

Driving the Capital Program with Sustainability & Asset Management Data

#APTAsmp19



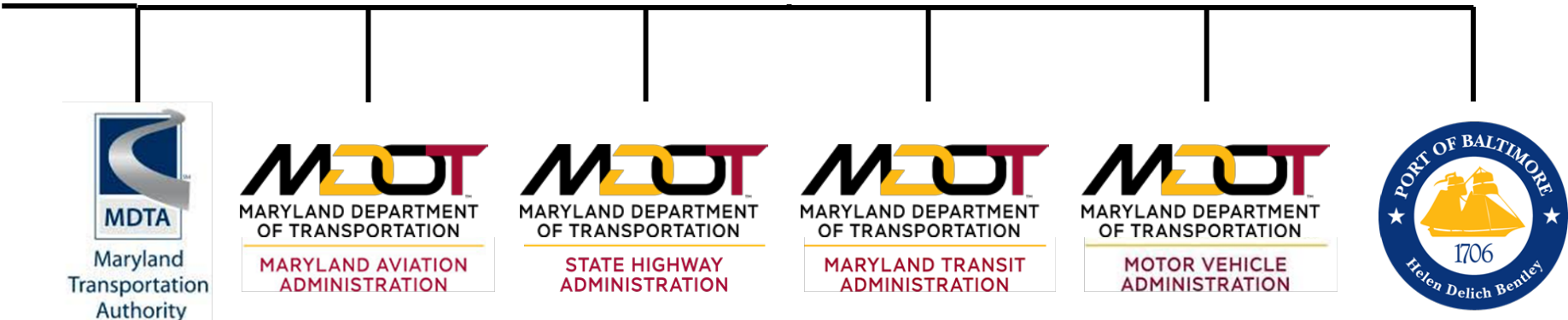
MARYLAND TRANSIT
ADMINISTRATION

Presentation Outline

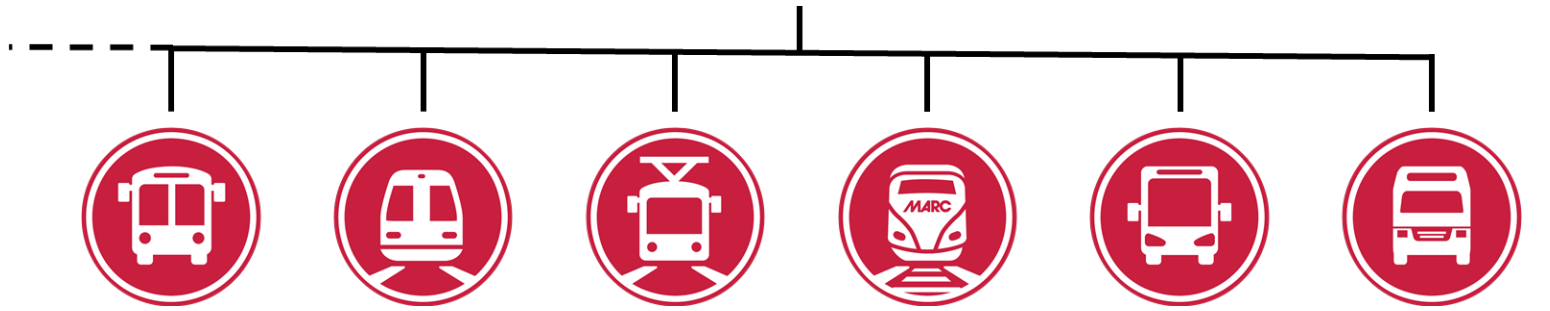
- Agency Overview
- Sustainability Program Overview
- 2018 Sustainability Plan Overview
- Implementation Strategy
- Implementation: Process, Performance, & Data Quality Enhancement

Maryland Department of Transportation (MDOT)

Maryland Transit Administration (MTA)

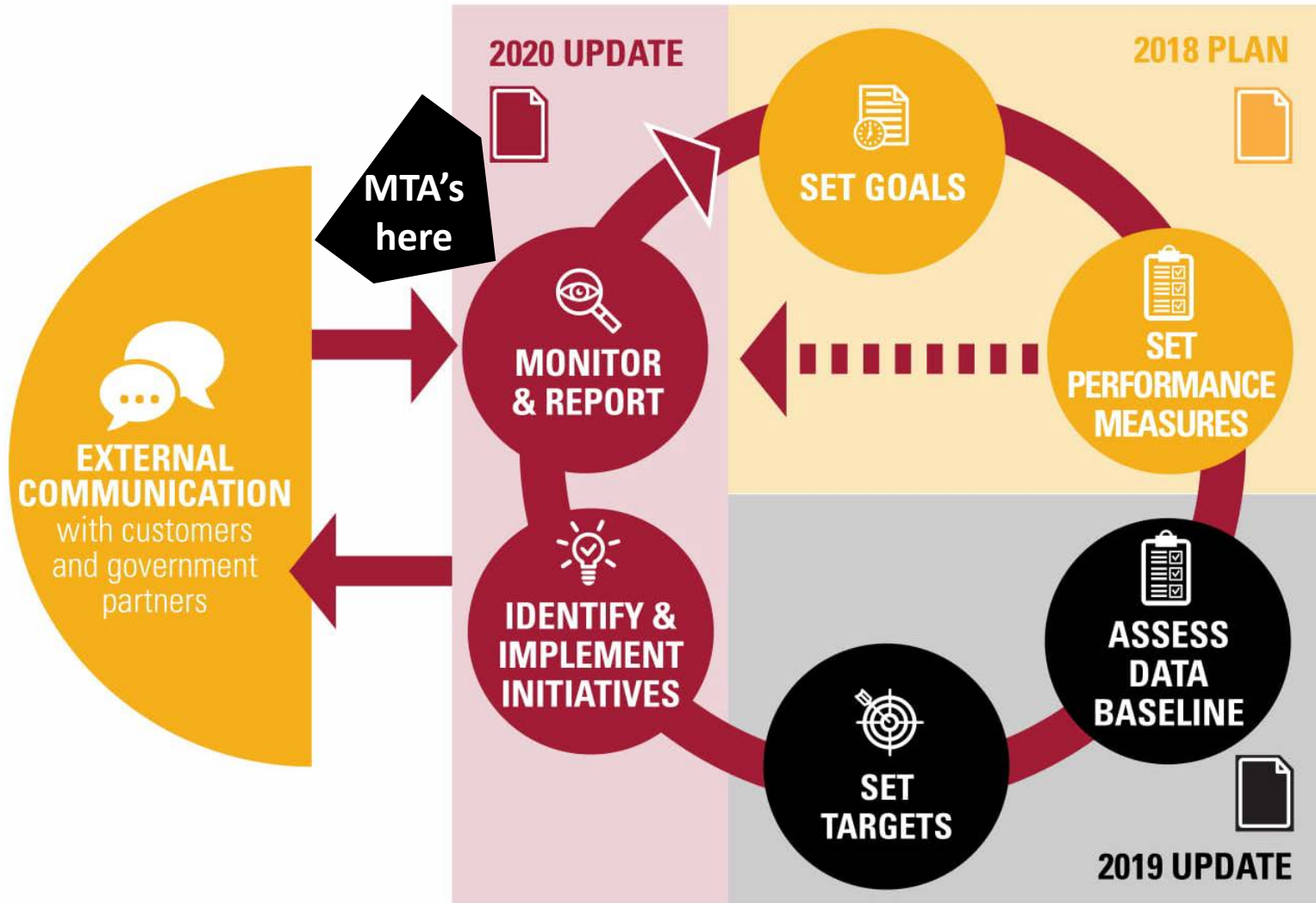


Freight



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

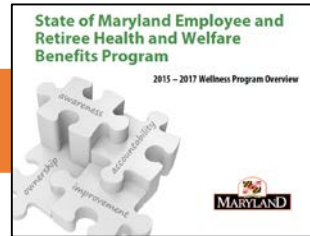


Why Performance Management?

- 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 – 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	--

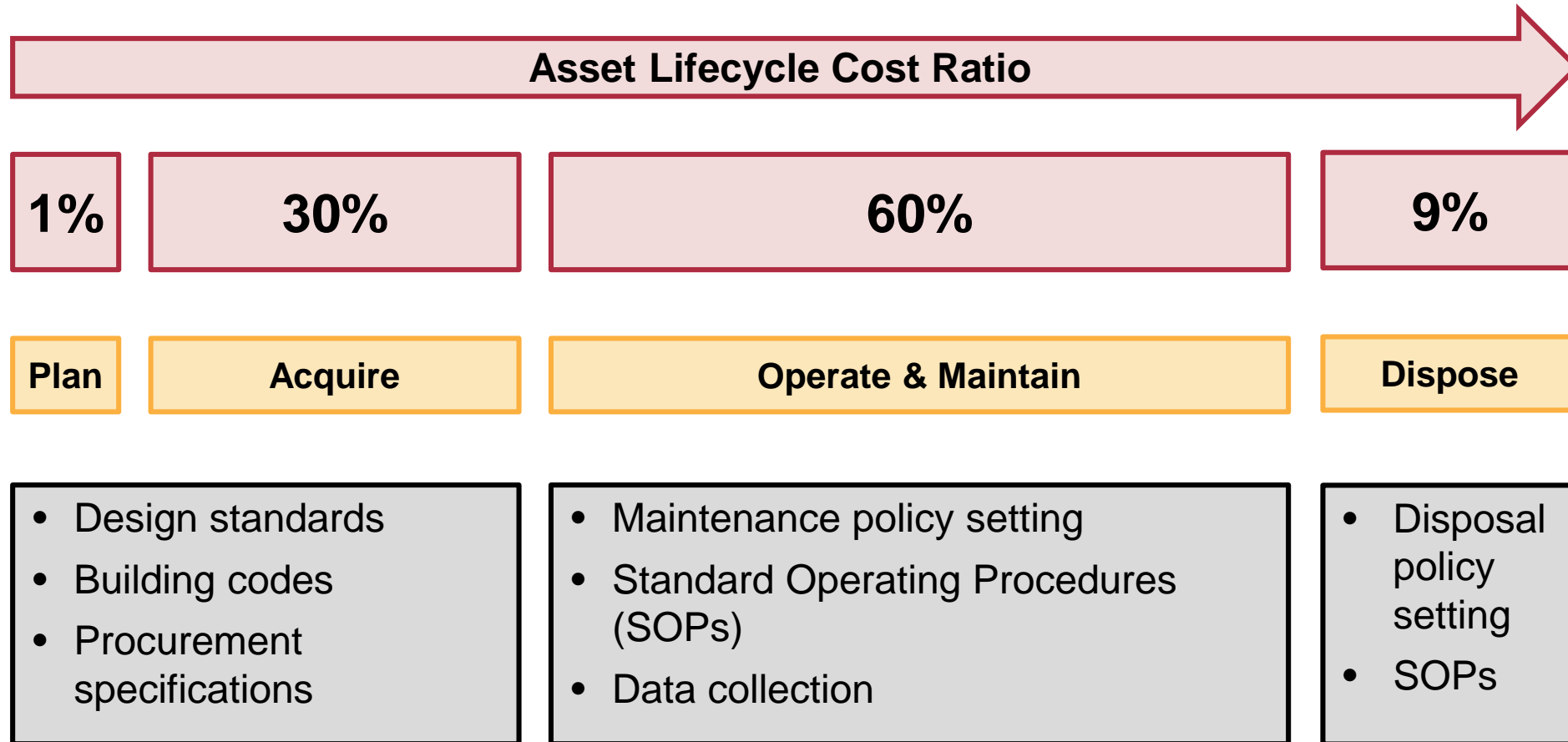
Goals and Performance Measures – Planet

		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

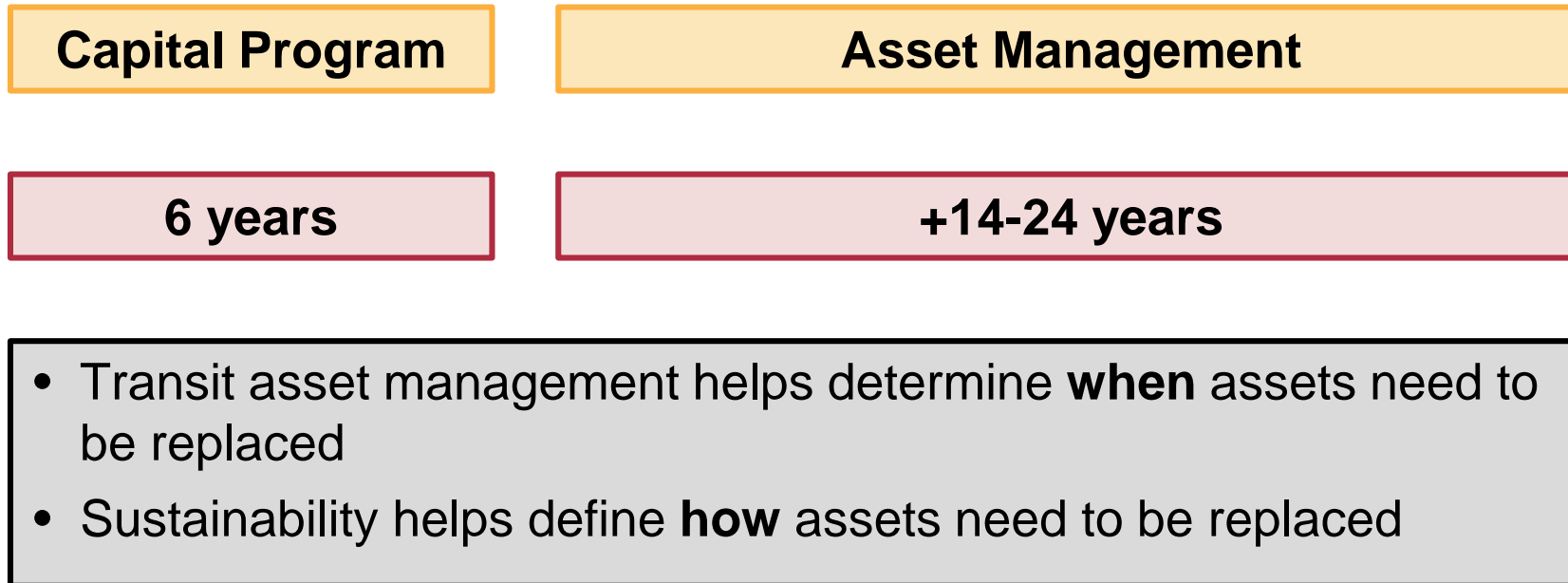
Goals and Performance Measures – Prosperity

		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			

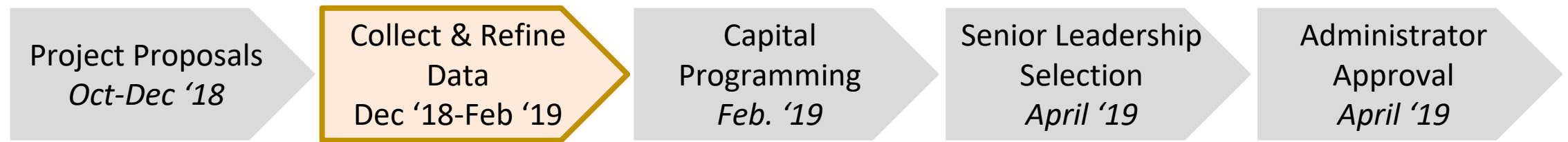
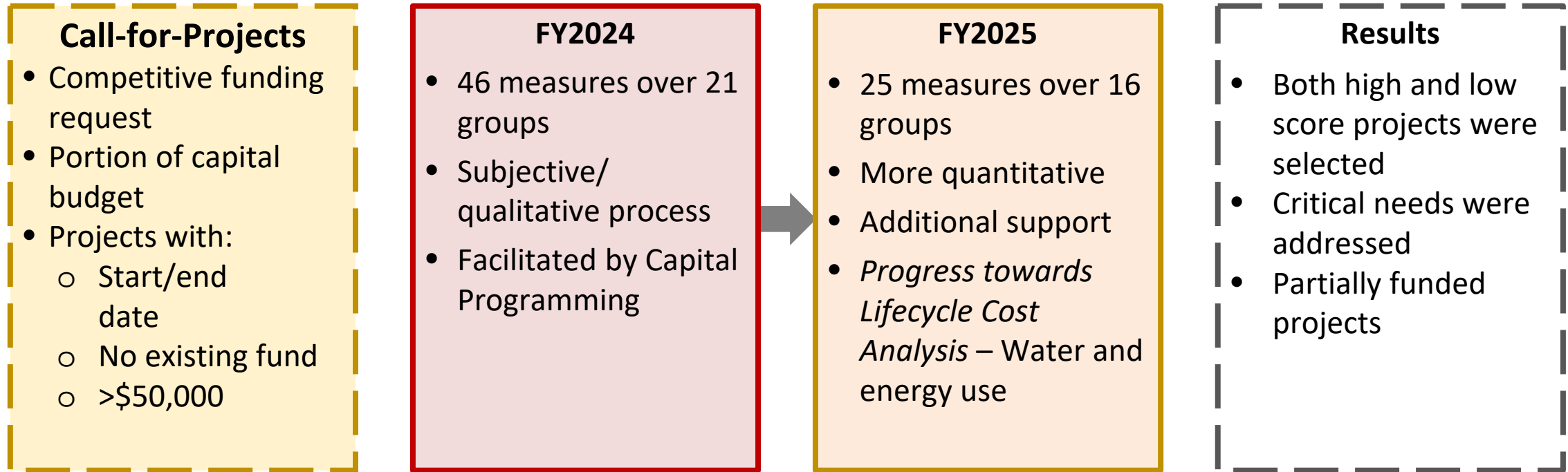
Total Lifecycle Approach



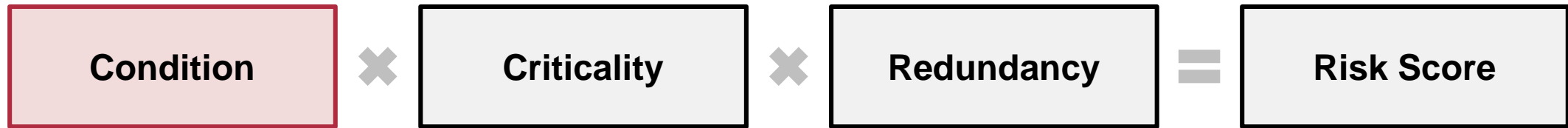
Planning Approach



Improving Process: Capital Budget Impact Analysis



Improving Process: Functional Condition Assessments



Physical/ Visual

- Mortality

- Applies to an asset
- Driven by FTA TAM regulations & guidance
- 60% total condition score

Functional

- Capacity
- Regulatory
- Obsolescence
- Level of Service
- Resources
- Resiliency

- Applies to a system or a subsystem
- Driven by best practice
- Piloting at Eastern Bus Maintenance Division
- 40% total condition score

Initiatives that Improve Performance



How do we systematically trigger these performance interventions?



PV Readiness

- New maintenance shop approaching 30% design
- Developed ROI strategy toolkit
- Recommendations based upon design documents
- Design team recommended rooftop PV, at minimum:
 - Additional roof cost: \$100,000
 - PV cost: Power purchase agreement
 - Annual savings: ~\$23,000

Retrocommissioning

- Whole-facility approach
- Ensures performance meets Owner Project Requirements
- Low cost recommendations – operations, control, repair, & calibration
- 2017 Northwest Bus Division
 - Assessment cost: \$32,000
 - Recommendations cost: \$156,000
 - Annual savings: \$37,000
 - Breakeven: 5 year ROI



CharmPass Mobile Payment

- Deployed in September 2018
- Serves all modes
- Enables free 90 min. transfer for local services

Initiatives that Enhance Data Quality



Utility Sub-Metering Plan

- Foundation for all sub-metering efforts
- 3 pilot sites
- Covers 15% design, automation workplan, and billing QA/QC



Real-Time Customer Information

- Transit Mobile App partnership
- \$1.043 million contract with Swiftly, Inc. to install GPS on 753 buses
- Deployed June 2018
- Working towards deploying real-time for remaining modes



Union Payroll System Overhaul

- Deployed in Spring 2019
- Remotely submit and track hours and view deductions

Data will help identify and scope projects that enhance performance

THANK YOU!

Let's talk more:

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