Beyond "Green": Enhancing the social aspect of data-driven sustainability programs

#APTAsmp19

MDOT

MARYLAND DEPARTMENT
OF TRANSPORTATION

MARYLAND TRANSIT
ADMINISTRATION

Presentation Outline

- Agency Overview

- Sustainability Program Overview

- 2018 Sustainability Plan Overview

- Advancing PM Capacity

- Assessing Potential PMs for Existing Accessibility Efforts

Maryland Department of Transportation (MDOT)
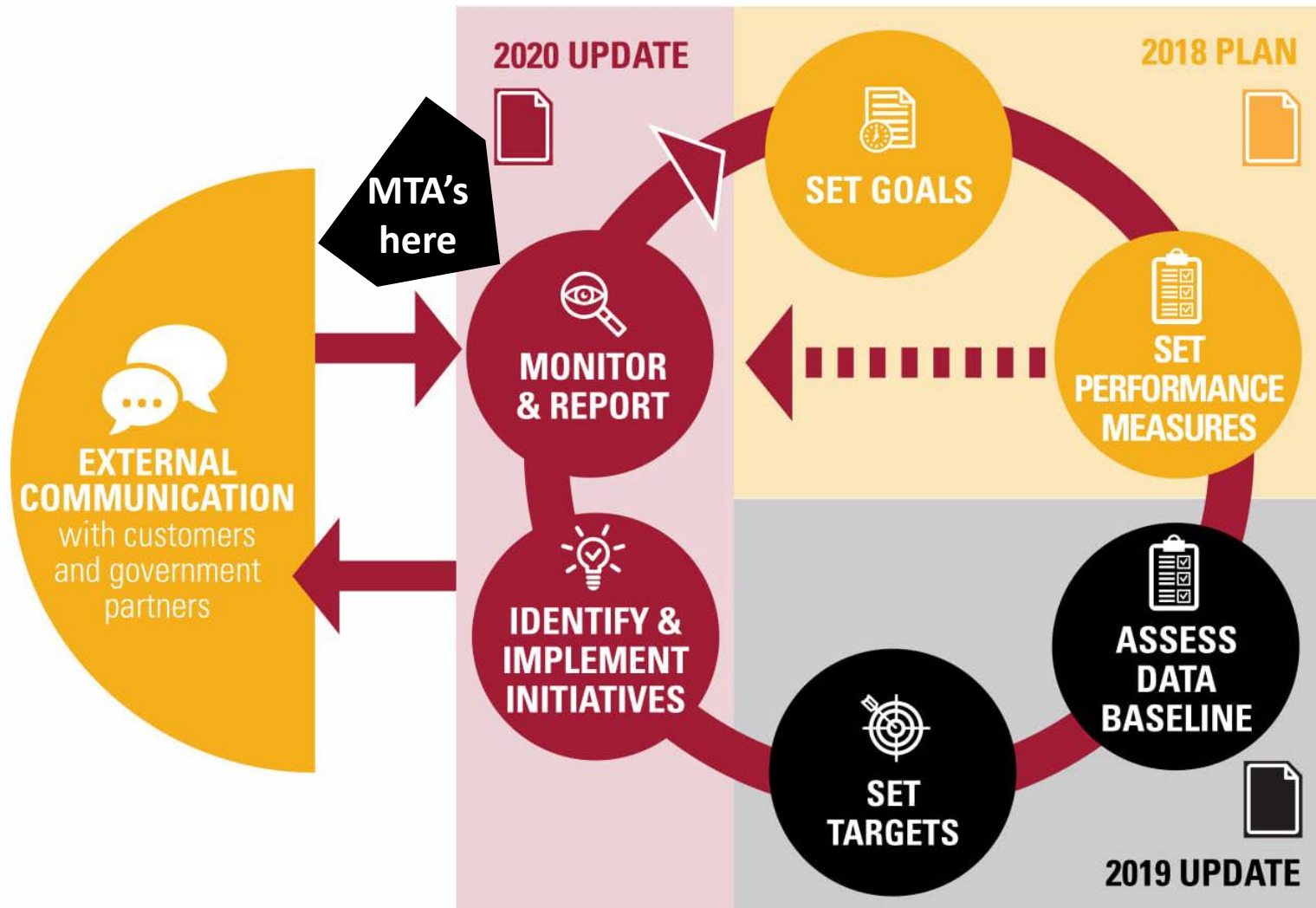# Maryland Transit Administration (MTA)
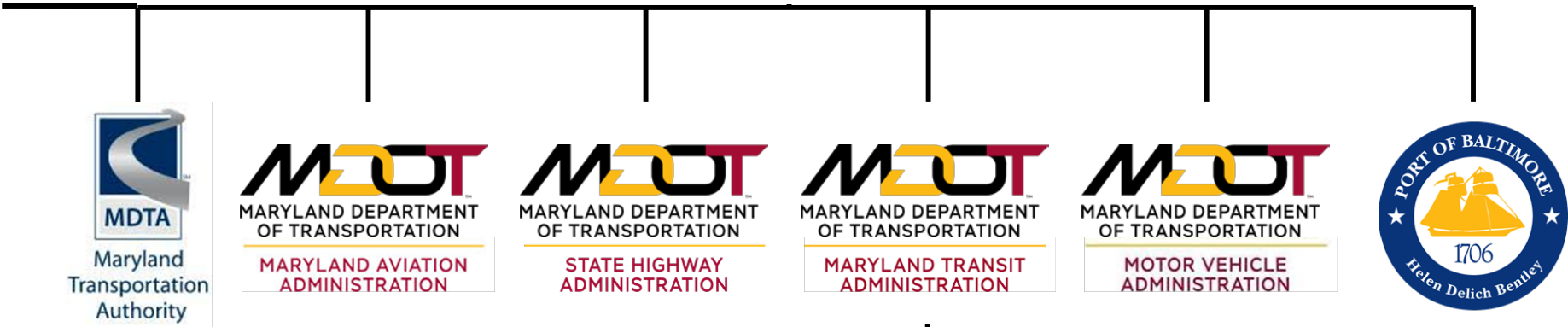
Ridership Share	68.7%	11.1%	6.7%	8.1%	3.6%	1.8%
# of Fixed Routes	66	1	1 (2 spurs)	3 (1 spur)	36	-
Track Route Miles	-	34	58	471	-	-
# of Stations	-	14	33	42	52	-

Performance Management Approach

Diagram: Performance management cycle. External Communication with customers and government partners connects to the cycle. MTA's here (pointing to Monitor & Report). Cycle stages: Set Goals (2018 Plan) → Set Performance Measures → Assess Data Baseline → Set Targets (2019 Update) → Identify & Implement Initiatives → Monitor & Report (2020 Update).

Why Performance Management?

- Statutorily committed to reducing GHG emissions, energy & water use, SGR backlog, stormwater runoff

- Formal procedures help address constrained resources and institutional knowledge

- Data-driven programs help develop business justifications and demonstrate impacts

Framework Development – Commitments, Goals, & Performance Measures

State Policy
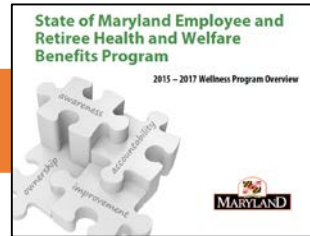
Industry Best Practice

Legal Requirements

- Energy & water use
- Renewable energy
- GHG emissions
- Impervious surface
- Recycling rate
- NTD

Data Capabilities

- Payroll
- GPS
- Electronic Fares
- Surveys
- Invoices/Billing
- ACS

Strategy Focused – Does the PM:

- Identify location-specific needs and strategy options? *Performance-based Planning*
- Scope solutions that quantifiably improves performance? *Target Setting*
- Create a data-driven capital budget? *Performance-based Programming*

Goals and Performance Measures – Planet

		GOAL	PERFORMANCE MEASURE	LEGAL REQUIREMENTS
PLANET	**At MDOT MTA:** Conserving Resources	Reduce energy use	Electricity and fuel consumed	Md. Finance & Procurement Code Ann. § 4-806 and § 4-808
		Reduce water use	Water consumed	Md. State Executive Order E.O. 01.01.2001.06
	In the Region: Supporting Environmental Stewardship	Improve water & air quality	Percent of renewable energy consumed	Md. Public Utilities Code Ann. § 7-703
			Tons of greenhouse gases emitted	Md. Environment Code Ann. § 2-1204.1; Md. Executive Order E.O. 01.01.2014.14
			Area of impervious surface treated	Md. Executive Order E.O. 01.01.2001.22; 40 CFR 122
		Reduce & recycle waste	Percent of waste recycled and total waste generated	Md. Environment Code Ann. § 9-1706.1

Goals and Performance Measures – Prosperity

		GOAL	PERFORMANCE MEASURE	LEGAL REQUIREMENTS
PROSPERITY	**At MDOT MTA:** Managing Finances Responsibly	Increase cost efficiency	Operating expenses	Md. Transportation Code Ann. § 7-208; 49 CFR 630
		Automate revenue collection	Percent of fares purchased through electronic services	--
	In the Region: Encouraging Job Creation	Improve transit reliability	On-time performance	--
		Maintain assets in a state of good repair	Percent of vehicles that met or exceeded their useful life	49 CFR 625; 49 CFR 630
			Percent of facilities & stations rated below a 3 on the TERM scale	
			Percent of track with performance restrictions	

Goals and Performance Measures – People

		GOAL	PERFORMANCE MEASURE	LEGAL REQUIREMENTS
PEOPLE	**At MDOT MTA:** Fostering Employee Wellness	Improve employee morale	Percent of employees with a positive perception of their workplace environment	--
			Percent of employees that frequently experience work-related stress	--
		Improve employee health	Number of lost work days due to injury and sickness	--
	In the Region: Promoting Livable Communities	Strengthen connections to opportunity	Population within a half mile of high-frequency service	--
			Ridership	--
		Enhance the transit experience	Average trip duration	--
			Percent of customers satisfied	--

Building Performance Measure (PM) Capacity*

Initial (1)
- Some goals and PMs defined
- Goals and PMs used inconsistently: not necessarily coordinated with regional priorities or support decision making

Developing (2)
- Collaborative goal setting process under development
- Clarifying linkages between agency functions and societal concerns
- Emerging process to track performance
- Basic outline of data and measure calculations

Defined (3)
- Collaborative goal setting process
- Formal PMs have been defined and approved
- Common understanding how PMs will be added, modified, and used to track progress
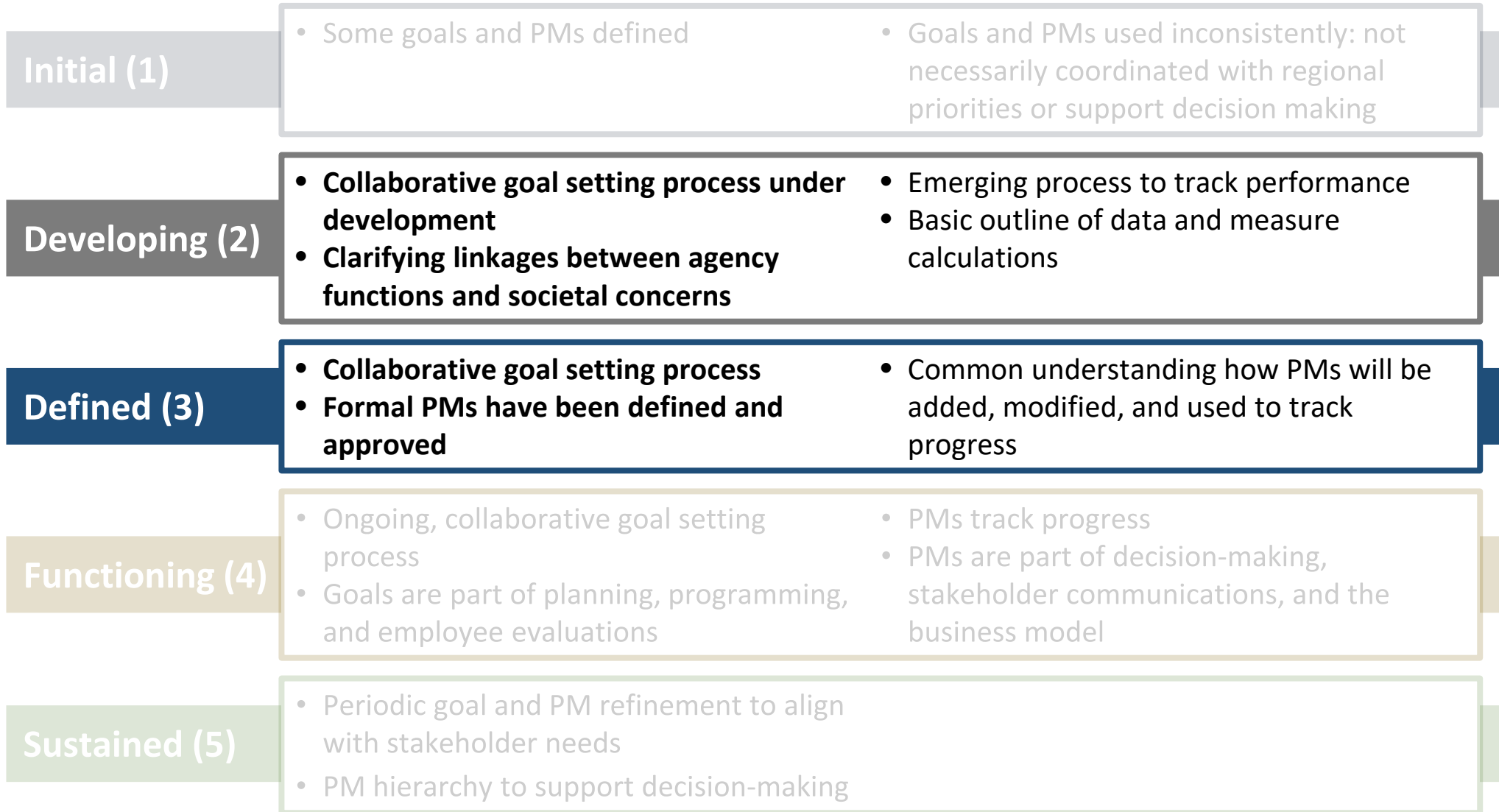
Functioning (4)
- Ongoing, collaborative goal setting process
- Goals are part of planning, programming, and employee evaluations
- PMs track progress
- PMs are part of decision-making, stakeholder communications, and the business model

Sustained (5)
- Periodic goal and PM refinement to align with stakeholder needs
- PM hierarchy to support decision-making

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Building an On-going, Collaborative Goal & PM Setting Process

Does each department feel represented?

What are their priority initiatives?

How do they measure and communicate success?

Available resources? Advocates and expertise?

Frequency of process?

Strategy Focused – Does the PM:

- Identify location-specific needs and strategy options? *Performance-based Planning*

- Scope solutions that quantifiably improves performance? *Target Setting*

- Create a data-driven capital budget? *Performance-based Programming*

Accessibility

GOAL	PERFORMANCE MEASURE	
Strengthen connections to opportunity	Population within a half mile of high-frequency service	
	Ridership	
Enhance the transit experience	Average trip duration	
	Percent of customers satisfied	

The Customer's Journey

1. Planning a Trip
2. Accessing a Stop
3. Waiting
4. Paying Fares
5. Riding
6. Transferring

Who? *Demographics*

How many? *Capacity & Comfort*

How? *Method & Ease*

Where? *Origin/Destination*

Guiding Evaluation Criteria for Individual Measures

- Specificity
- Data capabilities/Resources
- Understandable/Communicable
- Agency achievable
- Target setting/Compare progress
- Outcome (Identify & Prioritize)

TCRP 2019. *Social & Economic Sustainability Performance Measures for Public Transportation*.

Accessibility – Demographics
MDOT MTA Office of Planning and Programming (OPP)

Potential Option No. 1 – Engagement and Station Use

Inclusive Transportation Planning (HHS Grant)

Focus: Identify opportunities and incorporate perspectives of older adults and people with disabilities into the project development process

Deliverables: Build capacity, produce knowledge, and make change

Approach: Human-centered, open-ended, action-oriented

Engagement Methods: Focus groups, station walk audits, and tabling

Criteria	Details
Specificity	• Do the demographics of transit stop users differ from a community's demographics? Should they? • Demographics of a stop vs. the community
Data Availability/ Resources	• Third-party and direct observations • Limited automation potential
Understandable/ Communicable	• Wordy • Unclear value statement
Agency Achievable	• Maybe, How does this impact paratransit service?
Target Setting/ Comparing Progress	• Variability between communities and agencies • Higher difficulty to set agency-wide target
Outcome	Identify and prioritize: • Communities for engagement • Stations for redesign

Accessibility – Method and Ease
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Potential Option No. 2 – Station Area Walkability

Criteria	Details
Specificity	• How does walkability differ with: a disability or infrastructure quality? • Amount of time to walk ½ mile
Data Availability/ Resources	• Direct observation for a pilot • Potential for GIS-based automation
Understandable/ Communicable	• Straightforward concept • Simple unit of measurement
Agency Achievable	• Property ownership & DOT cooperation
Target Setting/ Comparing Progress	• Available guidance and literature • Easier comparison between stations and agencies
Outcome	Identify and prioritize: • Stations • Key intersections for redesign

Accessibility – Capacity & Comfort
MDOT MTA Office of Service Development (OSD)

Bus Shelter Prioritization

- How many? *Boarding*
- How long? *Transfers & freq.*
- Who? *Title VI area, human service facilities, relief points*

Bus Stop Design Guide

- 4 tiers of bus stops with increasing amenity levels
- 6 configurations depending upon the built environment
- Recommended configurations for site/network conditions and stop placement

ADA & Connectivity Stop Survey

- Minimum ADA compliance
- Adjacent ADA walkability

Potential Option No. 3 – Enhancements to Priority Stations

Criteria	Details
Specificity	• Percent of high priority stops with enhancements
Data Availability/ Resources	• Leverage existing analyses, guidelines, and surveys
Understandable/ Communicable	• Communicates agency priorities • Priorities can be confirmed through engagement
Agency Achievable	• Agency sets priority and vision for each stop • Through municipal DOT partnerships
Target Setting/ Comparing Progress	• Controlled through the capital program • More difficult to compare between agencies
Outcome	Identify and prioritize: • Passenger experience • Priority stations for enhancement

Accessibility – Origin/Destination
MDOT MTA Office of Service Development (OSD)

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Potential Option No. 4 – Job Accessibility

Criteria	Details
Specificity	• Number of jobs within ½ mile of high frequency service
Data Availability/ Resources	• American Community Survey • GIS systems
Understandable/ Communicable	• Communicates agency priorities • Does this align with customer needs?
Agency Achievable	• Should transit follow jobs, or help create jobs?
Target Setting/ Comparing Progress	• Working within operational constraints • Not a direct comparison between agencies
Outcome	Identify and prioritize: • Areas to expand service • Areas to enhance existing service

THANK YOU!

Let's talk more:

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