views – Identify and implement tools and technologies to improve data access
C.3 Data Standardization & Integration	2	2	– Get agreement on common data definitions, standards, aggregation units – Identify single source systems to each key data element – Develop and document processes for combining data sets to produce snapshot and trend views
C.4 Data Collection Efficiency	2	2	– Develop internal and external data sharing agreements – Identify system changes needed to facilitate data sharing
C.5 Data Governance	1	2	– Identify business owners for each data set – Gather input from data users on improvement needs – Define roles for data governance and stewardship – Develop systematic process for evaluating & implementing improvements
D.1 Data Exploration and Visualization	2	3	– Meet with different data users to understand needed data views – Identify and implement tools/technologies for exploration & visualization – Implement and configure reports, charts, query capabilities to fill needs
D.2 Performance Diagnostics	1	2	– Meet with staff to identify what information is needed to understand reasons for performance results – Compile supplemental information needed to diagnose and report on performance results
D.3 Predictive Capabilities	1	3	– Initiate effort to develop predictive models specific to performance areas – Validate models and refine based on user feedback – Enhance capabilities to analyze risk factors that may impact goal/objective achievement

1

Step 3: Identify priority actions for improvement

Select 3-4 actions from the matrix and list below by subcomponent. Adjust them to reflect your agency context.

Subcomponent	Action
C.1 Data Quality	Define and document data quality protocols at the DOT to align with existing protocols at MPO
C.3 Data Standardization & Integration	Get agreement on common data definitions, standards, aggregation units for data sets that could potentially be shared across DOT/MPO
C.4 Data Collection Efficiency	Identify system changes needed to facilitate data sharing across agencies; prioritize by considering BCA/ROI for each change
C.5 Data Governance	Define roles for data governance and stewardship and how these roles can be coordinated/streamlined between the DOT and MPO

Step 4: Complete improvement evaluation form for each priority action

Use the "Data Improvement Action Plan" handout.

2

Example

Data Improvement Action Plan

Data Improvement Action Item #1	
Action Item: Define/doc. data quality protocols at DOT to align with existing at MPO	**Subcomponent:** C.1 Data Quality
What is the problem we are trying to solve? How will this action help? The DOT is still in the process of defining data quality protocols, and because the MPO has already documented such protocols, it makes sense to align these as much as possible to make future data sharing easier.	
How will you know if your action is successful? (e.g. tangible results, progress milestones) When there is an agreed-upon documentation of a set of quality protocols that will be used at both the DOT and MPO. Additional milestones will be the actual implementation of the protocols, and the point when existing data fully conforms.	
Responsibilities: Who should take the lead in implementing this action item? - John Doe, Information Systems Manager, DOT - Jane Smith, Transportation Planner, MPO Who else should be involved? - Jill Montague, Deputy Director of Finance, DOT - Jimmy Lane, Senior Budget Analyst, MPO	
Key Issues to be resolved for implementation: - Current protocols may not be fully documented - Current protocols reflect varying needs and resources across agencies – may be difficult to get agreement - Need to identify staff resources to conduct an assessment and make a recommendation	

1