New Mexico Public School Facilities Authority

Partnering with New Mexico's communities to provide quality, sustainable school facilities for our students and educators

Public School Maintenance Conditions and Costs

Prepared for the NM Public School Capital Outlay Task Force

September 12, 2013

Facility Maintenance Assessment Report

2012 FARMINGTON

065038 ESPERANZA ELEMENTARY

Combined Schools Id 1: Id 2:

FMAR_Date: 10/19/2012 Weather: Fair 70's

PSFA Reps: Chris Trujillo Larry Tillotson

District Reps :

Overall School Maintenance Rating	
Outstanding	90.1% to 100%
Good	80.1% to 90%
Satisfactory	70.1% to 80
Marginal	60.1 to 70%
Poor	<= 60%

Deficiency Factors		
Life Safety, Health or Property Loss Exposure Multipliers		
Minor Deficiency	1.5	Potential Threat and No Work Order
Major Deficiency	3.5	ImmediateThreat and No Work Order

Area	Performance Items	Performance Level: Outstanding	Good	Satisfactory	Marginal	Poor	Deficiency Factors: Minor x 1.5	Major x 3.5	None	Performance Deficiencies: Weight	Performance	Deficiency	Calculated Score
Site	Roadway/Parking	○	◉	○	○	○	○	○	◉	3	-0.95	0	-2.85
	Site Utilities	○	◉	○	○	○	○	○	◉	5	-0.95	0	-4.75
	Playgrounds/Athletic Fields	○	○	◉	○	○	○	○	◉	5	-1.89	0	-9.45
	Site Drainage	○	○	◉	○	○	○	○	◉	8	-1.89	0	-15.12
	Sidewalks	○	◉	○	○	○	○	○	◉	2	-0.95	0	-1.90
	Grounds	○	◉	○	○	○	○	○	◉	2	-0.95	0	-1.90
Building Exterior	Windows/Ceiling	○	◉	○	○	○	○	○	◉	3	-0.95	0	-2.85
	Walls/Finishes	○	◉	○	○	○	○	○	◉	5	-0.95	0	-4.75
	Entry/Exterior Doors	○	◉	○	○	○	○	○	◉	7	-0.95	0	-6.65
	Roof/Flashing/Gutters	○	◉	○	○	○	○	○	◉	10	-0.95	0	-9.50
Building Interior	Walls/Floors/Ceilings/Stairs	○	◉	○	○	○	○	○	◉	3	-0.95	0	-2.85
	Interior Doors	○	◉	○	○	○	○	○	◉	3	-0.95	0	-2.85
	Restrooms	○	◉	○	○	○	○	○	◉	3	-0.95	0	-2.85
	Housekeeping	○	◉	○	○	○	○	○	◉	4	-0.95	0	-3.80
Building Equipment and Systems	Electrical Distribution	○	◉	○	○	○	○	○	◉	3	-0.95	0	-2.85
	Lighting	○	◉	○	○	○	○	○	◉	5	-0.95	0	-4.75
	Fire Protection Systems	○	◉	○	○	○	○	○	◉	10	-0.95	0	-9.50
	Equipment Rooms	○	◉	○	○	○	○	○	◉	2	-0.95	0	-1.90
	Heating/Cooling/Ventilation	○	◉	○	○	○	○	○	◉	10	-0.95	0	-9.50
	Air Filters	◉	○	○	○	○	○	○	◉	5	0	0	0.00
	Kitchen Equipment/Refrig	○	◉	○	○	○	○	○	◉	2	-0.95	0	-1.90
	Plumbing/Water Heaters	○	◉	○	○	○	○	○	◉	6	-0.95	0	-5.70
10/11/2012 Maintenance Management	PM Plan	○	◉	○	○	○				10	-0.95		-9.5
	FIMS and Equipment Data	○	○	◉	○	○				7	-1.89		-13.23
	Staff Development	○	○	◉	○	○				5	-1.89		-9.45
	Maintenance Safety	○	○	○	◉	○				5	-2.83		-14.15
	Maint. Contractor Oversight	◉	○	○	○	○				5	0		0.00
	Facilities Mater Plan (Renewal)	○	◉	○	○	○				3	-0.95		-2.85

Total Performance Deficiencies: -157.35 **Total Score:** 842.65 **Overall Rating:** 84.27%

80%

20%

FMAR: The FMAR stands for Facility Maintenance Assessment Report (FMAR). The FMAR is a tool used by the Public Schools Facility Authority (PSFA) to evaluate NM school facilities conditions / appearance and determine and verify the implementation of an effective maintenance management program. The results (feedback report) are used to establish a benchmark for the individual schools/districts maintenance programs in an effort towards continuous improvements and implementation of cost effective maintenance strategies. There are 5 main categories each with sub categories on the FMAR that are reviewed as follows:

Site Survey: The **Site Survey** category review includes the following items:

- Roadway/Parking
- Site Utility
- Playground Athletic Fields
- Site Drainage
- Sidewalks
- Grounds

Building Exterior Survey: The **Building Exterior** category review includes the following items:

- Windows / Caulking
- Walls / Finishes
- Entry / Exterior Doors
- Roof / Flashing / Gutters

Building Interior Survey: The **Building Interior** category review includes the following items:

- Walls / Floors / Ceilings / Stairs
- Interior Doors
- Restrooms
- Housekeeping

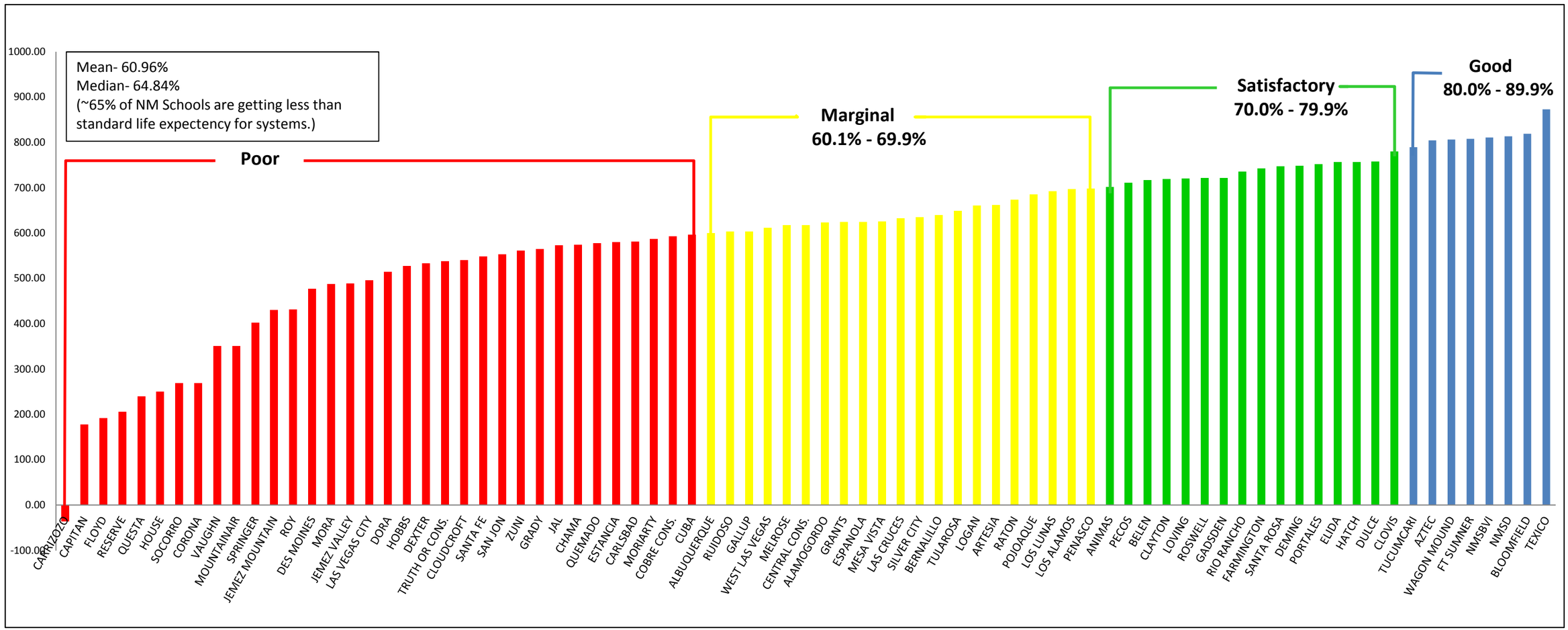
Building Equipment & Systems Survey: The **Building Equipment & Systems** category review includes the following items:

- Electrical Distribution
- Lighting
- Fire Protection Systems
- Equipment Rooms
- Heating / Cooling and Ventilation (HVAC)
- Air Filters
- Kitchen Equipment and Refrigeration
- Plumbing / Water Heaters

Maintenance Management – The **Maintenance Management** category includes a comprehensive review of the district's Maintenance Management systems as follows:

- **Preventive Maintenance Plan**: (required development and annul update per state statute: 22-24-5.3 NM for public and charter schools)
- **FIMS/Schooldude use/ Equipment Data**: (required use per state statute: 22-24-5.5 Districts CMMS programs are monitored quarterly with a written report developed from district data & provided to district leadership. (i.e.*FIMS Proficiency).*
- **Staff Development Plan**: Does the district have a written staff development plan that addresses training and re-training?
- **Maintenance Safety Plan**: Does the district have a written safety management plan that addresses safety training for the staff?
- **Maintenance Contract Oversight Plan**: Does the district have a policy to manage contractors completing work as school sites?
- **Facility Master Plan Renewal**: Does the FMP and maintenance program align with regards to projects and conditions identified from the FMAR?

FMAR District Averages FY 11-Present



OUTSTANDING: Maintenance activities demonstrate a highly focused and goal driven supported maintenance culture. Facility conditions are exceptionally good and clearly noticeable (Merriam-Webster). Maintenance Rating: 90.1% to 100%.

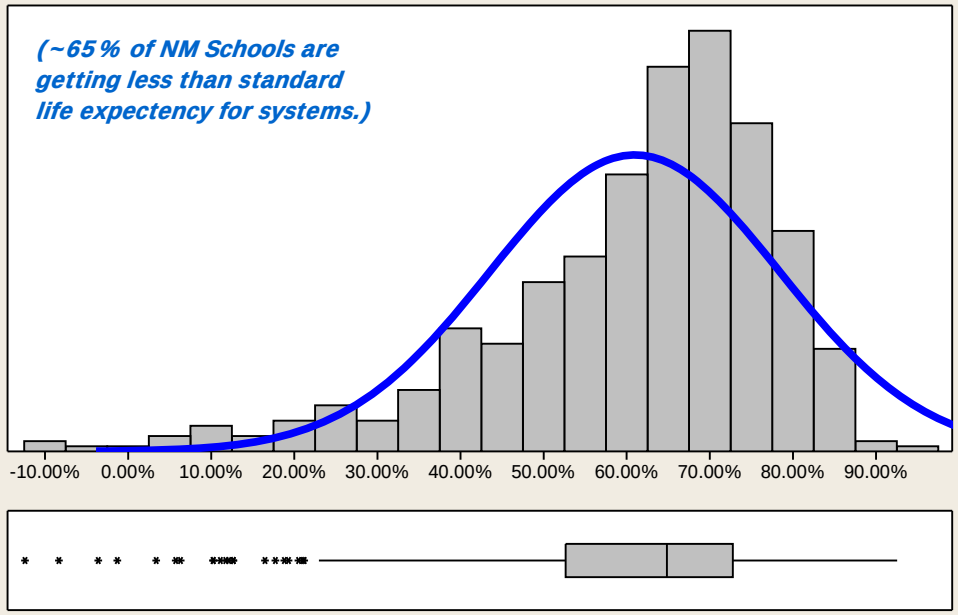
GOOD: Maintenance activities demonstrate a focused and supported maintenance program. Facility conditions are found to be of high quality, performing well, but not excellent or outstanding in quality. (Merriam-Webster). Maintenance Rating: 80.1% to 90%.

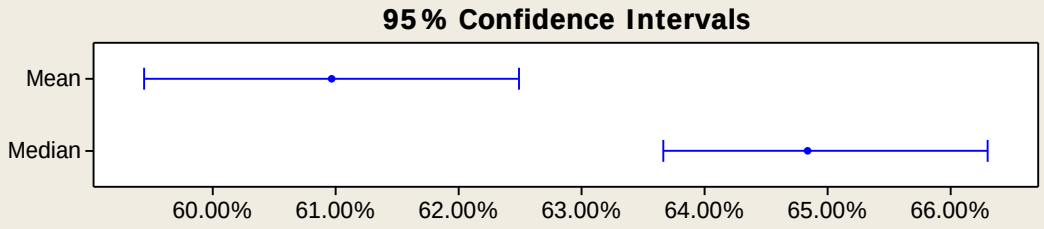
SATISFACTORY: Maintenance activities demonstrate a sufficient maintenance program which is sufficient to meet the demand or requirement; adequate or suitable; acceptable (Source: Dictionary.com). Maintenance Rating: 70.1% to 80%.

MARGINAL: Maintenance activities demonstrate a need for improvement and barely meet minimal acceptable standards to support the process. Activities are close to the lower limit of qualification, acceptability, or function; barely exceeding the minimum requirements. (Source: Merriam-Webster). Maintenance Rating: 60.1% to 70%.

POOR: Maintenance activities are poor and demonstrate a need for immediate improvement as systems, safety and the environment are at risk for failure. Activities are less than adequate; inferior in quality or value (Source: Merriam-Webster). Maintenance Rating: 60% and below.

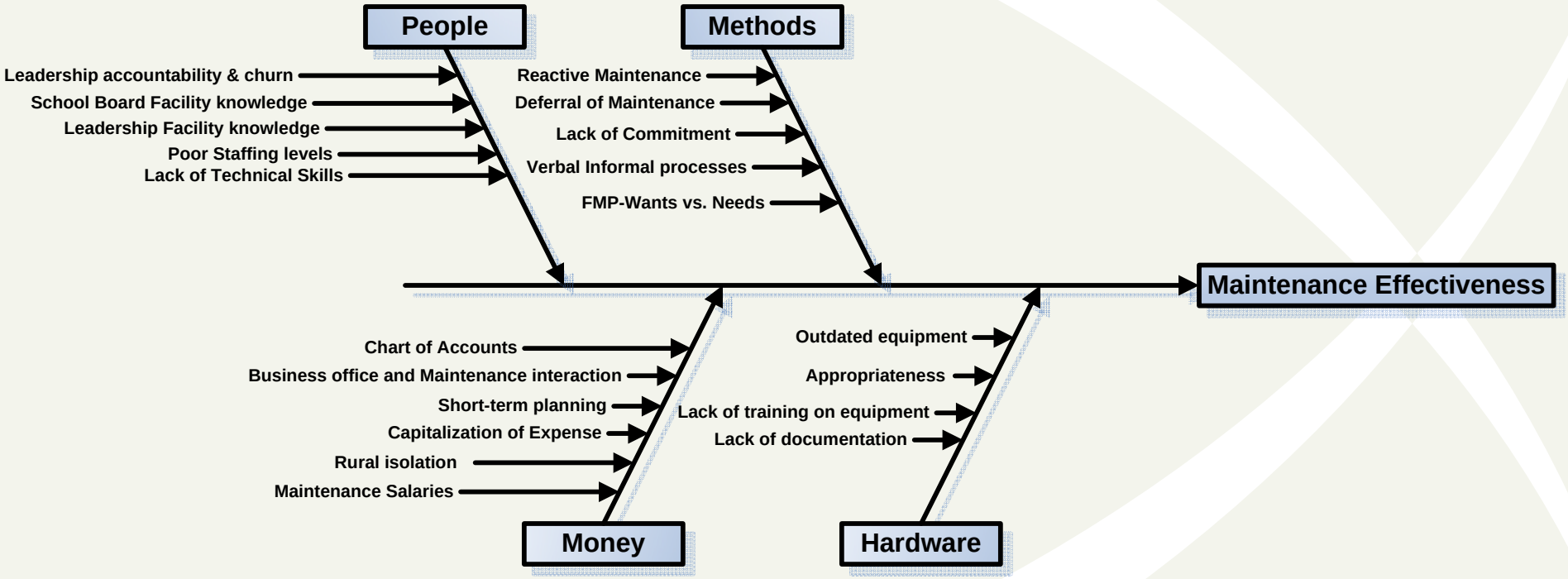
FMAR 2011 to Present Summary





Anderson-Darling Normality Test	
A-Squared	11.84
P-Value <	0.005
Mean	0.60967
StDev	0.17431
Variance	0.03038
Skewness	-1.27195
Kurtosis	1.89843
N	505
Minimum	-0.12400
1st Quartile	0.52642
Median	0.64838
3rd Quartile	0.72784
Maximum	0.92529
95% Confidence Interval for Mean	
0.59443	0.62491
95% Confidence Interval for Median	
0.63665	0.66302
95% Confidence Interval for StDev	
0.16418	0.18578

Factors contributing to FMAR Average Score of 60.9% at our NM schools.



FMAR Median is 64.8% (Marginal)

K-12 Maintenance Cost in New Mexico

As the Association of Higher Education Facilities Officers (APPA) explicitly states in their 2009 report: "*underfunding of maintenance and repair is a widespread and persistent problem. To overcome this problem, maintenance and repair budgets should be structured to explicitly identify the expenditures associated with routine maintenance and repair and activities to reduce the backlog of deferred maintenance".* APPA goes on to conclude that *"...an appropriate total budget allocation for routine maintenance and capital renewal in the range of 2 to 4 percent of the aggregate current replacement value of those facilities."* [1]

A fundamental issue with schools in New Mexico is that maintenance costs are not explicitly identified, but are accounted along with all other operational expenses such as vehicles (including fuel), security, technology, communications, school-sponsored events (e.g., football games), and other operations. The only break-out explicitly for maintenance expenses is found within districts that do more comprehensive accounting on a local basis. According to FMAR data, most (65%) of our New Mexico schools are performing maintenance below accepted standards. Among the upper 35% that have effective preventative maintenance (PM) programs Farmington, NM shows the following expenses:

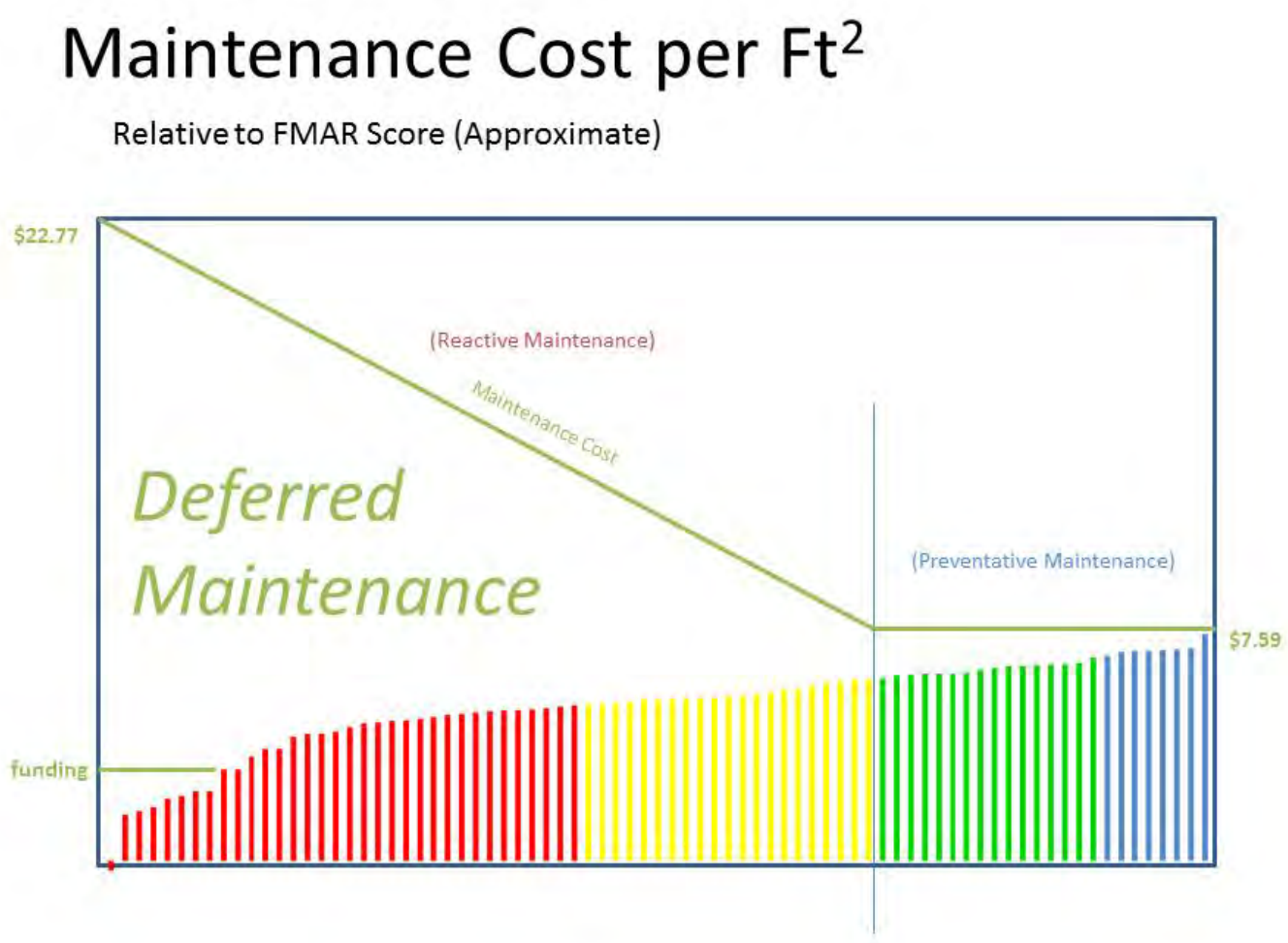
Example Operational Costs with Successful Preventative Maintenance (PM)

Category	Cost/ft^2	
Salaries & Benefits for Custodial and Maintenance Staff	$1.90	Full-time, part-time, and prorated portions of the costs for work performed by permanent and temporary employees of the school district.
Supplies, Materials & Contract Services	$1.30	Work to restore damaged or worn-out facilities to normal operating condition. Repairs are curative, whereas PM is preventative.
Maintenance Subtotal:	***$3.20***	
System Renewal (approximate)	$3.00	Capital renewal/replacement of major systems such as roofs, windows, HVAC that occurs on a cyclical basis (% of total asset value).
Facilities Subtotal:	***$6.20***	Cost of maintenance and renewal, exclusive of utilities
Utilities	$1.39	The cost of providing utilities (i.e., water, sewer, electric, natural as/propane) for the normal function of the facility.
Example Total (Farmington):	***$7.59***[2]	

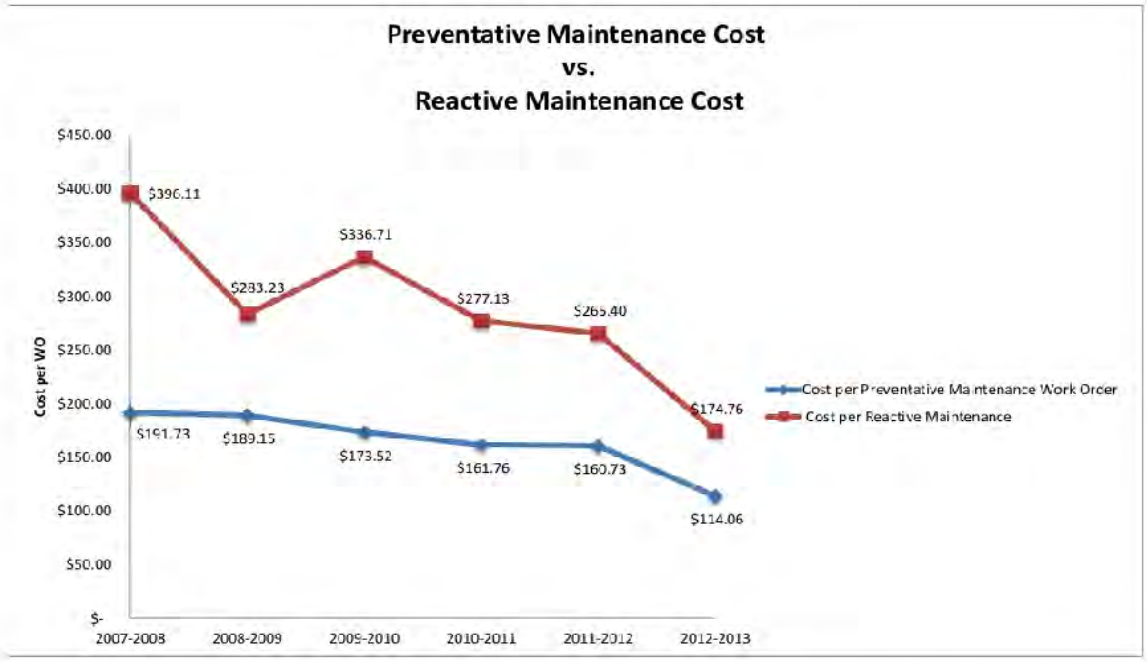
[1] Kaiser, Harvey H., *Capital Renewal and Deferred Maintenance Programs*, The Association of Higher Education Facilities Officers (APPA), 2009, p9.

[2] This value is consistent with the PSFA baseline model of $6-8/ft^2 for a well-managed school with successful preventive maintenance (PM) program. For comparison, the Building Owners and Managers Association (BOMA) calculated an average maintenance and renewal cost of $9.24/ft^2 for commercial space in their 2000 Experience Exchange Report (EER).

From historical data and FEMP[3] the cost ratio between preventative and reactive ('run till it breaks') maintenance is approximately 3:1, so if a top-performing district such as Farmington with a successful PM program costs $7.59/ft^2 including utilities and system replacement, then schools in the lower 65% that have less successful PM should be distributed across the range from $7.59-$22.77/ft^2. All schools have limited operational funds, but as performance goes down and real facility expense goes up, an increasing portion of maintenance is deferred into capital projects. Deferred maintenance can have an exponential effect in terms of whole systems or even whole schools out year capital expenditures. Roofs are generally the most critical, but neglected windows, HVAC, site drainage, and plumbing can also do structural damage and grow mold to wreck a building, such that deferred maintenance itself is the highest single risk factor to New Mexico school facilities and the educational programs they support.



[3] *Operations & Maintenance Best Practices: A Guide to Achieving Operational Efficiency*, Federal Energy Management Program (FEMP), r3.0, Aug 2010, c5.



New Mexico data is consistent in both range and magnitude (±10%) with maintenance expense data given in 'Types of Maintenance Programs' Chapter 5 of **Federal Energy Management Program (FEMP),** *Operations & Maintenance Best Practices: A Guide to Achieving Operational Efficiency*, r3.0, Aug 2010.