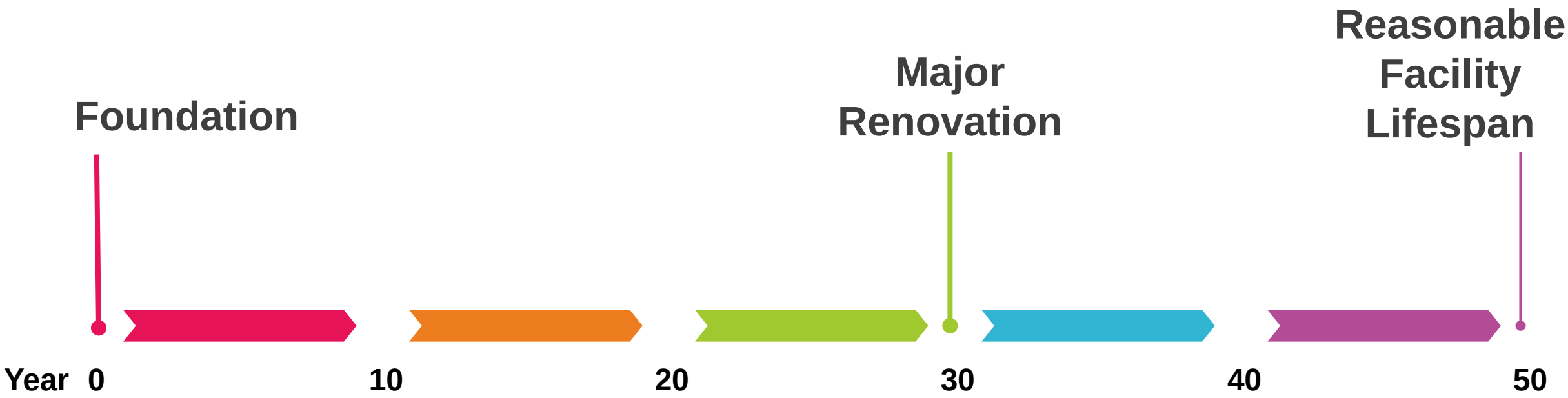
Maintenance and Maintenance Effectiveness

In preparation for the Workgroup on Assessment & Funding of School Facilities

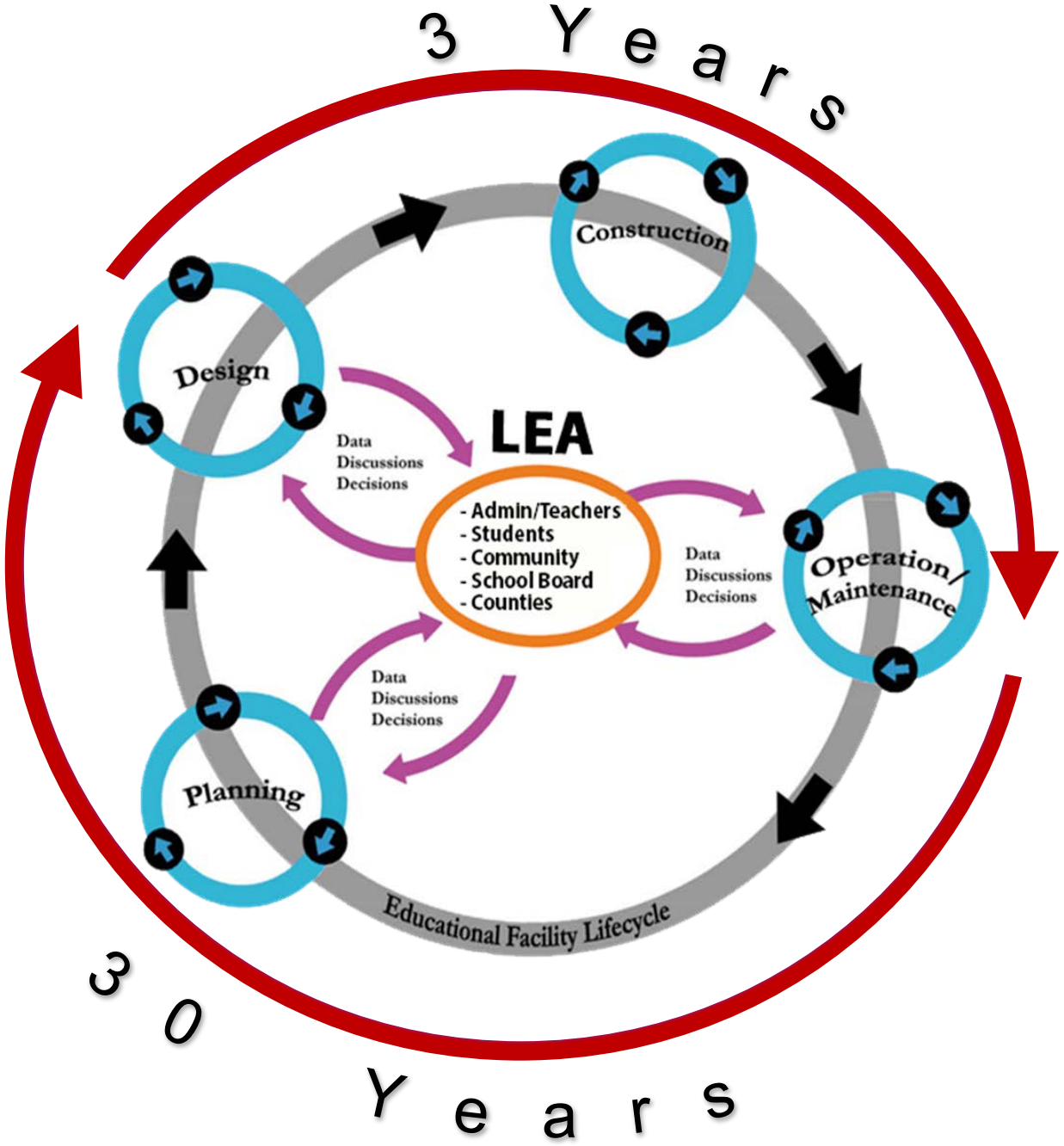
A Multigenerational Task



Continual Management and Upkeep…

Objectives: Educational Sufficiency + Fiscal Sustainability

Ownership and Cycle of Life



Definition of Maintenance

The work required to keep a facility (plant, building, structure, ground facility, utility system, or other real property) in such condition that it may be fully functional and continuously utilized for its expected lifespan, for its intended purpose, and at its maximum energy efficiency.

Two Types of Maintenance

1. Routine Maintenance **$ $ $ $ $**

2. Capital Maintenance **$ $ $ $ $**

Major repair, alteration, and replacement of systems, equipment, finished, and components, including their removal and disposal.

CAPITAL MAINTENANCE

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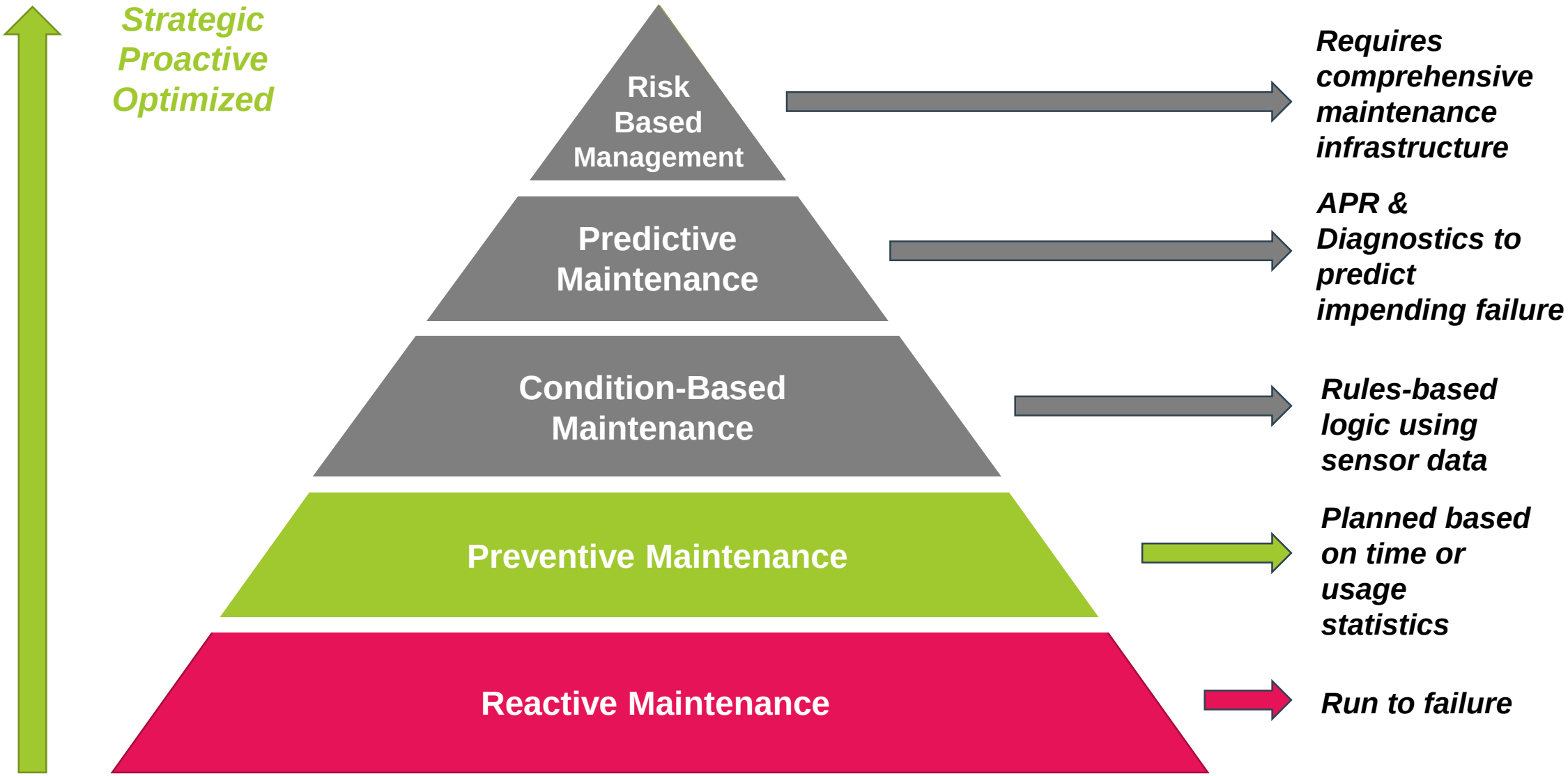
ROUTINE

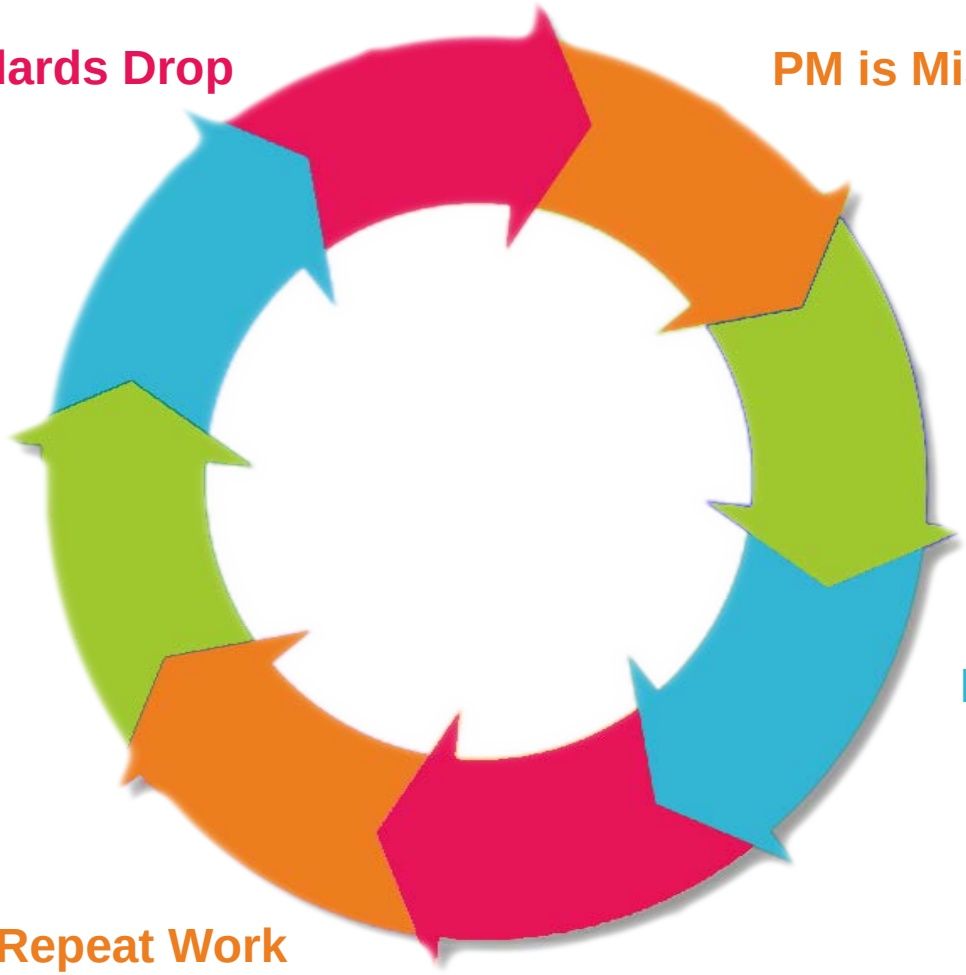
MAINTENANCE

Preventive, predictive, and emergent unscheduled tasks and repairs required to ensure that a facility functions according to its design, as well as its expected lifespan.

Types of Routine Maintenance



The Vicious Cycle of Reactive Maintenance



What is Preventive Maintenance?

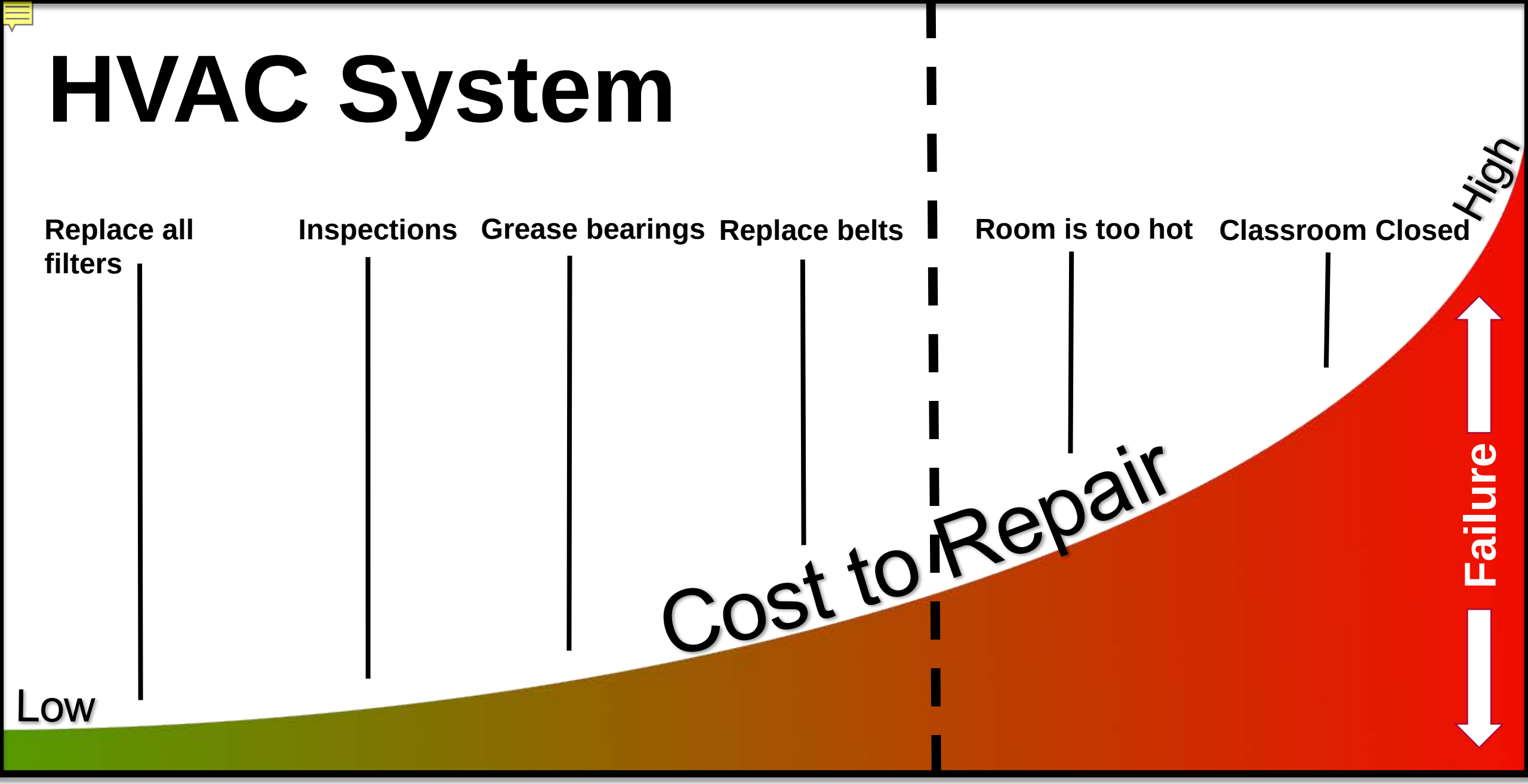
- System is inspected at least annually
- Maintenance is planned and scheduled with components replaced or repaired periodically
- One of the most effective tools to maximize service life of roofing system

Preventive Maintenance Schedules

Based upon manufacturers' recommendations and system-condition assessments

TASK	Frequency	Performed by	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Inspections														
Building interior common areas--check for damage, make repairs	monthly	staff	X	X	X	X	X	X	X	X	X	X	X	X
Building exterior--check for damage, make repairs	monthly	staff	X	X	X	X	X	X	X	X	X	X	X	X
Units--check for damage, cleanliness, make repairs	annual	staff						X						
Building Exterior														
Siding--wash if needed, monitor condition of paint, spot re-paint as needed	annual	staff				X								
Windows--wash, re-caulk if needed	annual	vendor				X								
Doors--wash, check weather stripping, re-paint as needed	annual	staff				X								
Signage--inspect, clean, repair as needed	monthly	staff		X										
Lighting--clean fixtures, change lamps as needed	monthly	staff	X	X	X	X	X	X	X	X	X	X	X	X
Roof--clear debris off flat areas and from drains/scuppers, monitor condition for														

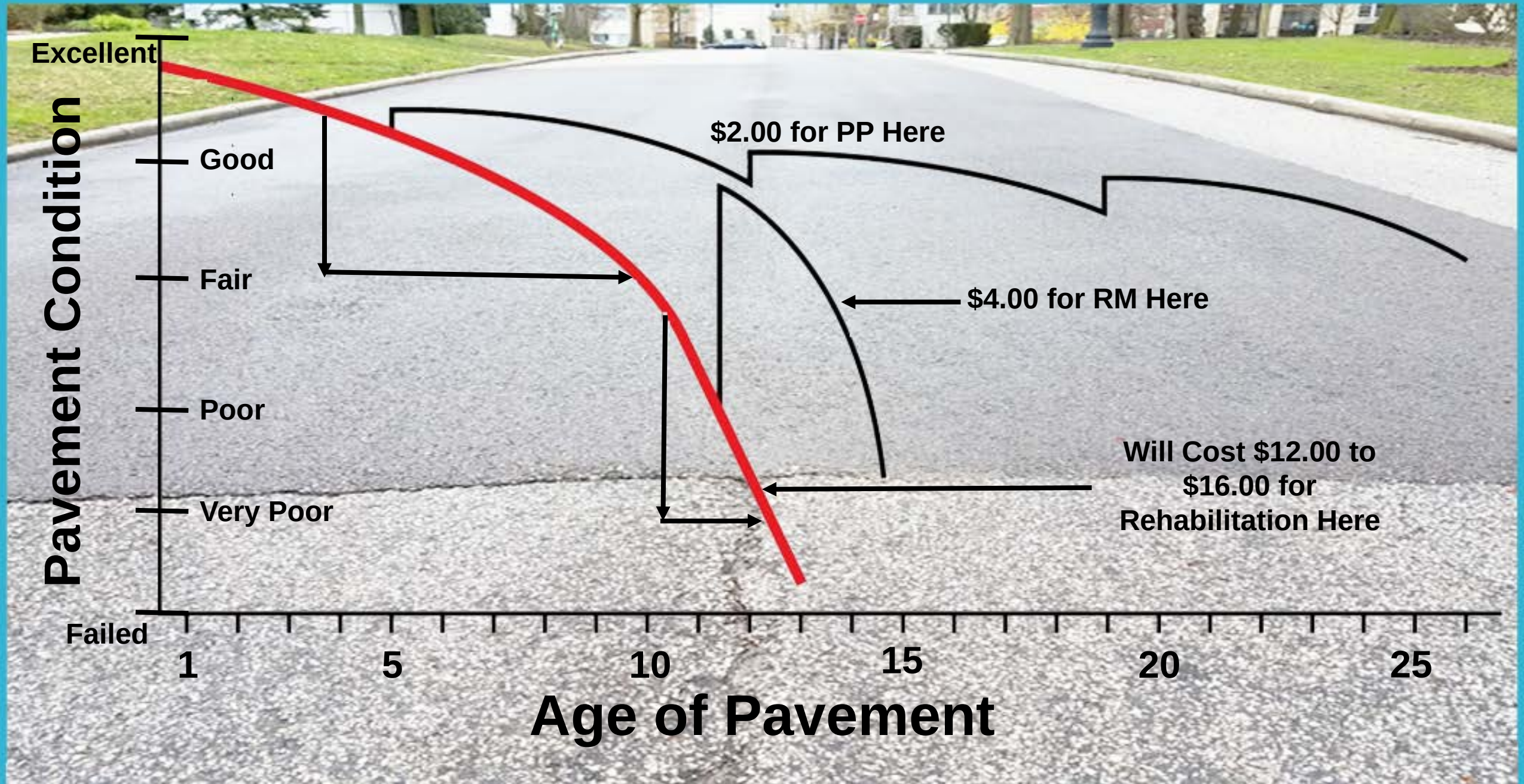
HVAC System



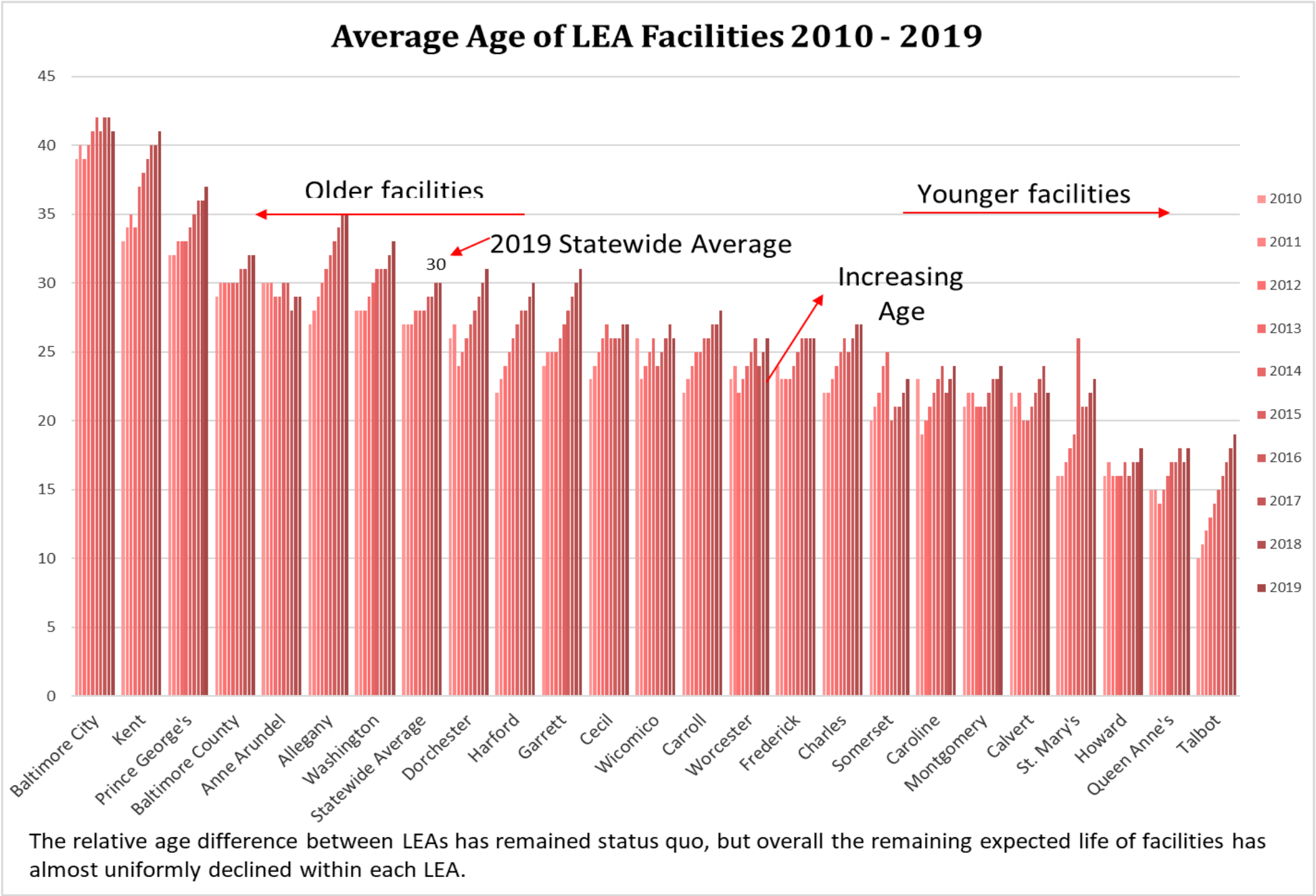
PREVENTIVE MAINTENANCE ZONE

REACTIVE MAINTENANCE ZONE

PAVEMENT CONDITION INDEX



Current Condition of Maryland's Portfolio



The relative age difference between LEAs has remained status quo, but overall the remaining expected life of facilities has almost uniformly declined within each LEA.

How Maintenance is Planned

A Comprehensive Maintenance Plan (CMP)

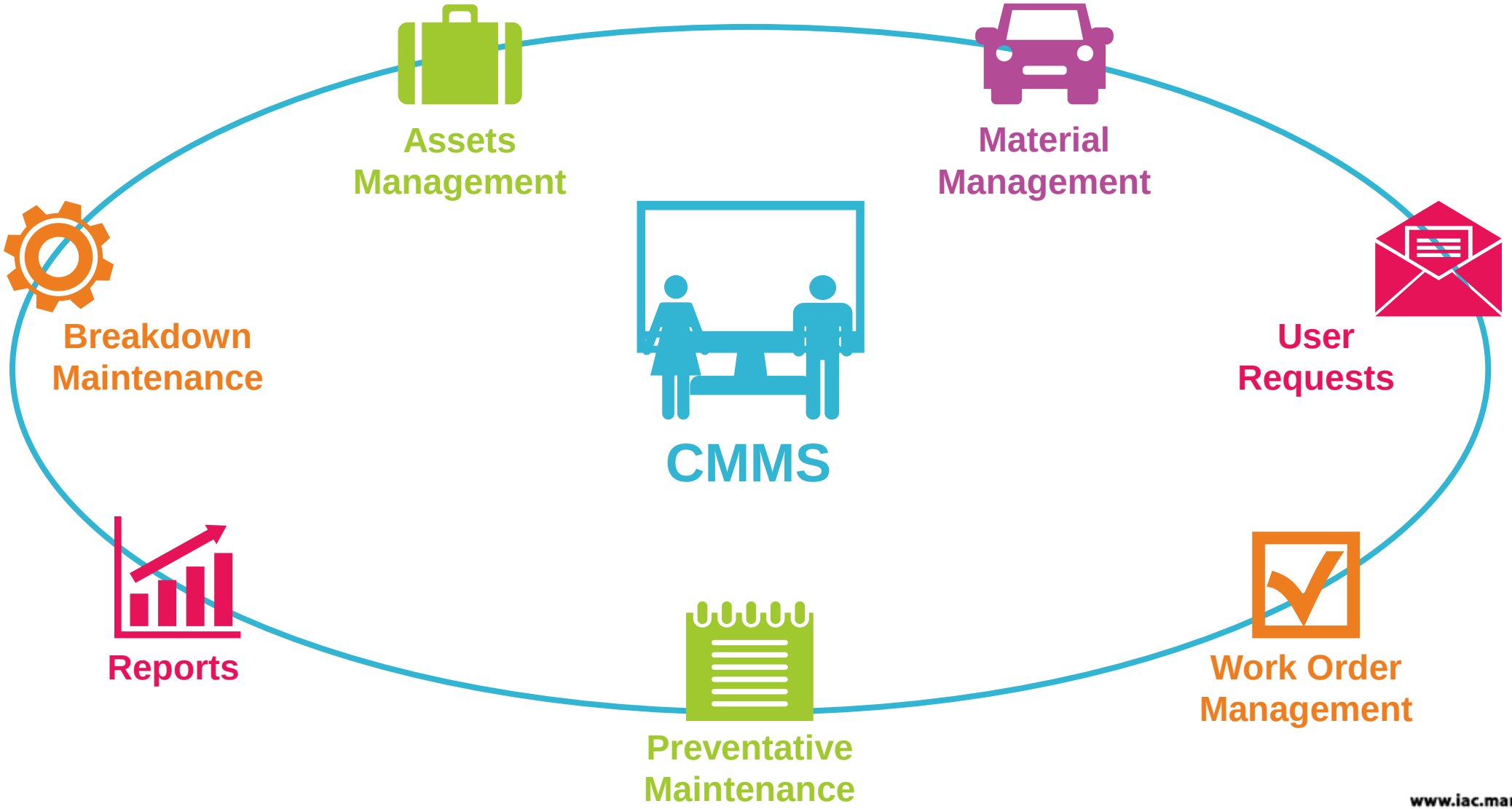
Defines **Core Service Functions** and identifies the procedures, tasks, and objectives required

Outlines a methodical and measurable approach to maintenance.

Includes any activities required to keep a building and its component systems in fully functional condition throughout their design lives, and prevents their premature failure. Examples include scheduled inspections, testing and servicing required to keep manufacturer's warranties in force; and programmed replacement of consumable parts.

Managing Maintenance

Computerized Maintenance Management System (CMMS)



Managing Maintenance

Spending on Routine Maintenance

Maryland

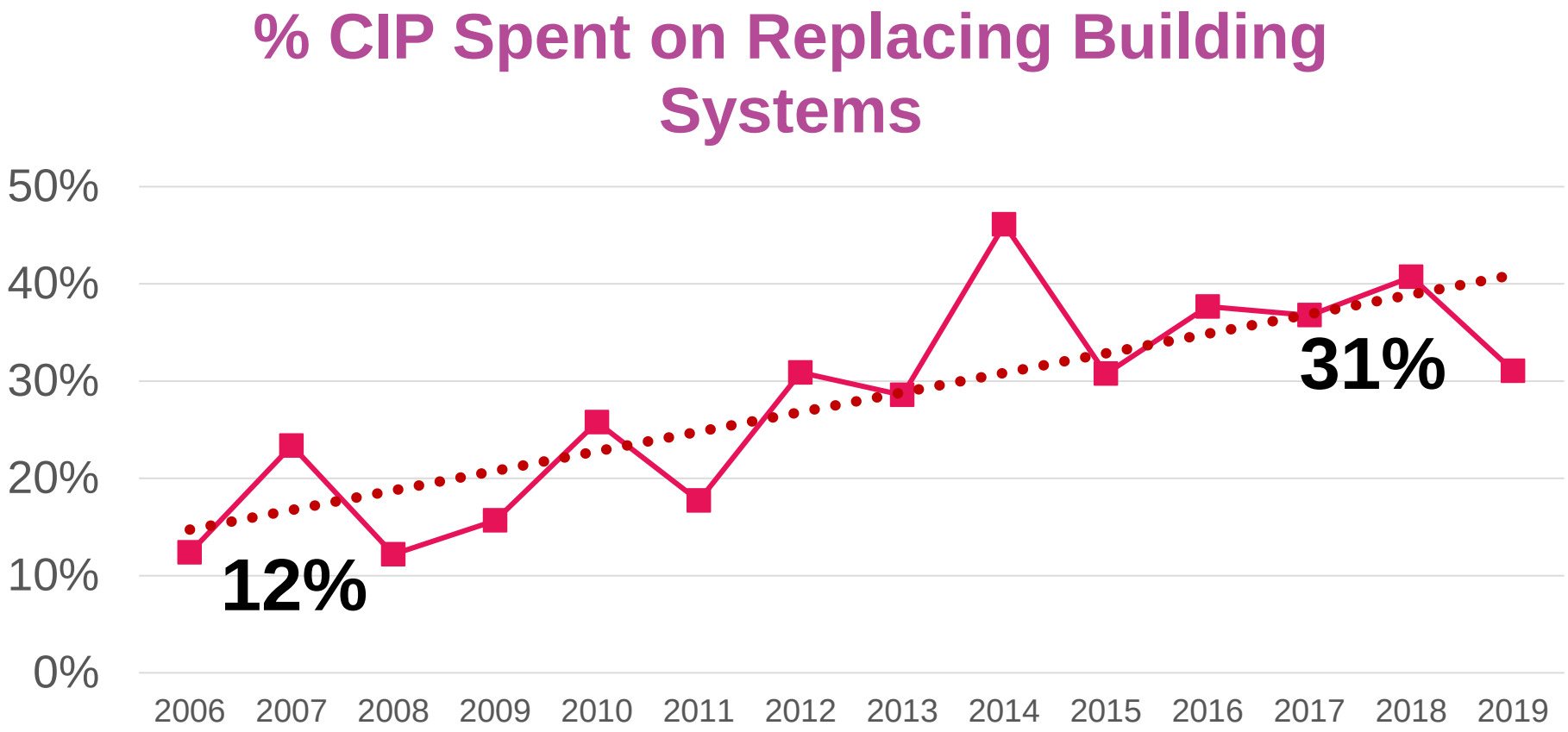
Avg. Annual Spending on Operations & Routine Maintenance
(1994-2013) (minus 30% for utilities):

$ 767,900,000

Standard: 2% of CRV/year
$ 1,106,000,000

= **69%**

Spending on Capital Maintenance

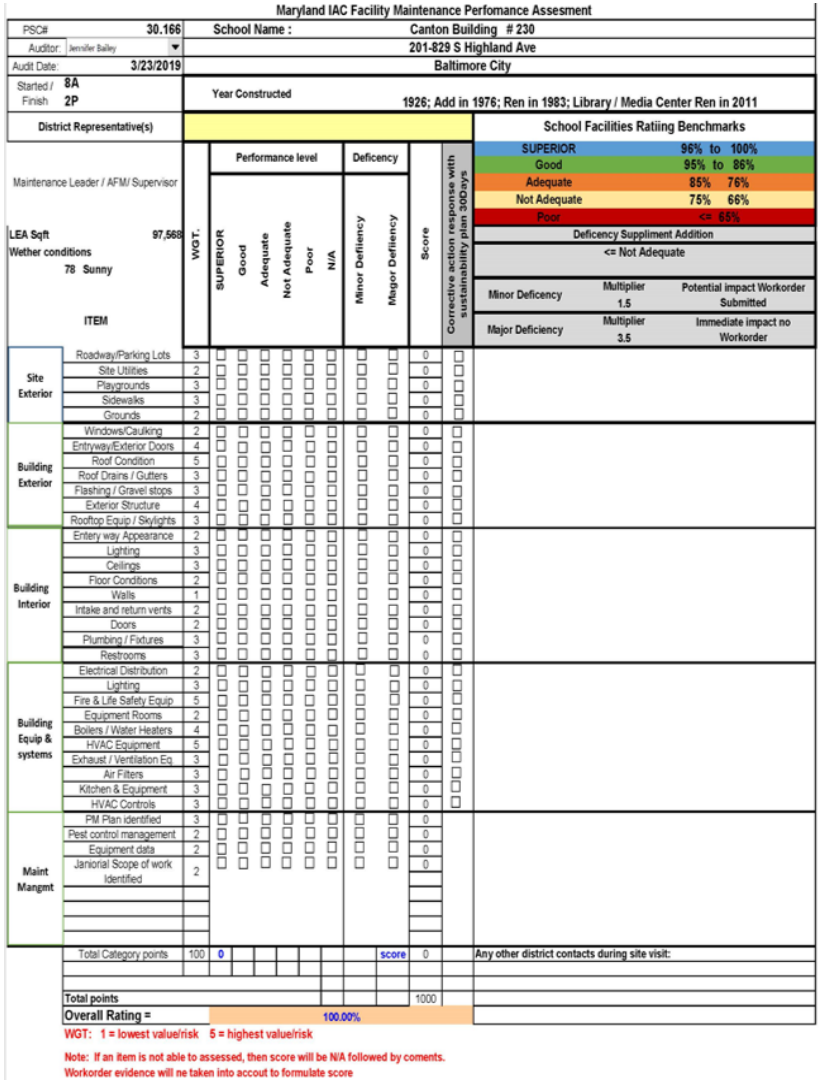


Measuring Maintenance Effectiveness

IAC Facility Maintenance Assessment (FMA)

Covers

- Site Exterior
- Building Exterior
- Building Interior
- Equipment and Systems
- Maintenance Management



Maryland IAC Facility Maintenance Perfomance Assesment

PSC#	30.166	School Name :	Canton Building # 230
Auditor:	Jennifer Bailey		201-829 S Highland Ave
Audit Date:	3/23/2019		Baltimore City
Started / Finish	8A / 2P	Year Constructed	1926; Add in 1976; Ren in 1983; Library / Media Center Ren in 2011
District Representative(s)			

School Facilities Ratiing Benchmarks

SUPERIOR	96% to 100%
Good	95% to 86%
Adequate	85% 76%
Not Adequate	75% 66%
Poor	<= 65%
Deficency Suppliment Addition	
<= Not Adequate	

Minor Deficency	Multiplier 1.5	Potential impact Workorder Submitted
Major Deficiency	Multiplier 3.5	Immediate impact no Workorder

Maintenance Leader / AFM/ Supervisor

LEA Sqft 97,568
Wether conditions
78 Sunny

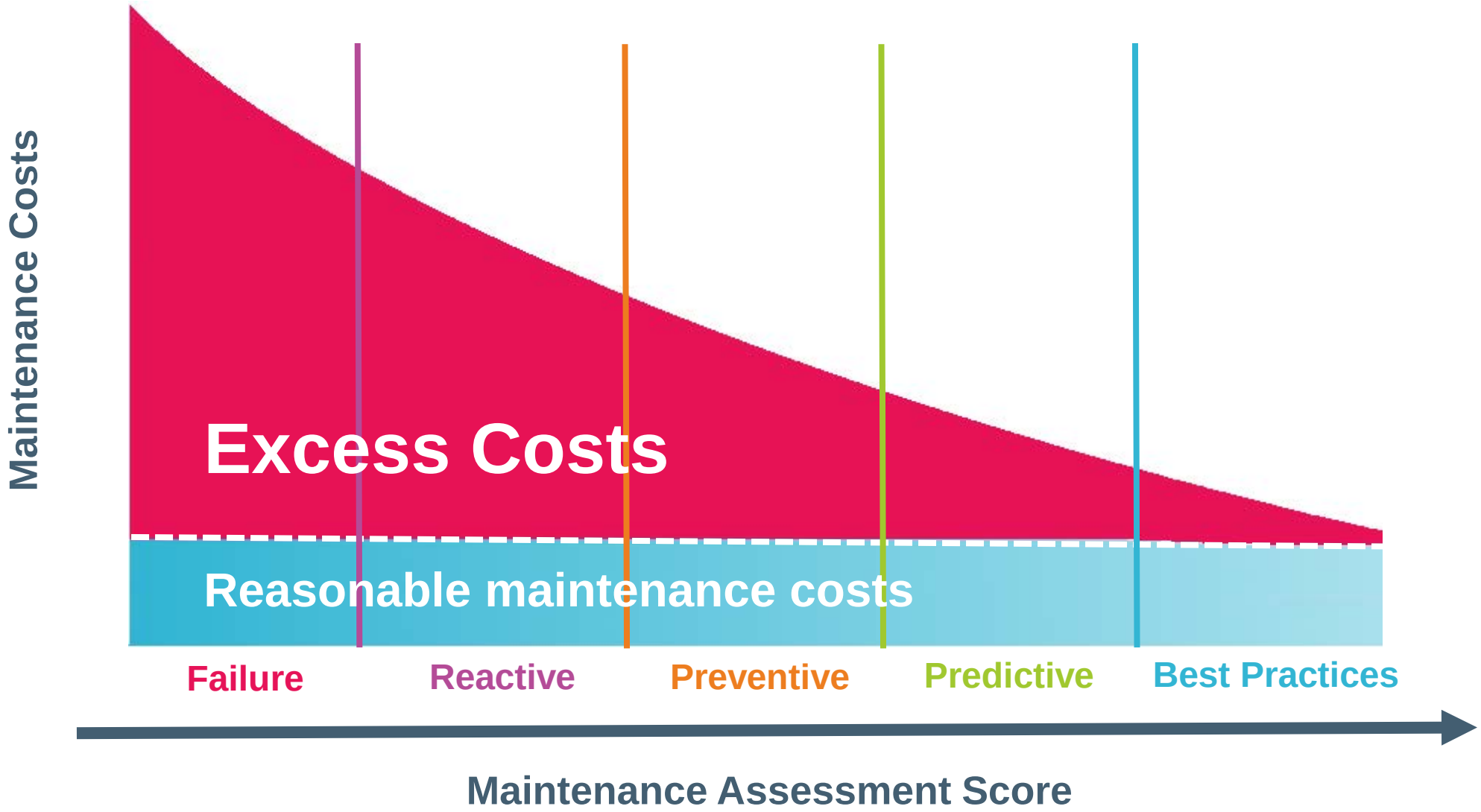
	ITEM	WGT.	Performance level: SUPERIOR	Good	Adequate	Not Adequate	Poor	N/A	Deficency: Minor Deficiency	Major Deficiency	Score	Corrective action response with sustainability plan 30Days
Site Exterior	Roadway/Parking Lots	3									0	
	Site Utilities	2									0	
	Playgrounds	3									0	
	Sidewalks	3									0	
	Grounds	2									0	
Building Exterior	Windows/Caulking	2									0	
	Entryway/Exterior Doors	4									0	
	Roof Condition	5									0	
	Roof Drains / Gutters	3									0	
	Flashing / Gravel stops	3									0	
	Exterior Structure	4									0	
	Rooftop Equip / Skylights	3									0	
Building Interior	Entery way Appearance	2									0	
	Lighting	3									0	
	Ceilings	3									0	
	Floor Conditions	2									0	
	Walls	1									0	
	Intake and return vents	2									0	
	Doors	2									0	
	Plumbing / Fixtures	3									0	
	Restrooms	3									0	
Building Equip & systems	Electrical Distribution	2									0	
	Lighting	3									0	
	Fire & Life Safety Equip	5									0	
	Equipment Rooms	2									0	
	Boilers / Water Heaters	4									0	
	HVAC Equipment	5									0	
	Exhaust / Ventilation Eq	3									0	
	Air Filters	3									0	
	Kitchen & Equipment	3									0	
	HVAC Controls	3									0	
Maint Mangmt	PM Plan identified	3									0	
	Pest control management	2									0	
	Equipment data	2									0	
	Janiorial Scope of work Identified	2									0	
	Total Category points	100	0							score	0	
	Total points										1000	
	Overall Rating =					100.00%						

Any other district contacts during site visit:

WGT: 1 = lowest value/risk 5 = highest value/risk

Note: If an item is not able to assessed, then score will be N/A followed by coments.
Workorder evidence will ne taken into accout to formulate score

Improved Maintenance Effectiveness Results in Reduced Costs



... A healthy, safe, and educationally sufficient learning environment for every child in every seat in Maryland.

Questions?

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Up next…

Measuring and Calculating a Deficiency Score for a Facility

In preparation for the Workgroup on Assessment & Funding of School Facilities

Webinar 4 of 4
August 20th, 2019
12:00 – 1:00 PM

Workgroup Meeting
August 28th, 2019
9:00 – 1:00 PM