

TPM State Workshop

FHWA TPM Framework and Capability Maturity Model (CMM)

Cheyenne, WY

November 1 & 2, 2017



U.S. Department of Transportation
Federal Highway Administration





Transportation Performance Management

Focusing on Performance for Safe, Reliable Journeys

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.



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)



TPM Elements



National Goal Areas

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



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



Measures: Safety (PM1)

| Measure Area | Performance Measures |
|--------------|---|
| Safety | <ul style="list-style-type: none">• 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/>



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) | <ul style="list-style-type: none">• 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) | <ul style="list-style-type: none">• GHG Measure: Percent Change in Tailpipe Carbon Dioxide (CO2) Emissions on the NHS from the Calendar Year 2017. |
| Freight Movement on the Interstate System | <ul style="list-style-type: none">• Freight Reliability Measure: Truck Travel Time Reliability (TTTR) Index |



Measures: CMAQ Program (PM3)

| Measure Area | Performance Measures |
|--|--|
| Measures to Assess the CMAQ Program: Traffic Congestion | <ul style="list-style-type: none">• 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 | <ul style="list-style-type: none">• Emissions Measure: Total Emission Reductions |



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 |



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 |



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



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



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



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)



State DOT and MPO Roles

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



FHWA Roles

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

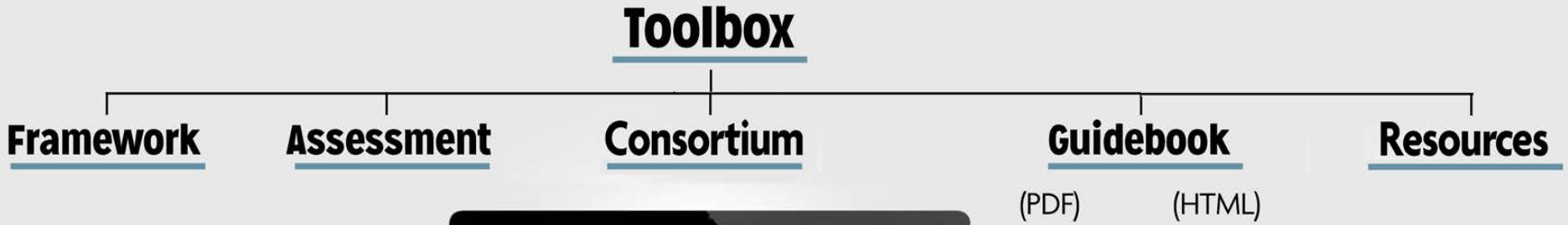


TPM Professional Capacity Building Program

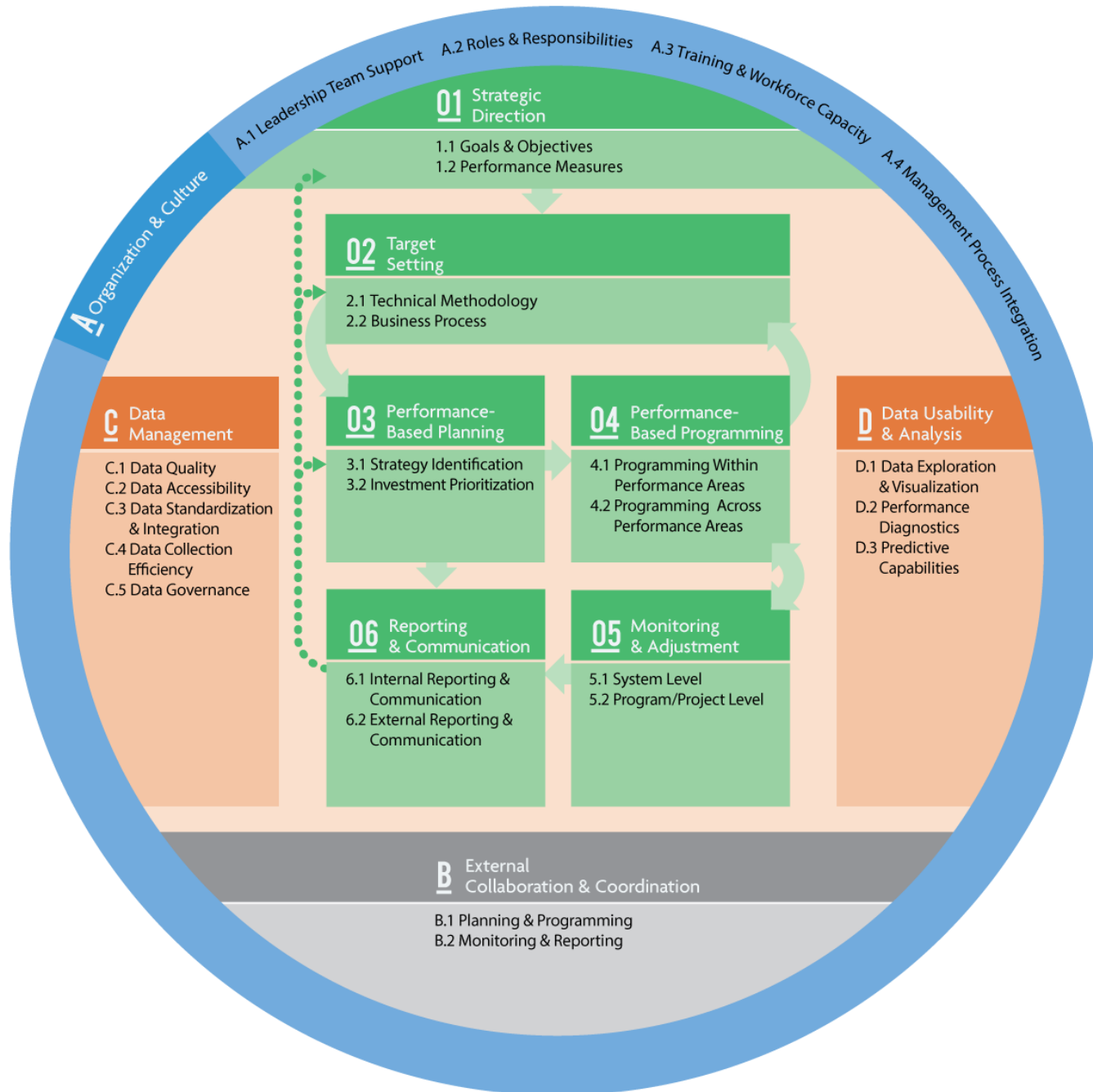
- Goal: to ensure transportation agencies and local partners are prepared to carry out performance-based decision-making
- Elements:
 - FHWA-sponsored training
 - **FHWA-sponsored workshops (like this one!)**
 - TPM capacity development pooled fund
 - TPM implementation review survey
 - Let's Talk Performance webinar series



Toolbox Elements

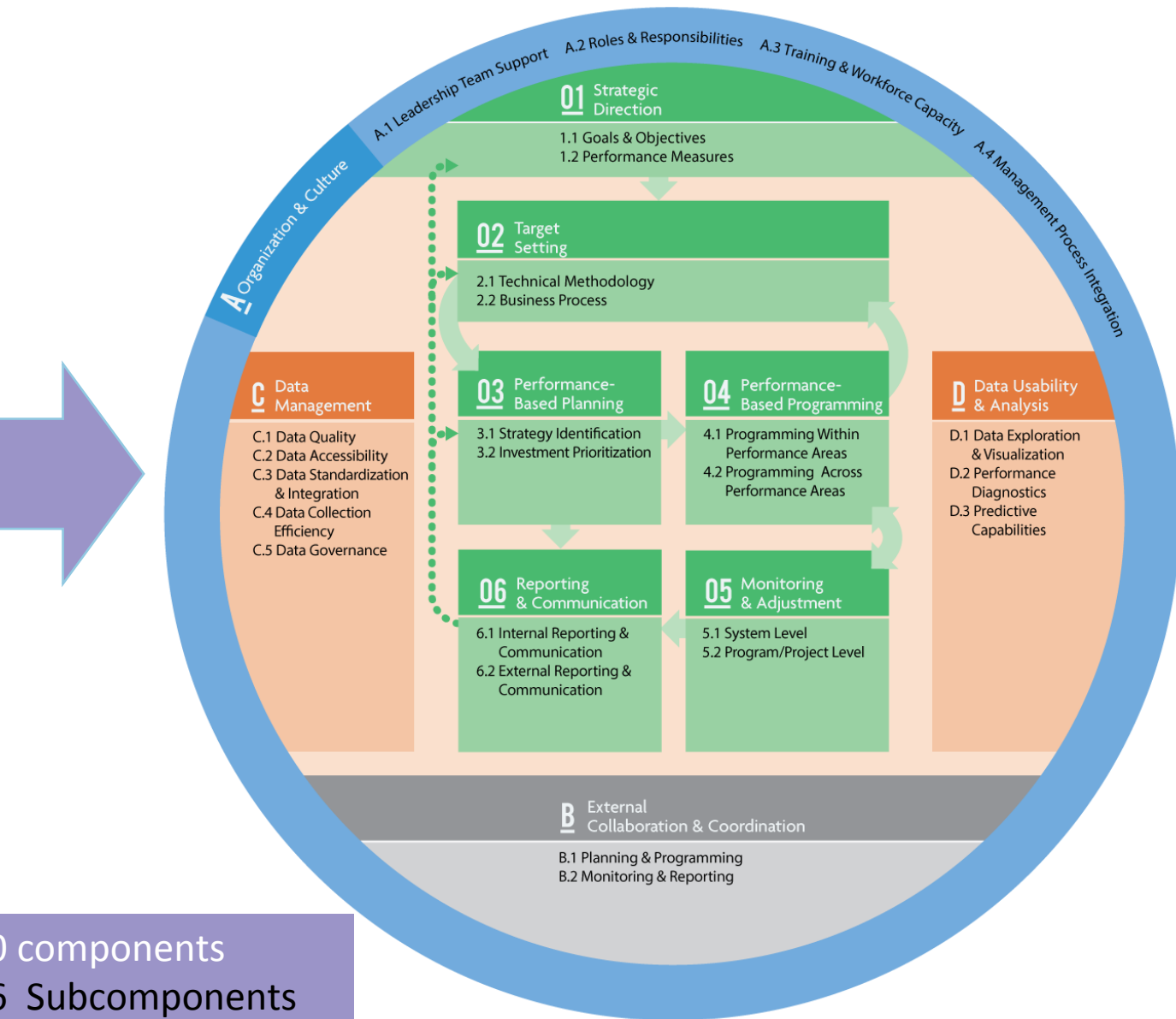


TPM Framework



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



CMM has 10 components with 26 Subcomponents

Component A: Organization and Culture

A Organization & Culture

A.1 Leadership Team Support

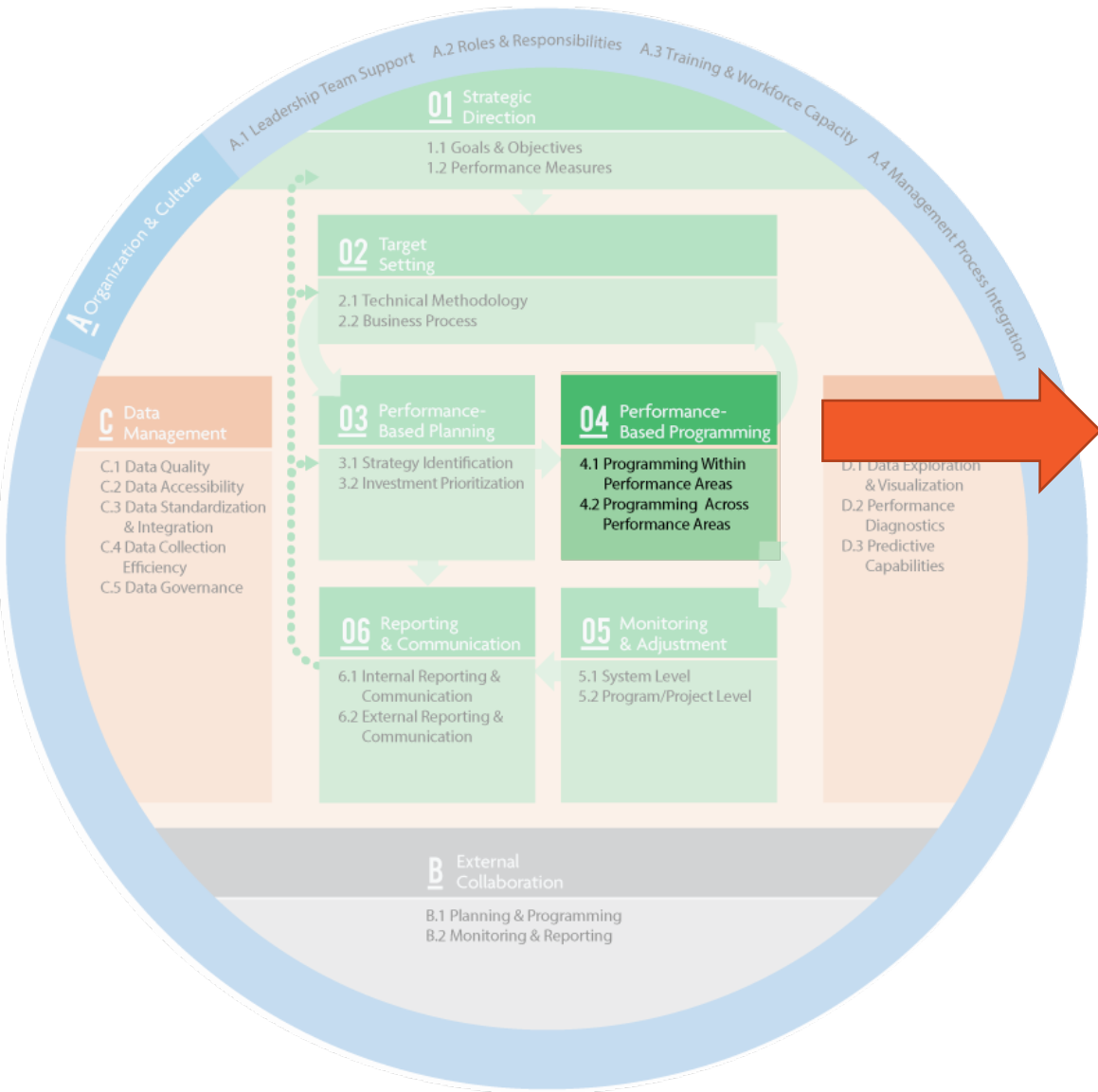
A.2 Roles and Responsibilities

A.3 Training and Workforce Capacity

A.4 Management Process Integration



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

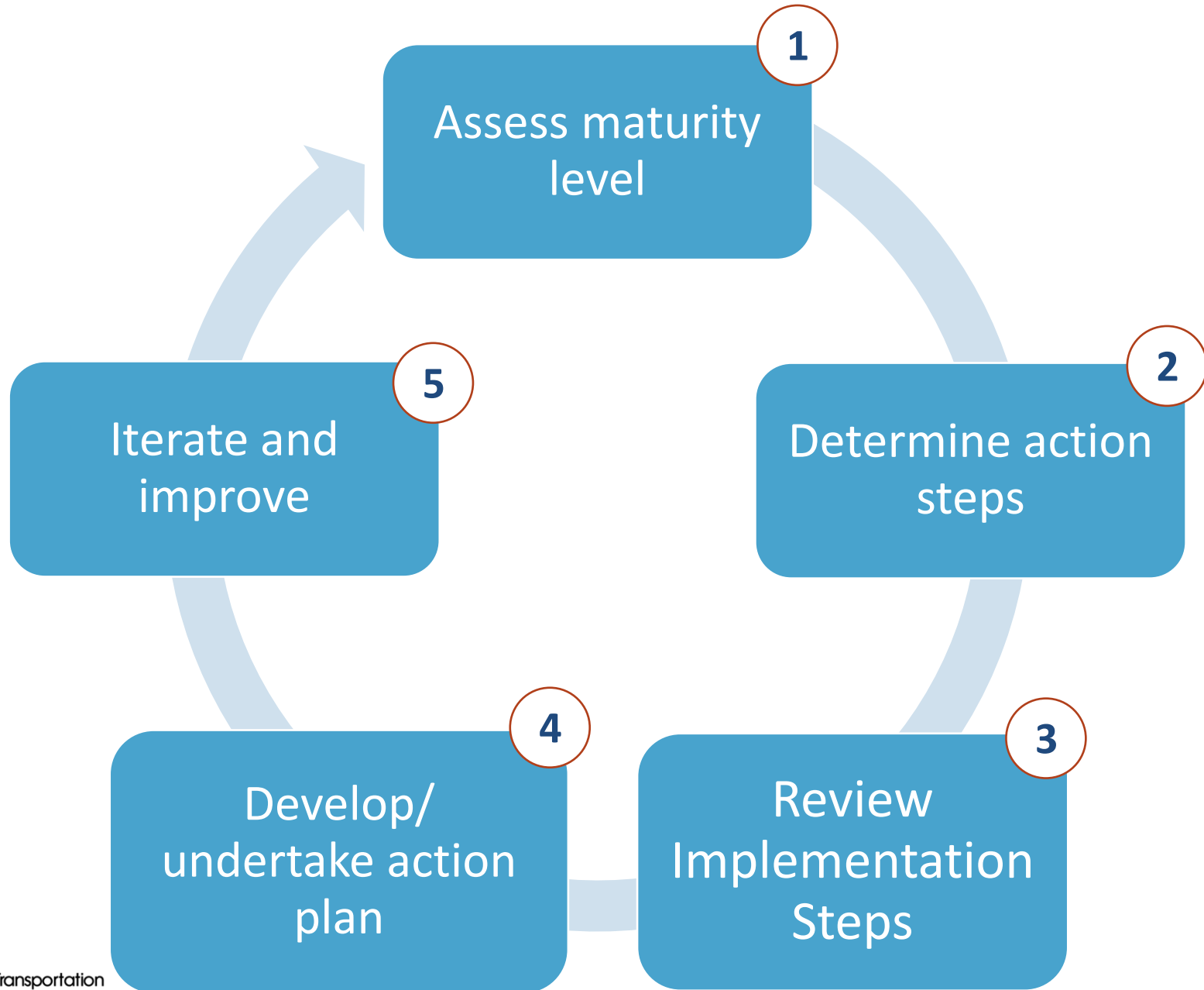


TPM CMM Levels of Maturity

| 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 |



Implementation Process



Discussion: Assessment Results



Assessment Results

- One set of aggregated results
 - Wyoming DOT
- Chart shows the distribution and median maturity levels for each component



Wyoming DOT

