TPM State Workshop

FHWA TPM Framework and Capability Maturity Model (CMM)

Shoreview, MN

October 25 & 26, 2017

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TPM
HOW WE GET THERE

Transportation Performance Management

The Federal Highway Administration defines Transportation Performance Management (TPM) as a strategic approach that uses system information to make investment and policy decisions to achieve national performance goals.

Investment Decisions

Using goals, measures, and data to make better informed decisions about how to invest transportation funding.

Aimed at a Better Performing Transportation System

Setting targets, developing plans, reporting results, and being accountable for performance.

For Connected and Productive Communities

Focusing on the efficient delivery of goods and safe, reliable journeys to work, to school, to shopping, to community activities.

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Rulemakings

TPM-Related Rules	Rule Effective Date	Regulatory Chapter
Safety Performance Measures (PM1)	April 14, 2016	23 CFR 490 (Subpart A & B)
Highway Safety Improvement Program (HSIP)	April 14, 2016	23 CFR 924
Statewide and Non-Metropolitan Planning; Metropolitan Planning	June 27, 2016	23 CFR 450
Highway Asset Management Plans for NHS	October 2, 2017	23 CFR 515 & 667
Pavement and Bridge Condition Measures (PM2)	May 20, 2017	23 CFR 490 (Subpart A, C & D)
Performance of the NHS, Freight, and CMAQ Measures (PM3)*	May 20, 2017	23 CFR 490 (Sub. A, E, F, G, H)

* Except for the GHG measure (the percent change in tailpipe CO2 emissions on the NHS compared to the 2017 level)

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TPM Elements

National Goal Areas

- Safety
- Infrastructure condition
- Congestion reduction
- System reliability
- Freight movement and economic vitality
- Environmental sustainability
- Reduced project delivery delays

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New Chapter: 23 CFR Part 490

- 18 Measures (including GHG measure)
  - Describes the applicability of the measures
  - Tells what data needed to support measures
- Target due dates
  - **State DOTs:** 1 year from the effective date of the final rule---May 20, 2018 (except GHG measure)
  - **MPOs:** 180 days after the State DOT
- Describes reporting requirements and timeline
- Defines the significant progress determination process

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Measures: Safety (PM1)

Measure Area	Performance Measures
Safety	• Number of fatalities • Fatalities per million vehicle miles traveled • Number of serious injuries • Serious injuries per million vehicle miles traveled • Number of non-motorized fatalities and non-motorized serious injuries

The Office of Safety has a website dedicated to this rule:

https://safety.fhwa.dot.gov/hsip/spm/

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Measures: Pavement & Bridge Condition (PM2)

Measure Area	Performance Measures
National Performance Management Measures to Assess **Pavement Condition**	- Percentage of pavements of the Interstate System in Good condition - Percentage of pavements of the Interstate System in Poor condition - Percentage of pavements of the non-Interstate NHS in Good condition - Percentage of pavements of the non-Interstate NHS in Poor condition
National Performance Management Measures to Assess **Bridge Condition**	- Percentage of NHS bridges classified as in Good condition - Percentage of NHS bridges classified as in Poor condition

Measures: System Performance & Freight (PM3)

Measure Area	Performance Measures
Performance of the National Highway System (NHS) **(System Performance)**	• **Interstate Travel Time Reliability Measure**: Percent of person-miles traveled on the Interstate that are reliable • **Non-Interstate Travel Time Reliability Measure**: Percent of person-miles traveled on the non-Interstate NHS that are reliable
GHG Measure on the NHS (NPRM proposing to repeal GHG measure published 10/05/2017)	• **GHG Measure**: Percent Change in Tailpipe Carbon Dioxide (CO_2) Emissions on the NHS from the Calendar Year 2017.
Freight Movement on the Interstate System	• **Freight Reliability Measure**: Truck Travel Time Reliability (TTTR) Index

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Measures: CMAQ Program (PM3)

Measure Area	Performance Measures
Measures to Assess the CMAQ Program: **Traffic Congestion**	• **Peak Hour Excessive Delay(PHED) Measure:** Annual Hours of Peak Hour Excessive Delay (PHED) Per Capita • **Non-Single Occupancy Vehicle Travel (SOV) Measure:** Percent of Non-Single Occupancy Vehicle (SOV) Travel
Measure to Assess the CMAQ Program: **On-Road Mobile Source Emissions**	• **Emissions Measure:** Total Emission Reductions

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Required Plans

Multimodal Plans	State/MPO Long Range Transportation Plans State/MPO Transportation Improvement Programs
Safety	Strategic Highway Safety Plan (SHSP) Highway Safety Improvement Program (HSIP)
Infrastructure Condition	Transportation Asset Management Plan (TAMP)
Congestion/ Air Quality	CMAQ Performance Plan
Freight	State Freight Plan
Transit	Transit Safety Plan Transit Asset Management Plan

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Planning Rule

Requirements of performance management

Updates or amendments to TIPs and STIPs and plans adopted or amended two years after the effective date of the performance management rules must comply.

Implementation Timeline

Final Rule	Effective Date	States Set Targets By	MPOs Set Targets By	LRSTP, MTP, STIP and TIP Inclusion
Safety Performance Measures (PM1)	April 14, 2016	Aug. 31, 2017	Up to 180 days after the State sets targets, but not later than Feb. 27, 2018	Updates or amendments on or after May 27, 2018
Pavement/ Bridge Performance Measures (PM2)	May 20, 2017	May 20, 2018	No later than 180 days after the State(s) sets targets	Updates or amendments on or after May 20, 2019
System Performance Measures (PM3)	May 20, 2017	May 20, 2018	No later than 180 days after the State(s) sets targets	Updates or amendments on or after May 20, 2019

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Planning Rule: Performance-Based Elements of the Metropolitan Transportation Plan

- Performance measures and targets
- System performance report
- Planning process includes integration of other performance-based plans
- As part of process, agreement between MPOs, State and public transit providers on performance data collection, targets and reporting for metropolitan area

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Planning Rule: Performance-Based Elements of the Statewide LRTP

Must include:

- Performance measures and targets
- System performance report
- Planning process includes integration of other performance-based plans

Asset Management Plan Processes

- State DOTs must establish a set of processes for developing an asset management plan
- FHWA will certify a DOT's processes in reviewing its *initial* asset management plan
- The State DOT's pavement and bridge management systems must meet minimum requirements and must be used to develop the asset management plan

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Asset Management Plan Rule

- State DOTs must develop an **initial** risk-based asset management plans for the NHS by April 30, 2018
  - Fully compliant plan not later than June 30, 2019
- TAMP must cover a 10-year period

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TPM Roles:
Working Together

TPM Roles and Responsibilities

- USDOT
  - Performance Measure Rules include:
    - Establish measures; identify data sources; define metrics
    - Report to Congress
    - Stewardship and oversight
- States and MPOs
  - Establish targets
  - Support national goals in the planning process and consider measures and targets in long range plans and programs
  - Report progress to USDOT (States)

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State DOT and MPO Roles

- Identify available and needed data
- Coordinate with other agencies
- Establish coordinated targets
- Collect and submit required data
- Report progress

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FHWA Roles

- FHWA is committed to your success!
  - o Headquarters provides guidance and develops policies and tools
  - o Divisions are responsible for program delivery
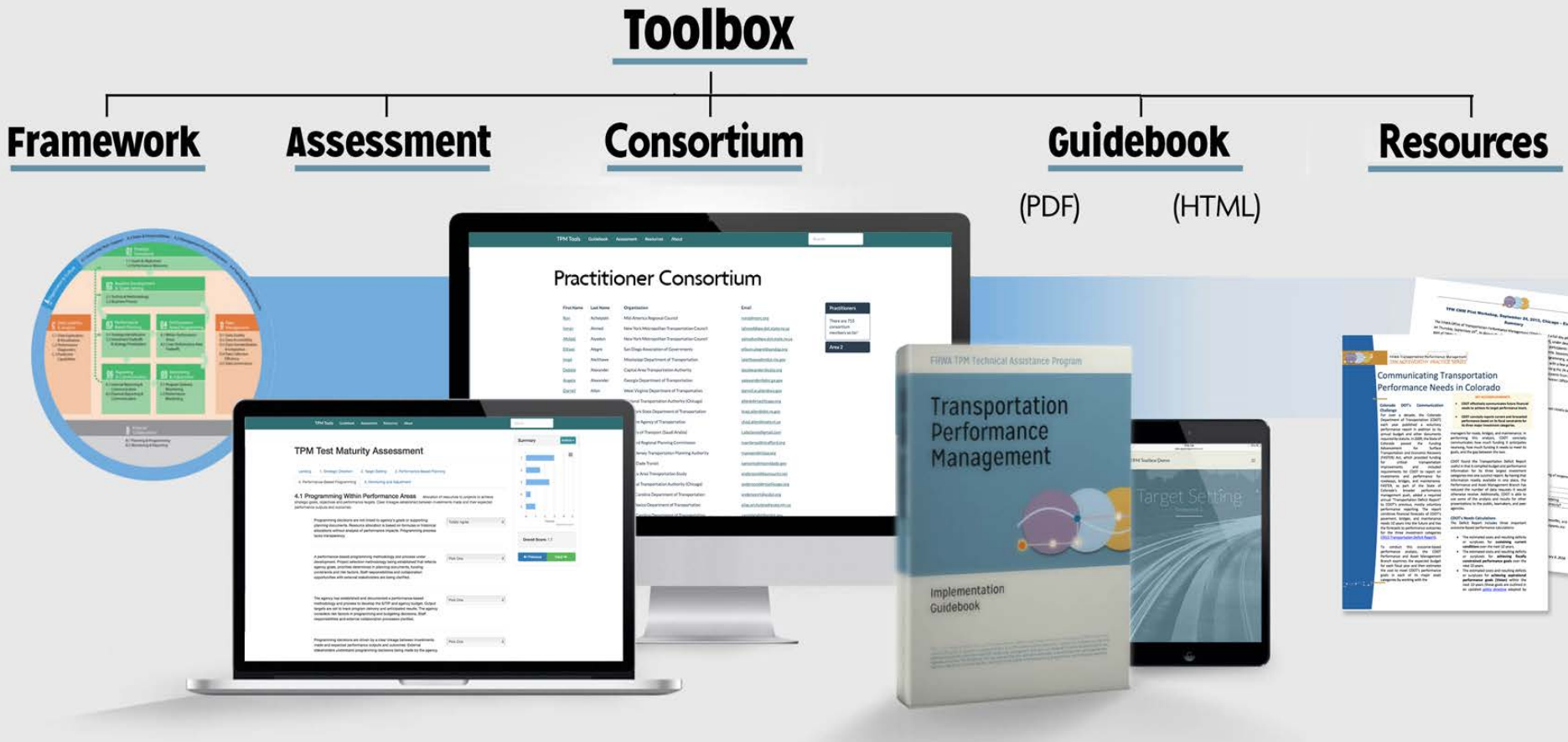 - o The Resource Center provides technical assistance and training

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TPM Professional Capacity Building Program

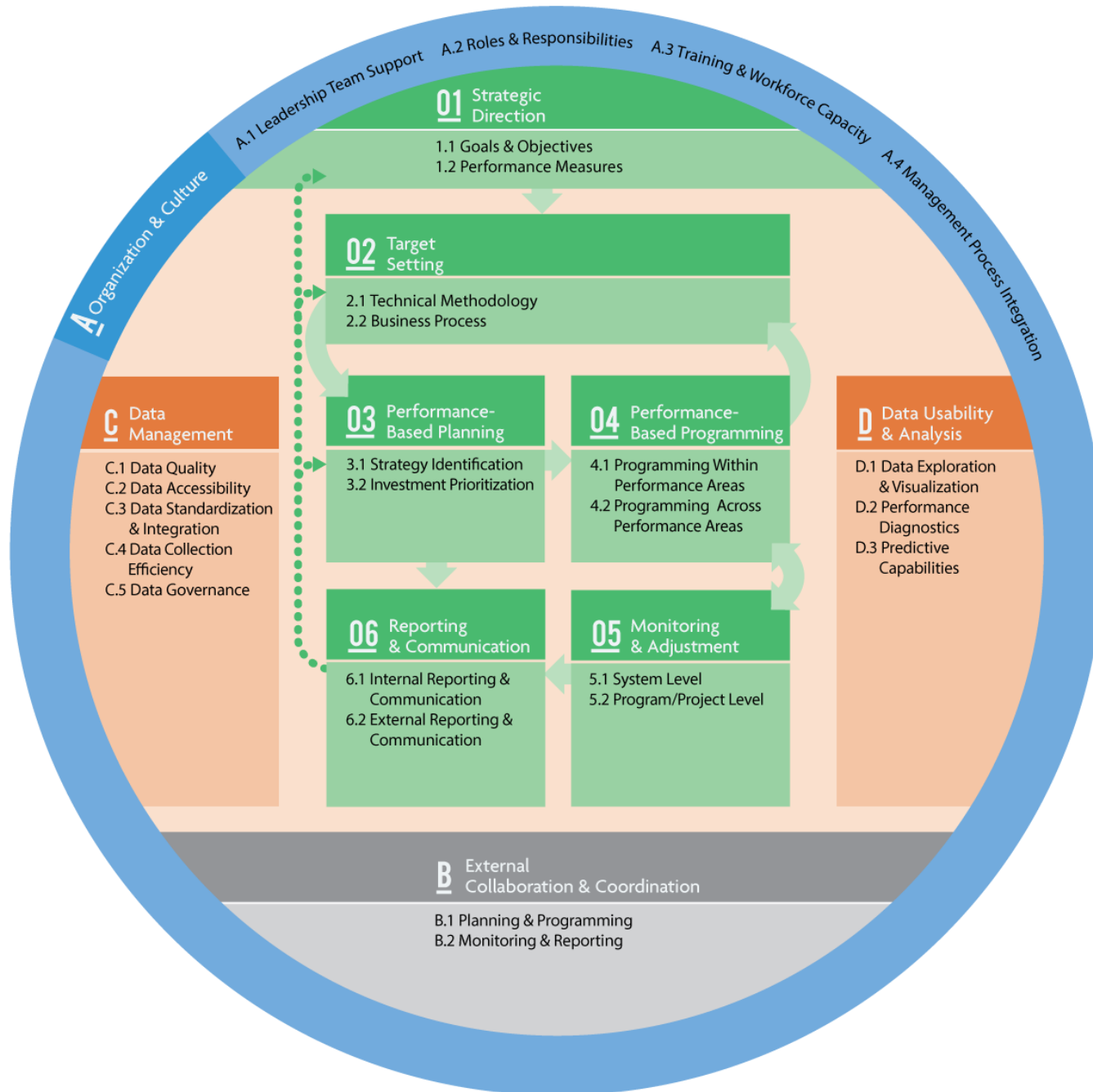- Goal: to ensure transportation agencies and local partners are prepared to carry out performance-based decision-making

- Elements:
  - o FHWA-sponsored training
  - o **FHWA-sponsored workshops (like this one!)**
  - o TPM capacity development pooled fund
  - o TPM implementation review survey
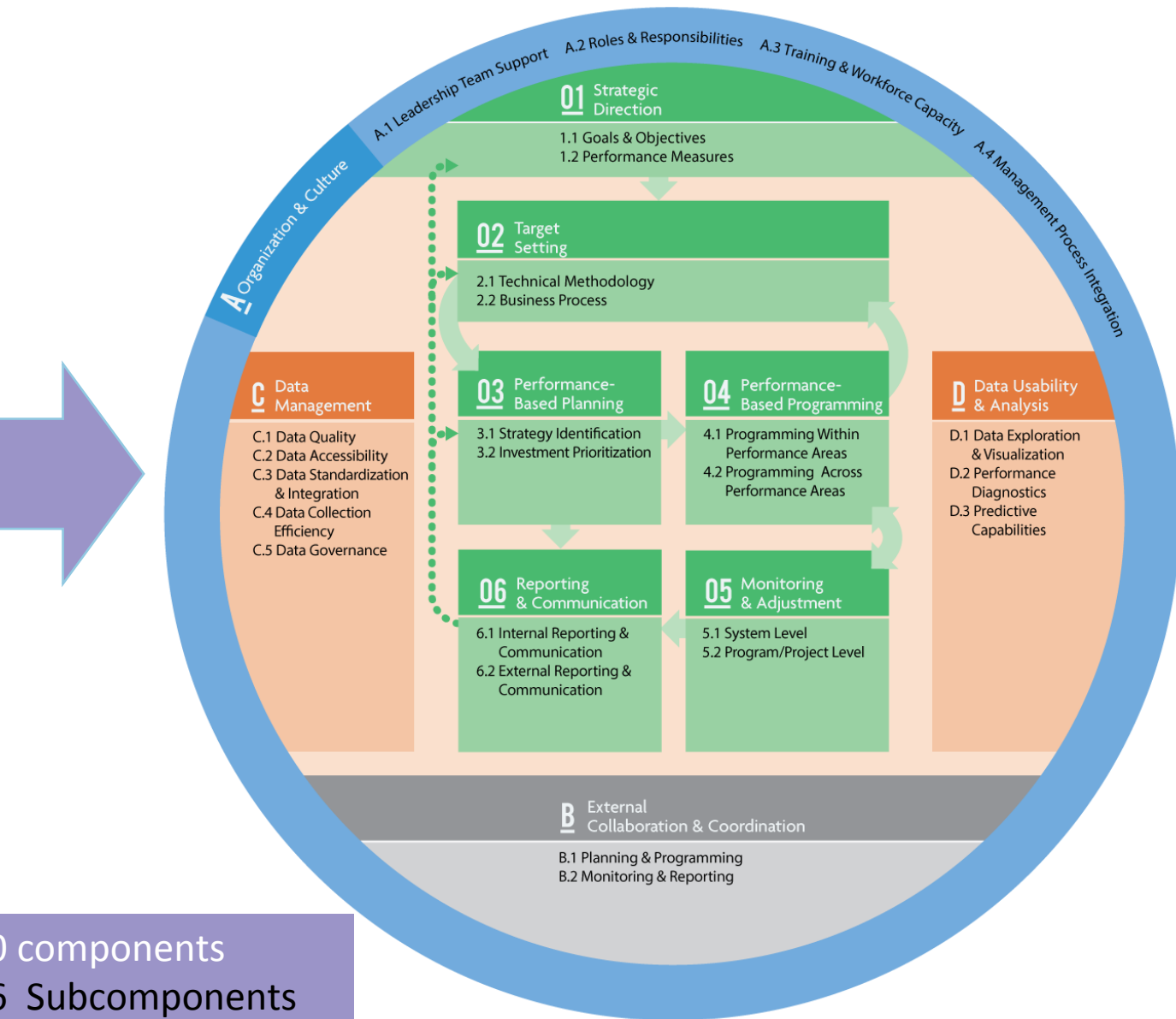 - o Let's Talk Performance webinar series

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Toolbox Elements

TPM Framework

TPM Framework

1. Strategic Direction

2. Target Setting

3. Performance-Based Planning

4. Performance-Based Programming

5. Monitoring & Assessment

6. Reporting & Communication

A. Organization & Culture

B. External Collaboration & Coordination

C. Data Management

D. Data Usability & Analysis

A.1 Leadership Team Support A.2 Roles & Responsibilities A.3 Training & Workforce Capacity A.4 Management Process Integration

A Organization & Culture

01 Strategic Direction
1.1 Goals & Objectives
1.2 Performance Measures

02 Target Setting
2.1 Technical Methodology
2.2 Business Process

C Data Management
C.1 Data Quality
C.2 Data Accessibility
C.3 Data Standardization & Integration
C.4 Data Collection Efficiency
C.5 Data Governance

03 Performance-Based Planning
3.1 Strategy Identification
3.2 Investment Prioritization

04 Performance-Based Programming
4.1 Programming Within Performance Areas
4.2 Programming Across Performance Areas

D Data Usability & Analysis
D.1 Data Exploration & Visualization
D.2 Performance Diagnostics
D.3 Predictive Capabilities

06 Reporting & Communication
6.1 Internal Reporting & Communication
6.2 External Reporting & Communication

05 Monitoring & Adjustment
5.1 System Level
5.2 Program/Project Level

B External Collaboration & Coordination
B.1 Planning & Programming
B.2 Monitoring & Reporting

CMM has 10 components with 26 Subcomponents

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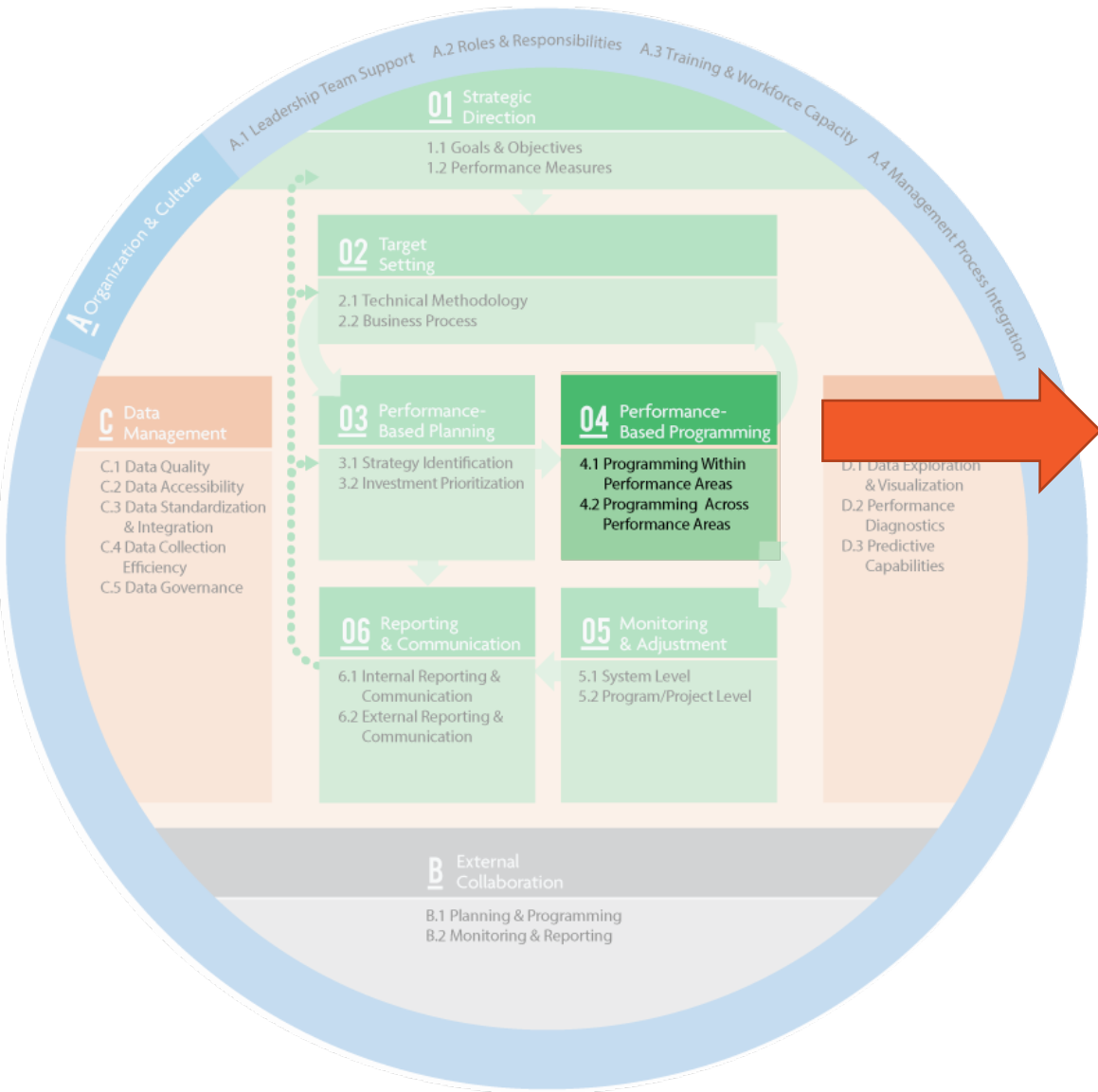
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Component 3: Performance-Based Planning

03 Performance-Based Planning

3.1 Strategy Identification

3.2 Investment Prioritization

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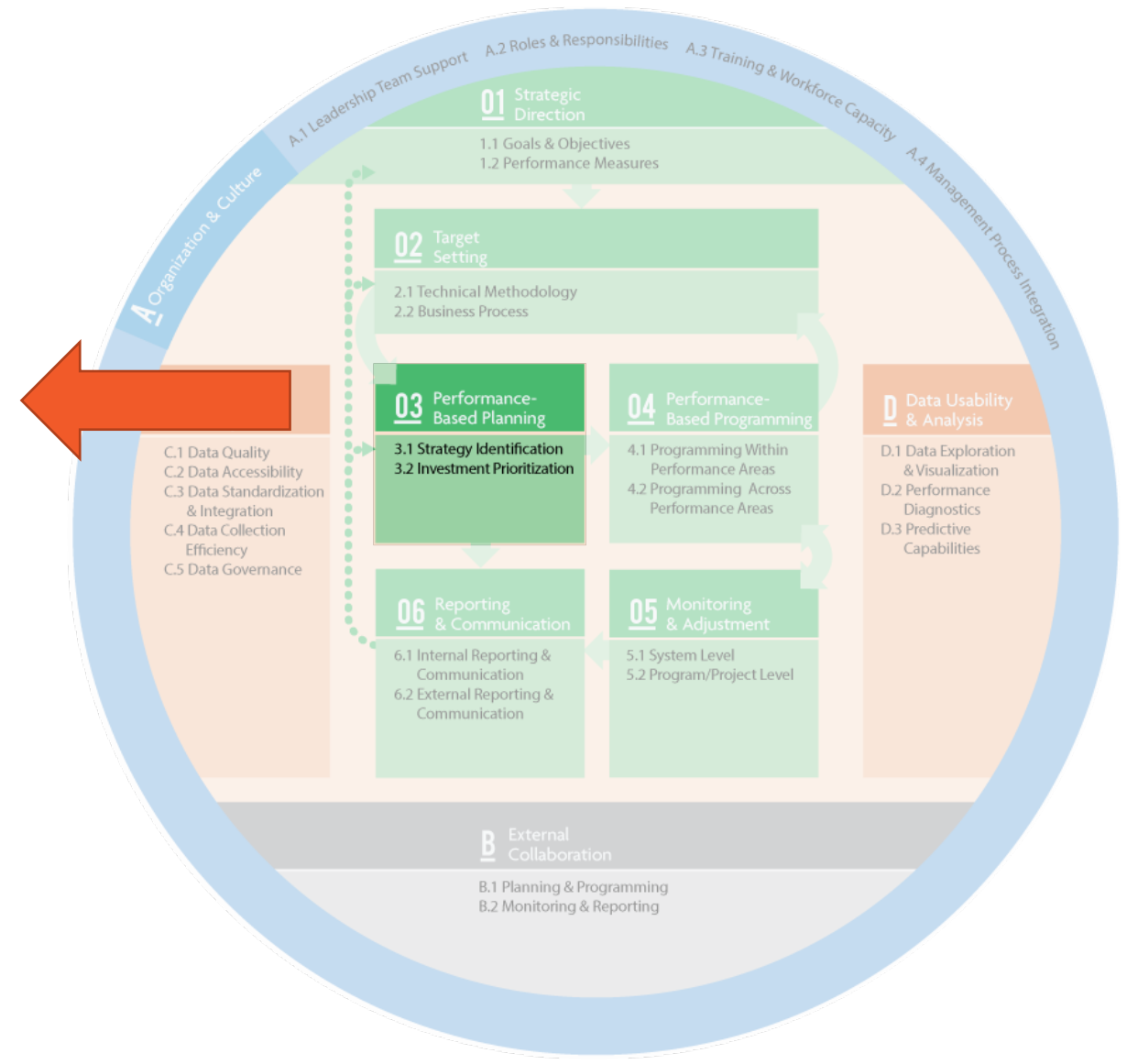
Component 4: Performance-Based Programming

04 Performance-Based Programming

4.1 Programming Within Performance Areas

4.2 Programming Across Performance Areas

CMM: Capability Maturity Model

Purpose
- Assess current state of your agency
- Identify logical set of improvements
- Show benefit of moving to higher maturity levels

TPM CMM
- Assesses maturity on 1-5 scale
- For each TPM Component

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TPM CMM Levels of Maturity

| Level	Definition
1. Initial	Ad hoc, uncoordinated, firefighting, champion-dependent
2. Developing	Nominal framework (e.g., organizational roles) being defined and systematic approaches starting to emerge
3. Defined	Framework and systems defined but not fully implemented or effectively supporting decision making
4.Functioning	TPM practices have been institutionalized , information used to guide actions, data improvements being pursued, basic predictive and tradeoff capabilities in place
5. Sustained	TPM will survive across new leadership, managers using performance information, data effectively managed, and external stakeholders view performance results as useful in promoting accountability and transparency

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Implementation Process

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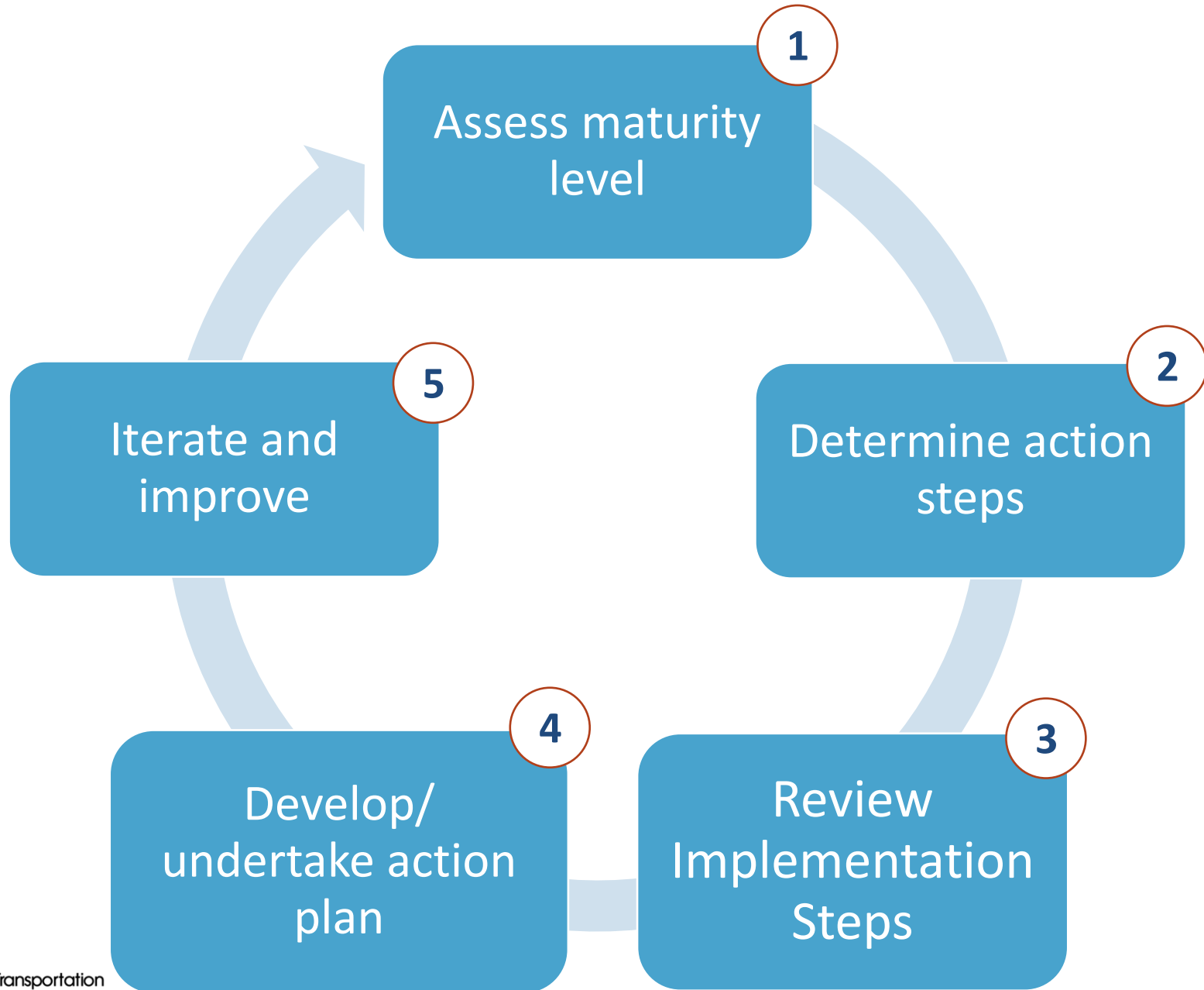
Discussion: Assessment Results

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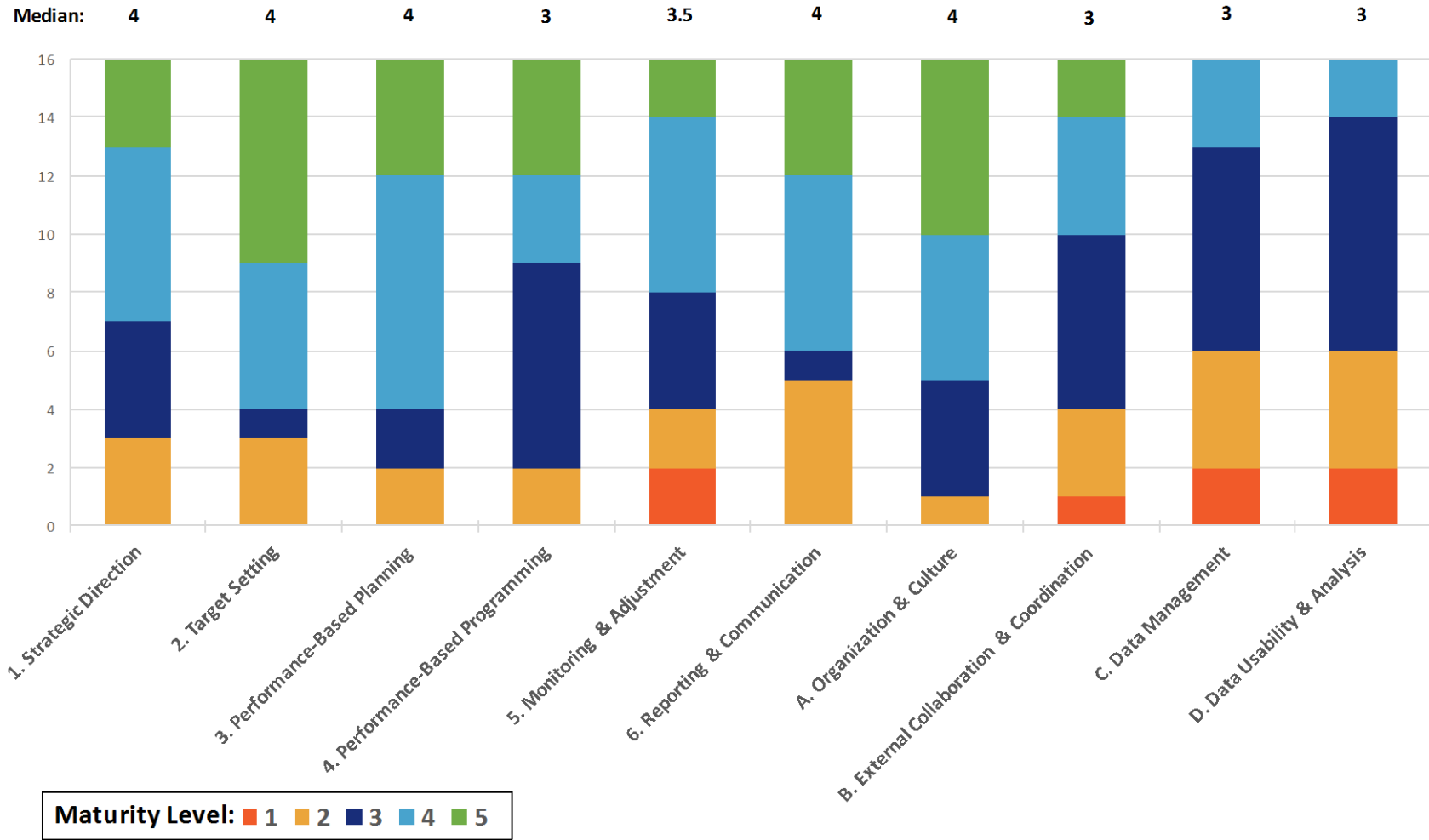**Federal Highway Administration**

Assessment Results

- Two sets of aggregated results
  - MnDOT
  - All others

- Non-MnDOT agencies will get individual results in later sessions

- Charts show the distribution and median maturity levels for each component

MnDOT

All Others

Maturity Level: ■ 1 ■ 2 ■ 3 ■ 4 ■ 5