Del Norte High School Rebuild

...it's all about the kids!

YEAR END REPORT

MAINTENANCE AND OPERATIONS

Albuquerque Public Schools

Fiscal Year 2014

"A growing body of research has linked student achievement and behavior to physical building conditions and overcrowding."

- M. M. Kunin

M&O

ALBUQUERQUE PUBLIC SCHOOLS

ALBUQUERQUE PUBLIC SCHOOLS
Maintenance and Operations

ALBUQUERQUE PUBLIC SCHOOLS

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...it's all about the kids!

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MISSION STATEMENT

The mission of the Maintenance and Operations Division is to partner with the schools in creating environments conducive to student success by providing purposeful, comfortable, aesthetic, clean, safe, and accessible learning and activity spaces in meeting academic achievement goals.

SYNOPSIS

This — the sixth successive M&O Year End Report — summarizes the Division's purpose and objectives; budget and expenses history; key initiatives and achievements realized in the 2013-14 fiscal year; current and foreseen challenges; and near-term goals. In addition to this document providing transparency to the citizens of Albuquerque and taxpayers (posted on APS website) regarding their capital investment in APS, it serves leadership in assessing the reasons behind both successful strategies in reaching goals and vexing hurdles that impede aspirations. Although the Division is responsible for maintenance of facilities in ensuring smooth operations District wide, all personnel never lose sight of the fact that their primary purpose is delivering learning spaces that foster each student's academic success and love of learning.

Following is a synopsis of the 2013-14 M&O Year End Report.

The importance of maintaining schools in advancing learning

- Deferring maintenance due to a lack of funds today only delays a need for more funding and decay at a later time.
- APS is staying ahead of the eight ball in preserving older schools, unlike many other urban school districts.
- M&O is comprised of highly trained and adept technicians.
- M&O personnel work in concert with Facilities Design + Construction (FD+C) personnel and contractors as part of the same team in supporting the education process.

Facility Information Management System (FIMS) is nucleus of work order process

- Preventive maintenance (PM) provides the greatest possible return on investment.

M&O Budget and Expenditures by School Cluster History

- The Division's budget and staff figures held steady in 2013 and 2014.

New initiatives and Highlights in 2013-14 FY

- Preventive maintenance program has resulted in cost savings.
- Qualifications-based contractor selection process aids in keeping project costs down and within budget.
- APS' M&O Division is working hard in getting in line with the Council of the Great City Schools' (CGCS) staffing recommendations.
- Replacing rather than repairing is current protocol if more cost efficient over time.
- M&O partnering with FD+C in making systems and equipment choices for new construction that will save service maintenance manpower hours, costs, and energy.
- Retro-commissioning will improve efficiency, performance, occupant comfort, and extend service life of electrical, mechanical, and control systems.

Albuquerque Public Schools • MAINTENANCE AND OPERATIONS • 2013-2014 Year End Report

- Spring 2014 survey findings revealed happy M&O customers.
- Schools' knowledge and use of the FIMS (SchoolDude) work order system continues to improve.
- M&O technicians show continued improvement in time to perform and close work orders.
- New hire energy use monitor focuses on reducing energy waste.
- Professional development and continuing education heightened.
- In collaborating with FD+C, significant progress made in 2013-14 in addressing deferred maintenance.
- M&O working with Capital Fiscal Master Plan Division in funding much needed deferred maintenance projects.
- Crews worked around the clock in rebuilding and cleaning up fire damage at two elementary schools as well as destruction caused by a severe storm with no classroom time lost or even delayed.
- Total 2013-14 utility costs came in under budget.
- APS' efforts to reduce electric waste resulted in electric expenses coming in under budget.
- According to the CGCS annual survey, APS' M&O ranks among the top in the nation in performance.
- Graffiti incidents have dropped every year since 2009. Vandalism incidents down over previous year but cost rose.
- Technicians and support staff have continued to improve the accuracy of SchoolDude work order data entry.
- The 2014 Preventive Maintenance (PM) Management Plan was successfully drafted and accepted by Public Schools Facilities Authority (PSFA).
- Only the Environment Management Department Procedures Manual remains to be completed (in progress). All other M&O Department Manuals drafted 2011-2014.

Department-specific Highlights

- Energy Conservation Program initiatives, successes (including energy savings rebate programs), and challenges.
- Profiles of M&O eight service departments.

Facing continued and future challenges

- Retro-commissioning will ultimately save time and dollars, but initial expense is a bit pricy.
- District is trying mightily to slay the beast of electric demand charges as well as eliminate energy waste.
- Growing (as opposed to sustaining the status quo) the PM program requires elusive funding.
- The Division's hard working heavy equipment fleet is continuously a challenge to keep operational yet imperative to District operations.

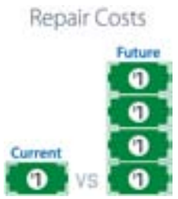
OPENING STATEMENT

By **John Dufay, Executive Director of Maintenance and Support Operations**

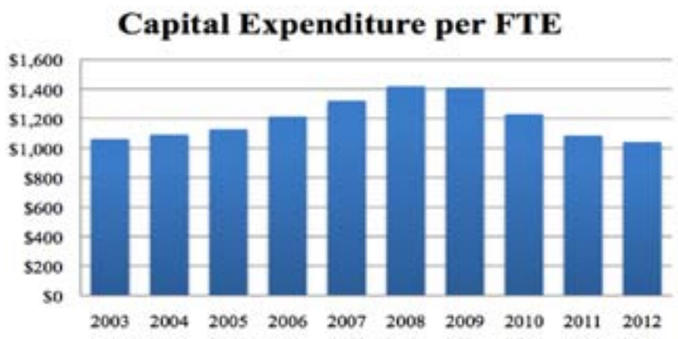

John Dufay, Executive Director

As mentioned in last year's Year End Report, I had the privilege of serving on national 27-member Deferred Maintenance Task Force (DMTF) — under the direction of the Council of the Great City Schools (CGCS) — charged with compiling research regarding the serious and troubling depreciation of the nation's schools and summarizing our findings. *Reversing the Cycle of Deterioration in the Nation's Public School Buildings* was published by the CGCS and presented at the organization's national annual conference held in Milwaukee, Wisconsin October 22-24, 2014. The DMTF was represented by executive level management of CGCS member large urban school districts nationwide, SchoolDude, and national educational consulting companies.

The DMTF confirmed through research results what we felt we already knew and grapple with every day in preserving our aged schools with limited and dwindling funds to do so. The Report precisely outlines how large urban school districts that have been financially squeezed over many years are pressed to make unfortunate economic decisions *today* that only perpetuate deterioration and increase repair or replacement costs exponentially *later*. Findings repeatedly stress the importance of school districts making economically prudent ***preventive*** and ***predictive*** facilities maintenance decisions that ultimately reduce the cost of the maintenance while improving and extending the performance of systems. A study conducted by the Pacific Partners Consulting Group found that for every dollar of maintenance deferred to a later date — when more funds are available — results in $4 of capital renewal. It is sadly ironic that an effort to save money today costs many times more money tomorrow.



But because districts are in the education, not facilities, business, and financial resources are more scarce with every passing year *(note illustration below)*, executive management deem it sensible to make cuts as far away from the classroom as possible. While total per student spending has remained essentially flat nationally since the economic crisis that began in 2008, funding for capital repairs and improvements has nose dived over 26% since the all-time peak in 2008 according to the Public Education Finances Division of the U.S. Department of Commerce. Considering that conditions vary by state, this national trend reflects the understandable focus on curriculum and operational funding to the detriment of capital and planned maintenance investments in public school facilities.



Source: United States Department of Commerce

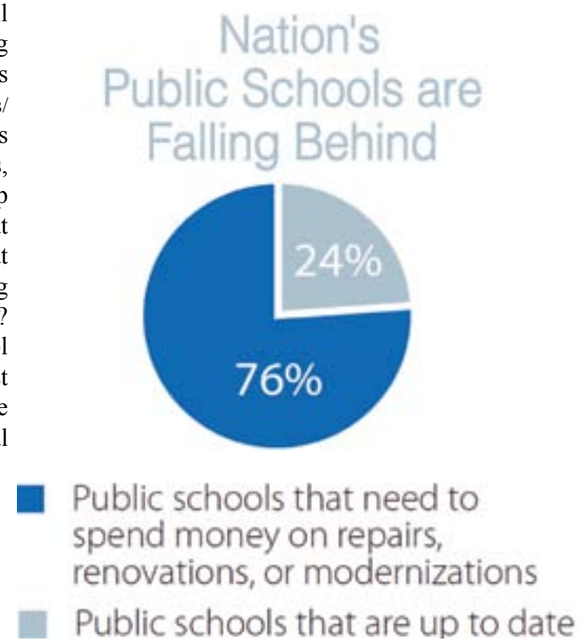
Well maintained schools advance learning

Numerous studies understandably and unequivocally support the importance of well-maintained school facilities in the advancement of student performance. Neither teaching nor learning is improved while taking place in decaying and distressed buildings. Research reveals that student achievement is measurably improved by adequate indoor air quality; comfortable temperature; proper lighting; appropriate acoustical conditions; and adequate classroom size to accommodate students comfortably. In addition, researchers have discovered that teacher satisfaction and performance is influenced by the condition of the school building and is an important predictor of their decision to remain or resign. (*Reversing the Cycle of Deterioration in the Nation's Public School Buildings* can be viewed at **www.cgcs.org**.)

APS' Old schools are cherished and preserved

None of our team's findings came as a surprise to me or thankfully, to other APS leadership. What I was surprised and equally gratified to learn, however, is how well APS schools fare in relation to buildings of similar districts nationwide, as APS certainly also has its share of old schools. Eugene Field Elementary was built in 1927 and four other elementary schools were built in the 1930s. The oldest middle school, Jefferson, was erected in 1938 and the original Albuquerque High School was built in 1914 (rebuilt in 1975). The average age the District's schools is ***44.7 years*** – quite amazing considering that this number was greatly lowered by the eleven new schools built since 2006. Our 2012 M&O Year End Report entitled, *Renewal of Old Quality for 21st Century Learning,* featured and honored the beautiful buildings that have stood the test of time for hundreds of thousands of APS students (that include me, my wife, our kids, and our kid's kids). Whereas so many school districts from coast to coast are struggling with crumbling and deteriorating buildings, APS' old schools are gems — standing straight and sturdy — not by accident, not easily, and not unnoticed.

According to the American Society of Civil Engineers' Infrastructure Report Card regarding the condition of the nations' public schools (http://www.infrastructurereportcard.org/a/#p/schools/overview), 76% of America's school districts need to invest money on repairs, renovations, and modernizations to bring their schools up to good overall condition. I am confident that APS falls in the 24% of school districts that are most definitely up to date and ***not*** falling behind. Is every building in perfect condition? Certainly not. But the condition of every school *is certainly known*, in minute detail in most cases. M&O prioritizes these facilities in routine maintenance and fights for a piece of the capital pie to tend to their high dollar needs.

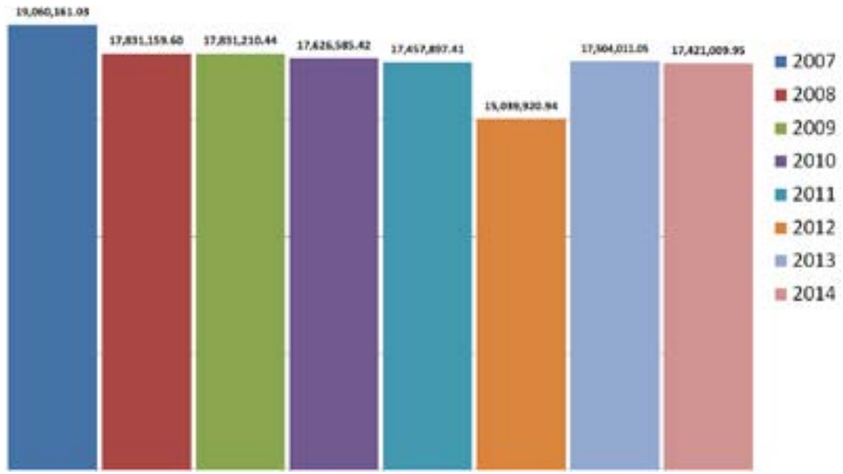


APS' preventive maintenance program is serving as a blueprint for other school districts. In addition, I serve on CGCS's Strategic Support Team to conduct performance peer reviews of facilities operations for member school districts. And I continue to learn from other CGCS member schools' facilities management teams in making improvements to our M&O program in addition to wrestling with vexing on-going and new challenges. Just as other districts are asking what APS is doing that they can implement in the districts, we're requesting their input in applying their successes to APS. As we all learned in drafting *Reversing the Cycle of Deterioration in the Nation's Public School Buildings*, no one needs to re-invent the wheel.

The following bar graph accurately illustrates that we service APS schools with fewer dollars every year, consistent with national figures, but fails to signify that we've done so whilst adding 54% more square footage and losing 20% full time employees between 2007 and 2014!

M&O Expenses 2007- 2014

(School sites only, excludes administrative facilities)



A great deal of credit goes to the taxpayers who more often than not vote in favor of tax levies (69% last bond election) that provide the capital dollars, however declining, that M&O depends on. And M&O manages the tight budget with scrupulous care and frugality with a strategy and mentality of *invest* rather than *spend*. Our conscientious fiscal management is transparent and readily available to taxpayers on the APS website. *(See Cluster Summary on page 15 and individual School Cluster Reports in the Appendices beginning on page 89.)*

Public school buildings are aging across the country, but APS has fortunately been able to stay ahead of the eight ball in maintaining and thus ***preserving*** older schools. APS has no boarded up, rusted out, or fallen beyond repair school structures as do many other urban school districts. It is a reflection of the city's support and M&O's attitude/culture, commitment, and understanding of what the prize is — ***kids' success*** — and everyone understanding what their role is in seizing that prize. That's the same commitment we need from our outside contractors and suppliers and we're striving for that. APS' needs cannot just be another job for them, and if they can't buy into that sense of partnership, they are not the right fit to partner with APS. They have to "get it."

Contract partners play vital role

While we are honored at APS to be recognized as good examples of facilities maintenance management, it certainly doesn't water down or de-emphasize all that we need to improve upon and correct, as this Year End Report testifies.

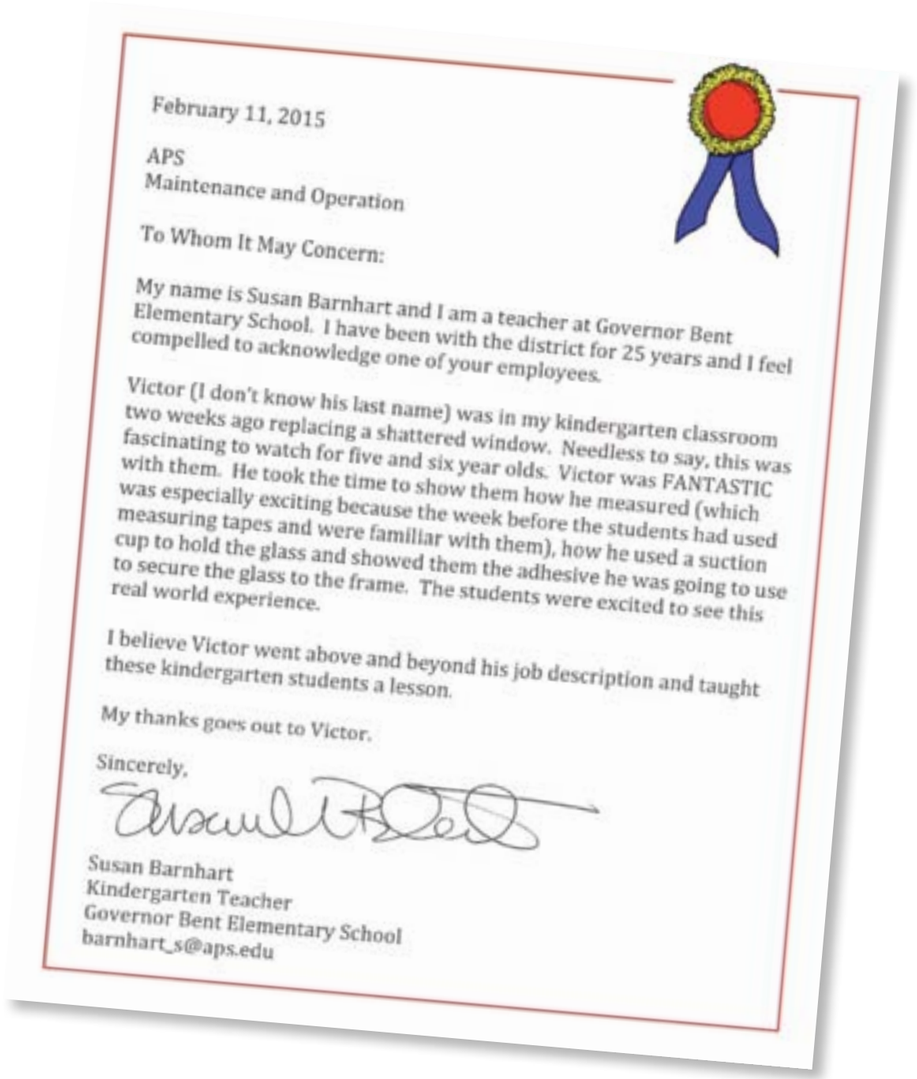
One of the challenges we definitely have is utilizing contract partners discriminatingly in creating high performance environments that support children's equally high performance and success. Accurately balancing the distribution of duties between in-house personnel and contract partners is required in meeting our goals. Contractor costs are deceiving, sometimes appearing excessive compared to in-house personnel salaries. These partners, however, have the resources available on demand to respond to calamity and emergency situations with 100% focus as well as tackle large projects, sometimes with unique expertise that is not routinely needed. They maintain the staff and industrial machinery needed for large and/or specialized jobs and, of course, the overhead that the District doesn't have to cover every day. Because the education process is not impeded at APS, emergency work is top priority and often best handled by contractors working in unison with M&O in resolving issues ***now*** and ***quickly***. However, ***all*** M&O techs can't be pulled away from completing daily maintenance work orders to address an emergency. Work orders piling up due to a main water line break isn't responsive and faithful customer service. It would then be near impossible to tackle a backlog of work orders due to an unanticipated crisis as incoming new work is ceaseless. And the smaller daily repairs and PM work handled by in-house technicians averts emergency work!

Contract partners are also instrumental in performing seasonal work such as cooling and heating prep and start-ups. The M&O HVAC technicians couldn't possibly service the District's thousands of systems within the short window of opportunity before hot or cold weather hits. It is a thorny balancing act that shifts with the tide of ever present unexpected events and circumstances.

M&O is comprised of valued rock stars, and they know it

Volumes have been published regarding the required attributes of a competent leader, and each author's definition and compulsory list of qualities are fitting. I absolutely subscribe to the need to be flexible, patient, humble when necessary, tenacious, and the array of the boundless other characterizations that management experts deem indispensable for a leader. The formula that most echoes me and my nature, however, is Dave Ramsey's (EntreLeadership.com) five characteristics of great leaders: Love Your Team; Give Praise; Seldom Use Your Power; Surround Yourself with Rock Stars; and Cast Your Vision.

It is only in respecting every ***team*** member as a valued and talented member of M&O that results in their desire to perform at their highest possible level with a sense of gratification and pride. Giving ***praise*** spins off my sincere regard for the team as they need to *know* that they are valued. There is little point in my feeling appreciative but not expressing it, as if it's not demonstrated by me, it's not received by them. And while I fully recognize that every leader possess ***power,*** I more importantly recognize that it does little good to demand unquestionable deference from those under my charge. I much prefer to lead by example and communicate clearly and directly versus using intimidation and coercion. It is important that Department Managers under me and technicians under them understand the "whys" of work strategies and procedures and *want* to "do it right" rather than follow protocol out of fear. They were all selected, after all, because they are proven ***rock stars***. M&O work is demanding. Precision, accuracy, efficiency, creativity and ingenuity, and quickness are the orders of the day, every day. Lastly, casting leadership's ***vision*** throughout M&O reinforces our mission and purpose. I and everyone else understand that our collective role is bigger than each of us individually. Though our functions are plumbing and painting and electrical wiring and cooling and heating and hundreds of other jobs, our *purpose* is the support of education excellence to the 88,000 plus students of APS.



February 11, 2015

APS
Maintenance and Operation

To Whom It May Concern:

My name is Susan Barnhart and I am a teacher at Governor Bent Elementary School. I have been with the district for 25 years and I feel compelled to acknowledge one of your employees.

Victor (I don't know his last name) was in my kindergarten classroom two weeks ago replacing a shattered window. Needless to say, this was fascinating to watch for five and six year olds. Victor was FANTASTIC with them. He took the time to show them how he measured (which was especially exciting because the week before the students had used measuring tapes and were familiar with them), how he used a suction cup to hold the glass and showed them the adhesive he was going to use to secure the glass to the frame. The students were excited to see this real world experience.

I believe Victor went above and beyond his job description and taught these kindergarten students a lesson.

My thanks goes out to Victor.

Sincerely,

Susan Barnhart
Kindergarten Teacher
Governor Bent Elementary School
barnhart_s@aps.edu

We're all in this together

This Report underscores the importance of "the village" that first erects and then preserves the buildings that constitute APS. The Facilities Design + Construction Division leads the charge in creating the structures and M&O inherits them indefinitely in preserving the real estate assets and protecting the occupants and users of the real estate. M&O's range and depth of responsibilities is immense but made easier due to preventive maintenance driving the force. PM keeps the lights on, the water running, the heating and cooling humming, the roof durable, the walls standing, the technology powered, the air clean, and the grounds safe and attractive throughout the District. None of it would be possible without PM which wouldn't be possible without competent maintenance technicians. PM carried out by expert technicians is a large facet of sustainability. A building's potential for sustainability only *begins* with its design and construction. Sustainability survives throughout the building's lifespan from the care and attention executed by preventive and routine maintenance.

OVERVIEW of MAINTENANCE and OPERATIONS

M&O is the epicenter of the physical operations of APS, the 31st largest public school system in the nation. Past Year End Reports have accentuated M&O's "support" of the education process – *education* being the unequivocal objective of APS. However, the word "support" rationally and truthfully understates M&O's purpose to APS. In the District meeting its objective of educating Albuquerque's children in preparation for their future and the betterment of their communities, the education process ***depends*** on the incalculable functions and services provided by M&O. Seemingly, M&O has nothing to do with school curriculum, but this is not true. Class programs are abruptly halted if an HVAC system malfunctions. Additionally, sports activities are canceled if the athletic field is flooded and lunch is not served if the school kitchen's electrical system falters.

While bestowing education is unquestionably the purpose of APS, the education process is dependent on the actual brick and mortar schools and all their necessary contents, systems, and billions of related component parts that make them hum. In the case of APS, that's over 2,200 facilities, the largest collection of public buildings in the state, over 14 million square feet of properly humming, functioning, comfortable, and aesthetically pleasing learning space.

M&O's eight departments make it possible for teachers to instruct and students to absorb science, math, reading, and history material. M&O personnel are accountable for not only the dependability and operation of the HVAC systems and electrical power, but also the safety and appearance (interior and exterior), of each square foot of 143 school sites; three sports stadiums; four administrative complexes; the Data Center; Research, Development and Accountability Testing Warehouse; Materials Management Warehouse; Central Kitchen; and Lincoln Complex housing M&O's many Craft Shops, its own Warehouse, and a 26-mechanics' bay Fleet Maintenance Department and charter and magnet schools (and adding every year). The preservation of the District rests on the shoulders of M&O's 263 (down from 330.5 in 2007) full-time staff. Every M&O Shop has emergency on-call service available 24 hours a day, 365 days of the year to address the urgent needs of all schools and facilities.

Maintenance Direct is central to work order management

Whereas M&O is the epicenter of the District, the Maintenance Direct (MD) work order software system (a module of SchoolDude) is the nucleus of M&O. Thousands of work orders a year nearly flawlessly flow from the schools to M&O via the Maintenance Direct WO system. Work orders simply do not get lost. In 2005, the New Mexico Public School Facilities Authority procured the state-of-the-art SchoolDude software system — and becoming more sophisticated daily — for all public school districts statewide. SchoolDude has not only greatly streamlined the work request, approval, and scheduling process, it has also enhanced M&O's daily management and future planning in identifying and predicting specific areas of needed attention. The result is a measurably advanced and productive Division. In addition, FIMS (Facility Information Management System) data reports, taken from SchoolDude, aid executive management in planning funding cycles and safeguarding that forecasted needs *will* be adequately financed when the time comes.

Also central to management planning is SchoolDude's Key Performance Indicators database system. While the Council of the Great City Schools' KPI measurement and evaluation system referenced in this

Report provides *a broad and in depth* perspective of an entire district's performance that includes fiscal and human resources management and student statistics, SchoolDude's KPI function focuses on the three modules pertinent to M&O – preventive maintenance, routine maintenance, and energy use. Work order data is gathered from SchoolDude to measure each district's performance (Dashboard linear gauge) and benchmarks comparisons to over 6,000 public school district users across the country and around the globe. APS' M&O work performance as well as how it rates compared to similar public school districts has proven invaluable in identifying where M&O is excelling and precisely where it can improve. *(See examples of Dashboards for APS' work order performance in the Appendices beginning on page 124.)*

SchoolDude/MD documents, prioritizes (low, medium, high, or emergency), disseminates, and tracks work orders and communicates the status of each to the schools, M&O personnel, and even to the M&O's hundreds of vendors via the APS Intranet. Maintenance Direct tracks WOs and every detail of the WO (materials, time, costs, job status, and more) from initial request through the completion of the job. Employee Productivity Reports provide the number of tasks performed by each technician and the time taken to execute every job, unambiguously denoting task specific performance. Department managers appropriately address productivity issues on a case-by-case basis in furthering each technician's abilities and knowledge. *(Following are FIMS Proficiency Reports, taken from SchoolDude –Preventive Maintenance Direct, Maintenance Direct, Utility Direct, and FIMS Feedback.)*

Preventative Maintenance Direct Proficiency

General Information

Assesment Date (mm/dd/yyyy):	6/30/2014
Assesor:	McCurdy, Jeffrey

Training Information

Has the FIMS Account for the district been setup using the NM Standards and all relevant district information?	Y	0.5
Has FIMS training occured?	Y	0.5

PM Schedule Information

Number of Schedule Types:	53	0.5
Number of Schedules Running:	5,473	
Are Schedules being processed in a timely manner (<45 days) ?	N	0
Is facility equipment being tied to schedules?	Y	0.25
District now linking Equipment to reactive work orders. This equipment "downtime" can be utilized to measure reliability of PM efforts.	N	0

PM Cost Ratio

PMCostRatio:	21.00%	0.25

PM Completion Rate

PMCompletion:	71.07%	0

Total Preventative Maintenance Direct Score

PMDScore:	2

Maintenance Direct Proficiency

General Information

Assesment Date (mm/dd/yyyy):	6/30/2014
Assesor:	Martinez, Les

Training Information

Has the FIMS Account for the district been setup using the NM Standards and all relevant district information?	Y	0.5
Has FIMS training occured?	Y	0.5

Work Order Information

New Request:	90	New PM Requests:	0		
WIP:	1897	WIP PM's:	803		
Complete:	1247	Complete PM's:	234		
Closed:	24569	Closed_PM:	5200		0.25
Pending:	451	Pending PM's:	173		0.25
Total Reactive WO's	26357	Total PM WO's	6410	Backlog %:	9.44%

Location Information

Locations:	Y
Square Footage:	Y
MEM Count	Y

Blank Code Information

Blank Craft Code:	4
Blank Purpose Code:	1

Transaction Information

Labor Transactions:	25448		0.25
Material Transactions:	7134		0.25
Contract Transactions:	2948	Transaction%	137.63%

Data Analysis Information

Can the District provide monthly progress reports?	N	
Is the district establishing reports to analyze data over time?	N	0
Is the district utilizing data to drive customer service?:	Y	0.25
Can the district provide 3 examples of utilizing MD for decision making?	N	0
Is the district using data to drive the most efficient use of resources?	N	0

Total MaintenanceDirect Score

MD_Score:	2.25

Utility Direct Proficiency

General Information

Assesment Date (mm/dd/yyyy):	7/16/2014
Assesor:	Trujillo, Santiago

Training Information

Has the FIMS Account for the district been setup using the NM Standards and all relevant district information?	Y	0.5
Has the district identified and entered utility bills?	Y	0.5
Has the district listed utility vendors?	Y	

Building Information

Square Footage:	Y	
MEM Count:	Y	

Current/Historical Utility Information

Does the district have current utility data?	Y	0.5
Does the district have 1 year of historical data?	Y	0.5
Does the district have 2 years of historical data?	Y	

Data Analysis Information

Has the district identified reports for data trending to include 3 reports on home page?	Y	0.25
Is the district utilizing the data for cost and usage comparisons?	Y	0.25
Has the district analyzed the data for budgetary planning?	Y	0.25
Has the district demostrated the opportunity for cost savings and reduced consumption?	Y	0.25

Total Utility Direct Score

UD Score:	3

FIMS Feedback Report

ALBUQUERQUE

Calendar Year: 2014 Qtr: 2

Overall FIMS Summary:

MD Score:	2.25	
W.O. Backlog %:	9.44%	*Goal: < 25% Work Order Backlog*
Transaction %:	137.63%	*Goal: >100% Transaction Percentage*
Comments:	District has a good Backlog and Transaction %. Clean up Blank Codes.	
PMD Score:	2.00	
PM Cost Ratio:	21.00%	*Goal: > 20% PM Cost Ratio is the target measure*
PM Completion %:	71.07%	*Goal: > 95% PM Completion rate is the target*
Comments:	District's completion rate is broken down into HVAC, 53.02%, and Non HVAC, 89.12%. Average above. District has increased their cost ratio to above 20%.	
UD Score:	3	
Comments:	The district uses both UD and EnergyCap to monitor utility data.	

* Scores ranges from 0 to 3.0

FMARs aid in identifying issues

Because data drives much of M&O's decision making and planning process, measuring maintenance effectiveness is essential in developing maintenance strategies. Utilizing the Public School Facilities Authority's (PSFA) Facility Maintenance Assessment Report (FMAR) system has greatly assisted in evaluating the condition of District school facilities. The FMAR is not a commissioning exercise, rather examines schools and school site conditions and objectively scores and rates the site, building exterior and interior conditions, building equipment and systems, and maintenance management practices. The assessment reports have identified areas of concern — raising a red flag — that likely would not have been discovered while carrying out routine WO requests. *(See example of a FMAR and Assessment Report Definitions beginning on page 118 in the Appendices.)*

Work Order Totals 2007 - 2014

Fiscal Years:	2007	2008	2009	2010	2011	2012	2013	2014
All Fiscal Years	Total Work Orders		Total Completed		Total Declined or Voided		Average Time To Complete WO	
FY 07	63137		58074		2487		65.05	
FY 08	63464		58641		2502		56.62	
FY 09	68143		63766		2098		48.54	
FY 10	68361		63586		2600		33.97	
FY 11	74544		70497		2261		26.01	
FY 12	79358		75264		2059		22.97	
FY 13	78280		74252		2136		20.41	
FY 14	78706		74826		1743		18.20	
Totals:	417,007		389,828		14,007		42.19	

Note: *Unlike the Summary Cluster Report, these figures represent work performed* ***throughout the District****, not just at schools. In addition, "Average Time to Complete WOs" represent the time between when the WO was opened and closed in the database, not the days to actually complete the job.*

Support of education is M&O's embedded culture

Leadership instills into all technicians that education is M&O's number one priority! It's not about fixing a broken pipe or putting a fresh coat of paint on the walls. Plumbing or painting may technically be their job to execute, but *doing it is all about fortifying each student's opportunity for achieving academic success*. M&O may well fix all that is broken or hazardous, clean-up all that is soiled, and eliminate what is offensive throughout APS, but it's the *purpose* of righting these wrongs — *the education process* — that drives the technicians. When a pipe breaks it is not viewed as a broken pipe, but rather a potential for classroom disruption and lost educational time. M&O's collection of skilled technicians, many licensed journeymen in their trade, are infinitely more than "fix it" crews. It is not just a job but rather it's *meaningful* and important work for kids and their future! *"It's for and about the kids"* is the M&O culture and continues to be embedded in all personnel.

M&O meets its formidable mission through the following eight service departments: **Mechanical, Grounds, Structural, Electrical, Building Services, Fleet Maintenance, Environmental,** and **Support Services** (accounting function). The **Computer Network** function, **Energy Conservation** office, and secretarial and clerical support staff complete the Division. *(See Organizational Chart on page 42 and Department Profiles beginning on page 43.)*

M&O Budget and Expenditures by School Cluster

Following is a historical perspective of M&O's budget, salary expenses, and employment numbers. All numbers have held relatively steady in the last three years. However, M&O operates with 20.2% fewer employees and 20% less dollars since 2007 but is responsible for 54% more square footage.

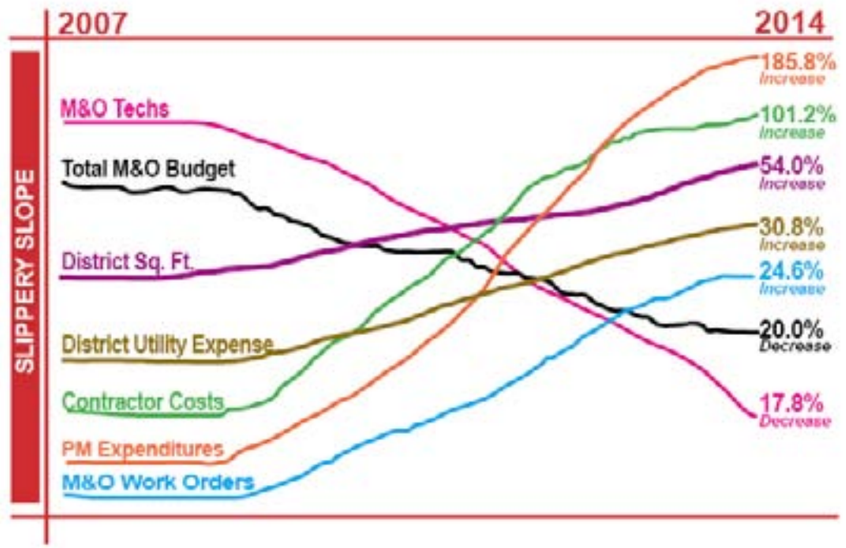
M&O's Total Budget for Fiscal Years 2006-07 — 2012-14

Fiscal Years	Work Orders	Square Feet	M & O TOTAL BUDGET	Operational Budget	SB-9 Budget	Salaries OT & Benfits	School Sites	FTEs
2007	63,137	9,350,500	$48,342,400.00	$2,903,213.00	$31,393,556.00	$14,045,631.00	136	330.5
2008	63,464	10,975,700	$55,391,208.00	$2,629,799.00	$37,165,908.00	$15,595,501.00	137	320.5
2009	68,143	12,010,152	$48,564,786.00	$2,066,226.00	$30,832,290.00	$15,666,270.00	139	310
2010	68,361	13,105,100	$41,227,836.00	$1,329,653.00	$25,350,736.00	$14,547,447.00	141	285.5
2011	74,544	14,207,533	$30,237,780.00	$ 909,154.00	$14,776,670.00	$14,551,956.00	142	265
2012	79,358	14,517,582	$35,966,909.00	$ 925,736.00	$21,355,325.00	$13,685,848.00	143	262.5
2013	78,280	14,624,261	$38,573,538.00	$1,005,736.00	$23,844,843.00	$13,722,959.00	143	263
2014	78,706	14,402,956	$38,655,311.00	$1,054,080.00	$23,818,035.00	$13,783,196.00	143	263.5

Note: *Work order totals apply District wide, not just school sites. Several schools sometimes share one campus. The Operational, SB-9, and Salaries/OT & Benefits columns equal the M&O BUDGET column. The Budget allocation includes "carryover" monies from previous fiscal year.*

M&O's Fiscal Operations in a Snapshot, 2007-2014

M&O divisions throughout the nation's public school systems are facing the same challenges of meeting their customers' expanding needs with a shrinking pool of technicians. At APS manpower is continuously sliding down (due to decreasing funding) while District facilities and programming are endlessly expanding. While it may be a slippery slope to navigate, M&O integrates new cost and manpower saving ingenuity in finessing the slope and effectively meeting the challenges. ***Note:*** *The following graph is for illustration purposes only. The Slippery Slope demonstrates the unceasing dramatic challenges M&O faces.*



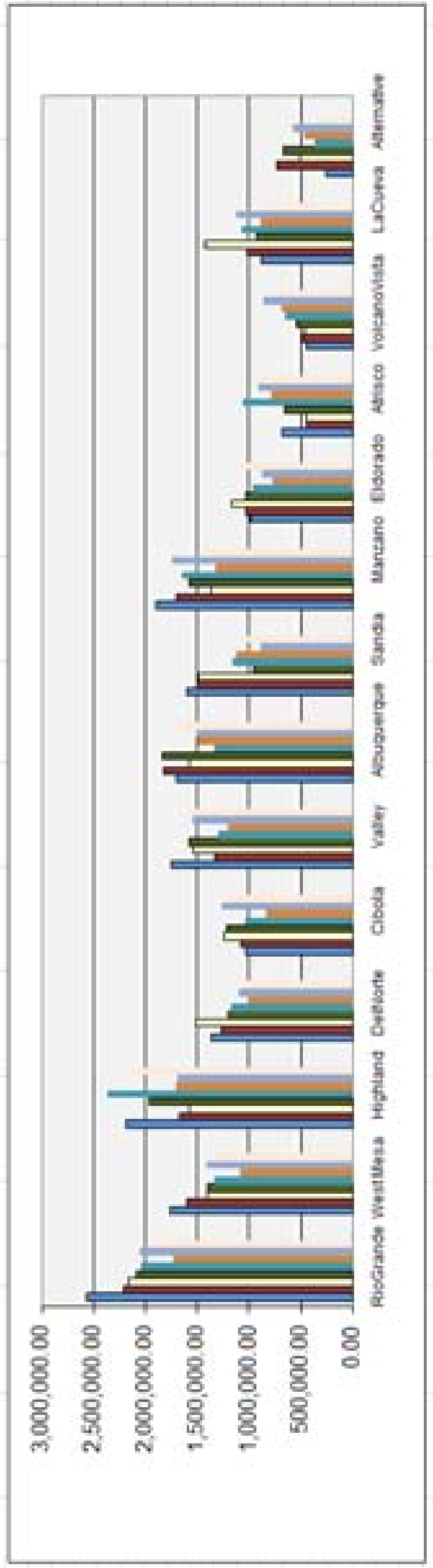
Slippery Slope Figures	2007	vs. 2014
M&O Technicians	303	249
Total M&O Budget	$48,342,400	$38,655,311*
M&O Work Orders	63,137	78,706
District Square Footage	9,350,500	14,402,956
District Utility Expense	$14,976,208	$19,599,664
Contractor Costs	$5,657,848	$11,386,944
Preventive Main. Expenditures	$1,777,360	$ 5,080,653

* Includes salaries and benefits

Following is a historical perspective of M&O's budget, salary expenses, and employment numbers. All numbers have held relatively steady in the last three years. However, M&O operates with 20.2% fewer employees and 20% less dollars since 2007 but is responsible for 54% more square footage.

M&O Expenditures per High School Cluster 2007 – 2014

	1 Rio Grande	2 WestMesa	3 Highland	4 DelNorte	5 Cibola	6 Valley	7 Albuquerque	8 Sandia	9 Manzano	10 Eldorado	11 Atrisco	12 VolcanoVista	13 LaCueva	14 Alternative	Totals	
FY 2007	2,560,773.36	1,781,450.91	2,176,408.70	1,363,664.81	1,024,119.71	1,750,422.54	1,696,274.63	1,596,107.36	1,609,713.12	976,927.45	682,114.66	446,305.64	872,666.89	263,211.27	19,060,161.03	FY 2007
FY 2008	2,210,404.41	1,604,608.60	1,664,019.47	1,254,359.49	1,071,437.56	1,324,612.25	1,819,590.86	1,490,621.06	1,698,225.05	1,017,962.92	445,239.47	487,564.96	1,012,666.38	729,646.92	17,831,159.60	FY 2008
FY 2009	2,157,903.06	1,399,556.10	1,571,355.44	1,504,688.36	1,234,137.54	1,534,660.59	1,570,097.51	1,482,744.17	1,370,659.08	1,170,309.81	443,115.00	458,389.74	1,420,779.77	512,814.28	17,831,210.44	FY 2009
FY 2010	2,009,431.07	1,410,019.99	1,961,904.31	1,197,353.68	1,211,596.27	1,579,640.92	1,833,832.47	953,459.70	1,573,384.27	1,027,172.44	657,638.31	533,922.54	934,978.83	662,330.62	17,626,585.42	FY 2010
FY 2011	2,043,876.46	1,335,700.52	2,364,077.98	1,167,505.64	1,027,473.36	1,287,339.19	1,328,910.01	1,164,875.29	1,649,310.92	968,170.48	1,549,826.20	645,018.65	1,067,423.00	358,388.91	17,457,897.41	FY 2011
FY 2012	1,731,470.71	1,085,263.75	1,703,670.32	998,657.02	833,731.93	1,199,486.71	1,483,416.38	1,115,068.12	1,316,006.52	769,598.06	778,853.37	686,920.54	878,501.70	459,275.81	15,039,920.94	FY 2012
FY 2013	2,055,026.09	1,410,991.87	1,681,795.26	1,100,283.41	1,254,255.57	1,541,387.18	1,504,331.13	890,055.81	1,734,472.28	868,675.45	906,900.57	854,158.20	1,126,498.86	575,179.38	17,504,011.05	FY 2013
FY 2014	1,937,296.95	1,328,522.05	2,171,356.68	1,042,157.74	1,211,050.78	1,601,941.89	1,683,986.16	1,086,018.77	1,448,403.64	1,119,277.97	875,062.95	733,090.93	830,727.94	352,115.53	17,421,009.95	FY 2014



Note: By Fiscal Year	2007	2008	2009	2010	2011	2012	2013	2014
Total Sq. Footage	9,350,500	10,975,700	12,010,152	13,105,100	14,207,533	14,517,582	14,624,261	14,402,956
Total Students	87,805	88,821	85,689	88,820	89,136	89,168	89,602	88,247
Total Work Order	50,104	54,681	59,287	59,011	63,492	61,634	70,138	71,048
Total Expense	19,060,161.03	17,831,159.60	17,831,210.44	17,626,585.42	17,457,897.41	15,039,920.94	17,504,011.05	17,421,009.95
* Cost per square foot =	2.04	1.62	1.48	1.35	1.23	1.04	1.20	1.21
* Cost per Student =	217.07	200.75	208.09	198.45	195.86	168.67	195.35	197.41

Notes:

- *Figures apply only to work orders on school sites; the higher number of work orders and expense totals stated elsewhere in this Report represent M&O work for **all District facilities**. See individual School Cluster Reports in Appendices beginning on page 89.*
- *The Cluster Summary history has been corrected retroactively to reflect work order activities - and accordingly costs - that are more consistent with the performance measurement system utilizing KPIs (Key Performance Indicators) practiced by the Council of the Great City Schools (CGCS) − of which APS is an active member − and the New Mexico Public Education Department's (PED) accounting units. Work that constitutes "major maintenance" versus "renovation" has been re-categorized to provide a clear distinction between M&O's large refurbishing maintenance projects and FD+C's renovation/remodel projects. The line between them has been blurred over the years, but has now been more appropriately defined to allow for the pertinent comparison of apples to apples rather than apples to oranges. The reclassification of work has brought APS in alignment with CGCS and PED categories and numbers.*
- *The drop of 221,305 square feet between 2013 and 2014 (the first ever) is temporary and due to the demolition of buildings at a number of school campus rebuilds in progress and the removal of portables. The District is not contracting in size. Rather, M&O's contracting staff is responsible for expanding existing campuses and the addition of entirely new schools.*

INITIATIVES and DIVISION HIGHLIGHTS

- **PM costs coming down**

As predicted, preventive maintenance costs are declining, 22.0% in 2013-14 over the previous year. Firing up a PM program was costly but now that scheduled inspections and service has become the status quo, there are far more *repairs* and far fewer exorbitant *replacements*. In essence, continued preventive maintenance work is conclusively "catching up" and saving money as PM is intended to do. The savings are applied directly back to the schools in doing more than the minimum work required. M&O is able to increase the scope-of-work on requested and PM work orders due to the savings. In addition, more routine maintenance work orders are now assigned to contractors and more PM is being performed in-house. Preventive maintenance is now clearly defined, no longer open-ended depending on need, and no longer an "open checkbook" for contractors. All Craft Shops that *can* perform PM work currently are. The flip side of this shiny coin is the challenge of growing the PM program with current resources.

As M&O has learned more about managing the PM program and process, the amount of work on each task has expanded therefore decreasing the number of work orders by 20.0% from the previous year. Fine tuning the PM program is an on-going work in progress. As M&O performs work and perfects the process, more knowledge is gleaned.

APS' Preventive Maintenance Program 2007–2014

Fiscal Year	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Reactive Work Orders	62,045	61,936	66,391	69,406	63,267	68,987	69,381	63,605
Preventive Maintenance	1,105	1,541	2,764	8,967	21,289	20,385	18,911	15,113
Total Number Of Work Orders	63,150	63,476	68,155	68,373	74,556	79,372	78,292	78,718
PM Count Ratio	2%	2%	4%	15%	40%	36%	32%	24%
Fiscal Year	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**	**FY 2012**	**FY 2013**	**FY 2014**
All Maintenance Cost	$ 25,873,770.34	$ 22,851,872.97	$ 23,728,536.91	$ 23,776,621.76	$ 22,058,133.77	$ 15,982,172.14	$ 20,372,806.09	$ 22,356,806.65
Preventative Maintenance Cost	$ 1,785,864.27	$ 1,877,315.91	$ 2,639,014.33	$ 3,841,340.63	$ 5,369,236.92	$ 5,566,047.02	$ 6,516,485.17	$ 5,088,653.09
PM Cost Ratio	6.90%	8.22%	11.12%	16.16%	24.34%	34.83%	31.99%	22.73%

Growth Of APS's PM Program

- **Utilizing new qualifications-based contractor selection process**

In late 2013, M&O adopted a qualifications-based (aka 'qualified bidding') method for the evaluation and selection process of engaging contractors. Unlike selecting contractors based primarily on their competitive bid quote, the qualifications-based selection (QBS) process provides a *focus* on quality and value, not only bid price. QBS is a procurement method in which the final criteria for selection are largely qualifications and demonstrated competence, although price is a factor and included in the overall evaluation.

Ironically and favorably, shifting the evaluation emphasis from *lowest* to *most qualified* bidder results in a better product, more advantageous warranty, and ultimately less cost. The QBS process awards the job to the bidder who most meets *the minimum standards of experience; resources and financial ability; managerial ability; reputation; and work history for a specified class of goods, services, or projects*. Observing these criteria recognizes an important and long overlooked fact: large project expertise is not a commodity. Complex and adept skills are *knowledge* and *service*. QBS emphasizes the reality that construction, electrical, and mechanical teams bring to each project the historical knowledge gleaned from previously working with APS, each other, and on education related maintenance projects. The *time intensive* acclimation and/or learning curve of a *proven* maintenance team serving APS is significantly reduced or altogether eliminated. Change orders are reduced significantly when an APS experienced contractor performs the important job, often also large and/or urgent. The cost of APS renovations carried out by the lowest bidders in 2013 was $114 per student. The cost of renovations executed by the most qualified bidders in 2014 was $31 per student, a whopping 72.8% decrease in many cases. While contributing conditions and circumstances surely differed between 2013 and 2014 jobs in terms of size and type, there is no doubt that the QBS system aids in keeping project expenses down and within budget.

▪ APS' M&O is nearing CGCS's staffing recommendations

Maintenance staffing is eternally a concern and challenge for school districts across the nation due to budget constraints, and APS is no exception. Even new school facilities require maintenance and upkeep — just as older buildings do. Pioneering building materials and products used in building new cutting edge schools require even more expertise. School districts must have sufficient staffing and funding to execute a successful maintenance and repair program as well as a sustainable PM program. If not, facilities will deteriorate and equipment will fail long before their determined life-cycle.

Staffing is the process of acquiring, deploying, training, and retaining a workforce of sufficient quantity and quality to carry out the work necessary for the efficiency and effectiveness of the M&O Division. Adequate and adept staffing is also essential in creating positive impact on the environment and most importantly the education process in classrooms.

The following table represents a staffing model for custodian, maintenance, and grounds staff based on square footage and facility acreage from the American School and University (ASU) study for schools and the Council of the Great City School's (CGCS) managing for results study.

Staffing Model

Position	ASU Recommendations (Basis of PSFA Manpower Study)	CGCS Recommendations
Sq. footage maintained per full-time custodial worker	32,100 Sq. Ft.	27,600 Sq. Ft.
Sq. footage maintained per full-time worker	92,074 Sq. Ft.	90,000 Sq. Ft.
Acres maintained per full-time grounds worker	31.0 Acres	28.0 Acres

APS staffing numbers differ a bit from these recommendations but follows the CGCS's model fairly close and is working toward meeting the model. APS' current slightly lower figures are based on regional area needs and standards. As the District continues to build new revolutionary schools and remodel existing school buildings to accommodate evolving teaching technologies, the model will be monitored and adjusted to meet the changing needs. Considerations also include the introduction of new products − from environmentally friendly cleaning products and tile adhesive to artificial turf. Up-to-date professional development and training programs will also need to be developed and conducted. *(See "Strengthening professional development opportunities" on page 23.)*

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▪ Information captured and monitored for utility submeters installed in new buildings

E-Mon D-Mon submeters for electricity, gas, and water are now routinely installed in many APS new building projects, especially those vying for the LEED Measurement and Verification (M&V) credit. These meters measure energy and gas use at 15 minute intervals throughout the day, as well as during peak energy demand hours. Such information helps generate accurate statements of utility use at specific locations, allowing performance comparisons and trouble shooting.

A guideline for M&V and submetering has been created by FD+C as well as steps to capture this important data in the District Database (along with standard utility bill data) for ease of analysis by M&O. The data and Database is continually monitored and analyzed by M&O staff and reported to the Executive Director.

In addition, M&O is able to isolate and identify specific circuits or appliances within a facility that are zapping energy and make adjustments in correcting the problem. While the sophisticated technology was initially costly, it will more than pay for itself in electric savings. EnTouch Controls portable measuring devices remove the laborious deduction process out of pinpointing energy hogs.

▪ Replacing rather than repairing when more cost efficient

All service departments are investing more time, effort, and attention in better judging when a replacement is more time and cost advantageous over repairing in the long term (life cycle assessments). Although replacing a part or system results in a more expensive work order today, if it reduces the number of routine work orders over time, man hours and costs for that part or system are ultimately lessened due to fewer or possibly even no repeat failures.

▪ Collaborating with FD+C in new building commissioning

Historically, APS' Facilities Design + Construction Division managed the erecting of new facilities then turned them over to M&O to maintain and preserve. A new and vastly improved attitude and culture are being cultivated between the two Divisions in building more sustainable, smart, and efficient facilities. It obviously takes a cohesive team represented by all the various trade and industry parties (architects, engineers, builders, tradesmen, and planners) involved in designing and constructing a new building. But not so obvious for too long is the necessary involvement of maintenance representatives who will be charged with servicing what will become *their* facility forevermore.

M&O is now playing a long overdue formal role on the new building commissioning team as part of the design concept and end-user group. A "we're in this together" attitude is being nurtured in designing facilities that *make sense* when M&O inherits the building. If not part of the design and systems selection process from the beginning, maintenance management and technicians begin in a hole and dig out – not the easiest, least costly, efficient, or smartest way to make repairs. Developing a culture of sustainability is more than a building lasting a long time. Architects drive the design, but M&O must be part of the navigation team as experts of the materials and complex apparatuses and systems that *drive the building*. In this regard, electrical, mechanical, landscape, and structural professionals know where to go and where not to go in operating the new facility and executing repair jobs.

■ **Working with PNM on energy and cost saving retro-commissioning (RCx) program**

RCx is the process of monitoring, troubleshooting, and adjusting electrical, mechanical, and other control systems in buildings to improve systems' performance. Experts analyze the performance of systems and offer specific strategies to improve efficiency, extend service life, and improve occupant comfort. RCx provides an understanding of how well a system is working for a specific space or building and identifies obsolete equipment in need of replacement or adjustment in saving energy and costs and improving the performance of systems. Study incentives help pay for the building assessments and savings incentives help reduce the cost of implementing the findings. Lastly, PNM offers rebates for identifying and implementing operational and maintenance improvements, many low-cost or no-cost.

As retro-commissioning can vary in complexity and degree, PNM has broken down various "study incentive" tier options depending on a building's kWh usage and/or size of the building. For example, larger buildings may provide for a more multifaceted RCx audit to yield greater savings. And as heating, ventilation, and air conditioning systems account for most of a facility's operating costs, PNM is proposing an RCx program specifically for the District's HVAC systems where the highest cost and energy savings can be realized. PNM contracts with engineers and energy-saving product wholesalers, distributors, and retailers who receive training on the RCx program and understand program rules and procedures. These various "trade allies" work directly with the PNM customer, such as APS' M&O personnel, in lowering the operation costs of HVAC systems. The trade allies are motivated by profitable networking opportunities to sell products and materials that will reduce the owner's energy use and maintenance price tag. Trade allies, who receive ongoing support and guidance from PNM, also play a vital role in educating owners about PNM rebates.

Most of the District's buildings qualify for a RCx Tier 1 incentive applicable for buildings at least 50,000 square feet in size, *or* use at least 750,000 kWh annually, *or* at least 500 kWh annually during peak demand hours, and a commitment from the owner to install all identified no-cost and low-cost measures (defined as those with a payback of less than two years and less than $2,000). Many APS facilities that are at least 100,000 in size also qualify for the more lucrative Tier 2 incentive program. Stay tuned for RCx program results in the 2014-15 Year End Report.

■ **Voice of the Customer (VOC) results revealed happy customers**

M&O conducted a general Voice of the Customer satisfaction survey in the spring 2014 querying all school site administrators responsible for reviewing, approving, and submitting work requests into the SchoolDude system. The survey was electronically disseminated to the administrators who conveniently responded to the questions online. Most of the middle schools' administrators participated (59.2%) followed by the high schools' administrators (57.1%). The overall participation rate was 55.3%. The exercise, conducted for the third time, provided the schools with the opportunity to express specific needs and concerns.

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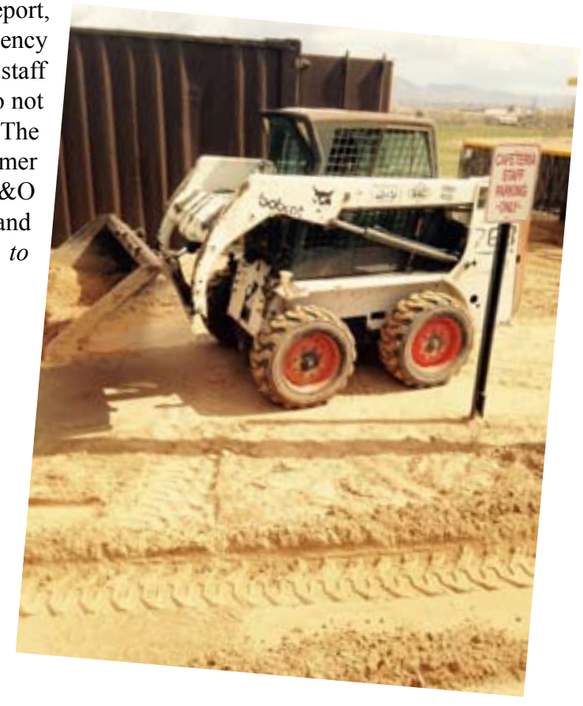
The survey asked that the responders to rate M&O's performance during the school year as Excellent, Good, Satisfactory, or Poor to the following five questions:

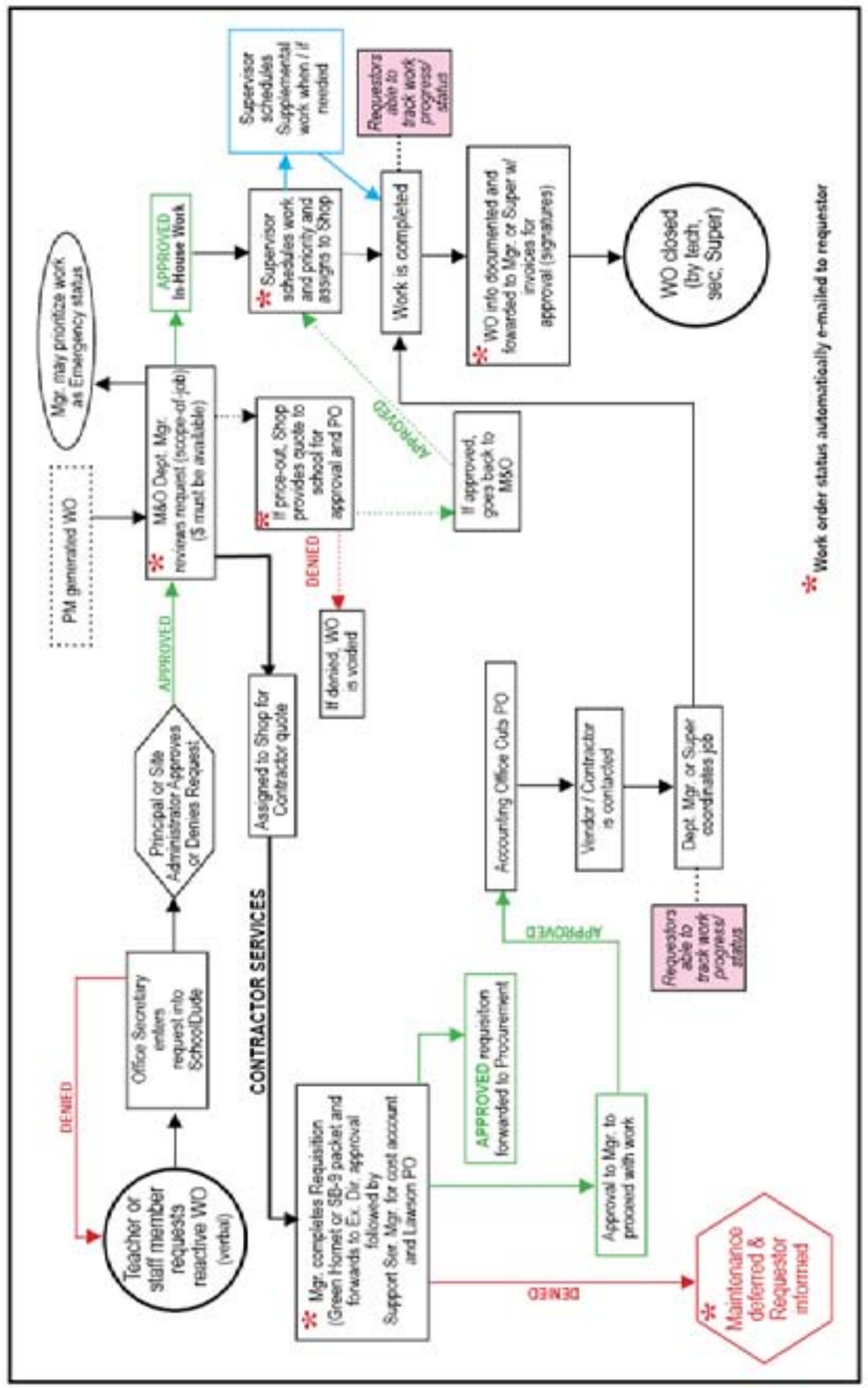
- How satisfied were you with the *timeliness* of services provided?
- How satisfied were you with the *quality* of services provided?
- How satisfied were you with the *courtesy, professionalism,* and *expertise* of the M&O staff that completed your work requests?
- How would you rate your *overall satisfaction* with M&O services provided?
- How satisfied were you with the ease of using the SchoolDude work order system?

The results were overwhelmingly positive — an average 88.37% of Excellent (32.60%) to Good (53.96%) rating. And when Satisfactory is factored in the average rating to the five questions was 98.85% leaving the rating for Poor responses at only 1.09%. In voicing dissatisfaction with an M&O issue, respondents generally either mentioned their school or the school was easily identified by the particulars provided in the criticism. The Executive Director reviewed all comments, positive and negative, and personally followed up with the site administrators who supplied negative feedback to work through and rectify the problem including specifically how *they* can be part of an improved methodology and *permanent* solution. All parties involved in the work request process — requestors and approvers at schools, dispatchers, M&O managers reviewing and assigning work, and the servicing technicians — must follow the established WO process protocol *(see WO flow graphic on following page)* so that nothing falls through the cracks to cause disgruntled customers. All comments are utilized in making improvements within M&O and with the WO request process that begins with the schools. Positive comments provide the opportunity to share effective practices with other Craft Shops that can adapt the same positive procedures.

Most comments, highlighted throughout this report, favorably acknowledged M&O for their proficiency and professionalism. Overall, management and staff personnel were pleased with the results but also not cavalier regarding the few negative comments. The attitude of M&O personnel is not that the customer was just having a bad day, but rather that M&O contributed to their bad day. M&O technicians and management want their service contributions *to make their day!*



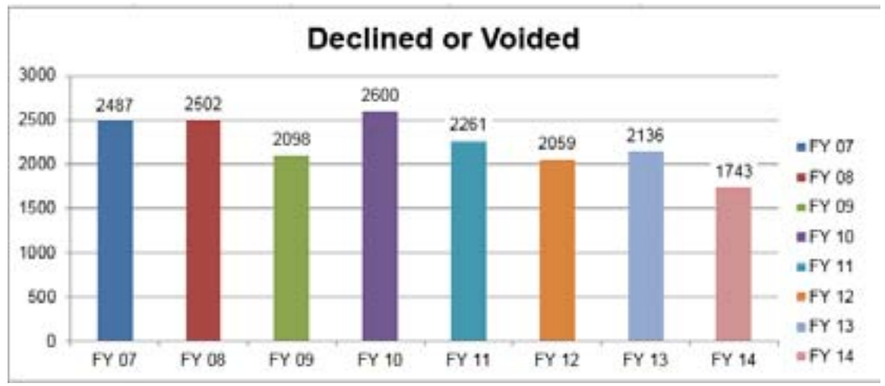
Work Order Process / Decision Tree



KIDS ZONE

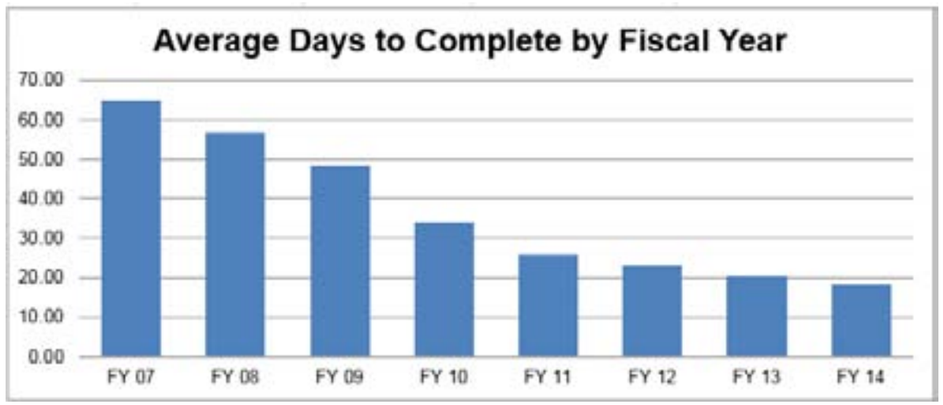
■ **Continued improvement in schools' understanding of the SchoolDude WO system**

As the following bar graph demonstrates, the schools are gaining a better understanding of the work request and approval process. There was an 18.3% improvement in declined or voided work orders in 2013-14 over the previous year and a vastly improved 29.9% improvement since 2007. M&O leadership credits the more efficient WO process to better communication between the schools and M&O. Schools are better grasping the difference between *wants* and *needs*; how the Capital Master Plan budgeting and allocation for projects works; how M&O determines and manages priorities and jobs based on urgency, size, and seasonal factors; and the age, maintenance history, and condition of their facilities. The schools are now more frequently taking these factors into consideration before they issue a work request. It is unrealistic to expect that declined or voided work orders will ever cease, as there will always be new Principals, school administrators, teachers, and staff at every school site. Although teaching and learning work request protocol is on-going, holding declined and voided work orders down to a minimum benefits the schools and M&O.



■ **M&O steadily improving work efficiency**

As illustrated below, M&O has steadily improved the time to perform and close work orders by more than half since 2007 and approximately 8% over last year. And while M&O is unquestionably working more proficiently every year, the more timely and efficient processing of work order paperwork is also credited for the improvement.



▪ Energy conservation monitor added

A newly hired M&O staff member has been informally assigned as the monitor of energy use and conservation. He is closely observing energy bills and questioning all peak charges (via newly established communications protocol) to address the occurrence of spikes in electrical use at schools and how to address them. As reducing energy use within a large school system without conceding educational quality isn't an option, the focus is on reducing waste. The new energy Monitor is working with WECC and the HVAC Shop in accessing where nightly shut-downs of heating systems can be carried out safely without the risk of pipes freezing.

▪ Strengthening professional development opportunities

M&O leadership has begun the process of learning what additional training or continuing education is needed by the technicians in bolstering their professional development. Professional development is defined as the process of improving M&O staff skills and competencies needed to produce high performance educational facilities. Current professional development strategies are essential to maintaining outstanding schools and maintenance departments that are efficient and effective to the learning environment.

All M&O technical professionals are required to keep their knowledge and skills current and in step with evolving technology and innovations so they can deliver the quality of service that safeguards the public's investment and meets the expectation of taxpayers, the Board of Education, teachers, students, and parents in addition to meeting each technician's trade requirements. And the importance of continuing professional development cannot be underestimated in M&O's commitment to school administrators who are charged with addressing ever increasing demands: reducing the achievement gap; meeting adequate yearly progress goals; staying current on student progress; and managing requisites and provisions of special-needs students.

With the introduction of increasingly more leading-edge mechanical systems into the schools, supplemental manufacturers' required training is needed for specific products and equipment at applicable school sites resulting in all technicians needing unique training. Identifying these distinctive needs is in progress in all Shops. M&O management also supports the benefits of courses such as supervisor training and conflict management in having a well-rounded and harmonious work force. Lastly, the staff is also responsible for staying abreast of PED and APS Human Resources mandated courses. *(See "Professional development critical in serving today's cutting-edge buildings and systems" in Facing On-Going Challenges and keeping Ahead Section on page 84 .)*

▪ Progress made in tackling deferred maintenance

As mentioned in the Opening Statement, the Executive Director's participation in the CGCS's Deferred Maintenance Task Force and being a contributing writer to their published document, *Reversing the Cycle of Deterioration of the Nation's Public School Buildings* (published October 2014), raised deferred maintenance awareness with the APS Board of Education. The published findings regarding the avoidable high costs of deferred maintenance also gained the attention and buy-in of the Superintendent, Chief Financial Officer, Chief Operating Officer, Capital Master Plan Director, and Facilities Design + Construction Executiv Director. Executive leadership now acknowledges that deferred maintenance (comprised of large ***needs***, not wants) has a sharper identity and must be addressed in their management decisions.

As a result, APS is identifying deferred maintenance throughout the District and getting these projects scoped out, designed, and planned — many currently in progress. M&O is working with the CMP office in earmarking monies specifically for deferred maintenance, hence the projects are much less vulnerable to budget cuts, and partnering with FD+C in incorporating DM projects with their remodels and rebuilds − effectively tackling more needs in one project. Boundaries between the two Divisions are no longer unyielding; some M&O and FD+C projects are lucratively being combined and completed.

Deferred maintenance is a major crisis across the nation and getting worse and has been a lurking crisis at APS. But APS is more fortunate than most urban school districts. Because APS has nurtured the public's trust and reliably meets its promises, Albuquerque citizens speak with their votes in supporting bond elections and saying, "go fix it."

▪ Several school fires caused severe damage

The spring of 2014 was not kind to two elementary schools suffering damage due to fires, coincidently, both in cafeterias. Appreciatively no one was hurt in either of the occurrences.

Chaparral Elementary School

The March 1, 2014 fire that broke out in the early hours in the cafeteria under expansion construction at Chaparral Elementary on that ruinous Saturday morning was ignited by insulation material. In spite of most of the fire remaining within the new portion of the cafeteria being enlarged and half of the existing kitchen, extensive smoke, soot, and odor damage to the school's entire main building ensued. In addition to the kitchen/cafeteria, other damaged spaces in the same facility included classrooms, the library, and administrative offices. M&O crews and disaster response partner contractors provided the emergency response in readying the school for the start of class on Monday morning. This required crews, totaling 45 technicians, working around the clock shifts throughout the weekend addressing tear down, clean-up, rebuild, and painting. All classrooms were ready and open for learning when the start of school bell rang on Monday morning, March 3.

Zia Elementary School

Just six weeks following the Chaparral fire, a fire erupted on the cafeteria roof at Zia Elementary on the Sunday afternoon of April 13. Kids' unwisely playing with matches on the roof was the unfortunate cause of this second preventable incident. Dry leaves caught on fire which quickly spread throughout the roof and the building's north wall. The job of extinguishing the fire and keeping it from spreading to the rest of the building was made much more difficult for city firefighters due to 59 mph winds. Fire crews fought the fire quickly and fiercely keeping the actual fire contained to the kitchen and storage areas. Nonetheless, the entire building suffered tremendous water and smoke damage.

Fortuitously, the District's spring break began the following day, providing seven full days to restore the building before the start of school on Monday, April 21 – and M&O emergency response crews, aided by the on-call contractor, did just that! Once again, technicians began the laborious undertaking the moment the Albuquerque Fire Department investigative team gave them the go ahead to proceed and worked day and night tearing down and clearing out the rubble and rebuilding the facility in a mere week's time. The north outside wall, insulation, lighting, and wiring was replaced and duct work, walls, floors, appliances and all other contents were thoroughly cleaned and disinfected and walls repainted. As many as 37 crew members were on the job at one time, working double shifts from 6:00 AM through 11:00 PM everyday including Easter Sunday.

M&O technicians who worked on these schools included carpenters, electricians, HVAC technicians, plumbers, painters, masons, and specialty cleaning crews. The M&O Environmental Management Department mitigated the emergency demolition portion of the facility containing asbestos. On the Monday following spring break, the students enjoyed breakfast and lunch in their cafeteria as if the disaster had not happened. Total cost of the repairs is estimated at approximately $375,000.

Zia Elementary School fire, BEFORE and AFTER rebuild

KIDS ZONE

▪ Mid-summer 2013 storm caused major damage throughout District

Is it serendipity or just crazy luck that APS was once again hit with a catastrophe while school just happened to be out of session? It was not lucky that gale winds and torrential rains pounded Albuquerque on the evening of Friday, July 26, but for M&O the timing certainly was as it allowed 17 days to extract water from flooded facilities and athletic fields; clear out downed trees; repair damaged roofs and structures; and address erosion problems before the school year commenced on August 13. Assisted by School Police who toured the District in identifying damaged schools, the M&O Executive Director began mobilizing the immediately responsive crews in the early hours long before sun up on Saturday morning, July 27. Crews tackled top priority jobs first, of which there were many, consisting of leaking roofs and sodden flooded classrooms as well as safety issues. About two dozen trees, including several huge majestic ponderosa pines at Jefferson Middle School, were toppled. Other large trees were downed at Montezuma, Monte Vista, Bandelier, and Whittier Elementary Schools and at Valle Vista Elementary a tree fell into a portable building and block walls. The Board of Education formally recognized the Grounds Department personnel for exemplary emergency response service to the schools.

Schools in the low-lying areas, mainly Rio Grande High School; Dolores Gonzales, Adobe Acres, and Barcelona Elementary Schools; and Ernie Pyle Middle School, suffered the most flooding but flooding also occurred at a few northeast heights schools including Eldorado High and E.G. Ross Elementary. Over 20 school campuses underwent some damage totaling an estimated $550,000 in repair costs. All schools affected by the storm were completely restored and ready for the start of school a few weeks later.

John Griego (left) and Lonnie McGhee with the M&O Grounds Department use chain saws to cut up a fallen 75-year old Ponderosa pine at Jefferson Middle School.

▪ Utility rates never dip, but total costs held down at $342,895 under budget

APS spent ***$53,697 a day*** for energy, refuse, and water in the 2013-14 fiscal year, and considering the unceasing rate increases (especially electricity) is remarkably frugal. For the first time in several decades, the District actually reduced electricity expenditures (reflecting rebates) over the previous year not by decreasing use, but rather by lowering demand charges, saving $73,606. The overly ambitious goal was to lower costs $300,000 which *would have been met if not for all that was **added** during the year:* square footage due to rebuilds at large campuses such as Del Norte and Sandia High School and the actual construction's electric use, thousands of computers and Promethean boards, and astronomical rate increases due to a growing precariousness of the U.S. electric system, including in New Mexico.

The District also spent less than the budgeted amount for natural gas. APS purchases natural gas out of season as a commodity and negotiates the best possible price. The District, however, exceeded its budget for water due to severe drought conditions yet the need to protect the District's over $18 million investment in athletic fields. The fields represent *outdoor classroom* spaces that are vital assets to student activities as well as APS' real estate portfolio. As the following history of the District's utility expenses illustrates, the price tag for all services has increased every year with the exception of natural gas.

History of APS Utility Expenses District Wide
2006-07 — 2012-14
2014 – 15 Budget*

ELECTRICITY		REFUSE	
2006-2007	$6,307,217	2006-2007	$1,137,027
2007-2008	$6,628,399	2007-2008	$1,094,743
2008-2009	$7,758,639	2008-2009	$1,543,440
2009-2010	$8,879,497	2009-2010	$1,563,038
2010-2011	$9,149,364	2010-2011	$1,442,888
2011-2012	$10,484,017	2011-2012	$1,395,558
2012-2013	$11,011,769	2012-2013	$1,461,055
2013-2014	$10,938,163	2013-2014	$1,503,571
2014-2015	$11,600,000*	2014-2015	$1,631,429*

NATURAL GAS		WATER / SEWER	
2006-2007	$5,313,287	2006-2007	$2,218,677
2007-2008	$5,301,009	2007-2008	$2,484,657
2008-2009	$5,895,423	2008-2009	$2,482,787
2009-2010	$6,063,183	2009-2010	$2,541,377
2010-2011	$4,150,665	2010-2011	$2,755,320
2011-2012	$3,862,079	2011-2012	$2,768,880
2012-2013	$3,783,403	2012-2013	$3,191,743
2013-2014	$3,893,150	2013-2014	$3,264,780
2014-2015	$4,400,00*	2014-201	$3,560,000*

TOTAL 2013-14 Utility Costs: $19,599,664
(.77% increase over 2012-13)

2007–2014 = *30.8% increase in utility expenditures*

KIDS ZONE

■ APS' M&O ranked in top 5% by CGCS's Annual Survey

The Council of the Great City Schools is the "nation's voice for urban education." The mission of CGCS, a nationwide organization whose membership consists of large urban school districts, is to educate the diverse urban student population to the highest possible academic standards in preparing them for future personal and career success and contributors to their communities.

ActPoint KPI
PERFORMANCE MANAGEMENT SYSTEM

In CGCS meeting its mission and enriching the value of school curriculum, the maintenance and operations functions of school districts are very much a part of their purpose. Without properly functioning classrooms, learning doesn't happen. Each year the organization conducts a web-based nationwide survey that defines, gathers, and reports data on key performance indicators (KPIs) in vital non-academic operations of school district management. The ActPoint® KPI system, an automated intelligence tool, allows member districts to enter raw data into online surveys; measures performance on selected KPIs; compares performance to member peer groups; and manages the results for improved performance and planning.

The M&O portion of the survey has been perfected over the years in adjusting KPI categories to be more relevant to districts in making comparisons regionally. The 2014 Report, *Managing for Results in America's Great City Schools* (published in October), now includes data quartiles to serve as a visual clue for member districts to set next year's benchmark targets.

Each year APS' M&O Division has realized an enormous benefit from participating in the collection and submission of data and evaluation of results. The KPI measurement findings provide national and regional benchmarks that serve as a vital tool in managing and goal setting. APS' M&O is proud to retain its position in the top 5% KPI rating (held for several years) of participating member schools for its management of the M&O Division in the 2014 study.

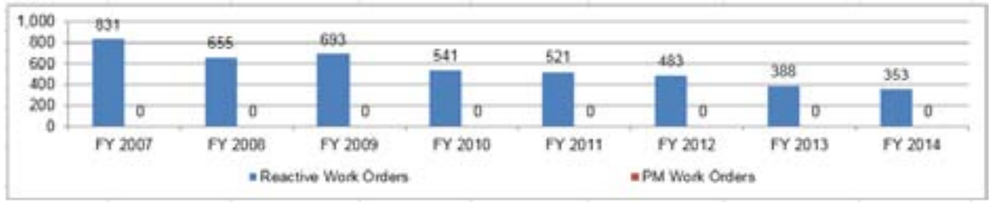
At a cost of $1.20 per square foot (one cent higher than last year), APS is rated the fourth highest in cleaning schools economically. Efficiencies without conceding quality is a difficult balance but accomplished due to tight cleaning schedules that break tasks down to seconds and minutes to perform. APS once again ranks second in custodial supply cost per square foot ($0.04) made possible by purchasing supplies in large quantities and on-site warehousing. Schools purchase cleaning supplies from the Materials Management Warehouse passing the savings directly to the schools. The maintenance costs per student has held steady ($1,279 in 2013 and $1,264 in 2014) without compromising maintenance quality. (A balance must occur between costs and cleaning quality.)

APS is again near the top in the average amount of time it takes to complete a work order. And as the District is working overtime in reducing its electric cost, ranking in the first quartile in electricity use per student is gratifying. *(See the M&O portion of the 2014 Report in the Appendices beginning on page 97.)*

■ **Graffiti continues its downward trajectory**

While it is credulous to expect that the marring of APS property by pernicious vandals to ever be completely eradicated, the District celebrates its continued success in reducing the destruction – an inspiring 57.5% decrease since 2007 and 9.0% decline over last year. It isn't happening by accident. Improved exterior lighting, school awareness programs, and security measures (cameras and vigilant APS Police patrols), neighborhood watch programs, and social media are credited.

GRAFFITI



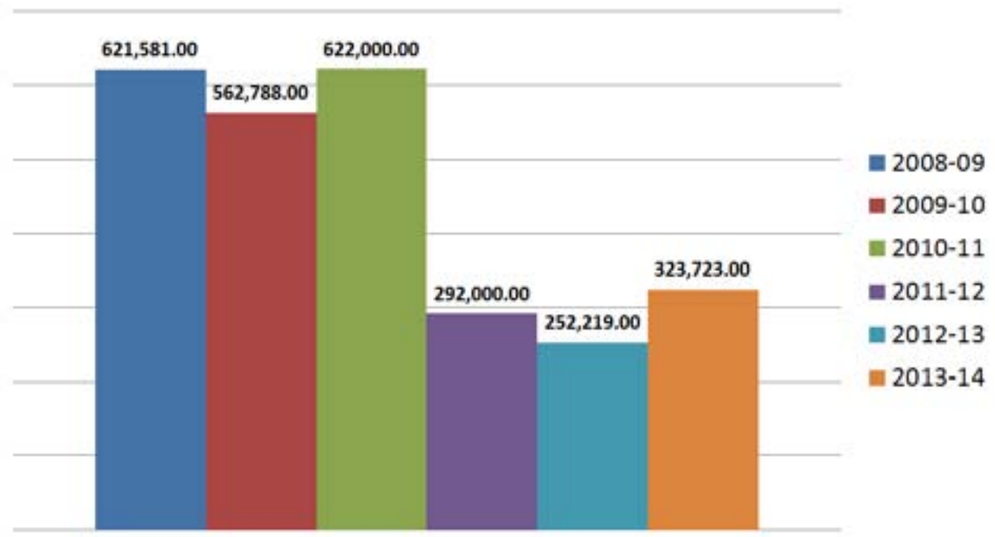
■ **Vandalism strikes down but price up**

In the 2013-14 fiscal year, the District responded to far fewer vandalism calls – 1,161 (21.8% fewer than the previous year) – but the cost ($323,723 excluding property loss) of the senseless ruin rose a disappointing 28.3% over the previous year. As predicted, copper thefts continued. The loss of the valuable copper is actually minor relative to the many times more costly damage to electrical systems and disruption to classroom activity and school operations that the crime causes. As the matter of copper theft has been of major concern throughout the city and state, officials are lobbying to make it a more serious criminal offense as well as for better enforcement of existing rules in buying used copper. Vandalism work orders dropping from four to three a day since last year is a positive turn and the result of much effort on the part of M&O and APS Police to deter it. ***Note:*** *Damage to Zia Elementary school, discussed on page 24, caused by vandalism represents the single highest repair cost at $375,000.*

The dramatic 53% decline in vandalism that happened in the 2011-12 fiscal year, illustrated in the following graph, was the result of a major campaign by the APS Communications/Public Information Office working with local news media. And as with graffiti, stepped up APS Policing efforts and a much heightened emphasis on security are also credited.

KIDS ZONE

Vandalism Costs 2008-09 — 2013-14



■ **Upgraded the *quality* of SchoolDude data entry**

Every year M&O staff members have stepped up their actual use of the SchoolDude work order system. In the 2013-14 fiscal year, however, a greater emphasis was placed on the quality of data (figures) entered into the system. The better quality control has resulted in each Department being more accountable and a higher level of confidence in the cost and labor hours totals, most notably in the HVAC Shop and Fleet Maintenance and Environment Management Departments.

■ **2014 Preventive Maintenance Management Plan completed and accepted by PSFA**

The Public School Facilities Authority, a division of the State Public Education Department, requires all New Mexico public school systems to annually document and present their district's preventive maintenance plan to the PSFA as well as to the New Mexico Public School Capital Outlay Council (PSCOC). Each year's Plan outlines preventive maintenance achievements, challenges and obstacles, and future goals, in providing a strategy for future improvement. The evaluation marks (low to high) of the Plan also determines some allocation of state funds towards districts' maintenance function.

■ **Drafting of department procedures manuals 88% completed**

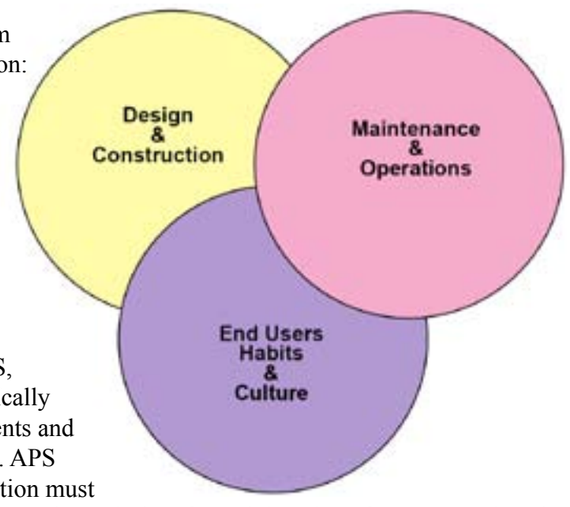
In 2011, M&O began the time intensive project of drafting procedures manuals for each of the eight departments as well as the M&O Warehouse. In the 2013-14 FY the Grounds Department was completed leaving only the Environmental Management manual to be finalized (in progress) and the Executive Director function to be drafted. Each manual enables the smooth operations of schools and other District facilities and aids understanding between all parties involved in work requests and APS policies.

APS' ENERGY CONSERVATION PROGRAM

The District energy conservation program encompasses most all of M&O (most notably the Electrical and Mechanical Departments and Energy Conservation office) APS' Water & Energy Conservation Committee (WECC). Conservation efforts are supported by leadership from Facilities Design + Construction; the Finance, Capital Master Plan, and Information Technology Divisions; and public utilities.

Last year's Report introduced the founding (in September 2013) of WECC represented by key APS personnel as well as municipal utility representatives and community leaders that include business and trade organizations. WECC is charged with identifying and implementing conservation opportunities District wide. The unfolding program incorporates new and existing equipment operation and use; educational outreach and behavioral practices throughout APS; and the indispensable involvement of the various gas, electric, and water utilities that serve the District. For M&O personnel, this means evaluating energy use and conservation opportunities (including that contributed by mechanical and electrical systems) and water sustainability. M&O's role also includes developing a strategy to eliminate electric waste and demand charges and positively influence occupant equipment use.

The transpiring District wide mandatory program consists of three intersecting areas of conservation: 1) new building design and construction; 2) recurring maintenance; and 3) the operational habits and culture of the end user. And it is where these three facets intersect that a balanced approach and the most beneficial energy conservation efforts will be seized, while maintaining sensible environments conducive to learning.



In developing a "culture of conservation" at APS, WECC's reach is broad and widening, most critically expanding to include a growing number of students and staff members excited to participate in the effort. APS recognizes that developing a culture of conservation must incorporate *sustainability* strategies in order to attain enduring financial and performance enhancing benefits. As such, M&O and WECC are focused on laying the foundation for promoting a conservation culture that includes viable sustainability initiatives that permeate every classroom, office, and athletic field and every individual who occupies these spaces. In addition, APS' long standing Energy STARS (Schools Teaching About Resource Sustainability) program is currently being reinvigorated as an integral and mandatory part of District wide energy conservation efforts.

■ **WECC's progress update**

• *Water Use*

APS is working closely with the Albuquerque Bernalillo County Water Utility Authority (ABCWUA) in reducing water use District wide. ABCWUA is carrying out the following initiatives:

- Conducting water use audits throughout the District and reporting results to APS. The M&O Grounds Department is adjusting water use based on audit findings.
- Installing automatic meters that monitor water use every hour. Schools view the use measurements online as well as receive "alerts" from the utility when the meter indicates over-use.
- Assisting APS in improving water allocation methods in keeping athletic fields green *without* accumulating extra surcharges.

In addition, APS is notifying ABCWUA of new construction and water installations in progress so that the water budget can be adjusted and surcharges avoided.

• *Electric Use*

APS uses over 100 million kilowatts per year at a cost of $30,000 a day. Due to the addition of new schools and expanded existing campuses, the new west side APS Community Stadium, and a ceaseless increase in technology use, usage has increased more than 11% in the last five years. WECC is committed to reaching the ambitious yet achievable goal of reducing APS' electric costs.

- In the 2013-14 fiscal year, WECC began determining a Baseline for APS buildings to use as a reference point against which to measure efficiency improvements and conservation efforts. This Energy Use Index measures energy output per square foot at buildings throughout the District and is expected to be completed by 2016 (in progress).
- APS has completed 77 energy efficient projects since 2009 resulting in:
  - 6,634,116 kilowatts in electric savings.
  - $541,137 in rebates from PNM's business energy efficiency programs.
- APS saves approximately $634,000 annually by participating in these energy saving programs. Subtracting 7% savings through rebate programs from the 11% increase in usage translates to approximately a 4% net increase in costs.
- FD+C is increasingly adding more solar panels to construction projects. Beginning with the new APS Community Stadium on Albuquerque's west side opened in the fall 2013, and the new classroom addition at McKinley Middle School currently in design, FD+C is installing solar photovoltaic (PV) panels on all new buildings. PV panels are installed at Adobe Acres and Chaparral Elementary Schools, Del Norte High School (in progress), and RFK Charter High School.
  - ☼ According to the utility figures compiled from September 2013 through March 2014, the Solar Array system at the APS Community Stadium (360 panels) produced an average of 8850 kilowatts per month, amounting to approximately 15% of the site's total load. In addition to PV generation offsetting electricity that would otherwise be pulled from the grid, PNM is returning $.5 per kilowatt for the PV generated energy. The Stadium's panel system production can be monitored at **www.solrenview.com** and keying in "Community Stadium" for location.

- The District is also partnering with PNM in reducing electric costs and use. APS is currently in discussion with the utility's representative on WECC regarding electric energy audits conducted by Energy Service Companies (ESCO). A new PNM program will reimburse audit costs if the ESCO's recommendations are strictly adhered to.

- The Facilities Design + Construction Division has dialed up striving for PNM rebates including now requiring that contractors submit rebate programs associated with new APS construction as part of their contract. Additionally, the Division is working with PNM in getting rebates on several new construction projects completed in recent years and plans to apply for new Gas Company of New Mexico rebates in 2014-15.

- M&O is testing a new program at Alvarado Elementary School that is changing high energy-use lighting to LED. Changing outdoor perimeter lighting at City Center to LED has been completed.

- As discussed throughout this Report, M&O has also begun measures in reducing PNM peak-use demand charges − a top priority.

WECC's policy/goal recommended to the APS Board of Education (Fall 2014)

In conjunction with the APS Citizens' Capital Advisory Commission, the members of WECC recommended that the Board of Education adopt the following policy:

> *Albuquerque Public Schools shall reduce net water consumption by twenty percent (20%) and net energy consumption by twenty percent (20%) by the end of the 2023-2024 school year as compared to an established 2013-2014 school year baseline. To support this effort, the Superintendent shall ensure full commitment by all employees and involved entities, including administrators, teachers, students, support personnel, contractors, suppliers, and communities using APS facilities.*
>
> *For purposes of this policy, "consumption" means the overall units of consumption. For water consumption, the unit of measure shall be* ***total gallons per student****, calculated in whole for the entire school District. Number of students for each year shall be the Fortieth Day Student Enrollment as reported by APS Capital Master Plan. For energy consumption, the unit of measure shall be kBtu per square foot, also known as EUI (Energy Usage Intensity), calculated in whole for the entire school District:* ***[total kBtu*** *(British thermal unit)] /* ***[total square footage].*** *This includes both electricity and natural gas, normalized to a common unit of energy.*

The 20% reduction will be based on overall units of consumption rather than dollars and include only occupied spaces and irrigated areas. Progress reports will be provided to the Board of Education annually, along with other comparative metrics.

WECC believes adoption of the policy is imperative for the following reasons:

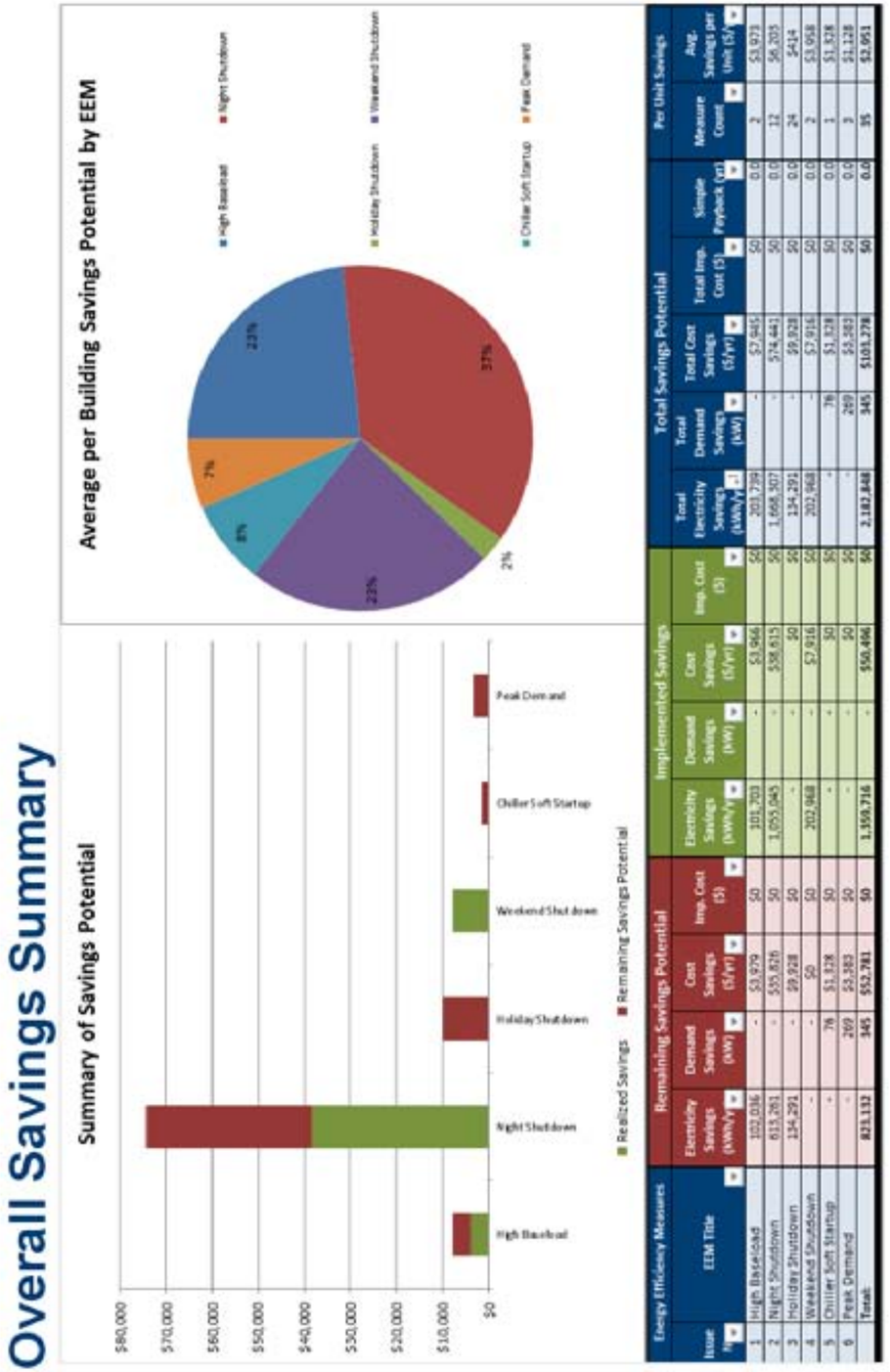
1. Energy concerns are a top priority for APS, currently costing the District approximately $19.6 million annually.
2. The management of energy is recognized as a local, state, national, and global concern, both fiscally and environmentally.
3. The escalation in utility rates and energy demand makes APS' current building operations unsustainable.
4. Water is New Mexico's most essential natural resource and needs to be protected.
5. Opportunities exist in all of APS facilities to reduce both energy and water waste when addressed through best practices and efficiency measures.

■ Electric forensic pilot program completed and electric savings started

In the previous fiscal year, APS launched an energy audit utilizing the three prototype elementary schools for the initial study followed by implementing an energy monitoring program of the District's top 20 high energy use schools. The international energy conservation consulting company, EnerNOC, provided the cutting edge portable tracking devices that monitor use pattern diagnostics of the HVAC systems, appliances, and technologies in isolating and identifying those that were unnecessarily high energy hogs.

With the pilot completed, addressing the findings began in the 2013-14 fiscal year and is continuing. The APS EnerNOC representative is working closely with M&O in reporting their findings to APS management monthly. Each monthly "scorecard" generated by EnerNOC indicates how every audited system is performing and guides M&O technicians in making the necessary adjustments to offending equipment for optimal performance. The tweaking, from minor to major, reduces the electrical output to reasonable levels.

The initial scorecard provided a summary of savings potential in six areas totaling 100%. ***Night Shutdown*** of systems provides the biggest opportunity for savings at 37% followed by ***High Baseload*** (daytime) at 23% and ***Weekend Shutdown*** of systems, also 23%. Amending the morning ***Chiller Start-Up*** of systems from simply flipping an on-switch to a soft start (revving the equipment up slowly) provides a potential savings of 8%. The findings indicate a 7% savings opportunity in lowering ***Peak Demand*** electric use during the highest electricity need/use part of the day. This mere 7% in electric savings is deceptive as the cost value of that 7% is *many* times greater as PNM's Peak Demand punitive charges are astronomical. Lastly, reducing systems down to hibernation during ***Holiday Shutdown*** presents a potential of saving 2% of electricity and is the easiest to do. Should an emergency arise, such as subfreezing temperatures, the systems are programmed to kick in. Though 2% seems nominal, it adds up to a great deal of dollars and kilowatts banked. The chart on the following page indicates an overall potential cost savings of $103,278 in a single year. Next year's Report will reveal more savings, but to date, the District has realized $50,496 in saved costs and the potential to save an additional $52,781.



Energy Efficiency Measures		Implemented Savings				Remaining Savings Potential				Total Savings Potential					Per Unit Savings	
Issue No.	EEM Title	Electricity Savings (kWh/yr)	Demand Savings (kW)	Cost Savings ($/yr)	Imp. Cost ($)	Electricity Savings (kWh/yr)	Demand Savings (kW)	Cost Savings ($/yr)	Imp. Cost ($)	Total Electricity Savings (kWh/yr)	Total Demand Savings (kW)	Total Cost Savings ($/yr)	Total Imp. Cost ($)	Simple Payback (yr)	Measure Count	Avg. Savings per Unit ($/yr)
1	High Baseload	-	-	$0	$0	102,036	-	$3,979	$0	102,036	-	$3,979	$0	0.0	2	$1,973
2	Night Shutdown	-	-	$0	$0	613,261	-	$35,826	$0	613,261	-	$35,826	$0	0.0	11	$6,205
3	Holiday Shutdown	-	-	$0	$0	124,291	-	$9,928	$0	124,291	-	$9,928	$0	0.0	24	$414
4	Weekend Shutdown	-	-	$0	$0	202,988	-	$7,916	$0	202,988	-	$7,916	$0	0.0	2	$3,958
5	Chiller Soft Startup	-	+	$0	$0	-	76	$1,328	$0	-	76	$1,328	$0	0.0	1	$1,328
6	Peak Demand	-	-	$0	$0	-	269	$3,383	$0	-	269	$3,383	$0	0.0	3	$1,128
	Totals			$0	$0	823,132	345	$52,781	$0	1,169,776	345	$103,278	$0	0.0	35	$2,951

The invaluable forensic program has already paid for itself as M&O has been working industriously in making adjustments and comparing the results to pre-adjustments findings. The following graph showcases the tremendous Baseload reduction savings potential ($7,900) at just three elementary schools between July and November.

Baseload Reduction Savings						
School	July Baseload	September Baseload (kW)	October Baseload (kW)	November Baseload (kW)	Energy Savings (kWh)	Cost Savings ($)
Tierra Antigua	44	43	40	43	-	-
Sunset View	78	79	62	53	100,522	$3,920
Rudolpho Anaya	69	77	68	72	102,036	$3,979
Total					202,558	$7,900

Shutting systems down at 11 schools at night resulted in 613,261 of saved kilowatts at a spared cost of $35,826. Not all adjustments are to equipment, but rather behavioral on the part of occupants and custodians, such as all lights manually shut down at the end of the school day.

Night Shutdown

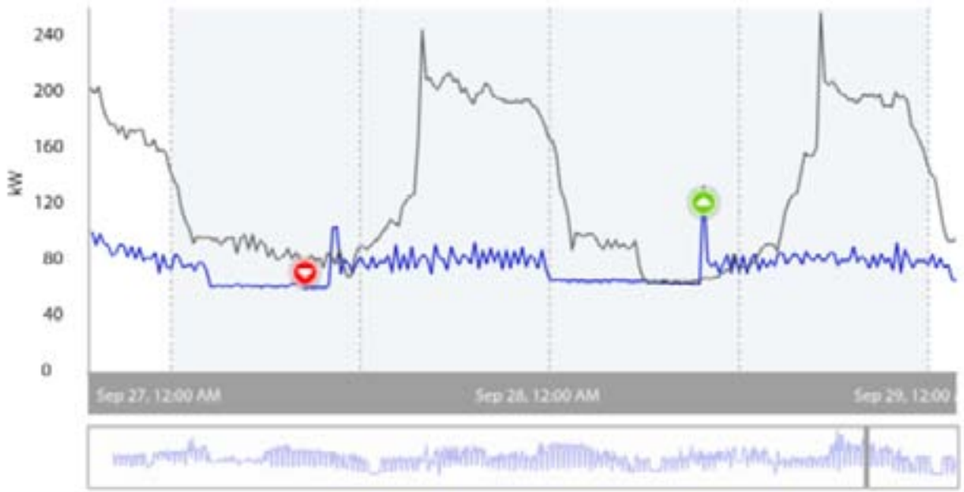
Site	Target Shutdown Percentage	Minimum Demand (kW)	Potential Consumption Savings (kWh)	Consumption Charge ($/kWh)	Potential Cost Savings
Albuquerque High	76%	147	103,741	$0.06	$3,797
Atrisco Heritage	78%	207	139,470	$0.06	$8,121
Cibola	67%	148	67,876	$0.06	$3,952
Eldorado	71%	147	36,585	$0.06	$2,130
Jimmy Carter	73%	52	39,029	$0.08	$3,032
Rudolpho Anaya	65%	62	10,605	$0.08	$824
Sunset View	67%	47	17,351	$0.08	$1,348
Tierra Antigua	87%	24	14,680	$0.08	$1,140
Tony Hillerman	85%	38	39,722	$0.08	$3,086
Volcano Vista	80%	159	112,629	$0.06	$6,558
West Mesa	70%	147	31,573	$0.06	$1,838
Total	-	-	613,261	-	$35,826

The following graph illustrates the percentage increase of electricity saved in December 2014 over the same month in 2013.

Nightly Average System Shutdown December 2014/2013		
Site	December 2014	December 2013
Atrisco Heritage	54%	44%
Volcano Vista	61%	36%
Albuquerque High	48%	51%
Cibola	61%	52%
Tony Hillerman	83%	36%
Jimmy Carter	54%	53%
Eldorado	64%	60%
West Mesa	65%	60%
Tierra Antigua	74%	62%
Sunset View	61%	50%
Rudolpho Anaya	57%	50%
Delnorte High	48%	48%
All Sites Average	61%	50%

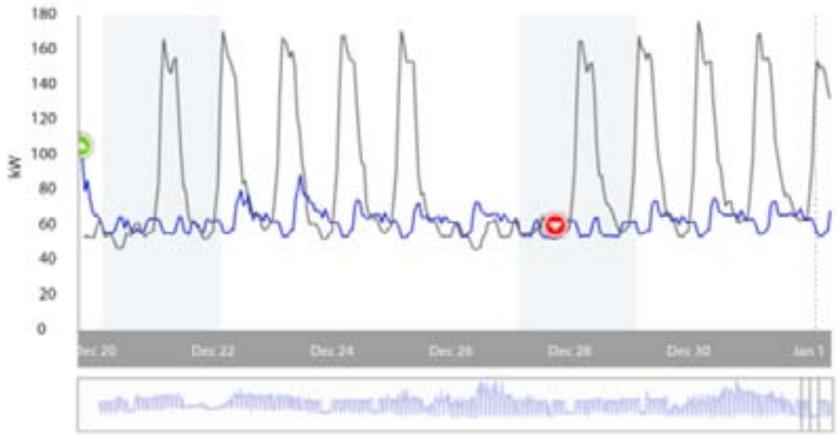
The following examples illustrate the substantial electricity saved in shutting down systems when not in use. In this first example, the black line represents electric use in 2013 and the blue line represents night use in 2014 at Sunset View Elementary over the same few days in both years. The white space between the lines is the electric savings realized in September 2014 over the same days in 2013.

Sunset View Elementary School 12-27-13 — 12-29-14



This next graph represents the holiday shutdown for Rudolph Anaya Elementary School during APS' Winter Break while school was not in session in 2013 and 2014. The black line is 2013 and blue is 2014. Night shut down was carried out both years, but obviously a much improved process in 2014 saved a tremendous amount of electric energy.

Energy Profiling Albuquerque Public Schools > APS Elementary Schools > APS - Rudolpho Anaya - PNM

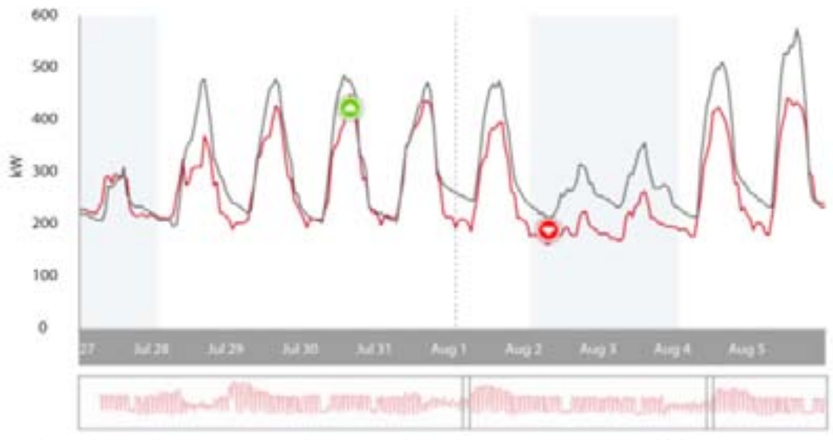


The graph below is a 48-hour comparison between 2013 and 2014. The black line represents a more instantaneous start-up of systems in 2013 and the 2014 blue line shows the improved softer rolling start-up, reducing the high spikes and avoiding demand charges due to the lessor surge.

Energy Profiling Albuquerque Public Schools > APS High Schools > APS - Atrisco Heritage – PNM

The following graph shows energy savings between the black 2013 line and red 2014 line at Eldorado High School over the same ten days in both years. The white space represents the improvement in energy consumption in 2014.

Energy Profiling Albuquerque Public Schools > APS High Schools > APS - Eldorado – PNM



(See other benchmarking illustrations in the Appendices beginning on page 121.)

▪ APS leading in Energy Star® Ratings

Energy Star is the EPA's national yardstick for measuring and evaluating building performance across the country. It uses a numerical scoring scheme (1-100) that ranks a building's energy efficiency among those of similar type, showing exactly where each falls compared to the others. To be considered Energy Star Certified, a facility must rate in the upper quartile (a score of 75 or better) of all buildings in its category as evaluated by a licensed Professional Engineer. An Energy Star score is provided by Portfolio Manager *(see next Highlight)*. The District is then responsible for underwriting the costs and applying for certification. The District has high energy performing schools that aren't certified due to the needed funding for the certification process.

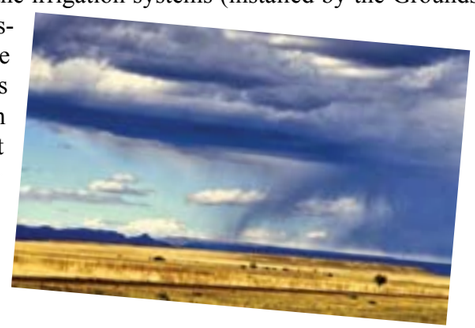
To date, APS has 84 sites that have achieved Energy Star Certification leading the way for very strong national recognition for Albuquerque and the state. In 2013 — for the first time ever — Albuquerque was honored to rank among the Top 25 Cities in the U.S. for the number of certified buildings. At 22nd, Albuquerque beat out strong contenders like Kansas City, Missouri, Riverside, California, and even the radically green Portland, Oregon. And New Mexico ranks third in the nation in percentage of Energy Star Certified schools. The state's total is 17%, and APS' contribution is just over 60% of school campuses.

▪ EPA Energy Star® Portfolio Manager

In recent years M&O has participated in an APS' Facilities Design + Construction Division program operated by Bridgers & Paxton Consulting Engineers, Inc. in installing and implementing the Environmental Protection Agency's Portfolio Manager measuring system into APS schools. Portfolio Manager is an interactive energy management tool operated online (password protected) to track and measure water and energy use across an entire portfolio of facilities. The program, which includes comparisons against the nationwide database of similar facilities, is assisting M&O in rating buildings' energy performance to better manage under-performing facilities and schools. And a new automated process was adopted that will utilize the Facilities Design + Construction database to update the Energy Star Portfolio Manager with the latest utility and square footage data on a monthly basis. The automatic process started in January 2014 greatly reduces the work and cost of re-submitting Energy Star data for certification.

▪ Rain Barrel Garden Program

APS joined hands with Bernalillo County Public Works (BCPW) in this educational "Kids Garden" program that waters schools' gardens and teaches kids how to plant and care for a raised garden. The students also learn the importance of water conservation and the benefits of homegrown versus store bought. Two high schools, three middle schools, 16 elementary schools, and several alternative schools are participating in the BCPW program that provided 100-gallon rain barrels to water the gardens following rainfalls rather than unnecessarily taping into the irrigation systems (installed by the Grounds Department's Irrigation Shop). BCPW conducted a hands-on workshop that included recommendations to conserve water and a water efficient irrigation survey that measures water use. The student growers are rewarded not only with an enjoyable and hands-on educational experience, but also with a supply of fresh vegetables to share with their families.



▪ PNM Electricity Conservation Rebate Programs

The utility is favorably motivated to provide rebates to their customers by the federal decree that public utilities diminish their environmental footprint as well as promote alternative sustainable resources. The District is glad to take advantage of the opportunity to participate in saving Mother Earth and electric expenses through the rebate programs featured below. PNM contracts with DNV•GL, a global energy consultancy company offering energy value services, in providing rebates to PNM customers. DNV•GL measures energy use for PNM who then provides rebates on a yearly basis.

• ***Peak Saver*** (June – September) — This rebate program is designed for large commercial electricity users. EnerNOC signals PNM when high electricity demand has reached a point of threatening a total brownout. The utility then alerts APS to shut off air conditioning units at low occupancy school sites and facilities during the summer. PNM compensated APS $53,461 in 2013-14, almost $3.5 thousand more than the previous year. PNM also realizes a cut of the electric savings from EnerNOC.

• ***Power Saver*** (June – August) — In participating in this rebate program, APS grants permission to PNM to shut down small cooling systems should a dearth of electricity occur in the Albuquerque area during high demand. PNM contracts with Comverge, an energy management consulting company that provides "demand response" sophisticated software to utilities and their customers in resolving high demand issues. The software monitors and controls standalone cooling systems used in classrooms and offices. The District received $4,089 in rebates in 2013-14, a 22.8% drop over the previous year due to more small school spaces utilized for summer program opportunities. While the District strives to save energy, it's never at the cost of student activity.

• ***Business Energy Efficiency*** — Rebates are awarded to APS for converting high energy lighting to efficient lighting District wide. Retrofits carried out at Marie Hughes, East San Jose, Los Ranchos, Chaparral, and Carlos Rey Elementary Schools; Van Buren and Polk Middle Schools; and Eldorado and La Cueva High Schools in 2014 resulted in a $33,587 rebate from PNM. The annual kilowatt savings was 439,304.

▪ Gas Company of New Mexico Conservation Rebate Programs

The local gas utility works with APS in identifying high energy furnaces, hot water heaters, and appliances and rewards the District for improving the efficiency of existing systems or replacing the most egregious equipment. In 2013-14, boilers were replaced at several elementary schools and many more were calibrated for better performance; Energy Star convection ovens were installed at six school cafeterias; and low-flow water aerators and spray valves that reduce the need to heat water were added at numerous school campuses. For this effort, 56,922 therms (unit of heat) and 2,900,502 gallons of water were saved and the rebate paid to APS was $23,192!

▪ Alternative Fuels Challenge

The 8th Annual Alternative Fuels Challenge, led by Ron Rioux of the APS Energy Conservation Program, was held on Saturday, November 16, 2013 and included 43 teams represented by 28 schools from across the state. The Challenge was developed to provide a hands-on opportunity for students to understand the need for renewable energy sources and explore the emerging technology of alternative power choices. It was the final year for hydrogen fueled model cars as the next event will feature electric powered cars.

Every year the Challenge provides competitive fun during which the students incorporate applied science and engineering skills and think creatively in building a model hydrogen fueled car; preparing and orally presenting their model and findings; and racing the team's model. Students learn that there is no single correct answer but rather a number of creative ideas to develop, test, and modify. Science teachers and team coaches nurture the excitement to learn, team build, and friendly but spirited competition. In preparation of the competition, APS conducted full-day workshops (in Albuquerque, Roswell, and Espanola) to educate the participating team teachers about hydrogen and how to guide their students in first designing and then constructing a hydrogen-powered model car.

Sponsored prize money was awarded to the top three overall teams ($750 for first, $500 for second, and $250 for third place) and applied to the teachers' budgets to fund energy conservation teaching materials. In addition to APS, the greatly appreciated sponsors included Sandia National Laboratories, Los Alamos National Laboratory, PNM, and Los Alamos National Security.

▪ City Center Paper Recycling Program

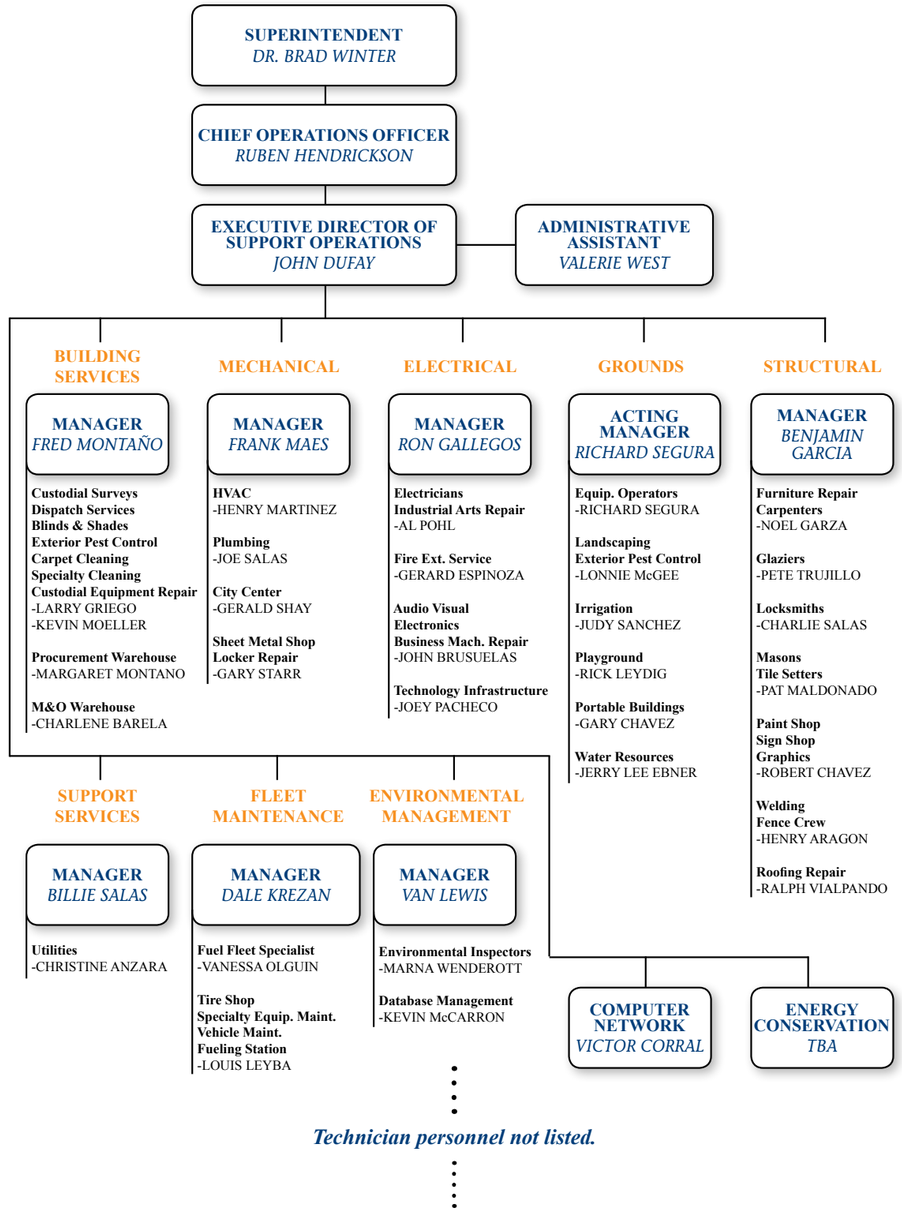
Since City Center, the facility that houses most of the District's administrative personnel, began its recycling program in 2011-12 it has gained impetus with every year. In the 2013-14 fiscal year, staff recycled 9.2 tons of paper, a 58.6% increase over two years ago and 21.9% increase over last year. More and more staff members are participating, made easy by the convenient receptacle for paper recycling provided at every desk. Cardboard requires more effort as boxes need to be flattened and dropped into large depositories centrally located throughout City Center. And staff members are making the effort to do just that, realizing a mammoth increase in cardboard recycling of 123% over the previous year!

	2011-12	2012-13	2013-14
Recycled paper	5.8 tons	7.6 tons	9.2 tons
Recycled Cardboard	unrecorded	1.3 tons	2.9 tons

The recycled paper alone translates to the saving of 156.51 trees; 64,445.5 gallons of water; 27.61 cubic yards of landfill; 18.41 barrels of oil; 67,746.65 kilowatt-hours of electricity; and 552.39 pounds of reduced air admissions.

SERVICE DEPARTMENTS

M&O's following eight integrated departments endeavor to provide the highest possible support of the education process through the reliable delivery of excellent maintenance in District schools and administrative facilities: Mechanical, Grounds, Structural, Electrical, Building Services, Fleet Maintenance, Environmental, and Support Services.



MECHANICAL

Frank Maes, Manager (21 years with Department, 12 years as Manager)
33 technicians and support personnel (down 3 from last year)

Mechanical Craft Shops include HVAC (heating, ventilating, and air conditioning); Sheet Metal (duct work, exhaust vents, venting hot water heaters, installing ceiling grills, installing air conditioning units, and locker repair); and Plumbing (domestic water, gas, and sewer maintenance).

Every M&O service department provides a necessary function in contributing to the learning process, no doubt. However, the educational day does not skip a beat due to a cracked sidewalk or broken window blinds. No heat in January, however, abruptly ends the education process and no cooling in August causes languid and inattentive students, at best. Simply stated, schools *cannot function* without mechanical and plumbing systems' functioning properly *all the time*, *year round*; they are irrefutably the pivotal hub of facilities management. The Department focuses on continual scheduled systems inspections and maintenance in "controlling" reactive work, as these perpetually demanding work orders are more costly and urgent than the vast majority of others. Mechanical technicians know their roles, whether they work in HVAC, plumbing, or sheet rock – provide all students, faculty, and staff with clean, safe, and comfortable environments *every day, all day,* no exceptions. This requires ceaselessly staying abreast of over 50,000 pieces of mechanical equipment that provide comfortable environments suitable to learning.

The Department's all-encompassing PM program (aided by contractors) ensures that HVAC systems are inspected monthly, quarterly, or annually (depending on usage). Sophisticated controls (and becoming more so annually) allow for optimum conditions and comfort and are continually monitored via the Internet. Safety inspections are conducted monthly on all fire protection sprinkler systems, kitchen hood fire suppressant systems, and boiler systems. As only vandalism results in needed locker repairs, the one-man Locker Repair Shop is the only craft not on a preventive maintenance program.

✓ Highlights

Executed new "per unit" fee contracts
Previously, M&O paid an hourly rate ($60 – $70 per hour) for air coolers' prep, start-up, and walk-through PM work. Under new contract agreements with three vendors, APS will now pay a per unit fee ($40 – $45) which is expected to cut down on the time spent to do the task. As this was launched at the end of the 2013-14 fiscal year, results are not yet known, but will be monitored closely and conveyed in the next Year End Report.

Mechanical staff participating in new systems selection process
As the FD+C Division continues to build additions as well as total rebuilds on APS campuses, the more complex and cutting edge the mechanical designs and options become. Department personnel have become indispensable partners in the new construction process regarding making the smartest possible mechanical systems choices that will be cost and time efficient to maintain and service and deliver top performance throughout the equipment's expected life cycles. The Mechanical Department Manager and FD+C's HVAC engineer have also teamed up in reviewing new construction and remodeling project specifications by calling out for the best value and best performing products in the market.

Participated in the design of VRF and DDC HVAC systems at various APS sites
Heating and cooling variable refrigerant flow systems and direct digital controls (low voltage electronics on heating and cooling systems individually operated via the APS Intranet) save energy, maintenance labor hours, and ultimately costs. Department leadership has been involved in the design and installation of these systems in numerous new FD+C projects. In the 2013-14 fiscal year, these include: Arroyo del Oso, Dolores Gonzales, and Wherry Elementary Schools in addition to a whole new system at Mountain View Elementary School; 9th grade academy and gym at Rio Grande High School; Ernie Pyle Middle School; and the new PreK – 8 school under construction on Albuquerque's west side.

Corrected existing VRF systems improperly installed
At the cost of the building contractor, the HVAC Shop electrical technicians re-wired the VRF systems that were mistakenly installed at the new Rio Grande ISP Building by the general contractor. Unfortunately, a similar situation occurred at the Valley High School Industrial Arts Building which also required correction by HVAC and Electrical Shop technicians. Both are now working properly.

Department Manager contributed to the selection and design of ground source heat pump systems installed at select sites
The innovative heating and cooling system buried 200-300 feet underground draws natural deep-earth warmth to heat *and* cool (using a reversing valve) facilities. The sites that have received ground source systems to date include Helen Cordero and Susie Rayos Marmon Elementary Schools, Desert Willow Family School, and the award winning APS Community Stadium.

Technicians trained on new systems
HVAC technicians received training on DDC and VRF systems, qualifying more personnel to proficiently work on this advantageous equipment being integrated into the District. This type of professional development will continue throughout the current fiscal year.

Half of the Plumbing Shop technicians completed training and are now certified to perform inspection and testing of new model backflow prevention devices. This will allow more work to be carried out in-house rather than outsourcing. When all have been trained and certified *(see 2014-15 Goal on the following page)* four gages, one per quadrant, will be purchased to perform the task at smaller schools. The larger schools will continue to be serviced by contractors.

Boilers replaced at select schools
Old hot water (hydronic heating) boilers that simply outlived their life cycle were replaced at Eubank, Villa Vista, and Duranes Elementary Schools. The Department will continue to upgrade and replace old systems as life cycles are realized.

Steam boilers converted to hot water boilers at two schools
Accomplished at Mission and Wherry Elementary Schools leaving seven yet to be converted. At least Highland High School will be achieved in the 2014-15 fiscal year.

Heating and cooling unit at Valley High School replaced
The multi-zone unit was replaced at the school's Performing Arts Center substantially improving the comfort in the building.

Cooling tower at Data Charter High School renewed
The Department upgraded the old system as well as replaced the cooling tower. The refrigeration system is now operating more reliably and efficiently.

Plumbing systems at select school sites upgraded
Uneconomic or worn out plumbing systems necessitated replacements:

. New domestic water line at Mitchell Elementary School.
. Complete gas line replacement at Osuna Elementary School and Sandia High School Administration Building.

Plumbing Shop steadily grows PM
The Plumbing Shop realized only a slight decrease in reactive work but a 7% improvement in preventive maintenance work over the previous year due to the new hot water heaters' PM.

. Check temperature and pressure valve.
. Drain hot water heater.
. Check burner to confirm proper venting.
. Check that pumps are working properly.

As the following bar graph illustrates, the Shop has upheld continuous growth in its PM program – 1597.5% since 2007!

PLUMBING SHOP

Plumbing

Fiscal Year	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Reactive Work Orders	5,868	6,093	5,946	6,807	6,993	5,601	6,058	6,000
Preventive Maintenance	40	61	165	344	621	627	634	679
Total Work Order For Fiscal Year	5,868	6,154	6,111	6,151	6,689	6,228	6,692	6,685
PM Count Ratio	1%	1%	3%	5%	10%	11%	10%	11%
Completed Or Closed PM Work Orders	40	61	137	290	394	454	441	430
PM Completion Rate By Craft	100%	100%	83%	81%	63%	79%	70%	72%

Fiscal Year	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
All Maintenance Cost	$ 1,200,698.58	$ 1,061,560.76	$ 907,390.44	$ 1,130,062.63	$ 1,038,568.59	$ 934,647.10	$ 1,068,832.81	$1,202,344.26
Preventative Maintenance Cost	$ 28,496.84	$ 60,948.66	$ 166,868.62	$ 186,868.63	$ 42,773.94	$ 129,762.37	$ 87,436.31	$ 91,964.26
PM Cost Ratio	2.54%	5.74%	18.58%	16.45%	4.12%	13.88%	8.19%	7.65%

Existing PM Program Depicted In Red

Fire sprinkler inspections and repairs performed faster
The fire sprinkler technicians realized a 5.4% increase in work orders over the previous year yet completed and closed WOs a more efficient 16.2% quicker.

FIRE SPRINKLER SYSTEMS

Total No Of WOs For FY 07	Total No Of WOs For FY 08	Total No Of WOs For FY 09	Total No Of WOs For FY 10	Total No Of WOs For FY 11	Total No Of WOs For FY 12	Total No Of WOs For FY 13	Total No Of WOs For FY 14
17	9	334	408	443	520	422	445

Average Days Aged For FY 07	Average Days Aged For FY 08	Average Days Aged For FY 09	Average Days Aged For FY 10	Average Days Aged For FY 11	Average Days Aged For FY 12	Average Days Aged For FY 13	Average Days Aged For FY 14
42.17	9.67	64.40	76.62	84.50	55.59	72.73	60.52

The guys have been phenomenal! When our boiler went down John Dufay was on the ball. We had *one* emergency call that wasn't taken care of in a timely manner: our plumbing backing up, spilling over and halls smelling of sewage. Other than that, it's been great.

~ Response from M&O:
Crews immediately responded to the emergency status work order, repaired the plumbing, and cleaned up the spillage.

EUBANK ELEMENTARY SCHOOL

M&O staff is always very professional and helpful. Thank you for all you do.

TRUMAN MIDDLE SCHOOL

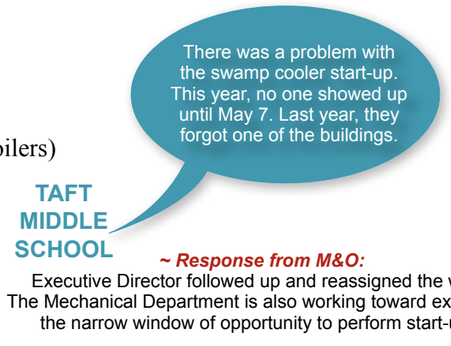
New PM Program

. Hot water heaters inspection and service (quarterly, *noted in previous Highlight*)

PM programs (on-going)

As HVAC and plumbing service inspections are unfunded state-mandated (code required), the Mechanical Department is ahead in developing PM programs; however, many of the following PM programs are not required. All PM work is automatically generated by the PM Direct work order system. PM work orders are scheduled monthly, bi-monthly, semi-annually, and annually (depending on use and function) and visual inspections are performed weekly. PM Direct inspection and/or service generated work orders include:

. Fire protection sprinkler systems
. Kitchen hood suppression systems
. Exhaust fans
. HVAC filter change-out
. AC equipment inspection and fully serviced (pads changed every other year)
. Spring AC start-ups (evaporative)
. Winterize AC shut-downs (evaporative)
. Cooling tower and chiller service
. Steam boiler service
. Steam boiler prep for winter heating
. All heating system start-ups (with and without boilers)
. Steam boilers layup
. Steam boilers (summer)
. Hot water boilers (summer)
. Hot water heaters
. Boiler inspections (visual, weekly)
. Chemical treatment for boilers and chillers
. Plumbing systems (annually, primarily summer)
. Water softener treatment
. Chlorinate treatment
. Plumbing inspections at all school sites (drains, faucets/fixtures, toilets, urinals, water fountains)
. Septic pumping and disposal
. Grease trap pumping
. Backflow testing and inspection / backflow prevention
. Air compressors
. Chillers
. Fire pump flow
. Dry pipe system drip test
. Chiller water closed-loop service
. Ground source closed-loop service
. Natural gas pipe run/inspection: Per the New Mexico Public Regulation Commission, by Congressional Mandate the Natural Gas Pipeline Safety act, all gas lines from the meter to the building, in accordance with Mandate (Docket PS-135, Amendment 192-3), all buried gas lines are to be periodically inspected for leakage and repaired if unsafe conditions are found. One third of APS gas lines are inspected on an every third year rotation (summer). APS pressure tests at 5 PSI or service line pressure, greases all gas stops, and repairs any gas lines as needed per the pressure test.



~ Response from M&O:

Executive Director followed up and reassigned the work. The Mechanical Department is also working toward expanding the narrow window of opportunity to perform start-ups.

× Special Challenge / Issue

~ SchoolDude HVAC numbers do not tell the true preventive maintenance story. While it is a worrisome problem that must be corrected, incorrect data is the lesser of the PM issues. All HVAC preventive maintenance *is* getting done and *that* is what is most important. Proper documentation of completed preventive maintenance work, however, has been a challenge. Nonetheless, progress is being demonstrated as more accountability has been placed on Supervisors and technicians to complete and forward paperwork in a timely manner. Contractors who have been slow in closing WOs have also been put on notice to perform SchoolDude data entry on a considerably improved timely and accurate basis or risk losing the work. The continued weekly review of work order data by the Executive Director has underscored the urgency for timely data entry that generates *accurate* results.

In addition, the SchoolDude Comptroller and Computer Network Administrator are providing assistance and streamlining the data collection and entry process.

GOALS

Status of 2013-14 Goals

~ Install VRF and DDC systems at Dolores Gonzales and Reginald Chavez Elementary Schools, Del Norte High School Industrial Arts Building, and the new Central Kitchen currently under construction. *Completed at Del Norte High School. In progress at Dolores Gonzales and Reginald Chavez Elementary Schools and at Central Kitchen still under construction.*

~ Hire qualified HVAC technicians. The Manager is hoping to rehire performance-proven former APS technicians and advance existing technicians. *Hired two but one has departed. Hope to replace.*

~ Add one more PM task in the HVAC shop (yet to be determined), and one in the Plumbing Shop (possibly hot water heater). *Completed in Plumbing Shop, not accomplished in HVAC. Moving current HVAC PM from contractors to in-house is more likely.*

~ Convert at least one or two of the nine pending steam boilers to hot water boilers. *Completed at Mission and Wherry Elementary Schools. Highland High School in planning.*

2014-15 Goals

~ Provide training to the remaining Plumbing technicians yet to be certified in backflow prevention inspection and testing.

~ Implement new Plumbing Shop PM to clean out sewer sanitary lines and storm drains with the jetter previously used only for emergencies. The jetter provides a high pressure washing system to address the heightened need as newer systems being connected to existing systems is resulting in increased backups. The PM for sewer lines will help reduce sewer back-up emergency calls dramatically.

~ Replace the multi-zone heating and cooling units at Del Norte High School's Performing Arts Center.

GROUNDS

Richard Segura, Acting Manager (34 years with District, and Acting Manager 2 years)
44 technicians and support personnel

Grounds Craft shops include Heavy Equipment Operators; Landscape Maintenance which includes Tree Trimming; Weed and Exterior Pest Control; Irrigation; Grounds Safety Inspection; Water Resources; Paving; Portable Maintenance; and Playground Maintenance and Repair.

The M&O Grounds Department is charged with providing safe, healthy, aesthetic, and purposeful outdoor common areas, playgrounds, sports fields, and learning environments that support students' achievement as well as preserve the District's assets. The upkeep of all schools' curb appeal also cultivates a sense of school pride certainly felt by the student population and their teachers and parents but also the neighboring communities.

Portable maintenance technicians provide exterior maintenance and access (including ADA) to approximately 1,600 portable classrooms. Landscape and Irrigation Shops maintain and irrigate the District's 360 plus acres of athletic fields, several hundred playgrounds, and tens of thousands of trees, drought tolerant shrubs and bushes, ornamental lawns, school summer gardens, and other vegetation.

The Playground Shop is dedicated to providing safe playground equipment and play areas throughout the District's 89 elementary schools, many having more than one playground. Inspections for safety compliance and necessary repairs, modification, or removal are performed on thousands of playground equipment on a scheduled basis. As the Shop's technicians are skilled and licensed welders, they also provide welding services to other Grounds Department Shops.

Horticultural pest control technicians eliminate unsightly weeds and uninvited pesky insects from outdoor learning and play spaces. But they are far more than weed and bug people. They are highly trained and licensed (by the NM Department of Agriculture) professionals educated in all areas of both approved and restricted chemical use. These include applicator certification and licensing, worker protection and safety, pesticide registration, protection of water and endangered species from pesticides, and complaint investigation. The NMDA ensures compliance with both federal and state laws related to agricultural and horticultural pesticides use. The technicians stay abreast of new chemical products and their use through continuing education curricula conducted by the NMDA.

The Heavy Equipment Shop provides support to other M&O technicians, such as plumbers and electricians, in performing repairs that would otherwise obstruct the educational day. Backhoe excavating is often required to provide access to piping and electrical wiring in need of repair that is more often than not urgent. The Shop also addresses ADA access issues, erosion control, and storm water drainage throughout the District's 2,900 plus acres. Heavy equipment operators are also responsible for maintaining the District's endless asphalt and paved surfaces (which includes 1,000 plus acres of parking lots), grading dirt tracks for student safety, snow removal, and the collection and delivery of sand, wood chips, and fill-dirt to playgrounds and other areas.

Portable maintenance technicians provide the exterior maintenance and access (including ADA) to over 1,600 portable classrooms throughout the District's schools.

We are very satisfied with the M&O service we get. Thank you for all you do for everyone.

VALLEY HIGH SCHOOL

✓ Highlights

Irrigation system at McKinley Middle School upgraded

As the antiquated irrigation system wasn't releasing an adequate amount of water, it was modified with the assistance of the Electrical Department electricians running wires and installing an electrical pole. A new booster pump was installed that has measurably improved water pressure and coverage without increasing water use.

Responsibility of added acreage

The District's steady growth results in added work for the Grounds' crews.

. Expanded campus at Montessori of the Rio Grande Charter School.
. South Valley Academy Charter School added a new athletic field and irrigation system (previously watered by ditch) as well as ornamental shrubs and grass surrounding buildings.

Running track at Eldorado High School upgraded

The running track was upgraded to remedy erosion issues. Major clean-up is no longer necessary following heavy rains.

Various restorations at Jefferson Middle School
The ancient irrigation system on the football field was replaced and the largely bald and weedy grass was remedied with new sod. The running track was also resurfaced and a new student drop-off loop, directed by FD+C, was constructed by a contractor working with M&O.

New athletic field installed at Chaparral Elementary School
As the existing field was torn down to make room for new construction on the campus, a whole new and improved athletic field was laid, also by a contractor working with M&O.

Drainage improvement at Volcano Vista High School
A drain was installed on the athletic field to divert ponding that previously impeded student sports activities. Subsurface volcanic rock proved to be a hindrance for proper drainage.

Athletic field sod repairs at select high schools
Badly worn patches on athletic fields required removing old sod and dirt and replacing with new at Rio Grande High School (a portion of the baseball field); softball and baseball fields at Cibola, Highland, West Mesa, and La Cueva High Schools; and baseball fields at Eldorado, Monzano, Albuquerque, and Atrisco Heritage Academy High Schools.

Football fields at three high schools reseeded
The ever important crown on the football fields at Atrisco Heritage Academy, Sandia, and La Cueva High Schools were reseeded and fenced off to keep foot traffic away. Crown (the center of the field) conditions have to be just right to allow for proper drainage. Rework of athletic fields throughout the District is a continuous activity and safety task.

Playground renovated at La Luz Elementary School
Renovation included a resurfacing of the asphalt and addition of new woodchips and playground equipment.

Paved surfaces repaired at select school sites
With the new crack sealer purchased a few years ago, the Department was able to conduct major asphalt repairs in-house, on time, and on budget saving tens of thousands of dollars.

. Tennis courts at Volcano Vista and Del Norte High Schools
. Surrounding playground at Hodgin Middle School
. Wilson Stadium parking lot
. Begin the repair of asphalt at portables area and playground access at Painted Sky Elementary School (to be completed in 2014-15 fiscal year)

Paving resurfaced at various sites
Complete resurfacing of the bus loop and front teacher parking lot was conducted at Alamosa Elementary School and playground areas at Pajarito and Griegos Elementary Schools.

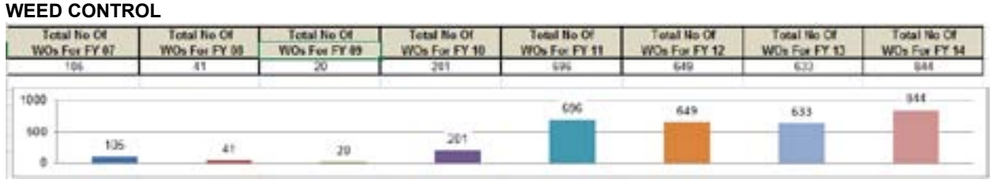
Major running track repairs at high schools
The track at Eldorado High School was resurfaced and a complete rebuild was started at Highland High School (to be completed in 2014-15 fiscal year). The project was outsourced and managed by the M&O Grounds Department.

Paving improvements at M&O Lincoln Complex completed
Improvements included a re-asphalt from the Grounds Department to the main street and laying a concrete slab for the dumpster area.

Grey water now exclusively used for irrigation at Van Buren Middle School
Working with the Water Authority, grey water irrigation systems were installed at the athletic field; disconnecting from the domestic water system saves money and precious water. In addition, backflows are eliminated which provides more water pressure yet reduces water consumption.

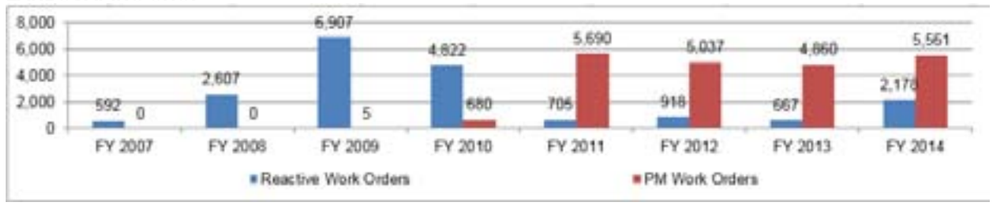
Weed control improved
With the help of APS Transition Students and Saturday Community Service workers (citizens unable to pay citation fees issued by Metro Court), the Grounds Department was able to perform 33.3% more weed eradication work orders at elementary schools over the previous fiscal year. That stated, a great deal of weed control work remains as a horticulture technician was lost and has not yet been replaced. (Weeds are addressed by yardmen at high schools and middle schools.)

WEED CONTROL



Landscaping Shop increased PM 14.4%
In spite of a huge spike in reactive work orders, the Landscaping technicians were able to perform 14.4% more preventive maintenance over the previous year, largely the result of an improved mowing schedule. The dramatic increase in reactive work was due to equally dramatic weather storms. Gale force winds downed trees and heavy monsoon rains caused major flooding and ponding clean-ups in addition to drainage repairs. More rain also meant more weeds on school grounds and along fence lines.

LANDSCAPING SHOP



Substantial playground improvements
The Playground Shop spent over $100,000 in playground equipment parts and over $150,000 in woodchip replacements District wide. The considerable increase over the previous year's playground budget enhanced safety of play equipment and surrounding areas and in meeting ADA compliance and remains a focus in the immediate future. Playground budgets are eternally a concern and challenge (safety versus costs).

PM programs (on-going)

Grounds:

. Grading dirt tracks.
. Irrigation controllers (spring and fall).
. Landscape maintenance of baseball and softball fields (corrective action at infields).
. Playground equipment audits (cut back from twice a year, then to annually, and currently down to once every 14 months due to personnel shortage).
. Grounds safety inspections.
. Spring and summer fertilization of all athletic fields and ornamental grass (February through March and again May through July fertilization improved to be more drought-tolerant).
. Pre-emergent weed control on bare ground (not turf) to prevent weeds from germinating (weed control not used on fields for safety reasons).
. Aerating and re-seeding athletic fields (cut back on frequency from twice a year to once except on football fields which are aerated and re-seeded twice a year).
. Fields inspection of sprinkler heads and bare spots (twice a week when possible spring through fall).
. Inspection of tennis courts and paved tracks (resurfacing and other maintenance as needed).
. Parking lot asphalt inspection and repairs, from minor to complete resurfacing and pothole patching.
. Annual summer grub inspection and spraying of athletic fields throughout the District (June through September). Grub control program minimizes damage to athletic fields.
. Clean outside storm drains every spring prior to monsoon season.
. Sweep all District parking lots every summer and clean after rain storms.
. Mow athletic fields at high schools twice a week (seasonal) and at other locations once a week (now PM Direct scheduled).
. Irrigation system route inspections (weekly).

Playgrounds:

. Playground safety inspection (annually).
. Playground maintenance (annually).
. Maintain proper condition of protective fall surfaces (woodchips).
. Maintain condition of sand (rototill, level).
. Tractor sweep the six foot parameter equipment pod.

GOALS

Status of 2013-14 Fiscal Year Goals

~ Upgrade the running track at Highland High School with a new rubber surface and subsurface. *50% completed and in progress.*

~ Resurface (asphalt) projects: playground at La Luz and Bel-Air Elementary Schools; John Adams Middle School parking lot; and Cibola High School student parking lot. *Completed at La Luz. Declined at Bell-Air and John Adams. Cibola will be completed in remodel master plan in progress.*

~ Monitor and reverse high water use at Volcano Vista and Atrisco Heritage Academy High Schools. Adjustments were made to the sprinkler heads in the last fiscal year; however, much more is required to correct the inexplicable volume of water use at the school. *In progress and ongoing; working with auditor provided by water utility at no cost to District.*

~ Continue transiting fields from independent to a more efficient computerized central control irrigation system (funding permitted). The central control system provides a considerable savings of cost, water, labor hours, and travel as the remote control eliminates the need for a technician to be on site to adjust irrigation and usage. Slated for the transition are Chelwood and Hubert Humphrey Elementary Schools. *Completed*

2014-15 Goals

~ Complete the upgrade in progress of the running track at Highland High School with a new rubber surface and subsurface.

~ Repair or replace broken equipment *(see more in Facing On-Going Challenges and Looking Ahead section on page 82.)*

~ Transition at least two fields from independent manual irrigation system to computer controlled system.

~ Begin transitioning irrigations systems District wide. Current systems require system control keypads that are no longer being manufactured. The Irrigation Supervisor is currently researching options for updated technology with improved technical support that will replace the current MIR 5000 system.

~ Transition from domestic water to grey water irrigation system at Milne Stadium (Field II).

~ Replace retired Heavy Equipment technician/operator.

~ Increase PM work in Irrigation Shop.

~ Acquire a smart phone for the Playground Shop and Play Pod app to easily and efficiently manage and send playground equipment information directly to the computer database. Approximately 33% of the District's playground equipment is already outfitted with Playworld Systems information that details all the specifics of each piece of equipment. Currently the time intensive tracking of this information is performed manually.

Wish list (as funding required)

~ Solve worrisome and worsening erosion issues at Hubert Humphrey Elementary School. Due to flooding, dirt is washing into drain system. As the dirt is removed, the water channel merely widens and problem persists.

~ Repair dire tennis courts at Valley and West Mesa High Schools. The Principals of both schools submit this request repeatedly but funding hasn't been available.

~ Save distressed trees from drought impact District wide.

~ Deep aerate all fields District wide to promote growth. Requires the purchase of new equipment.

STRUCTURAL

Benjamin Garcia, Manager (27 years with M&O, two years as Manager),
66 technicians and support staff

Structural Craft Shops include Furniture Repair; Carpentry; Glass and Window Repair; Lock and Key; Masonry/Tile; Flooring (tile, carpet, wood, concrete); Painting; Signage; Graphics; Welding; Fence Repair; Parking Lot Striping; Bleachers; Ceiling Tile; Doors and Hardware; and Roofing Repair (new roofs are the responsibility of FD+C).

The largest of the service departments, Structural is accountable for all that sustains schools' physical aesthetics, structural integrity, security, and safety. All Shops work at keeping up appearances *and* functionality. Technicians work year-round but are especially busy during the summer months when their work, especially large projects, can be undertaken with no disruption to the education process. Smaller and emergency repairs are carried out throughout the year with little to no classroom interference whenever possible (day, evenings, and weekends).

The Department's skilled carpenters, roofers, painters, glass fitters, masons, tile and carpet installers, welders, locksmiths, and sign and graphic artists provide for clean, safe, comfortable, and visually pleasing learning and administrative spaces. Their aim is to eradicate all that could be a distraction to occupants and their purpose – learning, teaching, or otherwise supporting the education system. Impediments such as a leaking roof, broken window, or wobbly desk challenge students' ability to concentrate on studies – *their* job. Structural technicians fully grasp the connection between how doing their work positively affects how the students do their school work.

After the anticipated flood of work requests that are received with the start of every school year, all Structural shops, except Painting, focus on PM inspections and performing small repairs before they have the chance to spiral into large cost and time intensive repairs. The Department had steadily grown its PM program every year until the 2013-14 FY. However, in spite of an almost 11% increase in reactive work, preventive work order numbers held steady. *(See Structural work order totals on page 87 of Appendices.)*

Installation of ceiling tile.

M&O and the many crafts that work within our school have provided support of the upkeep and maintenance of our school. The work provided is greatly appreciated by the school community.

LA CUEVA HIGH SCHOOL

✓ Highlights

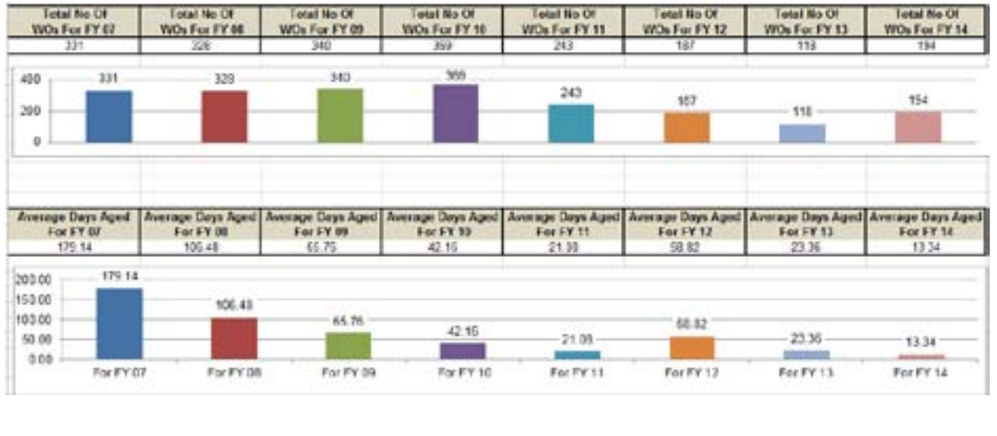
Gym floor refurbishment project completed

Several years back nearly all the auxiliary gym floors in the District's middle and high schools were in need of replacement of oil based sealer with water based. The Department accomplished the project in the 2013-14 FY with the completion of gym floors at Wherry Elementary School, Eisenhower Middle School, and Rio Grande High School.

Furniture Repair Shop doing more work faster

As noted below, the Shop technicians completed 46.6% more work 42.9% faster over the previous year.

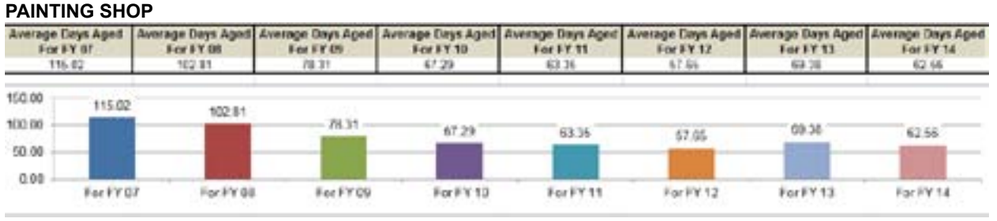
FURNITURE REPAIR



Painting Shop improved work performance time

As demonstrated in the graph below, painting technicians improved their time to complete work by 9.8% over the 2012-13 fiscal year.

PAINTING SHOP



Portable classrooms converted to Primus Cylinder security system

APS's own keyway that eliminates the possibility of duplicating keys was expanded to include all of the District's portable structures. Portable classrooms, most often located at the fringes of school campuses, are now considerably less vulnerable to theft. The Shop continually works to make break-ins more difficult.

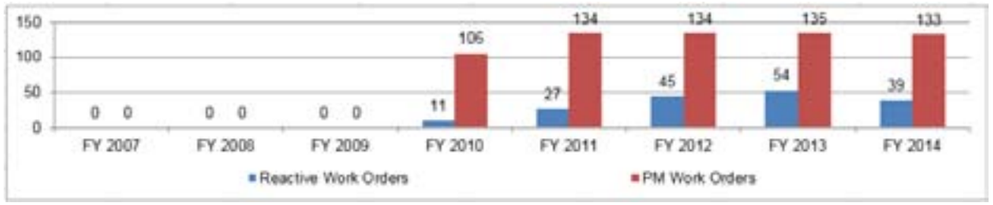
Obsolete bleachers replaced at two school sites

Replacing the bleachers at Hayes and Cleveland Middle Schools was long overdue. Both were original to the schools' 1963 construction – precarious and so outdated beyond repair as parts are no longer available. Both schools now enjoy new modern ADA approved bleachers in their gyms.

Parking lot striping PM program holds steady

The consistently strong PM program keeps reactive work requests down. Most of the 39 reactive WOs noted on the following bar graph were conducted at school additions. The new parking lots required cross-walk lines and special needs parking spaces.

PARKING LOT STRIPING



Glazing Shop reduced work orders by half since 2007 and is working more efficiently

The PM work of replacing all plastic windows (Alsynite) with clear glass reinforced by security screens (manufactured by the Welding Shop) has resulted in a notable reduction in reactive work orders caused predominately by vandalism. A continual decline of reactive work is illustrated below – 17.2% decrease since the previous fiscal year and a 55.2% drop since 2007! And because vandalism incidences were down this year, it allowed a 46.6% increase in PM work over the previous year. In addition, the Shop drastically decreased the time to complete work orders 53.4% over the previous FY.

GLASS & WINDOW REPAIR

Average Days Aged For FY 07	Average Days Aged For FY 08	Average Days Aged For FY 09	Average Days Aged For FY 10	Average Days Aged For FY 11	Average Days Aged For FY 12	Average Days Aged For FY 13	Average Days Aged For FY 14
14.46	7.74	8.80	9.72	11.38	65.13	16.68	7.76

Sign Shop's commercial printer refurbished

The technician was challenged by a large poorly functioning commercial printer required for reproducing large vinyl and poster size signs. The printer was inoperable but the replacement cost was prohibitive. Through ingenious research and exploring imaginative options, the unique repair parts were found resurrecting what was believed to be a dead printer. The immediate expense of purchasing a new one or having to outsource the work was saved. While the system is working well, replacing the printer is planned for the near future.

Roll-up doors preventive maintenance has reduced repair costs

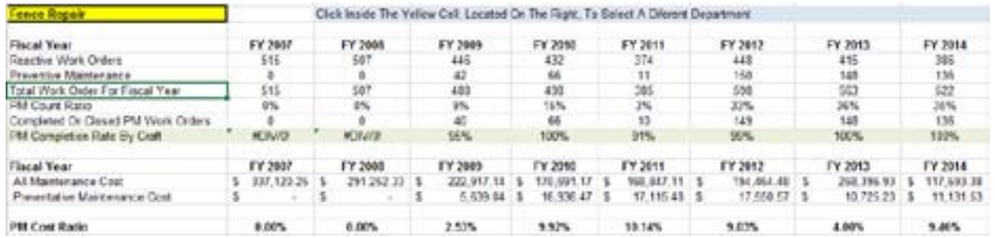
The Carpentry Shop realized a 25.3% decrease in roll-up doors PM costs but a 43.9% increase in PM work orders over the previous FY. Quite simply, the preventive maintenance on roll-up doors has significantly reduced the cost to repair them.

ROLL-UP DOORS

Fence replacement program making progress and Shop working more efficiently

Several years ago the Fence Shop launched a District wide inspection and replacement program to address the most ravaged and perilous fences. To date, approximately 30% have been replaced, driving reactive work orders down by 6.9% and all the while reducing the time to perform work by over half – 56.2%! The newly installed Supervisor is credited for a running an efficient Shop.

FENCE REPAIR



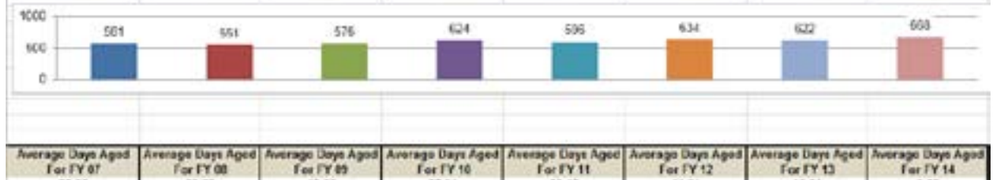
Average Days Aged For FY 07	Average Days Aged For FY 08	Average Days Aged For FY 09	Average Days Aged For FY 10	Average Days Aged For FY 11	Average Days Aged For FY 12	Average Days Aged For FY 13	Average Days Aged For FY 14
53.21	19.09	26.57	20.65	15.11	69.77	16.35	7.16

Welding Shop significantly decreased time to perform work

Headed by the same new Supervisor responsible for fence repair, the Welding Shop performed 7.3% more work orders in FY 2013-14 but an impressive 37.5% faster, as noted below.

WELDING SHOP

Total No Of WOs For FY 07	Total No Of WOs For FY 08	Total No Of WOs For FY 09	Total No Of WOs For FY 10	Total No Of WOs For FY 11	Total No Of WOs For FY 12	Total No Of WOs For FY 13	Total No Of WOs For FY 14
581	551	576	624	596	634	622	668



Average Days Aged For FY 07	Average Days Aged For FY 08	Average Days Aged For FY 09	Average Days Aged For FY 10	Average Days Aged For FY 11	Average Days Aged For FY 12	Average Days Aged For FY 13	Average Days Aged For FY 14
52.23	22.30	40.32	27.51	26.12	44.81	15.01	9.38

New PM Program

. ADA automatic door opener PM program has been launched and is expected to be fully implemented by June 30, 2015. PM contractor work will inspect all ADA access doors annually.

PM programs (on going)

. Roll-up doors inspection and repair
. Interior bleachers inspection and repair (outsourced)
. Inspection of gym floors every six months and performance of spot repairs
. Glass and window inspection and repair
. Doors inspection, weather stripping, and repair
. Repainting of fire and bus lanes
. Parking lot re-striping with focus on fire lanes and crosswalks
. Fabricating and installing security window screens

Covered seating at APS Community Stadium

× **Special Challenge**

Severe monsoon season reduced Roofing Shop's PM output

The 2013 mid to late summer brutal rainfalls resulted in a 175% increase in reactive roofing work orders and subsequent 27.5% drop in PM work, as illustrated below. The Shop expects to be caught up on the backlogged 2013-14 preventive maintenance work and back on a regular PM schedule by June 30, 2015.

ROOFING SHOP

Road — Click Inside The Yellow Cell, Located On The Right, To Select A Different Department

Fiscal Year	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Reactive Work Orders	2,456	1,198	1,213	1,538	1,084	1,835	934	1,661
Preventive Maintenance	5	39	118	176	156	160	200	146
Total Work Order For Fiscal Year	2,461	1,237	1,331	1,705	1,240	1,995	934	1,806
PM Count Ratio	0%	3%	10%	11%	14%	9%	22%	9%
Completed Or Closed PM Work Orders	5	39	118	176	156	160	200	146
PM Completion Rate By Craft	100%	100%	100%	100%	100%	100%	100%	100%

Fiscal Year	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
All Maintenance Cost	$ 1,110,426.93	$ 492,748.26	$ 414,715.97	$ 395,667.26	$ 266,521.31	$ 548,058.51	$ 261,263.16	$ 411,541.20
Preventative Maintenance Cost	$ 2,024.85	$ 117,627.62	$ 203,425.00	$ 172,111.62	$ 212,978.28	$ 181,269.01	$ 241,982.93	$ 189,419.69
PM Cost Ratio	0.27%	23.87%	49.05%	43.06%	66.39%	33.08%	92.26%	25.62%

Severe roof damage due to fire.

GOALS

Status of 2013-14 Fiscal Year Goals

~ Complete the sanding and finishing of auxiliary gym floors with a water-based sealer at the few remaining schools not accomplished in previous fiscal year. *Completed (see Highlight above).*

~ Replace the upper mezzanine bleachers in the main gym of at least two schools. Currently inspecting and completing assessments. *Completed at Hayes and Cleveland Middle Schools.*

2014-15 Fiscal Year Goals

~ Make progress in expanding the "SiteMaster" security key control system that informs the Key Shop Supervisor of keys issued activity. It began as a pilot in the M&O Division a few years ago and is primed for expansion whereby each site can monitor its own key control.

~ Complete the implementation of automatic issuing ADA door button opener PM work orders to PM contractor.

~ Replace bleachers at Eldorado High School and Washington, Jefferson, and Taylor Middle Schools, if funding allows. (Two schools planned with Eldorado high priority.)

~ Replace all six of the basketball goal posts in main gym at Highland High School. All are quite old and one poses a safety issue. Engineering in progress and manufacturing to follow.

The M&O individuals who have been to our school this year have been very good to the staff and students.

TOMASITA ELEMENTARY SCHOOL

Generally speaking M&O responds quickly, get the job done, and are very courteous and professional. This is a system that works well in APS! They have been great!

DOLORES GONZALES ELEMENTARY SCHOOL

ELECTRICAL

Ron Gallegos, Manager (26 years with M&O, Manager 22 years)
32 technicians and support personnel

Electrical Craft Shops are comprised of Electrical (includes back-up emergency generators); Industrial Arts Repair; Audio Visual; Electronics; Business Machines Repair; Fire Extinguisher Service; Elevators (inspections by City of Albuquerque and service handled by a contractor); and Technology Infrastructure.

Electrical Departments in all school districts have long been under pressure to keep the lights on. No lights, no school. But the electrical system of a school district the size of APS has continuously grown in volume and complexity, most remarkably since the introduction of technology and a greater focus on energy conservation. It's not just about keeping the lights on anymore. Smart boards have replaced blackboards and computers and their endless peripherals are now as much classroom fundamentals as pencil and paper used to be back when providing electrical power to classrooms was straightforward. And while technology throughout schools *and* administrative facilities has demanded more electricity, the electrical industry has concurrently introduced more sophisticated energy technology and products, as well as ceased to manufacture (as federally directed) lamps and fixtures needed to work with APS' thousands of ballasts and main electrical distribution panels. A third ball thrown into the juggling mix is the heightened need to **reduce** energy use in respect to environmental preservation and saving costs without conceding on providing classrooms that are comfortable, safe, and favorable to learning.

Yet, APS' Electrical Department manages to juggle the constantly transforming balls in meeting the ever evolving challenges. Dropping a ball is not an option! M&O electricians are responsible for guaranteeing properly wired and illuminated classrooms, computer labs, libraries, and gyms that support students' focused attention and academic success. While the sophisticated but out of sight electrical systems take backstage to today's high tech learning tools, the juice that fires up the technology abruptly takes center stage when the electronics don't turn on. The Electrical Department is dedicated to never allowing electrical hiccups all the while using the least about of wattage possible; it is an inspired endeavor, but vital to saving APS resources and Mother Earth.

The Industrial Arts Repair Shop provides the students with well-maintained and safe equipment and tools for a hands-on industrial trades learning environment. Shop technicians service a wide array of teaching apparatus that includes science equipment; microscopes; scales and balances; sewing machines; paper cutters; kilns; potting wheels; ice machines and appliances; auto, welding, and wood shop equipment; and numerous other pieces of instructional related machinery. And the Fire Extinguisher Shop is charged with keeping the District's fire extinguisher equipment up to code. The Shop is 100% self-sufficient (no work contracted out) and entirely PM with the exception of vandalism and theft of extinguishers. Lastly, the Technology Infrastructure Coordinator, a journeyman electrician, coordinates and synchronizes the installation of new electrical infrastructure for technology systems, as well as mechanic and electronic equipment, throughout the District.

✓ Highlights

Lighting retrofits resulted in a $33,587 rebate from PNM

Replacing high energy lighting systems with energy efficient systems at various APS schools earned a generous rebate from PNM and saved 439,304 kilowatts of electricity.

Programmable intermatic time clocks save time, effort, and money

The Department launched a new programmable time clock system at Cibola High School. Operated through the APS Intranet, it allows technicians to program lighting from their laptops in minutes. Special requests from the schools for lighting a night game will no longer require technicians to visit the site. Beginning with the high schools, installing the data lines and clocks will be conducted in-house throughout the District.

Electrical re-lighting at Reginald Chavez Elementary School 100% complete

As limited Senate Bill 9 funds are needed in converting magnetic ballast to electronic solid state and T-8 lamps District wide, saving 10 watts per lamp, progress is made every year, albeit slowly. The sooner the District can completely transition to T-8 electronics, the more energy as well as Operational dollars will be saved.

Coordinated installation of digital marquee signs at several District schools

More and more schools (three to five a year) are electing to replace manual marquee signs with digital marquees which provide ease in promoting upcoming special events and programs. Owned and paid for by the schools, the marquees are installed strictly by qualified contractors who work under the direction of the Electrical Department.

M&O's Lincoln Building exterior lighting retrofitting in progress

The Electrical Department is in the process of retrofitting the exterior lighting at M&O with 80 watt LED fixtures. To date, approximately 30% of the lighting has been converted from the high energy 400 watt fixtures. The Department hopes to complete approximately 5% every year until the entire complex has been converted to LED lighting.

Added electrical responsibility of new facilities

APS expanded physically in 2013-14 adding facilities that the Electrical Department is responsible for maintaining:

. Del Norte High School — Industrial Fine Arts building
. South Valley Academy (Charter School) — administration building, classrooms, and Media Center
. Montessori of the Rio Grande Elementary School — instructional rooms
. Sandia High School — classroom building
. Inez Elelmentary School — cafeteria and Fine Arts building

Energy efficient LED lighting installed in all new buildings

Only LED lighting, interior and exterior, is now being installed in all new buildings and total renovations. A conversion from *existing* interior lighting to LED, however, is more costly as it requires a complete system change. *(Note following Highlight)*

Converting from florescent lighting to LED in existing construction

The Department has made a concerted move toward converting existing florescent lighting to LED throughout the District. As old fixtures go out, they are being replaced with LED lighting. 2013-14 fiscal year projects completed:

. Ernie Pyle Middle School – gym and exterior lighting
. Marie Hughes Elementary School – exterior lighting
. Approximately five exterior fixtures at other APS sites

The 10 or 20 watt LED fixtures save approximately 30-50% energy over the 75 watt high pressure sodium outdoor fixtures they are replacing, without compromising safety. And a 34 watt indoor florescent lamp can be replaced by a 14 watt LED and the lumens output is very close to identical of the florescent lamp. In addition to wattage saved, the replacement fixtures qualify for PNM rebates. To switch out *functioning* systems for LED is desirable and on the "wish list" as it requires funding.

Replacement of T-12 incandescent light bulbs with T-8 florescent bulbs continues

The Department is working toward converting from T-12 incandescent bulbs to energy efficient T-8 florescent lamps District wide. However, as a costly complete system change is required, the task is slowly advancing. The Department installed 1,000 T-8 ballasts in the 2013-14 fiscal year bringing the District conversion to date to approximately 5%.

Assisted with new irrigation system at McKinley Middle School

The necessity of a major upgrade in the irrigation at the school required Electric Department electricians to run the necessary wire and electric pole.

Elevator PM inspections and service performed faster

Elevator work orders realized a 26% improvement in the time to complete work in the 2013-14 fiscal year, the first improvement since 2011.

ELEVATORS

Average Days Aged For FY 07	Average Days Aged For FY 08	Average Days Aged For FY 09	Average Days Aged For FY 10	Average Days Aged For FY 11	Average Days Aged For FY 12	Average Days Aged For FY 13	Average Days Aged For FY 14
#DIV/0!	#DIV/0!	76.00	35.70	32.40	53.26	54.53	40.31

Audio Visual Shop working more and faster

Shop technician realized an increase of 48.4% more work orders yet a decrease of 29% in time to complete and close the WOs.

PM programs (on-going)

Government mandated PM work is performed by contractors and includes:

. Fire extinguisher, sprinkler, and alarm inspection
. Fire suppression systems
. Elevator (quarterly) inspection and service (monthly inspections performed by City of Albuquerque)
. Emergency generators inspection (twice a year)

Not government mandated PM is performed in-house:

. Replacement of high energy systems with energy and cost effective systems throughout the District. *(See following Special Challenge)*

× **Special Challenge / Issue**

Struggling to perform PM due to lack of manpower

Two two-man crews are assigned only lighting retrofit work (energy saving electrical systems improvement); they never perform reactive WOs. They are assigned other PM work when retrofit work slows down, but regrettably it is a rare occurrence. More manpower is needed to increase electrical preventive maintenance.

Through APS Risk Management, Hartford Steam Boiler Inspection and Insurance Company conducted an audit on claims filed by M&O: a failed transformer and a failed bus duct (feeds power to a high rise building) at City Center. As a result of the audit, the claims adjustor recommended that all oil fill transformers be tested and inspected every five years. It would involve performing infrared scanning of the equipment at a cost of approximately $1,000 apiece and there are one to four per site, depending on school size. The Department has the equipment and skill to perform the inspections but, unfortunately, lacks the resources. Departing electricians, six in recent years, are not replaced – the jobs eliminated rather than filled.

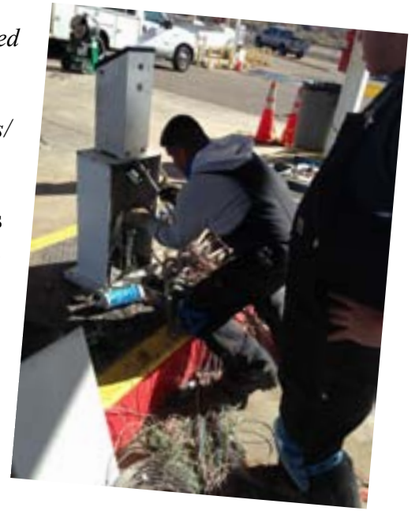
GOALS

Status of 2013-14 Fiscal Year Goals

~ Fine tune SchoolDude scheduling to track work performed by outside contractors in all Electrical Shops (already done with elevators). *Completed*

~ The successful completion by all electricians of the 16 hours of professional development training (required every three years) regarding the new electrical codes applicable January 2014 – December 2016. *The National Electrical Code*, the electricians' bible, provides new codes and amendments to old codes. Every electrician tech, Supervisor, and Manager is responsible for complying with codes in the installation of systems. *Completed*

~ Continue retrofitting entire electrical switch gear panels; in older schools panels are past life expectancy. *Completed at Mission and Comanche Elementary Schools. Goal of accomplishing at least two a year is on-going; progress made every year as funding allows.*



~ Retrofit the lighting at Atrisco Elementary School. *Canceled due to pending construction at the school.*

~ Continue retrofitting the M&O parking lot lighting. *In progress/ on-going (see Highlight above)*.

~ Complete the installation of 32 individual electrical outlets in M&O parking lot to accommodate diesel service vehicles. *Completed*

~ Implement a digital bar code system in Fire Extinguisher Shop to better track inventory. It will be performed in-house by the two Shop technicians. *Completed*

~ Upgrade all elevators at City Center. *In progress (50% Completed)*

2014-15 Fiscal Year Goals

~ Convert Alvarado Elementary School's exterior and interior lighting to energy efficient LED lighting.

~ Complete the update of all elevators at City Center.

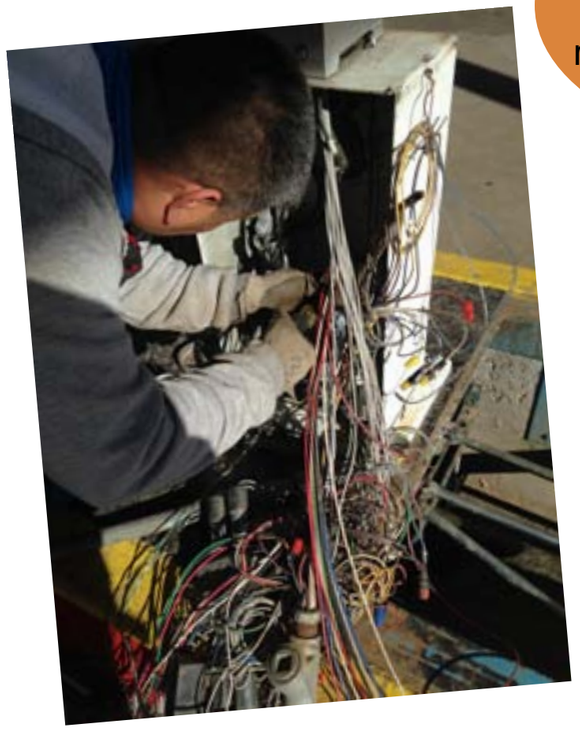
~ Complete (or be near completion) the installation of programmable intermatic time clock systems at all high schools. *(See Highlight above.)*

~ Complete the total LED retrofit (interior and exterior) of Alvarado Elementary School.

~ Convert parking lot fixtures to LED at A. Montoya and San Antonito Elementary Schools and Roosevelt Middle School (34 total fixtures).

~ Upgrade electrical systems at two aging school sites (planning begun).

~ Overhaul at least two (to be determined) old elevators to be new code compliant.



M&O continues to support our school so that we can concentrate on reading, writing, and math.

HARRISON MIDDLE SCHOOL

BUILDING SERVICES

Fred Montano, Manager (34 years with APS, Manager 12 years)
50 technicians and support personnel

Building Services Craft Shops include Graffiti Removal; Custodian Coordination; Pest Control; Custodial Equipment Repair; Carpet Cleaning (includes water extraction); Specialty Cleaning; Blinds and Shades; Emergency Dispatch; and M&O Warehouse Management.

In the Building Services Department maintaining clean and sanitary environments, the crews address the District's dirtiest and most distressing and disruption causing clean-ups. These include water extraction due to flooding; cleaning up any and all bodily fluids as well as pigeon excrement; washing and sandblasting graffiti off every imaginable surface; and the extermination of annoying and potentially harmful indoor and outdoor pests that include ants, wasps, and mice, as well as the humane removal of bees, skunks, and feral cats. These reactive work requests are most often, about 80% of the time, emergencies that need to be attended to straightaway. An unhygienic classroom due to an ailing student is not favorable to learning or the health of the other students, and graffiti defaces APS property and is an offensive insult to all school occupants and the neighboring community. Important cleaning jobs that don't require immediate attention are scheduled in PM Direct and include annual school wide carpet cleaning as well as power washing and disinfecting restrooms and cafeteria tables.

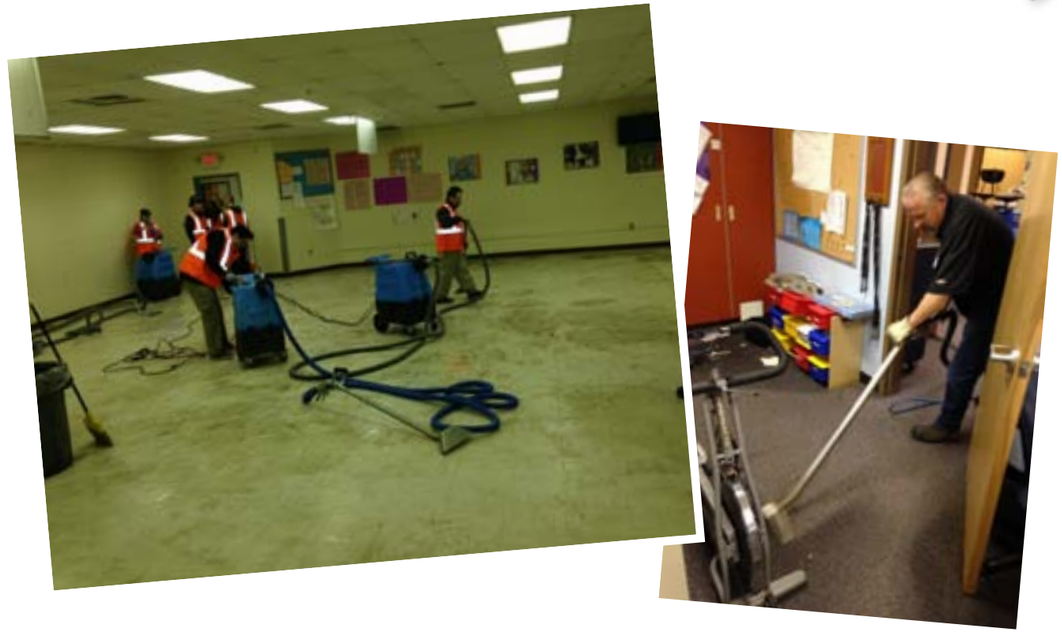
Non-cleaning responsibilities include the purchasing, stocking, and distributing of the approximately $1.2 million worth of inventory (repair materials, supplies, tools, and equipment) used by M&O Craft Shops and housed in the M&O Warehouse; custodial equipment repair; window blinds repair; and two dispatchers charged with responding to emergency calls and ensuring that all emergency work is immediately communicated to pertinent Department Managers and technicians.

Lastly, Building Services Department directs the District's school custodian program. All APS custodians are hired and trained by the Department. Training is extensive and includes proper procedures in performing every cleaning function as well as the precise seconds or minutes allocated for the completion of each task. Custodians are also regularly re-trained on the use of newly introduced high tech and earth-friendly green cleaning products. All new hire custodians begin in the substitute pool and are assigned to schools in place of custodians out on leave, and all permanent school custodian staff are hired from this pool.

Some HVAC repairs have required multiple visits to complete. If same tech is sent every time, it will be more efficient. Paint crew wanted to take short cuts like not spackling first.

PAINTED SKY ELEMENTARY SCHOOL

~ Response from M&O:
HVAC parts are on order and the graffiti crew was covering graffiti, not performing wall repairs. Repairs followed.



✓ Highlights

Gained full-time licensed indoor pest control specialist
The new pest control exterminator came just in time as the increase in moisture during the 2013-14 FY caused a steep spike in the ant and roach population.

Progress gained in pigeon excretion clean-up
While the battle with uninvited pigeons that lodge on HVAC equipment is on-going, progress was made at the most problematic sites. Netting over evaporative cooling units was installed at Kit Carson Elementary School, Truman Middle School, and the Fleet Maintenance facility on the M&O complex. Many other schools are in progress with this difficult and expensive task.

× Special Challenge / Issue

Carpet cleaning preventive maintenance continues to be a challenge
Cleaning the carpets at an entire school is PM Direct scheduled, however competing the high quantity of reactive work requests is trumping the preventive maintenance scheduled work. Maintaining clean carpets is important, especially in the kindergarten and elementary school classrooms where young students sit on the carpet for reading circles and other activities. Hiring two crews (four individuals) is one solution. The Department is also currently working with contractors on developing a PM plan with regards to carpet cleaning and disinfecting.

PM programs (on-going)
. Thorough pressure washing of each school's cafeteria tables annually (summer)
. Interior pest control school inspection monthly (reduced from 12 to 9 months a year)
. Annual custodial equipment maintenance and repair at every school site

GOALS

Status of 2013-4 Fiscal Year Goals

~ Hire a qualified full-time indoor pest control technician to fill vacancy left by a retirement. *Completed.*

~ Manager will monitor SchoolDude Craft Reports for all Building Services Shops to confirm accuracy. *Completed.*

~ Assess the carpet cleaning system and machines and replace those most past their life cycle. *Completed. Replaced two truck mounted machines with more efficient high tech systems.*

~ Revise the PM program in the Blinds and Shades Shop to include all schools and administrative sites. The one-man Shop will aspire to perform 45 full inspections a year covering all schools in three years. *In progress.*

~ Pursue more funding to purchase sorely needed custodial equipment repair parts for equipment at school sites. *In progress and will continue into the foreseeable future.*

2014-15 Fiscal Year Goals

~ Improve classification of pest control work orders in SchoolDude. Currently there is an "indoor" category and simply a "pest control" category ostensibly to group outdoor pest WOs. However, as data entry is inconsistent and the attempt to categorize has merely caused unnecessary confusion without aiding in managing the Craft Shop. More planning will take place.

~ Hire two Assistant Supervisors in the Custodial Shop to monitor evening school custodians, conduct spot checks during their work schedules, and support custodial survey PM program throughout the District. The custodial surveys determine and regulate the precise time each task — unique to each school site — requires for satisfactory completion. Observing the time allotments eliminates slack in the schedule furthering productivity.

FLEET MAINTENANCE

Dale Krezan, Manager (7 years with APS, Manager 3 years)
15 Technicians and Support Personnel

Fleet Maintenance responsibilities includes Vehicle Maintenance; Specialty Equipment Maintenance (small engine grounds equipment); Tire and Towing; Fuel Station; Lincoln Complex automated security gate access and fueling systems maintenance; point of contact for vehicle accident processing; APS and M&O Drivers' License issuance, background checks, and management of the program.

The Fleet Maintenance Department maintains the District's wide range of safe, dependable, and fuel-efficient fleet that includes approximately 1,000 vehicles (cars used by administrative leadership and APS Police); M&O's comprehensive collection of commercial vans and trucks, earth moving and other heavy equipment, backhoes, loaders, trailers, water trucks, road graders, snow removal equipment, and wreckers; and refrigerated box trucks used by APS Food Services. The Department is also responsible for servicing grounds maintenance equipment consisting of over 7,000 pieces of machinery located at schools, M&O, and other sites throughout the District. These include riding and push lawn mowers, trimmers, hedgers, blowers, chainsaws, golf carts, gators, and other miscellaneous motorized equipment.

All mechanics, working in a fully equipped 26-bay facility, hold a State of New Mexico Commercial Driver's License necessary to operate heavy equipment, and Air Care Station certifications for emissions tests conducted and "passed" certifications issued on site along with mechanic certifications. The mechanics are also skilled welders and fabricators. APS' in-house fleet maintenance operation results in enormous savings to the District.

Tire Shop technicians provide road repairs and wrecker service. The Fuel Station technician monitors the fueling system that dispenses about 1,000 gallons of unleaded gasoline and 300 to 500 gallons of diesel fuel daily to run APS as well as CNM vehicles (reimbursed to the District). In addition, the Fuel Station provides propane gas for roofing equipment, Materials Management forklifts, heavy equipment, and other assorted equipment. Fuel is purchased through a negotiated City of Albuquerque contract (weekly spot price) and is delivered to the Fuel Station. Fleet vehicles can also be conveniently power washed and vacuumed at the Station at any time during hours of operation.

The Department' work orders are managed by two computer software systems. FleetVision software is utilized for "smart tracking" vehicle maintenance control that includes vehicle history; driver information; VIN and license plate numbers; maintenance records; PM due notification; and vehicle fueling history that includes quantity, date, and miles to the gallon. Trak Engineering's "Dream Island software" is a security system that tracks and records all APS and CNM vehicles entering and exiting Lincoln Complex during off-hours when Complex gates are locked. Dream Island provides an electronic key system that coordinates the fuel station information that is exported to the FleetVision system software. Fleet Maintenance work orders were also added to the SchoolDude work order system several years ago to track and manage work order activity (not FleetVision capable). While duel entry is now necessary, the tighter management and control of the thousands of WOs performed annually is vastly improved and advantageous to Fleet Maintenance management and their customers.

The Department's administrative responsibilities include obtaining vehicle body repair estimates from vendors and directing the repairs and coordinating with Risk Management; guiding APS drivers through the post-accident APS process; and managing the M&O APS Driver's License program which includes running monthly drivers' license background checks on all approved APS licensed drivers.

M&O workers are very courteous and professional.

L.B. JOHNSON MIDDLE SCHOOL

✓ Highlights

Implemented a quick service Lube Lane

After reorganizing the Tire Shop, a previous Shop position now serves as the new Lube Lane tech. He services small repairs, such as belts or wiper replacements, and Schedule 1 (4,000 mile) PM inspections which includes changing oil and topping fluids. The Lube Lane technician also performs Schedule 2 (12,000 mile) inspections. Previously, vehicles were added to the repair appointment schedule, at times about a month out. Now needed Schedule 1 and 2 appointments can be made a few days in advance. Service has been greatly expedited; if no repairs are needed, approximate time in the lube lane is 45 minutes. In the case of needed repairs, the vehicle is either assigned to a mechanic immediately or scheduled for a later date, depending on needed repair.

Assistant Supervisor position upgraded to Supervisor and filled, significantly improving service

Fleet Maintenance did not have an Assistant Supervisor in place to man the service desk for a year. The important check-in station, where all vehicle repairs are triaged and scheduled, had inconsistent coverage by an array of staff members covering the job for brief periods. In reorganizing the Department and upgrading the Assistant Supervisor to a full Supervisor level, the service desk is now properly manned full-time. In addition to overseeing the technicians, the Supervisor initiates and manages work orders and is credited for improving lead time in the scheduling and performance of jobs by approximately 40%. The Supervisor also functions as the service writer which keeps the Shop running effectively and efficiently. Any slack in all work processes has been tightened up, much to the appreciation of customers.

Added new personnel

Two new mechanics were hired, filling the vacancies created by the promotion of one mechanic to Supervisor and a retirement. Another vacancy was filled due to a retirement in the Specialty Equipment Shop. The Department is functioning at full capacity and operating well.

Preventive maintenance backlog improved

Last year's Year End Report stated that due to mounting reactive work orders the PM schedule fell approximately 30 days behind. Mechanics have since done an outstanding job of getting a handle on the essential PM work and are now scheduling preventive maintenance work orders just several days to no more than a week in advance.

Added approval level on all vehicle purchases

A newly enforced multi-level review and approval process for the request and purchase of new vehicles has provided more scrutiny of drivers' vehicle requests and specific needs. Vehicle choices are checked for appropriateness from the standpoint of functionality and cost value to taxpayers. The revised purchasing process ensures several incisive perspectives before a purchase is made with final approval by the Executive Director.

Obsolete parts inventory returned to vendors for credit

In re-evaluating its parts inventory, the Department removed items that have become obsolete and replaced them with useful high usage parts, such as filters, batteries, and certain brake shoes that are common among many vehicles. Less frequently needed automotive parts are typically delivered by the vendor within an hour or ordered immediately from the vendor's warehouse site. The obsolete parts returned to the vendors for credit provided reusable dollars and much needed storage space. This practice will continue.

Formalized vehicle title records and processing of salvage vehicles

The Department is up to date in clearance of salvage vehicles that had been accumulating due to missing titles and an outdated process to sell old equipment. Regrettably, Fleet Maintenance has not been the consistent custodian of titles, currently in possession of only about 70%. A Department representative is acquiring official titles directly from the State Motor Vehicle Department in Santa Fe as needed and bringing all files up to date.

Assisted Food Services Department in purchasing three refrigeration trucks

The previous trucks were retired after many years of service transporting fresh food to the schools. The Fleet Maintenance Manager, in coordination with APS Purchasing Division, used several state contracts in assisting Food Services with the purchase of three chassis and cabs in addition to the refrigerated boxes placed on the chassis. Other purchases are in progress.

Assumed issuance of Vehicle Equipment Operator Permits from APS Risk Management

After careful review of all processes and directives, the Department is now responsible for administering driver training and testing (written) every two years (mandated); checking existing New Mexico motor vehicle driving records monthly; and issuing an APS permit and certificate of competency to M&O and all other APS drivers assigned to operate District commercial vehicles and large equipment. The process refines responsibilities and skills as well as reduces risk to the drivers and the District. Some types of citations (such as DUI) disqualify the employee from operating APS equipment.

Department secretary reclassified as Fleet Specialist
The secretarial role expanded to perform many supplementary responsibilities and new tasks beyond the level of secretary, which warranted the reclassification. In addition to continued office responsibilities, the Fleet Specialist attends to vehicle matters including titles and license plates, and processes vehicles for salvage. Duties also include administering the issuance of Vehicle Equipment Operator Permits *(see above Highlight);* working with Risk Management regarding accidents and subsequent vehicle body repairs; managing the fuel operating systems (and software) which includes billing for fuel usage to various APS Departments and schools as well CNM personnel authorized to fuel up at the APS Fueling Station.

APS Transition Students learning valuable skills while lending support to Fleet personnel
The APS Transitional Education program assists qualifying students to transition from school life to an adult job environment. The unpaid students are acquiring parts inventory training in stocking and maintaining accurate records; learning and performing minor mechanic functions and assembling equipment; and developing computer and office organization skills. The part-time workers also learn communication and social skills in becoming more prepared for securing a paid job in the future.

New PM program
~ Monitor generators' diesel fuel levels at the Data Center where the District's Information Technology Division and main computer server are housed. The generators are used for backup purposes in the event electricity to the site is lost by PNM. These generators provide power for the District's main frame systems and Data Center.

PM programs (on-going)
~ In preserving the fleet, the Department performs preventive maintenance schedules based on mileage (4,000 / 12,000 / 48,000) that includes all vehicle manufacturers' required tasks.

. PM inspections and repairs are performed to prevent major servicing at a later date. Preventive maintenance improves gas mileage, reliability of fleet, and extends the life of vehicles.

. A minimum of three or four PM work orders are scheduled every day in Fleet. The PM includes oil changes, transmission flushes, brake inspections and other safety inspections and repairs as required and recommended by manufacturers' specifications.

~ Large grounds equipment inspection and service (typically performed in off season while not in use with the exception of rider lawn mowers which are priority during growing season).

× **Special Challenge / Issue**

Aging fleet continues to tax funding and work schedule limitations
APS' vehicles have an average of 150,000-175,000 miles on them. The fleet is old, worn, and expensive to maintain. While preventive maintenance is credited for squeezing more life out of every car and service vehicle, keeping the aging fleet on the road still requires more frequent repairs and parts replacements. SB-9 funds have been earmarked specifically for new maintenance vehicle replacements. Funding will be utilized to begin updating the fleet in the current fiscal year. Until updating the fleet begins, PM and reactive work schedules will continue to be taxing. In spite of these challenges, high priority repairs (M&O service trucks and vans, APS Police units, and food service trucks) are attended to without delay – never compromising the District's daily operational needs or the safety of any vehicle driver!

GOALS

Status of 2013-14 Goals
~ Partner with Risk Management in the issuing of APS driver's licenses for all M&O drivers of District vehicles. *Started at the end of the FY. More information to follow in the 2014-15 Year End Report.*

~ Implement a Lube Lane in the Mechanic Shop. One technician will be assigned the responsibility of a Schedule 1 (4,000 mile) inspection which includes oil and filter change, fluid check, and "light line" repairs (belts, wipers, etc.). "Heavy line" repairs will be scheduled for repair. *Completed (see Highlight above)*

2014-15 Goals
~ Bring 18 school buses (acquired when a school bus vendor closed their business in August 2014) up to APS, Department of Transportation, and the Public Education Department standards. Most of the buses transporting APS students are owned and maintained by bus vendors. The unexpected acquisition of 18 buses that service the east mountain schools has presented Fleet Maintenance with the maintenance of the buses, all in dire condition and several more expensive to repair than their replacement value. The Department is also responsible for conducting the mandated inspections prior to every morning and afternoon trip. Students' safety is the District's primary concern.

~ Replace approximately 25 of the fleet's most high mileage and poor condition vehicles. Funding has been allotted for this purpose and at least a portion shall be released during the current fiscal year as approved by the Executive Director.

ENVIRONMENTAL MANAGEMENT

Van Lewis, Manager (18 years with M&O, Manager 8 years) 9 Inspectors/staff

The fundamental purpose of the M&O division is any school system is supporting academic performance – and clean and safe indoor air is compulsory to a students' ability to focus on classroom instruction and achieve academic success! In looking after the wellbeing of students and other occupants, APS has been ahead of the nation's public schools since it established its own environmental management program in 1989 in response to asbestos abatement legislation becoming effective. The Department provides first-rate environmental services at a fraction of the cost over hiring outside contractors, and has never failed an EPA asbestos inspection audit nor has ever been cited for non-compliance of any environmental regulation. As new EPA regulations come into effect the APS Environmental Management Department responds accordingly.

APS environmental inspectors, certified in a number of environmental disciplines, conduct scheduled EPA and OSHA delegated inspections and manage the resolution of ascertained contaminants, such as asbestos, mold, radon, and lead-based paint. And in meeting federal and state compliance, inspectors also conduct scheduled drinking and wastewater sampling and immediately correct irregularities if found.

Lastly, the Department personnel mitigate and oversee the safe handling of contaminant materials (floors, ceilings, walls, plumbing) present in repairs performed by M&O Craft Shops as well as demolitions and renovations conducted by Facilities Design + Construction. The applicable Shop or Division must request an AHERA Compliance Work Plan prior to commencing any repair work, demolition, or remodeling construction. The environmental inspectors review the site's history, sample the affected materials for analysis, and generate the AHERA permit which outlines in precise detail how to carry out the work safely.

Due to the nature of the Department's government mandated tasks and support to M&O and FD+C, 'preventive maintenance' work is not easily defined or quantified. While APS is distinctively fortunate to control its own environmental management program, it is also understandable that a work order system is not perfect for measuring or managing environment PM work orders as the Environment Management Department does not "prevent" future maintenance. Nonetheless, tasks that can be managed through PM Direct currently are, and the list is growing.

The value of APS housing its own environment management is immeasurable on all fronts – providing students with clean and safe environments conducive to learning; substantially reduced cost to taxpayers; and the ability to control costs and liabilities in the astute management of environmental issues.

Volcano Vista High School

✓ Highlights

Supported two large asbestos abatement projects

At the new **Food Services / Central Kitchen** currently under major renovation (old K-Mart at Lomas and Louisiana), managed the safe remediation of exterior asbestos coating and removal of interior asbestos floor tile and sheetrock. As this massive job required working around the general building contractor's schedule, the project was protracted over several months.

The rebuild of **Wilson Middle School** included completely gutting the main building which held administrative space, the library, and the majority of the school's classrooms. Overseeing the safe demolition and removal of the numerous hazardous building materials took approximately four months.

Resolved record number of indoor mold issues

Due to record breaking rainfall in 2013, schools experienced a corresponding and predictable number of mold problems and water damage clean-up — a 32.7% increase in indoor air quality work orders over the previous fiscal year.

PM Direct scheduling increased 23.2%

In spite of the fact that environmental work projects are not applicable to the preventive maintenance paradigm, PM Direct is enormously helpful in scheduling the Department's inspections conducted monthly, quarterly, annually, or every three years – increasing the number 23.2% over the previous fiscal year. However, the Department is currently wrestling with holding the "average days aged" down as the system schedules WOs a bit faster than they can realistically be executed.

ENVIRONMENTAL WORK ORDER TOTALS

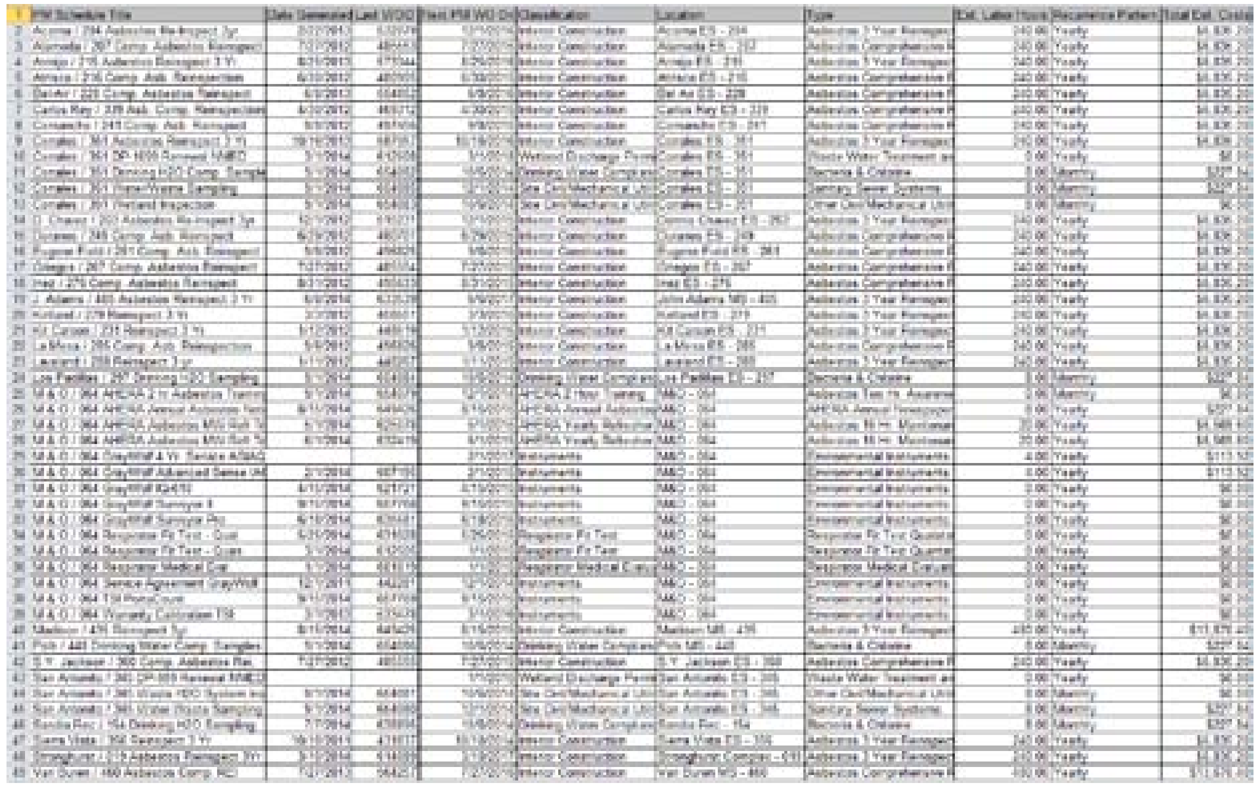
Some work orders don't get cleared when completed and it builds up in the system

HELEN CORDERO ELEMENTARY SCHOOL

~ Response from M&O:

Some WOs are not closed in SchoolDude but are completed. M&O is working hard to tighten paperwork processing time.

ENVIRONMENTAL PM DIRECT SCHEDULE



Cost of asbestos bulk sampling reduced by 55%

Due to the local chemistry laboratory ceasing the analysis of quick-turnaround (a few hours) asbestos samples, the Department is sending the samples to a Phoenix lab at a $22 savings per sample and a single day-turnaround. While the previous same day processing was more expedient, next day turnaround has proven to be quite manageable at a considerable savings.

Most proven in-house insurance adjusters assigned exclusively to the Department

Several years ago the APS Risk Management Division hired in-house adjusters in saving the substantial "hourly" costs of engaging contract adjusters. In-house adjusters can contain the scope-of-project to actual disaster-caused damage versus the practice of outside insurance adjusters inflating the damage and subsequent price unnecessarily. The newly employed APS adjusters, however, had to ascend the learning curve of evaluating the impact and potential for mold growth and its contribution to structural damage. With the help of Environmental Management Department personnel, they have done so and those with the most demonstrated structural expertise have been assigned to work exclusively with the Department reducing damage restoration cost, effort, and time.

Investigated, identified, and corrected water treatment system at Corrales Elementary School

A complete revamping of the mechanical room's potable water plumbing system and chlorinator caused "water hammering." The pressure shock and spike adversely affected the well piping causing the normally very high quality water pumped from an 800-foot deep well to test positive for chloroform bacteria. The Department Manager was able to identify the source of the problem – 120 feet of aging pipe – which was replaced correcting the problem.

New PM programs

. San Antonito Elementary School – wastewater system inspections (monthly)
. Corrales Elementary School – wetlands inspection (monthly)

GOALS

Status of 2013-14 Fiscal Year Goals

~ Refurbish the wetland cells to ensure proper wastewater treatment at Corrales Elementary School. Due to the age of the wetlands, cells have become overgrown and not working as economically or ecologically as designed. *On hold. The Village of Corrales has temporarily connected their wastewater system to the County. So while the system is currently working properly, a rebuild is yet necessary and will be attempted during winter of 2015.*

~ Draft Department's Procedures Manual. *In progress.*

~ Redistribute tasks of the Inspectors to be more specialized and conserve time and resources. Currently all Inspectors perform all environmental tasks at their assigned schools. Process was stared in the last fiscal year but has not been fully developed. *Not Completed. Moved to 2014-15 FY.*

2014-15 Fiscal Year Goals

~ Renew the Wastewater Discharge Permit for wetlands at Corrales Elementary School.

~ Refurbish the wetland cells to ensure proper wastewater treatment at Corrales Elementary School. (Moved from last FY)

~ Redistribute tasks of the Inspectors to be more specialized and conserve time and resources. (Moved from last FY)

It really depended on which craft was responding if it [performance] was excellent or good. The excellent Shops were Sign, Paint, Carpentry, Environmental [Department] and Electrical [Department]. Plumbing, not so much.

LOWELL ELEMENTARY SCHOOL

Just an FYI – We wish this [survey] had been broken down by Departments within M&O. Some are much better than others. Thanks.

JOHN ADAMS MIDDLE SCHOOL

Some services are very slow in occurring while others happen quickly. It depends on the supervisor and his commitment to customer service.

CAREER ENRICHMENT CENTER

~ Response to the three comments from M&O:

The Executive Director communicated with the sites to relate that it's a matter of workload, budget, and available man hours – **not** a lack of commitment to customer service. Also, many work order requests are large projects that require more time unlike simpler and quick repairs. It takes time to build shelves or plan a cost and time efficient execution strategy for a complex project, and plumbing is a project rather than a repair more often than not.

The majority of negative feedback will be corrected as M&O improves communication with the school administrators and custodians. If schools don't *know the specifics* of the situation, they draw their own conclusions. Most of these are not problems but a lack of keeping the school abreast of the steps needed and why a job is temporarily suspended, such as waiting for ordered parts.

SUPPORT SERVICES

Billie Salas, Manager (27 years with M&O, manager 8 years) 10 employees

The Support Services Department is responsible for the administration of Budget Management; Invoice and Payment Processing; Contract Administration; and Utilities Management.

Support Services personnel provide support to all M&O service departments to enable them to complete their work orders/projects in a timely manner utilizing budget availability processing. In serving this purpose they work in close collaboration with the M&O Executive Director and Department Managers as well as personnel in APS' Finance, Procurement, and Accounts Payable offices in overseeing M&O's fluid budget balance, expenses, and daily finance operations. Budget sources consist of Operational funds and Senate Bill 9 funds. The management of Operational monies is straightforward as it pays for the fairly predictable salaries, services, materials, equipment, fleet fuel, and District wide utilities. However, administering SB-9 monies, used to underwrite contractor services and related materials and equipment, requires much more artful and vigilant strategizing. Operational funds are allocated annually with no carry-over options. SB-9 monies, created in the 1990s by voter approval, are replenished after each funding cycle and unspent dollars in the current fiscal year are carried over to the next fiscal year.

Ms. Salas works closely with M&O Managers in earmarking budget funds as specifically as possible for anticipated large projects and unforeseen but certain emergencies, approximately 35% of the budget. This astute planning requires the keen awareness by all M&O Managers of funding restraints in setting priorities to meet the District's most demanding needs within budgetary boundaries. In addition, Ms. Salas reviews all M&O invoices daily and approves for payment (in accordance with procurement rules and procedures) before forwarding to APS' Procurement and/or Accounts Payable Departments for final processing. In support of the education process, Support Services strives to process vendor invoices promptly as a gridlock in the APS payment system impedes work projects at schools. Frankly stated, unpaid vendors cease serving the District which is unacceptable as it is not in step with M&O's non-stop service to the schools and students.

As the following figures exemplify, the Department was challenged by a major budget cut in 2011 and since then by limited budgets just holding steady in the most recent fiscal years. The battle isn't helped by rising maintenance and utility costs coupled with the opening of new schools and expansion of existing campuses.

M&O Budget History 2007 – 2014

(Total M&O Budget Allocation Includes "Carry Over" SB-9 Monies from Previous Fiscal Years)

Fiscal Years	Work Orders	Square Feet	M & O TOTAL BUDGET	Operational Budget	SB-9 Budget	Salaries OT & Benfits	School Sites	FTEs
2007	63,137	9,350,500	$48,342,400.00	$2,903,213.00	$31,393,556.00	$14,045,631.00	136	330.5
2008	63,464	10,975,700	$55,391,208.00	$2,629,799.00	$37,165,908.00	$15,595,501.00	137	320.5
2009	68,143	12,010,152	$48,564,786.00	$2,066,226.00	$30,832,290.00	$15,666,270.00	139	310
2010	68,361	13,105,100	$41,227,836.00	$1,329,653.00	$25,350,736.00	$14,547,447.00	141	285.5
2011	74,544	14,207,533	$30,237,780.00	$ 909,154.00	$14,776,670.00	$14,551,956.00	142	265
2012	79,358	14,517,582	$35,966,909.00	$ 925,736.00	$21,355,325.00	$13,685,848.00	143	262.5
2013	78,280	14,624,261	$38,573,538.00	$1,005,736.00	$23,844,843.00	$13,722,959.00	143	263
2014	78,706	14,402,956	$38,655,311.00	$1,054,080.00	$23,818,035.00	$13,783,196.00	143	263.5

✓ Highlights

Increased number of "drawdown" purchase orders (PO) by 31.9%

A drawdown PO formally earmarks a specified dollar amount to pay for recurring or expected expenses to specified vendors as needed during the fiscal year. Paying invoices against the single PO rather than issuing separate purchase orders for transaction payments, reduces the number of requisitions waiting for approval, purchase processing steps, and time. The Department has been on a quest to move to the simpler drawdown PO practice for some time, making progress with every year. Support Services achieved the most success in the 2013-14 fiscal year — 190 PO encumbrances were created, 31.9% more than the previous year's 144. Payments to vendors are fast tracked and closing financials at the end of the fiscal year is streamlined. The Capital Fiscal Department is credited for their help and cooperation with the M&O budget.

Cross training of personnel successfully completed

Last year's Report addressed the imminent challenge of losing three tenured employees due to retirements. In anticipation of this combined loss of skill and knowledge, the Manager initiated a cross training program Department wide. While additional in-depth cross training is still in progress, all staff members have learned every transaction process and duty that the Department is responsible for. Two positions were vacant for several months and were covered by the newly cross trained staff members; a backlog of work did not ensue due to the reduced number of employees! And as personnel learned a new process, they became permanently reassigned to the task broadening the scope of responsibilities for all staff.

Three highly qualified staff members joined Department

In replacing the vacancies left by retirees, Support Services was able to hire proficient individuals who complemented the skills set of existing staff. The new hires began their new roles near seamlessly.

New Utilities Management Technical Assistant is competent and zealous to learn

One of the three new hires mentioned above is the Utilities Technician charged with tracking and paying the utility expenses for the entire District. It sounds straightforward enough, but staying abreast of the hundreds of utility invoices generated by 140 plus metro area schools and urban school sites, numerous administrative complexes, warehouses, Central Kitchen, and three sports stadiums is no simple task. The utility vendors for electric, natural gas, water/sewer (utility and wells), refuse, and recycling are many and their invoicing systems can be complex with many variables affecting each invoice's total. Appreciatively, the new Utilities Technician brought valuable research knowledge and other skills from

previous experience within APS and was able to get up to speed in the utilities function quickly *as well as* learn the Manager's tasks in serving as back-up when needed. She has proven to be an invaluable asset to the Department in both areas.

Smooth beginning of six year funding cycle

While Support Services personnel certainly perform many financial closures in preparation for commencing a new funding cycle without snags and complications, all M&O financial activity is not within their control. The beginning of a fiscal year or funding cycle will expectedly require getting over some hurdles and stumbling blocks. The start of the six year funding cycle that began on July 1, 2013, however, went without a hitch thanks to careful planning and executing of financial matters within the Department and interconnected APS Capital Finance and Accounting Divisions.

GOALS

Status of 2013-14 Fiscal Year Goals

~ Meet with M&O Managers in securing their encumbered requests for the 2013-14 fiscal year before July 1. Managers will be required to be very specific in the amount of each vendor's purchase order (within each Department's budget) in meeting their needs. *Completed.*

~ Hire and train new Utilities Technician and fill two other vacancies due to retirements. *Completed.*

~ Cross train personnel to become adept in all Department functions. Currently only one staff member knows the utilities management function and newer employees need to be knowledgeable and thoroughly trained regarding all APS/M&O policies and procedures. Support Services will operate more smoothly and effectively, thereby serving all of M&O better. *Completed.*

~ Due to the Department running out of file space, staff will began scanning all invoices and store them electronically once they are paid and closed as well as scan old invoices stored in filling cabinets. Because APS Accounts Payable recently faced and completed the laborious task, M&O's Support Services can now easily and quickly find any vendor payment information online (password assessable). While the project can't be completed in fiscal year 2013-14, it will commence. *Planning has begun. See 2014-15 Goals.*

2014-15 Fiscal Year Goals

~ The scanning of all invoices for electronic storage (note above goal) will be well worth the time intensive effort when completed, but as the task is daunting, it will be approached methodically beginning with a pilot program in one area of the Department. This will allow the Manager to get a better understanding of what will be involved and plan accordingly in organized stages. Additionally, acquiring at least one more scanner will be necessary.

~ Create drawdown POs for utility expenses.

FACING ON-GOING CHALLENGES and LOOKING AHEAD

Retro-commissioning important, but not easy or cheap

Retro-commissioning was introduced in the New Initiatives Section on page 19 of this Report. School buildings experience operational and occupancy changes that compromise the mechanical, electrical, and control systems, impeding optimal performance. Additionally, today's sophisticated systems are highly interactive with electrical controls affecting mechanical controls and other interrelated issues also adversely affecting performance. The importance of improving how APS' building equipment and systems function together and the overall condition of school facilities isn't questioned, the cost, however, surely is. Retro-commissioning is exactly that*, bringing building systems back to design and manufacturers' specifications* as performance degrades over time due to incessant use. Regardless of how well service technicians maintain the equipment, reliability problems and energy waste can occur. The formal step-by-step process is much beyond PM servicing or tweaking and requires detailed action, not just accessing, in bringing systems back to right. It's accountability. It's also time intensive and extraordinarily expensive, therefore, quite the challenge.

Understandably, the entirety of APS can't be retro-commissioned as retro-commissioning all systems at all schools is not cost, time, or effort feasible. But, as not doing it *at all* is also not the answer, retro-commissioning the District's schools can't be an all or nothing proposition. M&O's challenge is to come up with a modified, "loosely" customized retro-commissioning program that is doable with a combination of in-house and contract experts as well as sustainable and affordable District wide. To be truly sustainable, the program has to be replicable – not so customized that it can't apply to all schools. In spite of the fact that the schools are all different, the process has to be the same.

Eliminate energy waste

As so much of what improves the education process requires using more energy, the only viable saving opportunity is in eliminating waste. Energy frugality in schools *can* be done, but not without sacrificing education. Retro-commissioning will constitute the vast majority of M&O's energy conservation focus. An improved handover of new facilities from FD+C to M&O will also contribute to more energy savings in the operation and maintenance of HVAC systems.

Managing the perfect storm of irrepressible electric expenditures

The no-tech chalk board, fundamental to classroom instruction since the early 1800s, was the principal means of presenting the same information to the entire class until the introduction of the white board, still no-tech, in the 1980s. However, along with the rest of the nation's schools, APS' leap from *no*-tech classroom boards to the nearly *all*-tech classrooms of today has come with a hefty price tag. Computers were first being introduced as teaching tools at APS schools in 1988 and have multiplied in quantity many times over since, along with their accoutrements. Interactive smart boards replaced the white board in 2011 and the even higher energy using Promethean board's introduction in the last few years coupled with all the related computer technology requires using ever more expensive electricity. The District is navigating through the perfect storm caused by the introduction of technology that necessitates not only more electrical power to operate but also better "conditioned" air for optimal performance. Desktop computers, laptops, high tech printers, autocad systems, copy machines, and smart Promethean boards,

cameras, and projectors – the list is exhaustive – all depend on controlled refrigerated air which is many times more expensive than the evaporative coolers of yesteryear.

The storm only rages on due to the fragility of the electric industry mentioned earlier in this Report caused by the shutting down of coal-fired plants (two dozen across the nation); reductions in nuclear power; a growing shift to more expensive yet renewable energy; and natural gas pipeline constraints. Fortunately, as New Mexico's electric industry is regulated, the storm is tempered compared to other regions, yet is predicted to endure.

So though the storm can't be tamed, navigating through it can be managed. M&O is utilizing monitoring technology in identifying high-use systems and trimming use and cost. The District's highest 20 electric use sites are currently the focus where monitoring technology is isolating which circuit or appliance within the campus is unnecessarily draining energy so the problem can be fixed. Once the diagnosis has been completed at one school, the diagnostic "boxes" are moved to the next school. *(See more regarding WECC developments in Energy Conservation section on page 31.)*

Lower demand charges spikes

The District is working mightily to reduce the costly demand charges applied by PNM. As discussed in the electric forensic pilot program section on page 34, APS' partnership with EnerNOC in monitoring electric use and more importantly making adjustments to systems, such as starting systems up slower and/or earlier in moderating electric use during the costliest peak demand hours. It's more simply stated than done as a chilly classroom in January is not favorable to learning.

Growing PM program means reaching higher

After a PM program is successfully launched and becomes standard operating procedure, it hits a point that it is difficult to grow. APS is getting close to that point. Obstacles and restrictions are faced – namely more funds needed to employ more people to carry out the reactive and preventive maintenance workload. Money is key to expanding PM work. All the low lying fruit has been harvested and now a ladder is needed to reach the higher fruit, but the District is lacking the funds to purchase the ladder or hire a fruit picker to climb it. It is more difficult and expensive to reach the top of the tree. All the while, reactive work, some of which is urgent and catastrophic, never takes a holiday. It's a conundrum — PM work reduces reactive work because critical failures are diminished, but requires out of reach resources.

Struggling to get up the tree, however, doesn't mean abandoning the PM program! Every step up the ladder has to become a current status quo that is held until climbing higher is achievable. As it is important to never reverse the effort or progress, M&O is pressing forward with simultaneously implementing energy conservation strategies, improving the efficiencies of established PM work, and reaching higher up the PM tree.

Essential heavy equipment requires expensive and immediate repairs

Keeping M&O's large fleet of heavy equipment operational is perpetually a challenge and was particularly taxing in the 2013-14 FY. Because every piece of machinery in the specialized fleet is a work horse running hard five to six days a week, each *must* be operational around the clock every day of the year. The equipment is often called to service in emergency situations, but even if not urgent, as the jobs are inevitably large and important, preventing breakdowns is indispensable. The inventory includes industrial commercial dump trucks, a winch-boom, a five-ton and two and ½ ton flatbed trucks, one-ton pickup, six-ton semi with fifth wheel, refrigerated box trucks, water trucks, forklifts, backhoes, loaders, road graders,

excavators, bulldozers, snow plows, rider mowers, and wreckers. Each requires costly diligent preventive maintenance upkeep and equally expensive and immediate repair in the event of a breakdown − urgency is invariably a factor with this equipment. Specific to Fleet Maintenance are the safety and time issues in keeping the Food Services refrigeration trucks on the road. Fresh food is delivered to every school site several times a day on inflexible tight schedules.

Just managing the PM in keeping the equipment functional is a challenge. Servicing hard working equipment with little down time has to be performed during off hours when the equipment is not in use. Yet, in spite of regular preventive maintenance, breakdowns are going to happen. Grounds equipment run over unseen objects and other equipment expires under duress in performing demanding jobs. And parts are nearly always needed for a down truck or backhoe that is needed NOW, presenting a second challenge. But there is not time to wait for parts and repairs, yet costs for spare parts or backup equipment is prohibitive, presenting a third paradox. M& O is always under pressure with regard to heavy equipment that is crucial for the smooth operation of all Departments but most notably Fleet, Mechanical, and Grounds.

Cleaning costs on the rise

Cleaning costs for commercial facilities are rising nationally. In some cases cleaning costs *alone* represent approximately 38% of the total cost for operating the average commercial building. Other operational expenses include salaries, supplies/materials, and general repairs. This sizeable rise in cleaning costs is in part due to the introduction of safe and environmentally friendly products as well as the required training on the proper use of the products. To date APS has effectively managed custodial costs but is on notice of cleaning costs potentially increasing radically. This dramatic increase requires a greater investment in planning, more efficient equipment, upgraded programs and products, and most importantly, more efficient custodian manpower. Manpower productivity is a vital key in holding cleaning costs down. Yet, the ***quality*** of cleaning ranks equally with cost considerations. As quality can be a subjective matter, a basis must be determined that meets APS' high standard — no easy task when budget is always a determining factor.

Professional development critical in servicing today's cutting-edge schools and systems

Lost classroom learning time due to breakdowns of HVAC, plumbing, or electrical systems, or a leaking roof must be avoided at all costs. APS students and taxpayers are entitled to receive the utmost in efficiency of operations throughout all APS schools. In providing that efficiency in the 21st Century, it is no longer sufficient for a plant engineer, supervisor, or technician to know a little about a lot of things relevant to a facility. As buildings and their equipment and electrical energy systems become more efficient and high tech, extremely specialized training and knowledge is required for ***all*** M&O staff. Today's facility technicians are required to be highly skilled and knowledgeable about ***specific*** complex state-of-the-art systems that outperform and outlast obsolete equipment while using less energy.

It's quite a challenge, considering budgetary limitations, yet an M&O priority to plan and carryout this indispensable professional development. To shelve it for a later time will result in the sophisticated systems failing and classrooms closed until the ***added*** costs of corrective action resolves the breakdown that wouldn't have occurred in the first place had systems' maintenance training been provided.

APPENDICES

M&O Department Work Order Totals

School Cluster Reports

Managing for Results in America's Great City Schools

(M&O portion of the Council of the Great City Schools October 2014 Survey Results)

Facility Maintenance Assessment Report

PSFA Facility Maintenance Assessment Report Definitions

EnerNOC Electric Use Scorecard Examples

SchoolDude KPI Dashboard Examples for APS' M&O

M&O Department Work Order Totals

Mechanical Total	Click Inside The Yellow Cell, Located On The Right, To Select A Diferent Department							
Fiscal Year	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**	**FY 2012**	**FY 2013**	**FY 2014**
Reactive Work Orders	16,533	17,087	16,936	19,101	19,931	21,601	20,333	19,733
Preventive Maintenance	957	1,287	1,895	4,917	4,734	4,906	4,711	4,374
Total Work Order For Fiscal Year	17,490	18,374	18,831	24,018	24,665	26,507	25,044	24,107
PM Count Ratio	6%	8%	11%	26%	24%	23%	23%	22%
Fiscal Year	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**	**FY 2012**	**FY 2013**	**FY 2014**
All Maintenance Cost	5,920,067	5,983,645	6,145,055	6,122,687	7,346,716	6,680,585	7,297,543	7,496,559
Preventative Maintenance Cost	1,670,035	1,596,451	2,191,255	2,582,013	2,579,443	2,702,720	3,187,974	2,636,703
PM Cost Ratio	**28.21%**	**26.68%**	**34.19%**	**42.17%**	**36.60%**	**40.46%**	**43.69%**	**35.17%**

Existing PM Program Depicted In Red

Grounds Total	Click Inside The Yellow Cell, Located On The Right, To Select A Diferent Department							
Fiscal Year	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**	**FY 2012**	**FY 2013**	**FY 2014**
Reactive Work Orders	4,404	8,934	13,875	11,900	16,427	15,036	13,412	14,428
Preventive Maintenance	43	4	12	854	11,539	13,112	7,854	6,732
Total Work Order For Fiscal Year	4,447	8,938	13,887	12,762	27,966	28,148	21,266	21,160
PM Count Ratio	1%	0%	0%	7%	70%	87%	59%	47%
Fiscal Year	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**	**FY 2012**	**FY 2013**	**FY 2014**
All Maintenance Cost	3,962,254	3,711,668	5,467,751	3,502,132	3,371,436	2,616,872	3,419,825	3,063,218
Preventative Maintenance Cost	19,435	4,596	1,139	126,451	1,379,864	1,412,902	1,474,911	943,270
PM Cost Ratio	**0.49%**	**0.12%**	**0.02%**	**3.22%**	**40.93%**	**54.01%**	**43.13%**	**31.41%**

Existing PM Program Depicted In Red

Structural Total — Click Inside The Yellow Cell, Located On The Right, To Select A Diferent Department

Fiscal Year	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Reactive Work Orders	19,589	17,122	17,457	17,603	16,424	19,399	20,937	23,508
Preventive Maintenance	6	45	254	682	836	1,012	970	985
Total Work Order For Fiscal Year	19,595	17,167	17,711	18,285	17,260	20,411	21,907	24,493
PM Count Ratio	0%	0%	1%	4%	5%	5%	5%	4%

Fiscal Year	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
All Maintenance Cost	8,196,400	5,350,357	4,965,114	5,228,730	4,712,188	5,196,060	5,014,098	5,291,633
Preventative Maintenance Cost	2,273	118,416	343,335	750,675	827,361	958,763	891,667	793,579
PM Cost Ratio	0.04%	2.21%	6.91%	14.36%	17.56%	18.53%	17.78%	15.00%

Existing PM Program Depicted In Red

Electrical Total — Click Inside The Yellow Cell, Located On The Right, To Select A Diferent Department

Fiscal Year	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Reactive Work Orders	13,584	11,799	11,213	11,421	11,714	8,585	7,631	8,681
Preventive Maintenance	98	202	222	821	1,401	441	435	561
Total Work Order For Fiscal Year	13,682	12,001	11,435	12,242	13,115	9,026	7,966	9,242
PM Count Ratio	1%	2%	2%	7%	12%	5%	6%	6%

Fiscal Year	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
All Maintenance Cost	2,581,068	3,461,998	3,084,545	2,962,685	3,114,613	2,511,315	2,530,145	3,302,499
Preventative Maintenance Cost	92,740	157,148	128,456	158,965	292,917	210,855	184,359	211,843
PM Cost Ratio	3.11%	4.54%	4.27%	5.37%	9.40%	8.40%	7.29%	6.39%

Existing PM Program Depicted In Red

Building Services Total — Click Inside The Yellow Cell, Located On The Right, To Select A Diferent Department

Fiscal Year	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Reactive Work Orders	10,386	6,811	6,943	6,547	8,061	8,501	8,122	6,402
Preventive Maintenance	1	3	6	1,191	2,359	2,793	3,098	1,552
Total Work Order For Fiscal Year	10,387	6,814	6,949	7,738	10,423	11,374	11,220	7,954
PM Count Ratio	0%	0%	0%	15%	29%	33%	38%	24%

Fiscal Year	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
All Maintenance Cost	1,627,544	1,088,976	929,005	833,175	909,049	1,021,519	1,106,255	794,313
Preventative Maintenance Cost	211	765	1,481	123,331	207,795	260,760	343,517	178,698
PM Cost Ratio	0.01%	0.06%	0.16%	14.80%	23.09%	25.52%	31.05%	22.42%

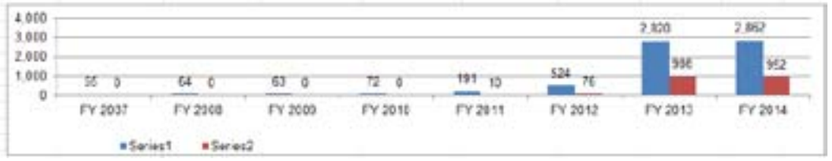
Existing PM Program Depicted In Red

Fleet Total — Click Inside The Yellow Cell, Located On The Right, To Select A Diferent Department

Fiscal Year	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Reactive Work Orders	55	64	63	72	191	524	2,820	2,862
Preventive Maintenance	0	0	0	0	10	76	986	962
Total Work Order For Fiscal Year	55	64	63	72	201	600	3,806	3,824
PM Count Ratio	0%	0%	0%	0%	5%	15%	35%	33%

Fiscal Year	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
All Maintenance Cost	951,731	0	633	128	79,799	112,373	757,526	2,166,820
Preventative Maintenance Cost	0	0	0	0	1,381	30,764	361,109	416,474
PM Cost Ratio	0.00%	#DIV/0!	0.00%	0.00%	1.73%	27.38%	45.28%	19.41%

Existing PM Program Depicted In Red



Note: *Fleet Maintenance did not utilize the SchoolDude/FIMS work order system until the 2012-13 fiscal year. In addition, the 658 PM work orders is not reflective of the percentage of PM versus reactive work performed by the Department, as PM work orders conducted on the vehicles are large projects while many of the 2,266 reactive work orders consist of minor and quick repairs. In comparing the PM cost to all maintenance costs, however, a more accurate picture is provided — PM represents 41.7% of all maintenance costs performed by the Department.*

Environmental Total — Click Inside The Yellow Cell, Located On The Right, To Select A Diferent Department

Fiscal Year	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Reactive Work Orders	782	668	560	450	656	440	473	583
Preventive Maintenance	0	0	14	15	13	27	71	88
Total Work Order For Fiscal Year	782	668	574	505	669	467	544	671
PM Count Ratio	0%	0%	3%	3%	2%	6%	15%	15%

Fiscal Year	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
All Maintenance Cost	1,554,453	1,598,341	864,365	979,672	848,455	572,990	796,717	97,301
Preventative Maintenance Cost	0	#REF!	1,056	28,557	25,843	76,621	41,533	22,814
PM Cost Ratio	0.00%	#REF!	0.12%	2.92%	2.97%	13.37%	5.21%	23.43%

Existing PM Program Depicted In Red

*Note: Due to the nature of the Environmental Management Department's role (**support** to other M&O Departments and FD+C), it is difficult to accurately identify "reactive" WOs. The Department's work, whether routine inspections or support work related to repairs or construction, is always scheduled work in response to a regulation.*

*In addition, the above graph does not illustrate time, but rather costs and not necessarily costs to the Environmental Management Department. Because every asbestos work order, including those generated by FD+C, goes through Environmental Management, the costs are included in the Environmental WO even if the Department doesn't actually cover the costs. To exclude costs in the WO, however, would be negligent as costs would then not be accurately tracked anywhere. That stated, over 90% of work that **can** be scheduled in PM Direct is. The remaining work is reactive and documented.*

School Cluster Reports

Note: The following School Cluster Reports have been corrected to reflect work order activities - and accordingly costs - that are more consistent with the performance measurement system utilizing KPIs (Key Performance Indicators) practiced by the Council of Great City Schools (CGCS) − of which APS is an active member − and the New Mexico Public Education Department's (PED) accounting units. Work that constitutes "major maintenance" versus "renovation" has been re-categorized to provide a clear distinction between M&O's large refurbishing maintenance projects and FD+C's renovation projects. The line between them has justifiably been blurred over the years, but has now been more appropriately defined to pertinently allow for the comparison between apples to apples rather than apples to oranges. The reclassification of work has brought APS in alignment with CGCS and PED categories and numbers.

Rio Grande High School Cluster

Rio Grande Cluster	2011-2012 Square Footage	2011-2012 Total Students	2011-2012 Work Orders	2011-2012 Total Cost	2012-2013 Square Footage	2012-2013 Total Students	2012-2013 Work Orders	2012-2013 Total Cost	2013-2014 Square Footage	2013-2014 Total Students	2013-2014 Work Orders	2013-2014 Total Cost
Adobe Acres ES - 206	80,946	553	568	$ 125,272.92	80,946	562	531	$ 131,611.02	73,332	667	547	$ 131,356.69
Armijo ES - 215	64,387	510	495	$ 86,245.28	64,387	452	593	$ 97,615.19	62,375	450	504	$ 82,757.25
Atrisco ES - 216	61,228	386	498	$ 149,457.77	61,228	351	501	$ 125,631.27	61,357	380	459	$ 87,693.48
Barcelona ES - 225	76,338	571	315	$ 66,906.82	76,338	529	373	$ 120,915.36	75,544	542	369	$ 89,639.54
Ernie Pyle MS - 450	175,633	655	617	$ 138,261.11	175,633	653	743	$ 207,304.60	118,356	634	675	$ 223,720.60
Harrison MS - 415	134,416	849	520	$ 133,286.55	134,416	925	637	$ 140,926.91	122,148	857	756	$ 151,830.27
Kit Carson ES - 231	66,716	570	460	$ 66,382.84	72,211	617	662	$ 91,353.12	72,211	486	482	$ 82,474.56
Los Padillas ES - 297	45,881	284	629	$ 147,233.28	45,881	292	795	$ 157,538.89	45,801	276	581	$ 124,926.27
Mountain View ES - 324	64,466	410	439	$ 86,361.49	63,844	398	402	$ 73,903.96	63,844	372	418	$ 73,696.46
Navajo ES - 327	76,480	672	463	$ 91,362.13	76,480	679	547	$ 96,271.95	82,562	689	517	$ 90,755.16
Pajarito ES - 333	71,070	653	490	$ 137,139.83	71,070	611	486	$ 163,086.96	71,070	549	441	$ 108,666.07
Polk MS - 448	89,869	456	384	$ 91,530.13	89,869	458	591	$ 127,127.27	91,565	415	589	$ 114,219.56
Rio Grande HS - 540	390,728	1,595	1384	$ 338,995.14	390,728	1,464	1462	$ 475,842.14	390,728	1,523	1400	$ 447,649.61
Valle Vista ES - 370	72,192	614	475	$ 112,322.32	72,192	656	482	$ 106,418.45	72,192	566	556	$ 119,221.12
Totals	1,459,189	8,778	7,637	$ 1,731,476.71	1,464,983	8,548	8,595	$ 2,655,626.09	1,393,125	8,386	8,334	$ 1,937,296.95
Cost Per Square Foot	1.19	Cost Per Square Foot			1.48	Cost Per Square Foot			1.39	Cost Per Square Foot		
Cost Per Student	197.25	Cost Per Student			240.41	Cost Per Student			231.02	Cost Per Student		

West Mesa High School Cluster

West Mesa Cluster	2011-2012 Square Footage	2011-2012 Total Students	2011-2012 Work Orders	2011-2012 Total Cost	2012-2013 Square Footage	2012-2013 Total Students	2012-2013 Work Orders	2012-2013 Total Cost	2013-2014 Square Footage	2013-2014 Total Students	2013-2014 Work Orders	2013-2014 Total Cost
Alamosa ES - 210	64,460	732	428	$ 103,537.57	64,460	694	542	$ 161,665.47	77,376	652	437	$ 92,816.12
Chaparral ES - 234	92,682	936	639	$ 143,872.61	92,682	894	675	$ 150,061.20	92,682	991	697	$ 331,662.79
Jimmy Carter MS - 445	170,939	1,162	477	$ 134,264.80	170,939	1,233	569	$ 129,267.31	173,861	1,232	518	$ 134,713.04
John Adams MS - 405	120,954	768	737	$ 141,208.32	120,954	703	775	$ 154,567.42	122,976	677	722	$ 130,455.57
Lavaland ES - 288	66,123	673	635	$ 123,788.08	66,123	691	677	$ 129,134.36	66,123	698	629	$ 72,631.33
Painted Sky ES - 375	98,452	1,053	688	$ 169,238.38	98,452	1,028	586	$ 132,722.85	98,452	1,096	690	$ 149,409.75
Susie Rayos Montoya ES - 280	57,725	733	451	$ 56,111.02	102,758	776	514	$ 90,605.35	102,758	862	492	$ 73,698.18
West Mesa HS - 570	366,570	1,740	1,149	$ 282,166.57	366,570	1,561	1,310	$ 462,968.41	366,570	1,463	1,382	$ 352,246.34
Totals	1,003,919	7,734	4,994	$ 1,685,263.75	1,088,938	7,560	5,459	$ 1,490,991.87	1,097,958	7,571	5,367	$ 1,328,522.85
Cost Per Square Foot	1.00	Cost Per Square Foot			1.30	Cost Per Square Foot			1.21	Cost Per Square Foot		
Cost Per Student	148.32	Cost Per Student			166.05	Cost Per Student			175.48	Cost Per Student		

Highland High School Cluster

Highland Cluster	2011-2012 Square Footage	2011-2012 Total Students	2011-2012 Work Orders	2011-2012 Total Cost	2012-2013 Square Footage	2012-2013 Total Students	2012-2013 Work Orders	2012-2013 Total Cost	2013-2014 Square Footage	2013-2014 Total Students	2013-2014 Work Orders	2013-2014 Total Cost
Bandelier ES - 222	75,668	547	539	$ 90,562.23	75,668	594	637	$ 139,234.44	77,057	579	603	$ 107,138.96
Emerson ES - 255	67,096	467	533	$ 304,483.52	67,096	492	748	$ 118,783.75	67,096	604	659	$ 121,065.39
Hawthorne ES - 270	68,151	561	452	$ 87,533.35	68,151	526	518	$ 150,382.36	68,151	497	557	$ 105,384.51
Hayes MS - 416	111,470	449	287	$ 77,307.46	111,470	378	343	$ 121,159.96	113,562	381	312	$ 224,443.86
Highland HS - 520	397,798	1,657	1,466	$ 260,756.37	397,798	1,592	1,422	$ 248,321.03	397,798	1,466	1,448	$ 600,237.42
Kirtland ES - 279	53,038	368	563	$ 131,822.16	53,038	369	474	$ 58,834.62	53,038	352	486	$ 63,289.51
La Mesa ES - 285	83,429	700	554	$ 109,353.37	83,429	732	478	$ 64,656.72	83,429	709	586	$ 100,696.55
Manzano Mesa ES - 268	81,644	699	370	$ 66,114.17	81,644	739	412	$ 66,881.88	81,644	748	466	$ 81,634.11
Mark Twain ES - 364	72,423	382	470	$ 79,978.73	72,423	402	544	$ 88,399.30	72,423	395	636	$ 97,026.68
Sandia Base ES - 348	51,430	488	484	$ 71,638.13	51,430	492	452	$ 115,756.55	51,430	459	418	$ 91,455.83
Van Buren MS - 460	113,204	590	529	$ 107,091.22	113,204	533	681	$ 143,457.23	111,194	544	498	$ 116,609.17
Wherry ES - 376	67,333	535	448	$ 110,438.46	67,333	533	431	$ 72,910.46	67,333	543	460	$ 102,249.36
Whittier ES - 379	68,592	709	552	$ 55,904.46	68,592	409	426	$ 57,316.80	68,592	453	355	$ 67,557.47
Wilson MS - 479	100,408	496	530	$ 100,231.96	100,408	518	455	$ 95,699.04	128,408	508	671	$ 371,638.44
Totals	1,411,712	8,797	7,797	$1,703,678.32	1,411,712	8,481	7,521	$ 1,581,795.26	1,441,155	8,158	8,155	$ 2,171,356.68
Cost Per Square Foot	1.21	Cost Per Square Foot			1.15	Cost Per Square Foot			1.51	Cost Per Square Foot		
Cost Per Student	193.66	Cost Per Student			200.19	Cost Per Student			266.16	Cost Per Student		

Del Norte High School Cluster

Del Norte Cluster	2011- 2012 Square Footage	Total Students	Work Orders	Total Cost	2012- 2013 Square Footage	Total Students	Work Orders	Total Cost	2013- 2014 Square Footage	Total Students	Work Orders	Total Cost
Arroyo Del Oso ES - 329	40,744	470	350	$ 68,351.36	60,658	415	283	$ 100,448.50	60,658	439	291	$ 75,535.93
Bel Air ES - 228	75,519	365	454	$ 103,670.46	75,519	375	560	$ 92,787.81	71,496	420	594	$ 76,535.98
Cleveland MS - 407	115,850	714	443	$ 110,310.81	115,853	666	395	$ 130,389.36	108,336	648	393	$ 155,547.76
Del Norte HS - 514	297,145	1,276	981	$ 213,186.58	305,891	1,138	969	$ 325,326.63	305,851	1,182	883	$ 225,507.51
E.G. Ross ES - 215	64,143	555	524	$ 104,893.22	65,153	496	437	$ 97,444.84	65,163	586	447	$ 86,796.78
Governor Bent ES - 230	64,797	566	542	$ 76,369.18	64,797	627	646	$ 107,946.13	65,631	530	659	$ 96,097.34
Hodgin ES - 273	79,856	602	517	$ 64,967.99	79,856	586	462	$ 67,846.38	79,856	588	503	$ 82,549.22
McKinley MS - 448	95,336	627	740	$ 160,618.63	95,336	672	582	$ 118,321.85	97,802	540	546	$ 166,457.22
Zuni ES - 388	57,125	443	456	$ 96,290.89	57,125	415	404	$ 58,771.95	57,125	431	413	$ 86,329.05
Totals	899,519.00	5,557	5,007.00	$ 998,657.02	910,202	5,240	4,738	$ 1,100,283.41	901,557	5,284	4,625	$ 1,042,157.74
Cost Per Square Foot	1.11	Cost Per Square Foot			1.21	Cost Per Square Foot			1.16	Cost Per Square Foot		
Cost Per Student	179.71	Cost Per Student			209.98	Cost Per Student			157.23	Cost Per Student		

Cibola High School Cluster

Cibola Cluster	2010- 2011 Square Footage	Total Students	Work Orders	Total Cost	2011- 2012 Square Footage	Total Students	Work Orders	Total Cost	2012- 2013 Square Footage	Total Students	Work Orders	Total Cost	2013- 2014 Square Footage	Total Students	Work Orders	Total Cost
Cibola HS - 599	375,287	1,564	1,325	$ 256,890.09	375,287	1,607	1,063	$ 221,588.13	394,545	1,633	1,389	$ 330,357.23	394,545	1,542	1,423	$ 496,390.12
Corrales ES - 381	70,834	473	542	$ 138,997.61	70,834	468	446	$ 114,612.90	70,834	457	625	$ 284,490.63	70,004	446	571	$ 106,291.09
James Monroe MS - 490	159,120	958	481	$ 149,768.23	159,684	1,001	371	$ 96,260.23	158,684	976	421	$ 161,729.27	158,684	977	420	$ 96,965.23
Petroglyph ES - 297	67,369	721	593	$ 125,458.57	67,369	738	569	$ 112,687.01	67,369	736	492	$ 144,833.86	67,369	563	497	$ 106,398.66
Seven Bar ES - 295	71,120	966	296	$ 61,792.28	71,120	900	293	$ 66,368.15	71,120	829	367	$ 72,699.56	87,280	806	397	$ 75,136.33
Sierra Vista ES - 296	73,253	869	399	$ 84,604.95	73,253	738	419	$ 97,490.14	73,253	794	441	$ 142,047.97	73,253	780	470	$ 82,696.18
Sunset View ES - 393	85,869	461	354	$ 42,764.93	85,899	496	395	$ 46,113.26	85,384	631	379	$ 69,502.41	85,364	594	391	$ 55,437.28
Taylor MS - 457	111,936	629	618	$ 157,224.08	115,836	687	521	$ 84,519.07	115,826	609	578	$ 121,897.10	114,270	498	444	$ 117,648.36
Totals	1,023,170	4,958	4,409	$1,027,473.36	1,060,585	4,789	4,076	$ 833,719.93	1,028,545	4,653	4,701	$1,254,255.57	1,042,147	4,392	4,083	$ 1,211,856.78
Cost Per Square Foot	1.00	Cost Per Square Foot			0.83	Cost Per Square Foot			1.22	Cost Per Square Foot			1.16	Cost Per Square Foot		
Cost Per Student	548.52	Cost Per Student			122.81	Cost Per Student			188.52	Cost Per Student			181.69	Cost Per Student		

Valley High School Cluster

Valley Cluster	2011- 2012 Square Footage	Total Students	Work Orders	Total Cost	2012- 2013 Square Footage	Total Students	Work Orders	Total Cost	2013- 2014 Square Footage	Total Students	Work Orders	Total Cost
Alameda ES - 207	53,081	264	380	$ 89,256.76	45,911	252	412	$ 114,214.38	45,911	259	337	$ 63,754.70
Alvarado ES - 213	44,671	441	414	$ 79,444.53	49,321	401	431	$ 95,752.54	49,321	368	444	$ 363,560.60
Cochiti ES - 237	58,652	303	334	$ 67,686.31	58,652	279	252	$ 63,531.83	50,652	290	362	$ 103,732.56
Duranes ES - 249	55,340	300	401	$ 94,143.35	55,340	328	430	$ 141,646.68	55,530	362	439	$ 115,855.06
Garfield MS - 416	96,192	367	427	$ 76,043.09	96,192	347	349	$ 91,910.57	101,741	331	367	$ 78,879.66
Griegos ES - 267	46,749	366	488	$ 96,565.65	46,749	378	454	$ 69,505.53	46,749	368	419	$ 68,817.28
La Luz ES - 282	51,672	273	340	$ 56,734.11	51,672	220	367	$ 73,136.86	61,672	222	382	$ 79,745.49
Los Ranchos ES - 336	56,577	364	480	$ 84,434.37	56,577	341	521	$ 126,447.73	56,977	343	524	$ 98,443.02
MacArthur ES - 303	46,228	233	472	$ 104,469.81	46,228	248	463	$ 92,676.05	46,228	233	664	$ 124,463.89
Mission Avenue ES - 309	58,833	440	404	$ 92,214.51	58,833	435	528	$ 151,728.60	58,833	406	468	$ 118,107.80
Taft MS - 455	123,136	523	561	$ 119,729.66	123,136	524	526	$ 128,618.24	121,869	514	645	$ 129,320.93
Valley HS - 560	349,380	1,539	1,211	$ 239,765.57	349,380	1,340	1,564	$ 392,178.60	349,380	1,231	1,380	$ 294,360.50
Totals	1,032,911	5,485	5,912	$1,199,486.71	1,030,391	5,093	6,337	$ 1,541,387.18	1,034,863	4,867	6,311	$ 1,601,941.89
Cost Per Square Foot	1.16	Cost Per Square Foot			1.50	Cost Per Square Foot			1.55	Cost Per Square Foot		
Cost Per Student	221.92	Cost Per Student			302.65	Cost Per Student			329.14	Cost Per Student		

Albuquerque High School Cluster

Albu. Cluster	2011- 2012 Square Footage	Total Students	Work Orders	Total Cost	2012- 2013 Square Footage	Total Students	Work Orders	Total Cost	2013- 2014 Square Footage	Total Students	Work Orders	Total Cost
Albuquerque HS - 590	311,621	1,676	762	$ 296,552.70	311,621	1,712	734	$ 260,571.98	334,109	1,565	909	$ 353,927.79
Coronado ES - 243	43,030	211	286	$ 47,636.37	43,036	278	289	$ 48,162.88	43,036	295	327	$ 49,754.49
Dolores Gonzales ES - 244	53,262	467	480	$ 156,320.08	52,926	415	398	$ 68,994.55	52,926	415	553	$ 85,517.80
East San Jose ES - 252	68,174	633	517	$ 113,780.93	68,174	620	430	$ 118,981.58	68,174	596	472	$ 120,237.67
Eugene Field ES - 261	52,111	396	393	$ 79,557.47	52,111	367	333	$ 72,229.17	52,111	327	344	$ 62,279.36
Jefferson MS - 425	123,372	864	621	$ 176,052.78	123,372	930	696	$ 154,251.69	123,372	862	789	$ 235,004.65
Lew Wallace ES - 373	34,089	291	275	$ 52,575.28	34,089	299	246	$ 45,843.46	34,089	296	261	$ 71,968.78
Longfellow ES - 291	47,698	294	343	$ 61,970.26	47,698	294	377	$ 69,841.88	47,698	291	339	$ 58,963.09
Lowell ES - 300	54,341	418	516	$ 136,134.17	54,341	396	484	$ 126,783.37	53,572	366	572	$ 125,755.96
Monte Vista ES - 312	56,790	481	383	$ 74,390.06	56,790	492	361	$ 96,483.56	56,790	623	427	$ 108,668.52
Montezuma ES - 315	75,997	584	297	$ 56,577.56	75,997	586	275	$ 61,122.84	75,997	474	314	$ 90,517.48
Reginald Chavez ES - 330	46,279	368	613	$ 86,989.97	46,279	340	410	$ 219,290.28	46,279	316	348	$ 77,641.43
Washington MS - 465	95,488	490	397	$ 80,752.12	95,488	463	312	$ 87,557.98	97,467	486	389	$ 98,204.64
Zia ES - 385	69,983	483	436	$ 73,666.62	69,983	489	425	$ 77,137.34	69,983	436	451	$ 143,764.61
Totals	1,121,235	7,500	6,217	$1,483,416.38	1,120,905	7,519	5,760	$ 1,504,331.13	1,144,543	7,327	6,475	$ 1,683,986.16
Cost Per Square Foot	1.32	Cost Per Square Foot			1.34	Cost Per Square Foot			1.47	Cost Per Square Foot		
Cost Per Student	197.79	Cost Per Student			200.07	Cost Per Student			229.83	Cost Per Student		

Sandia High School Cluster

Sandia Cluster	2011- 2012 Square Footage	Total Students	Work Orders	Total Cost	2012- 2013 Square Footage	Total Students	Work Orders	Total Cost	2013- 2014 Square Footage	Total Students	Work Orders	Total Cost
Bellehaven ES - 229	51,261	356	326	$ 51,587.94	51,261	317	283	$ 43,858.33	51,074	328	338	$ 70,430.52
Comanche ES - 241	49,478	422	366	$ 73,417.92	49,478	409	320	$ 48,236.61	49,365	417	331	$ 39,272.35
Eubank ES - 256	60,226	528	902	$ 206,859.39	60,226	497	636	$ 133,395.86	60,226	466	427	$ 158,650.29
Grant MS - 413	116,722	728	459	$ 114,569.97	119,722	635	425	$ 92,677.16	139,519	615	568	$ 117,774.71
Inez ES - 276	60,877	451	455	$ 77,362.70	60,877	444	395	$ 53,682.83	60,877	451	535	$ 140,770.76
Madison MS - 435	121,188	790	615	$ 210,614.49	121,188	732	585	$ 143,379.54	124,271	704	599	$ 159,606.43
Osuna ES - 332	48,769	421	241	$ 61,761.26	48,769	430	267	$ 53,175.17	48,769	429	341	$ 91,333.94
Sandia HS - 550	336,821	2,882	1,030	$ 254,948.54	336,821	1,886	993	$ 279,449.38	336,821	1,844	996	$ 229,239.10
Sombra Del Monte ES - 357	62,295	392	344	$ 64,296.00	62,295	383	333	$ 49,230.94	62,295	352	382	$ 78,540.67
Totals	907,637	6,896	4,738	$1,115,068.12	907,637	5,733	4,241	$ 890,055.81	933,217	5,656	4,495	$ 1,086,018.77
Cost Per Square Foot	1.23	Cost Per Square Foot			0.98	Cost Per Square Foot			1.16	Cost Per Square Foot		
Cost Per Student	183.10	Cost Per Student			155.25	Cost Per Student			192.01	Cost Per Student		

Manzano High School Cluster

Manzano Cluster	2011- 2012 Square Footage	Total Students	Work Orders	Total Cost	2012- 2013 Square Footage	Total Students	Work Orders	Total Cost	2013- 2014 Square Footage	Total Students	Work Orders	Total Cost
A. Montoya ES - 321	72,085	341	290	$ 66,121.41	65,971	316	359	$ 84,006.17	66,971	365	290	$ 101,279.22
Acoma ES - 204	43,894	214	265	$ 46,964.52	45,141	192	273	$ 55,365.74	45,141	158	335	$ 59,416.30
Apache ES - 214	48,581	413	377	$ 62,068.02	58,630	428	384	$ 58,072.25	58,630	428	387	$ 96,278.60
Chelwood ES - 236	69,716	542	486	$ 86,574.35	69,716	502	445	$ 58,348.49	76,152	609	509	$ 86,812.93
Collet Park ES - 240	44,007	395	319	$ 71,544.31	44,007	355	319	$ 72,900.29	45,656	365	315	$ 76,677.73
Jackson MS - 420	88,934	618	553	$ 162,566.59	88,934	609	536	$ 122,208.90	88,934	577	528	$ 119,157.22
Kennedy MS - 427	89,048	494	491	$ 93,394.76	107,782	502	543	$ 111,743.93	107,782	485	527	$ 113,137.69
Manzano HS - 530	408,812	1,924	1,285	$ 291,021.17	408,812	1,802	1,335	$ 733,110.81	343,394	1,718	1,257	$ 314,154.56
McCollum ES - 307	57,885	334	498	$ 116,850.52	66,687	412	417	$ 82,668.58	66,687	397	418	$ 84,701.66
Roosevelt MS - 452	103,470	393	412	$ 131,794.21	103,470	359	435	$ 136,346.23	98,852	333	415	$ 187,723.18
San Antonito ES - 345	53,719	312	271	$ 97,967.75	53,719	284	332	$ 139,653.99	53,719	268	320	$ 114,405.15
Tomasita ES - 363	64,759	381	514	$ 100,104.71	64,759	378	414	$ 78,196.81	64,759	402	494	$ 102,669.19
Totals	1,171,670	6,364	5,761	$1,316,006.52	1,198,588	6,239	5,791	$1,734,472.26	1,155,877	6,096	5,795	$1,448,493.64
Cost Per Square Foot	1.12	Cost Per Square Foot			1.45	Cost Per Square Foot			1.30	Cost Per Square Foot		
Cost Per Student	206.79	Cost Per Student			278.00	Cost Per Student			237.60	Cost Per Student		

Eldorado High School Cluster

Eldorado Cluster	2011- 2012 Square Footage	Total Students	Work Orders	Total Cost	2012- 2013 Square Footage	Total Students	Work Orders	Total Cost	2013- 2014 Square Footage	Total Students	Work Orders	Total Cost
Eldorado HS - 515	370,620	1,932	1,177	$ 382,612.68	370,620	1,886	1,296	$288,674.42	370,620	1,833	1,101	$ 436,802.22
Georgia Okeefe ES - 328	85,000	590	225	$ 55,211.76	85,000	605	225	$ 35,951.85	91,842	684	249	$ 39,780.77
Hoover MS - 418	112,222	645	574	$ 113,802.45	112,220	684	559	$235,558.47	111,636	678	536	$ 136,872.99
John Baker ES - 257	55,555	486	347	$ 66,519.33	69,535	477	330	$ 79,506.48	69,535	549	336	$ 68,585.26
Matheson Park ES - 335	42,375	330	316	$ 47,713.80	43,375	321	325	$ 65,559.22	43,375	344	361	$ 147,601.07
Mitchell ES - 350	54,078	445	319	$ 66,048.78	54,078	438	375	$ 65,210.04	54,078	411	438	$ 115,362.53
Onate ES - 227	45,305	264	156	$ 39,509.89	45,305	227	191	$ 39,581.79	42,379	221	182	$ 78,269.92
S.Y. Jackson ES - 360	56,388	639	426	$ 77,772.39	56,388	672	361	$ 69,443.18	56,388	686	428	$ 113,629.51
Totals	821,547	5,238	3,539	$ 769,598.86	835,525	5,262	3,651	$868,615.45	839,322	5,222	3,651	$1,119,277.91
Cost Per Square Foot	0.94	Cost Per Square Foot			1.04	Cost Per Square Foot			1.33	Cost Per Square Foot		
Cost Per Student	146.93	Cost Per Student			165.05	Cost Per Student			214.34	Cost Per Student		

Atrisco Heritage Academy High School Cluster

Atrisco Cluster	2011- 2012 Square Footage	Total Students	Work Orders	Total Cost	2012- 2013 Square Footage	Total Students	Work Orders	Total Cost	2013- 2014 Square Footage	Total Students	Work Orders	Total Cost
Atrisco Heritage HS - 575	473,000	1,726	760	$169,279.96	473,000	2,413	1077	$ 312,534.36	473,000	2,329	1046	$ 301,753.29
Carlos Rey ES - 339	95,166	668	585	$114,305.87	95,166	852	494	$ 115,115.78	95,166	775	449	$ 82,774.39
Edward Gonzales ES - 262	84,363	641	266	$115,704.14	84,363	664	271	$ 75,753.33	84,363	649	277	$ 64,416.36
Helen Cordero ES - 395	83,877	801	265	$ 44,040.51	83,877	848	325	$ 69,209.43	83,877	798	350	$ 48,413.14
Mary Ann Binford ES - 250	74,203	919	505	$108,843.35	74,203	515	483	$ 114,839.66	74,203	993	498	$ 136,394.82
Rudolfo Anaya ES - 392	86,000	695	295	$ 58,952.79	90,680	811	394	$ 83,534.23	104,904	873	418	$ 71,266.98
Truman MS - 475	163,136	1,296	492	$155,627.05	174,436	1,291	578	$ 130,713.79	174,436	1,396	534	$ 902,544.78
Totals	1,058,745	6,946	3,169	$778,853.37	1,075,727	7,894	3,622	$ 906,900.57	1,089,951	7,729	3,772	$ 875,062.95
Cost Per Square Foot	0.74	Cost Per Square Foot			0.84	Cost Per Square Foot			0.80	Cost Per Square Foot		
Cost Per Student	112.13	Cost Per Student			114.88	Cost Per Student			113.16	Cost Per Student		

Volcano Vista High School Cluster

Volcano Vista Cluster	2011- 2012 Square Footage	Total Students	Work Orders	Total Cost	2012- 2013 Square Footage	Total Students	Work Orders	Total Cost	2013- 2014 Square Footage	Total Students	Work Orders	Total Cost
Chamiza ES - 295	70,747	686	616	$116,071.10	73,787	675	638	$ 203,619.98	73,747	618	440	$ 124,471.49
LBJ MS - 485	164,722	992	558	$137,483.08	165,869	915	589	$ 156,801.20	165,869	872	561	$ 145,986.71
Mario Hughes ES - 365	69,633	677	563	$116,656.21	69,113	600	449	$ 104,283.15	69,110	667	467	$ 115,037.07
Tierra Antigua ES - 389	89,000	568	406	$ 79,338.58	85,304	718	313	$ 70,651.73	85,304	757	395	$ 69,348.33
Tony Hillerman MS - 492	172,300	893	489	$132,731.88	172,600	913	542	$ 139,180.22	176,766	1,006	464	$ 123,834.87
Ventana Ranch ES - 264	99,329	753	325	$ 68,938.64	99,329	777	321	$ 53,815.46	99,329	732	309	$ 68,428.68
Volcano Vista - 575	486,300	2,093	840	$132,843.15	484,630	2,159	943	$ 329,626.44	484,630	2,188	892	$ 209,656.27
Totals	1,080,684	5,976	3,178	$696,939.54	1,075,232	6,079	3,155	$ 854,158.20	1,082,960	6,114	3,058	$ 733,090.93
Cost Per Square Foot	0.64	Cost Per Square Foot			0.79	Cost Per Square Foot			0.68	Cost Per Square Foot		
Cost Per Student	114.95	Cost Per Student			148.51	Cost Per Student			119.90	Cost Per Student		

La Cueva High School Cluster

La Cueva Cluster	2011- 2012 Square Footage	Total Students	Work Orders	Total Cost	2012- 2013 Square Footage	Total Students	Work Orders	Total Cost	2013- 2014 Square Footage	Total Students	Work Orders	Total Cost
Dennis Chavez ES - 203	62,994	710	592	$ 54,358.81	63,364	662	611	$ 107,438.69	63,026	614	697	$ 102,251.17
Desert Ridge MS - 430	167,039	1,021	436	$141,456.39	157,839	1,048	476	$ 133,498.34	159,767	1,026	418	$ 126,533.24
Double Eagle ES - 350	65,651	516	381	$ 88,870.04	65,651	492	487	$ 97,771.63	65,651	535	539	$ 90,272.61
Eisenhower MS - 480	137,017	915	498	$117,523.50	137,017	888	544	$ 126,410.95	135,825	895	679	$ 126,431.76
Hubert Humphrey ES - 221	76,443	470	623	$ 94,721.83	76,440	478	497	$ 108,961.98	68,879	447	490	$ 86,234.13
La Cueva HS - 525	387,921	2,079	1,837	$259,966.33	387,921	1,849	1,098	$ 479,040.02	387,921	1,846	979	$ 238,569.61
North Star ES - 268	79,693	707	350	$ 81,605.40	79,693	741	357	$ 73,357.25	79,693	628	270	$ 58,445.41
Totals	986,755	6,418	3,817	$878,501.70	987,125	6,148	3,990	$ 1,126,498.86	970,762	5,993	4,072	$ 830,727.94
Cost Per Square Foot	0.89	Cost Per Square Foot			1.14	Cost Per Square Foot			0.86	Cost Per Square Foot		
Cost Per Student	136.88	Cost Per Student			183.23	Cost Per Student			138.62	Cost Per Student		

Alternative Schools' Cluster

Alternative Cluster	2011- 2012 Square Footage	Total Students	Work Orders	Total Cost	2012- 2013 Square Footage	Total Students	Work Orders	Total Cost	2013- 2014 Square Footage	Total Students	Work Orders	Total Cost
Ace @ Coors - 591	0	0	0	$ -	0	0	5	$ 43,920.78	0	0	15	$ 2,157.53
Career Academic & Technology Academy (CATA) - 767	0	0	0	$ -	0	0	0	$ -	0	0	0	$ -
Career Enrichment Center - 592	52,906	0	466	$ 99,809.19	52,906	1,661	342	$ 68,477.16	52,906	1,602	346	$ 54,725.92
Crossroads - 512	0	0	0	$ -	0	6	0	$ -	0	9	0	$ -
Court House - 915	0	0	0	$ -	0	0	0	$ -	0	0	0	$ -
Data Charter - 743	0	0	0	$ -	0	0	0	$ -	0	0	17	$ 3,113.54
Desert Willow Family School - 980	29,451	234	134	$ 16,064.69	29,451	240	116	$ 16,815.21	0	244	123	$ 23,150.63
eCademy - 511	30,000	86	92	$ 4,431.28	44,397	0	169	$ 23,488.88	44,397	31	148	$ 18,686.89
Freedom HS - 596	30,830	149	226	$ 27,184.68	41,474	170	193	$ 38,195.89	41,474	159	267	$ 33,754.49
Juvenile Detention Center - 640	4,480	86	6	$ 81.82	4,480	55	6	$ 163.76	0	0	1	$ 85.44
Montessori Rio Grande - 723	14,671	0	127	$ 27,425.53	14,671	0	123	$ 43,962.46	0	0	146	$ 18,793.85
Native American Community Academy - 762	30,912	0	167	$ 61,297.13	30,912	0	144	$ 23,194.31	0	0	33	$ 9,287.41
New Futures HS - 549	45,359	261	286	$ 53,443.31	35,903	156	307	$ 53,458.12	35,903	156	317	$ 57,230.81
New+Gen Academy - 586	46,804	0	69	$ 10,272.52	46,804	254	86	$ 15,229.57	46,606	337	123	$ 20,333.97
Nuestros Valores - 739	0	0	0	$ -	0	0	0	$ -	0	0	29	$ 13,760.65
Public Academy For Performing Arts (PAPA) - 747	29,668	0	149	$ 18,664.28	29,668	0	149	$ 32,467.72	0	0	88	$ 8,423.64
Robert F Kennedy HS - 726	43,904	0	162	$ 36,305.48	43,904	0	168	$ 68,678.07	0	0	62	$ 9,793.86
Sandia Bac - 554	13,200	0	48	$ 38,415.58	13,200	0	55	$104,245.56	0	0	41	$ 4,263.35
School On Wheels - 597	19,338	154	122	$ 29,042.42	19,338	124	138	$ 23,122.47	19,338	127	127	$ 19,212.73
Sierra Alt HS - 594	0	0	11	$ 381.76	0	0	2	$ 68.96	0	0	4	$ 397.44
South Valley Academy - 725	0	0	0	$ -	0	0	11	$ 4,587.86	0	0	127	$ 25,085.15
Vision Quest - 840	3,380	27	74	$ 7,955.59	3,380	7	115	$ 17,153.25	3,380	22	60	$ 6,010.61
Western Trails Alt. HS - 508	8,726	0	51	$ 12,561.99	8,726	0	53	$ 7,883.91	0	0	53	$ 6,747.23
21st Century Charter School - 727	0	0	6	$ 33,648.81	0	0	1	$ 42.72	0	0	1	$ -
Totals	413,829	910	2,179	$439,225.81	410,294	2,728	2,513	$595,173.38	243,904	2,742	2,096	$352,155.53
Cost Per Square Foot	1.14	Cost Per Square Foot			1.37	Cost Per Square Foot			1.44	Cost Per Square Foot		
Cost Per Student	473.48	Cost Per Student			218.54	Cost Per Student			128.42	Cost Per Student		

Managing for Results
in America's Great City Schools
2014

RESULTS FROM FISCAL YEAR 2012-13

A REPORT OF THE PERFORMANCE MEASUREMENT AND BENCHMARKING PROJECT

OCTOBER 2014

INTRODUCTION

OVERVIEW

The Performance Management and Benchmarking Project

In 2002 the Council of the Great City Schools and its members set out to develop performance measures that could be used to improve business operations in urban public school districts. The Council launched the Performance Measurement and Benchmarking Project to achieve these objectives. The purposes of the project were to:

- Establish a common set of **key performance indicators** (KPIs) in a range of school operations, including business services, finances, human resources, and technology;
- Use these KPIs to benchmark and compare the performance of the nation's largest urban public school systems;
- Use the results to improve operational performance in urban public schools.

Since its inception, the project has been led by two Council task forces operating under the aegis of the organization's Board of Directors: the Task Force on Leadership, Governance, and Management, and the Task Force on Finance. The project's work has been conducted by a team of member-district managers, technical advisors with extensive expertise in the following functional areas: business services (transportation, food services, maintenance and operations, safety and security), budget and finance (accounts payable, financial management, grants management, risk management, compensation, procurement and cash management), information technology, and human resources.

Methodology of KPI Development

The project's teams have used a sophisticated approach to define, collect and validate school-system data. This process calls for each KPI to have a dearly defined purpose to justify its development, and extensive documentation of the **metric definitions** ensures that the expertise of the technical teams is fully captured. (The definitional documentation for any KPI that is mentioned in this report is included in the "KPI Definitions" section of each functional area.)

At the core of the methodology is the principle of **continuous improvement**. The technical teams are instructed to focus on operational indicators that can be *benchmarked* and are *actionable*, and thus can be strategically managed by setting improvement targets.

From the KPI definitions, the surveys are developed and tested to ensure the comparability, integrity and validity of data across school districts.

Power Indicators and Essential Few

The KPIs are categorized into three levels of priority—Power Indicators, Essential Few, and Key Indicators—with each level having its own general purpose.

- **Power Indicators:** Strategic and policy level; can be used by superintendents and school boards to assess the overall performance of their district's non-instructional operations.
- **Essential Few:** Management level; can be used by chief executives to assess the performance of individual departments and divisions.
- **Key Indicators:** Technical level; can be used by department heads to drive the performance of the higher-level measures.

This division is more or less hierarchical, and while it is just one way of organizing the KPIs, it is helpful for highlighting those KPIs that are important enough to warrant more attention being paid to them.

A Note on Cost of Living Adjustments

We adjust for **cost of living** in most cost-related measures. Regions where it is more expensive to live, such as San Francisco, Boston, New York City and Washington, D.C., are adjusted downward in order to be comparable with other cities. Conversely, regions where the costs of goods are lower, such as Columbus, OH, and Nashville, TN, are adjusted upwards.

MAINTENANCE & OPERATIONS

Performance metrics in maintenance and operations (M&O) assess the cost efficiency and service levels of a district's facilities management and labor. Areas of focus include *custodial work*, *maintenance work*, *renovations*, *construction*, *utility usage*, and *environmental stewardship*.

The cost efficiency of custodial work is represented broadly by **Custodial Workload** and **Custodial Cost per Square Foot**, where low workload combined with high cost per square feet would indicate that cost savings can be realized by reducing the number of custodians. Additionally, the relative cost of supplies can be considered by looking at **Custodial Supply Cost per Square Foot**.

The relative cost of utilities is represented by **Utility Usage per Square Foot** and **Water Usage per Square Foot**.

These KPIs should give district leaders a general sense of where they are doing well and where they can improve. The importance and usefulness of each KPI is described in the "Importance of Measure" and "Factors that Influence" headings, which can be used to guide improvement strategies.

Albuquerque Public Schools • MAINTENANCE AND OPERATIONS • 2013-2014 Year End Report

Council of the Great City Schools Performance Measurement and Benchmarking Project

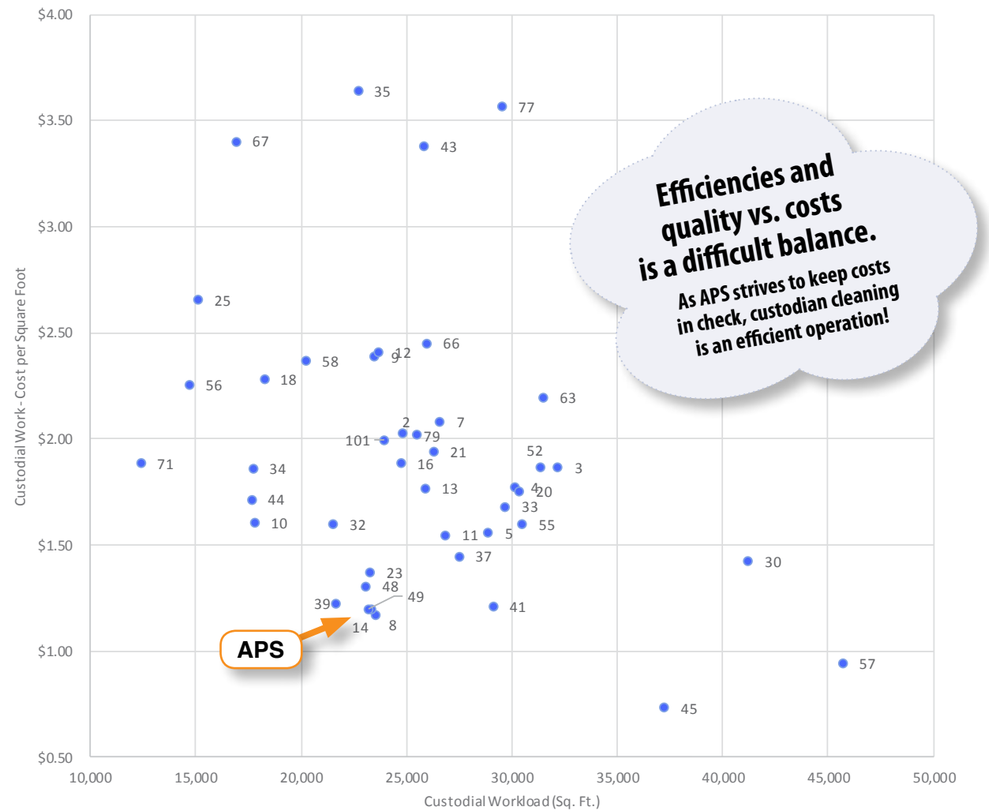
FEATURED ANALYSIS

Figure 88
Custodial Workload vs. Cost per Square Foot

This chart compares custodial staffing levels with total custodial cost. Districts to the top-left have high staffing levels and high costs, suggesting that the number of staff is driving up costs. Conversely, districts to the bottom-right have lower staffing levels and lower costs, suggesting that those districts have achieved cost savings through reduced staff levels.

However, rarely does this trend hold—many districts are in the bottom-left quadrant, meaning that they have reduced costs and also higher staffing levels. This may be due to other efficiencies and cost-savings that these districts have implemented.

This analysis also does not take into account the quality of the work done. Districts that are unsatisfied with the level of cleanliness in their facilities have good reason to want to invest more in custodial staff and supplies in order to provide clean, safe facilities.

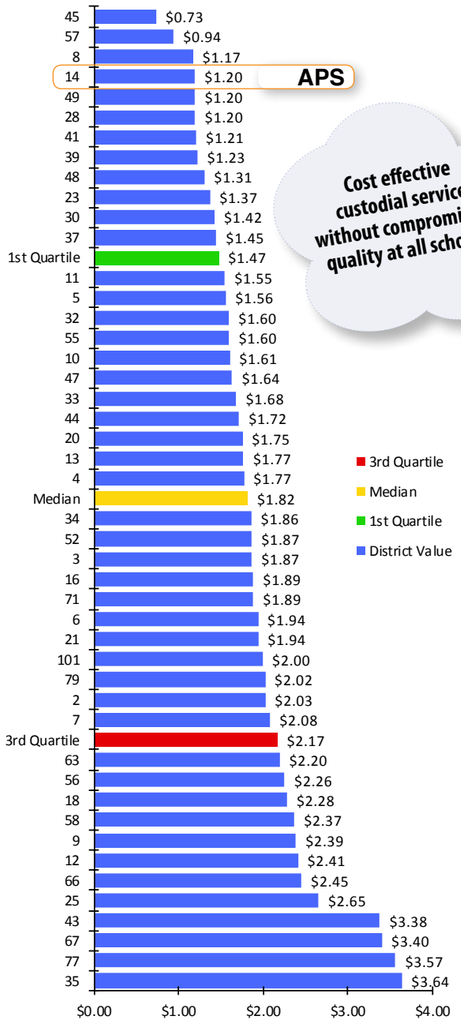


OPERATIONS
MAINTENANCE & OPERATIONS

DATA DISCOVERY

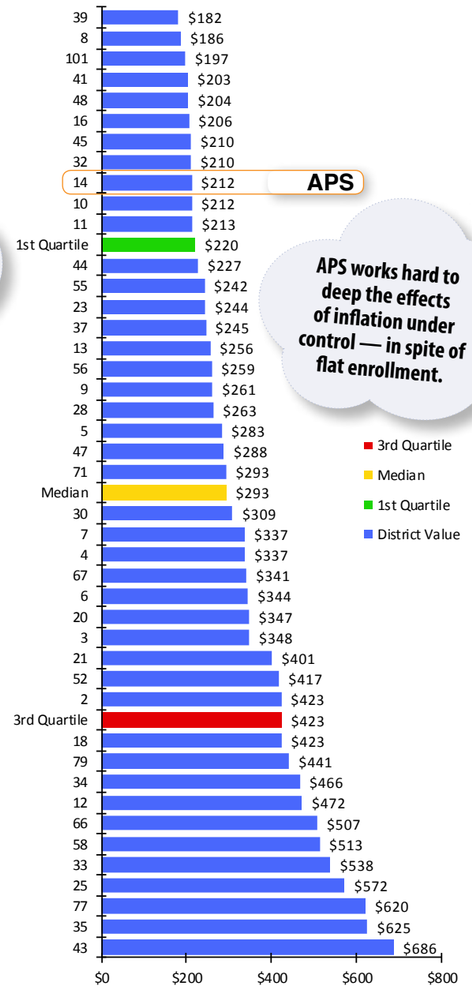
Figure 89
Custodial Work - Cost per Square Foot

This is the total cost of custodial services relative to the total building square footage in the district.



Cost effective custodial service without compromising quality at all schools.

Figure 90
Custodial Work - Cost per Student

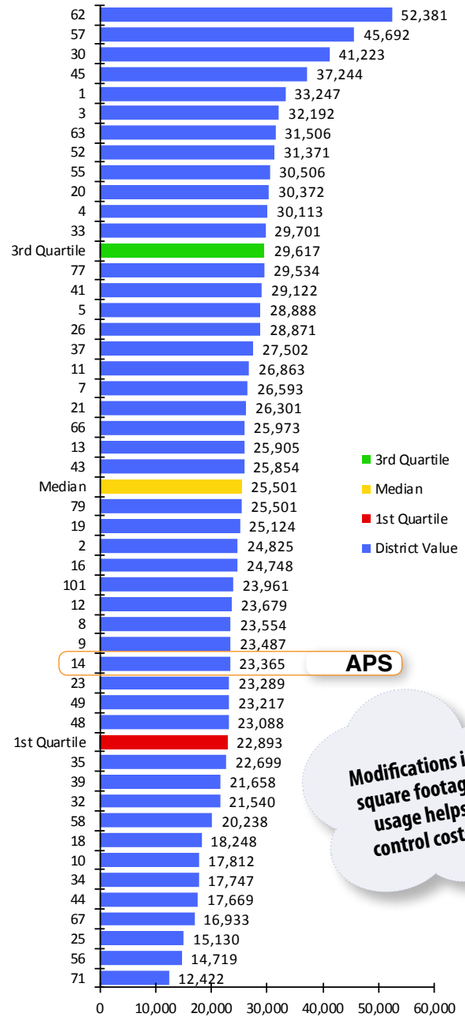


APS works hard to deep the effects of inflation under control — in spite of flat enrollment.

Does this accurately reflect the cost-efficiency of your custodial operation? What kinds of factors are affecting this result? (See KPI Definitions at the end of this section.)

Figure 91
Custodial Workload (Sq. Ft.)

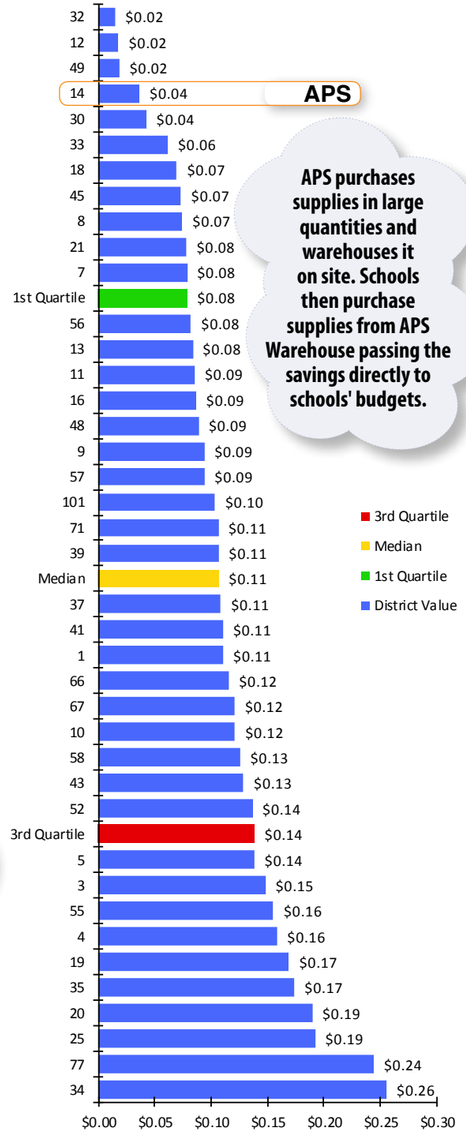
This is a staffing-level measure. It represents the average square footage that each custodian would be responsible for if all district facilities were divided up evenly.



Modifications in square footage usage helps control costs.

How might this relate to building cleanliness and cost efficiency? Which one of these is affected more by your result above?

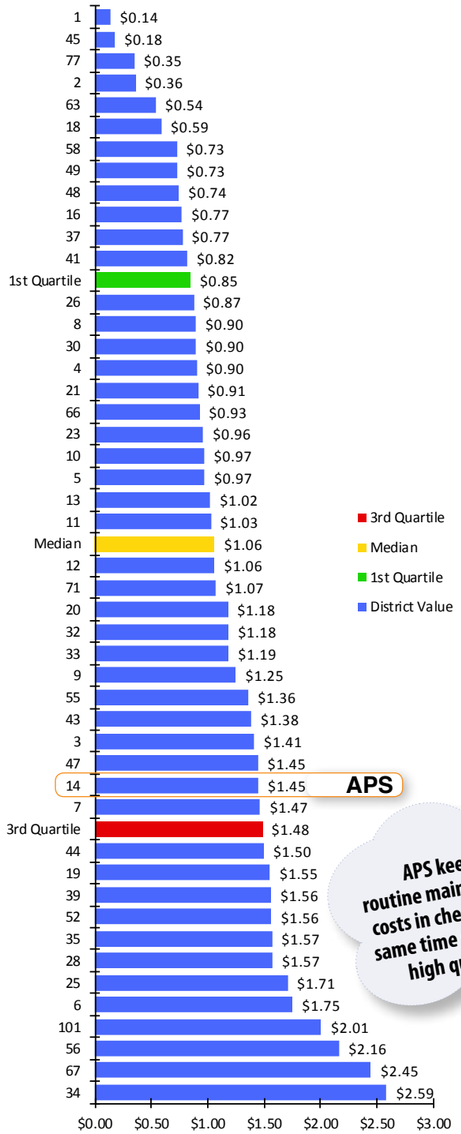
Figure 92
Custodial Supply Cost per Square Foot



APS purchases supplies in large quantities and warehouses it on site. Schools then purchase supplies from APS Warehouse passing the savings directly to schools' budgets.

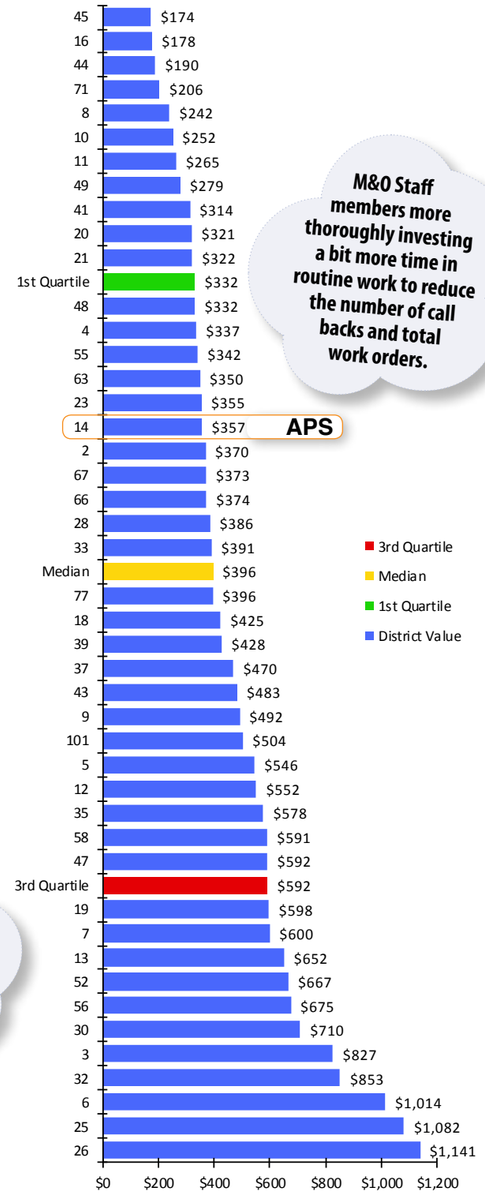
Figure 93
Routine Maintenance – Cost per Square Foot

This is the total cost of routine maintenance relative to the total square footage.



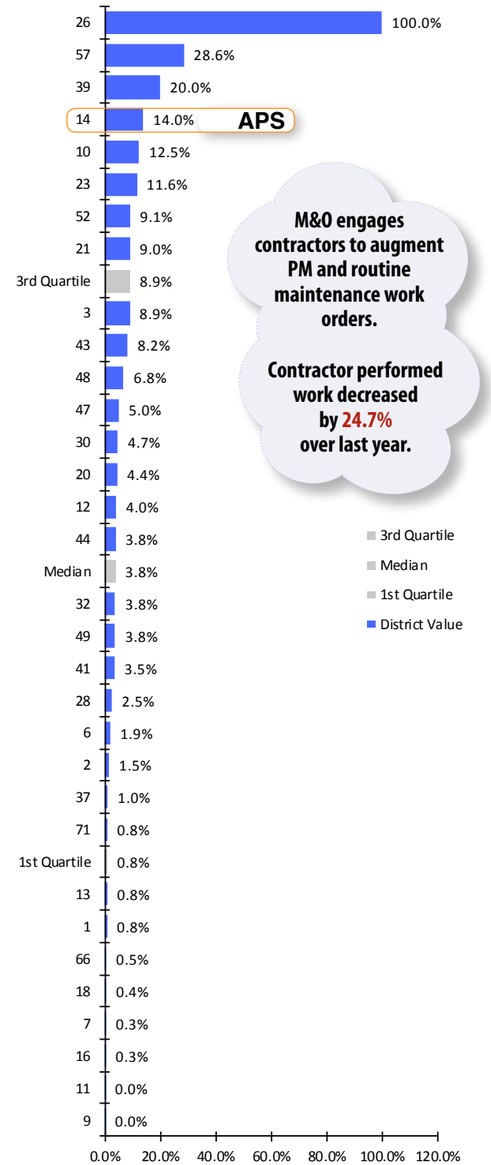
APS keeps routine maintenance costs in check at the same time retaining high quality.

Figure 94
Routine Maintenance – Cost per Work Order



M&O Staff members more thoroughly investing a bit more time in routine work to reduce the number of call backs and total work orders.

Figure 95
Routine Maintenance – Proportion Contractor-Operated, by Work Orders

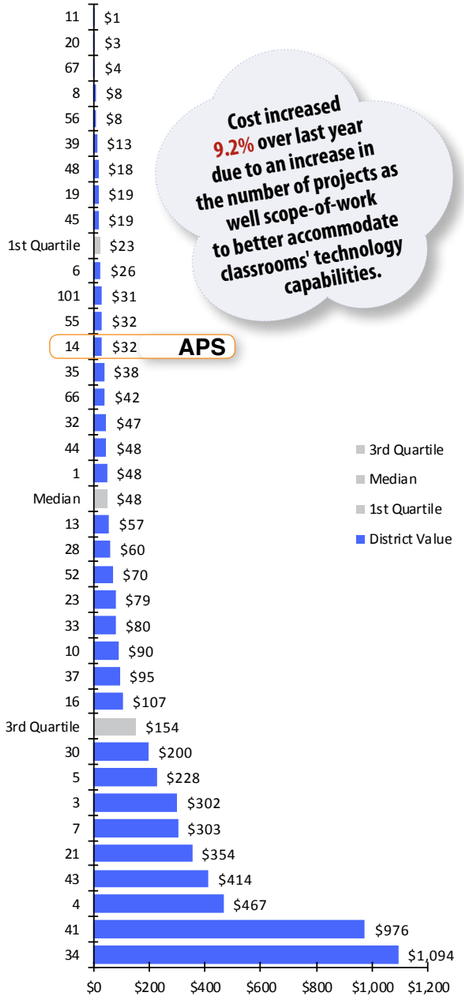


M&O engages contractors to augment PM and routine maintenance work orders.

Contractor performed work decreased by 24.7% over last year.

Figure 96
Major Maintenance – Cost per Student

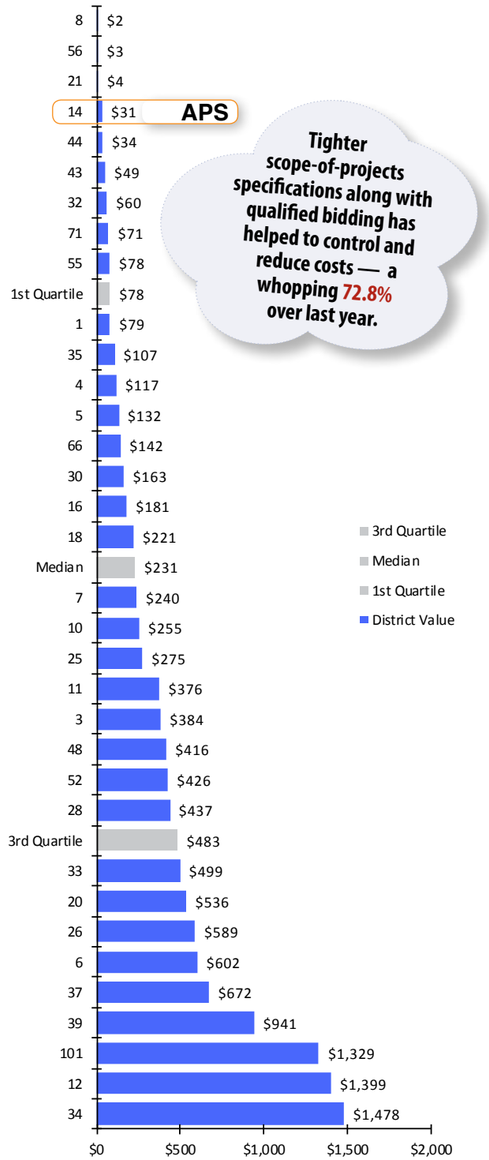
This represents the per-student spending on major maintenance. While cost-efficiency is important, CGCS has found that many districts vastly underinvest in the maintenance of their facilities, increasing the total lifecycle cost of the facility.



Cost increased 9.2% over last year due to an increase in the number of projects as well scope-of-work to better accommodate classrooms' technology capabilities.

Are you protecting your facilities assets through preventive maintenance?

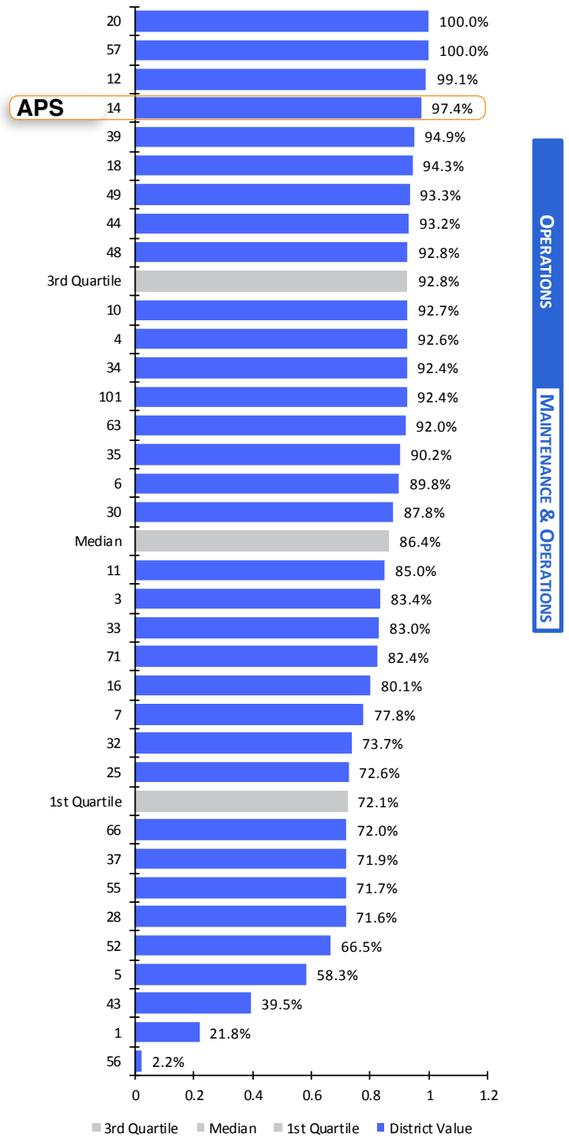
Figure 99
Renovations – Cost per Student



Tighter scope-of-projects specifications along with qualified bidding has helped to control and reduce costs — a whopping 72.8% over last year.

Figure 100
Renovations – Delivered Construction Costs as Percent of Total Costs

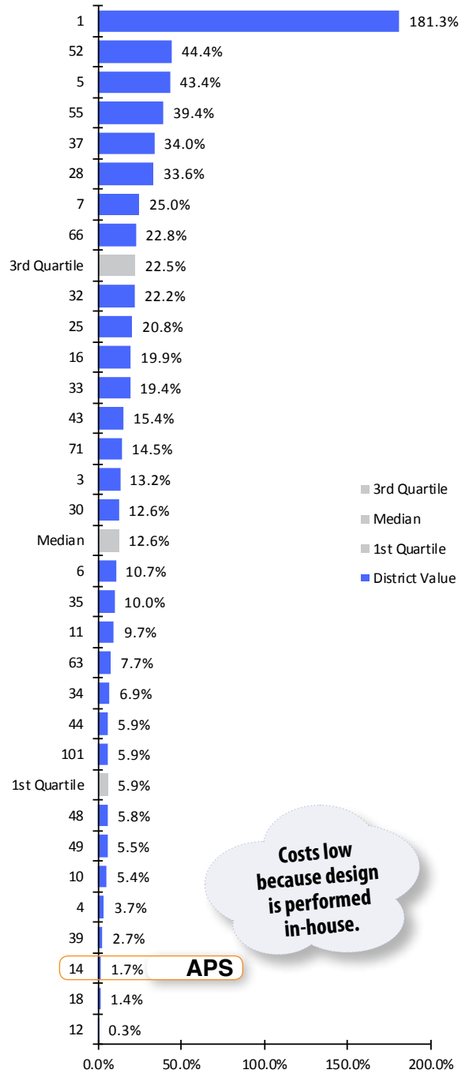
Other cost categories include (1) design, pre-construction, and compliance costs, and (2) non-technical office staff (supervisors, support staff, and clerical staff).



MAINTENANCE & OPERATIONS

Figure 101
Renovations – Design to Construction Cost Ratio

Design costs include design, pre-construction, and compliance costs, such as architects, drafters and engineering consultants, including in-house drafters and designers. Delivered construction costs include personnel, material and supplies costs, including in-house and contracted work.

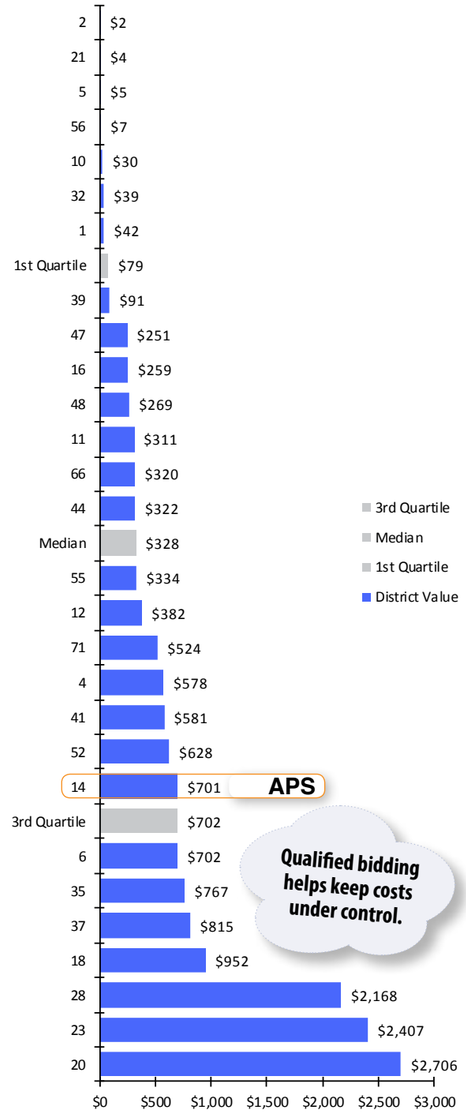


MAINTENANCE & OPERATIONS

Costs low because design is performed in-house.

Figure 102
New Construction – Cost per Student

This is the total per-student spending on new construction. This is heavily influenced by population patterns and construction funding such as bond measures.



Qualified bidding helps keep costs under control.

Figure 103

New Construction – Delivered Construction Costs as Percent of Total Costs

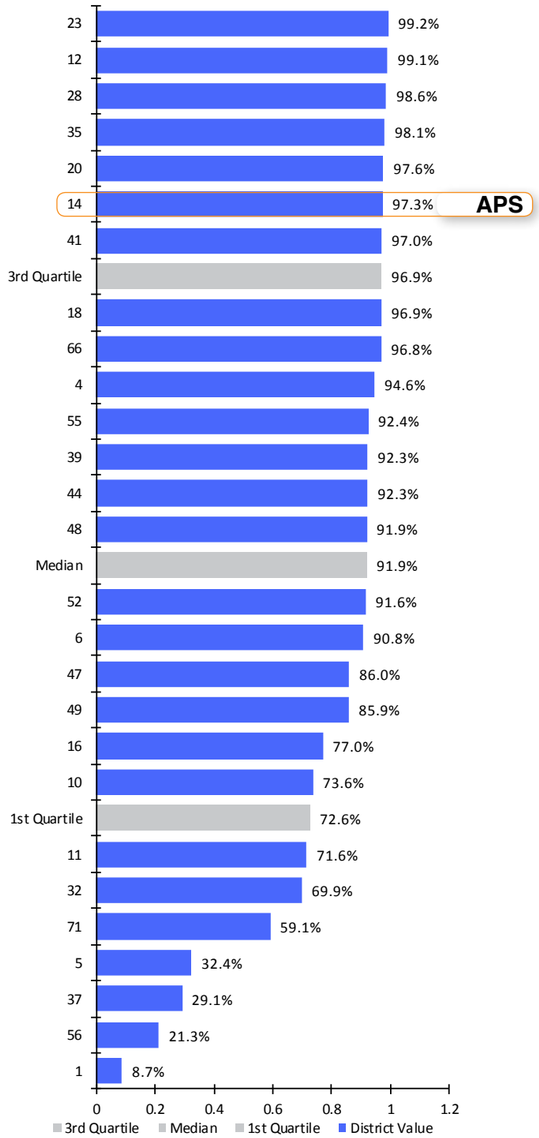


Figure 104

New Construction – Design to Construction Cost Ratio

Design costs include design, pre-construction, and compliance costs, such as architects, drafters and engineering consultants, including in-house drafters and designers. Delivered construction costs include personnel, material and supplies costs, including in-house and contracted work.

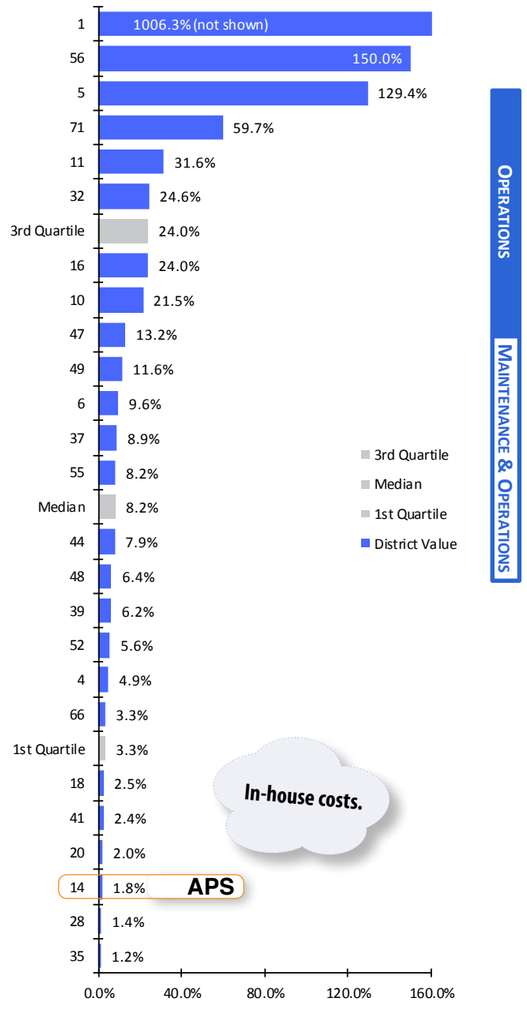


Figure 105

M&O Cost per Student

This "catch-all" cost measure includes all the M&O categories that have been reported in the previous pages (custodial work, grounds work, routine maintenance, major maintenance, renovations and new construction) relative to total student enrollment.

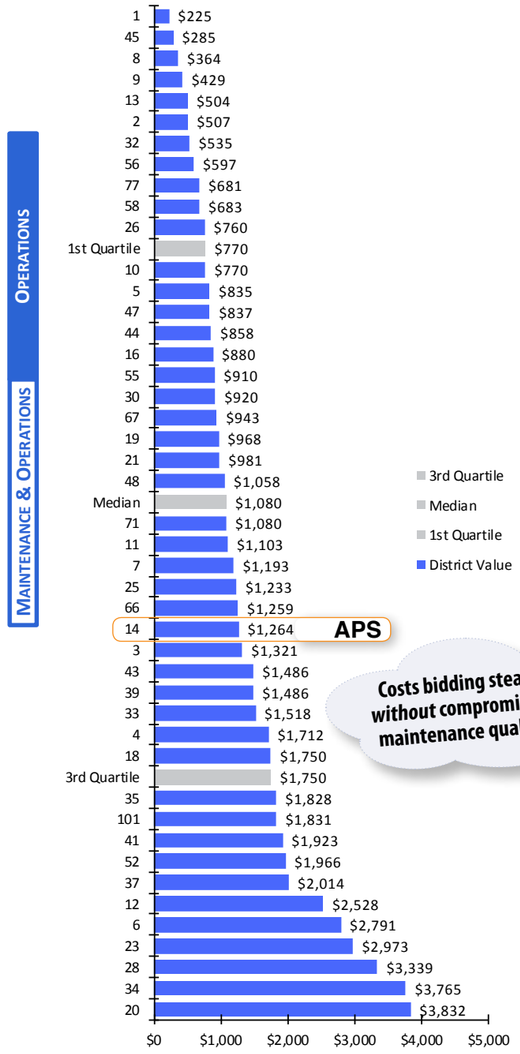


Figure 106

M&O Cost Ratio to District Budget

This "catch-all" cost measure includes all the M&O categories that have been reported in the previous pages (custodial work, grounds work, routine maintenance, major maintenance, renovations and new construction) relative to the total district operating budget.

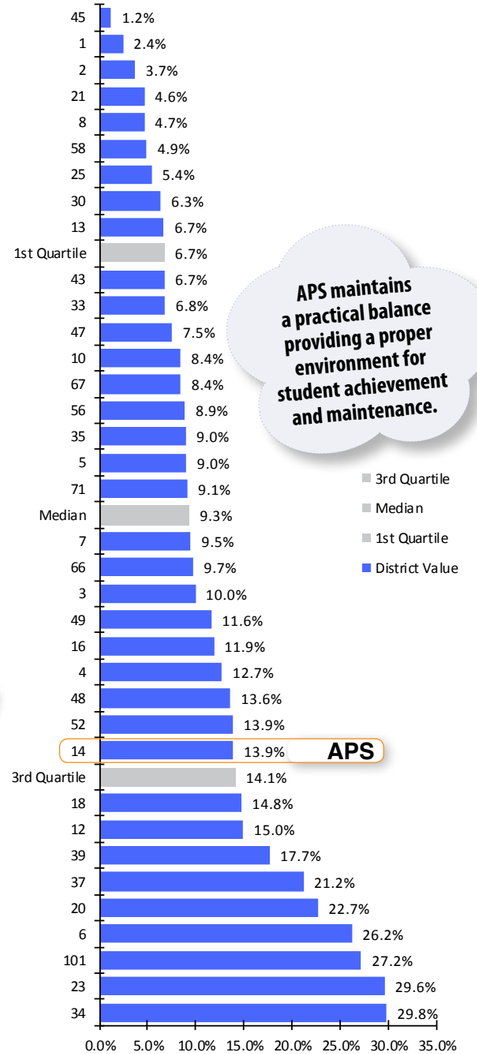


Figure 107
Work Order Completion Time (Days)

This is the average amount of time it takes to complete a work order.

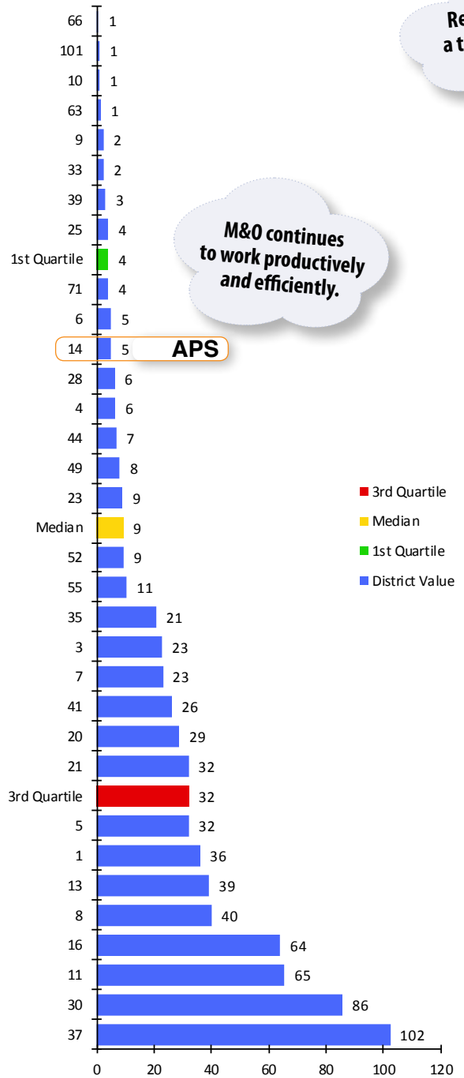


Figure 108
Recycling – Percent of Material Stream

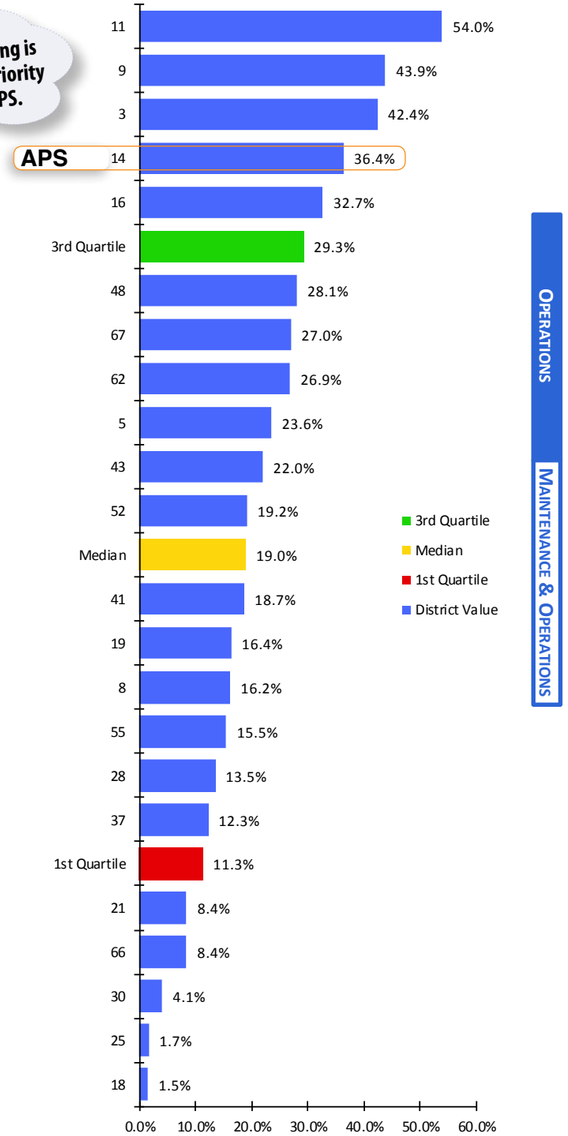
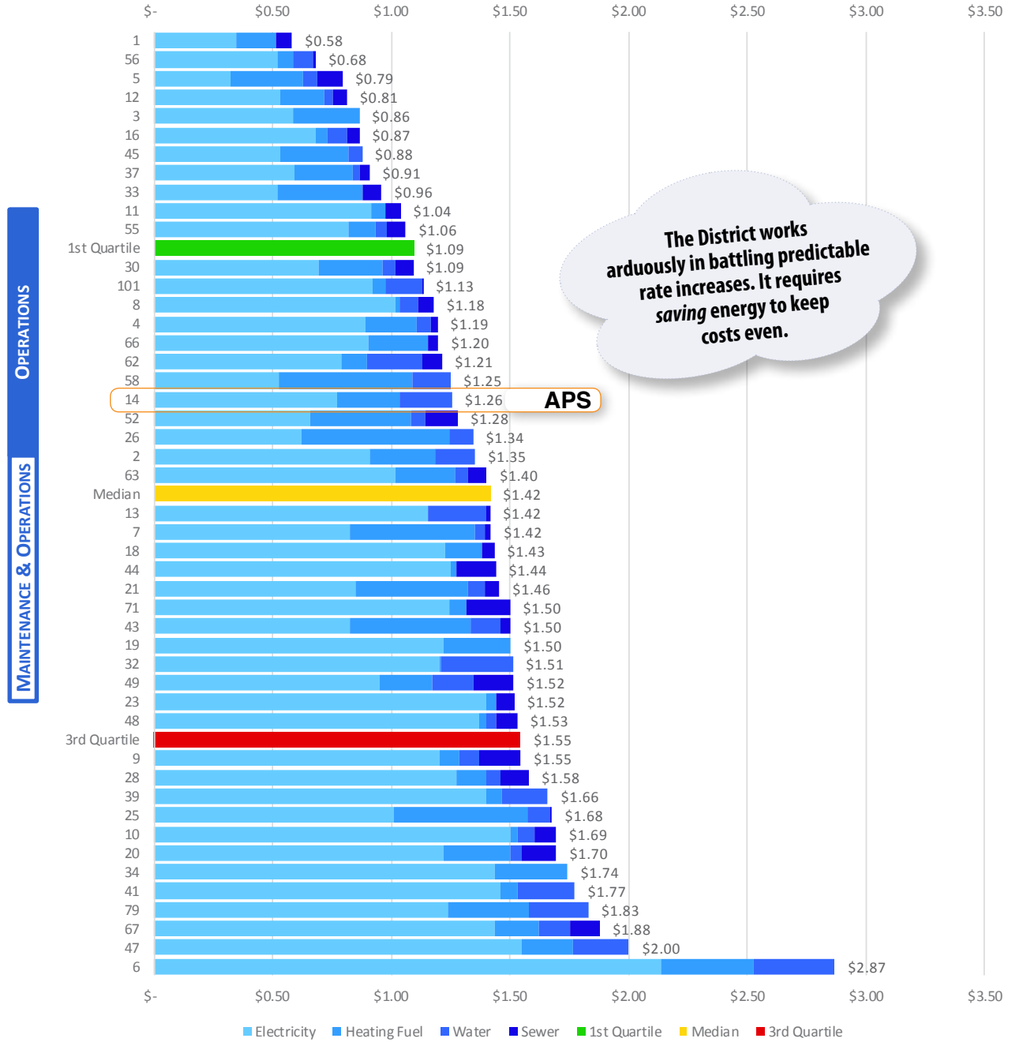


Figure 109
Utility Costs per Square Foot

Adjusted for cost of living.



How much is this affected by regional factors? Which district(s) should you compare yourself to in the same region? Are there other businesses or agencies in your region that set an example for energy efficiency?

Figure 110
Utility Usage – Electricity Usage per Square Foot (kWh)

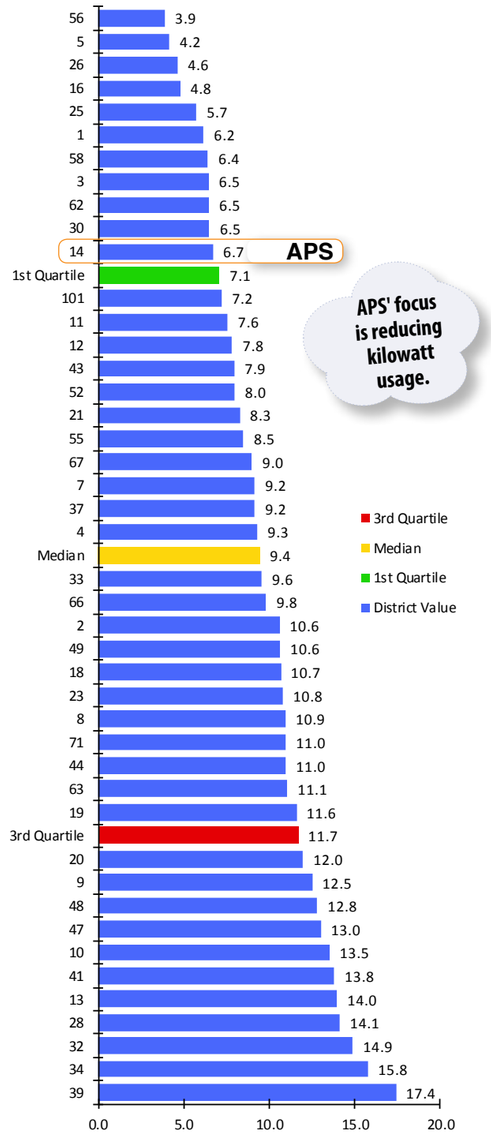


Figure 112
Utility Usage – Water (Non-Irrigation) Usage per Square Foot (Gal.)

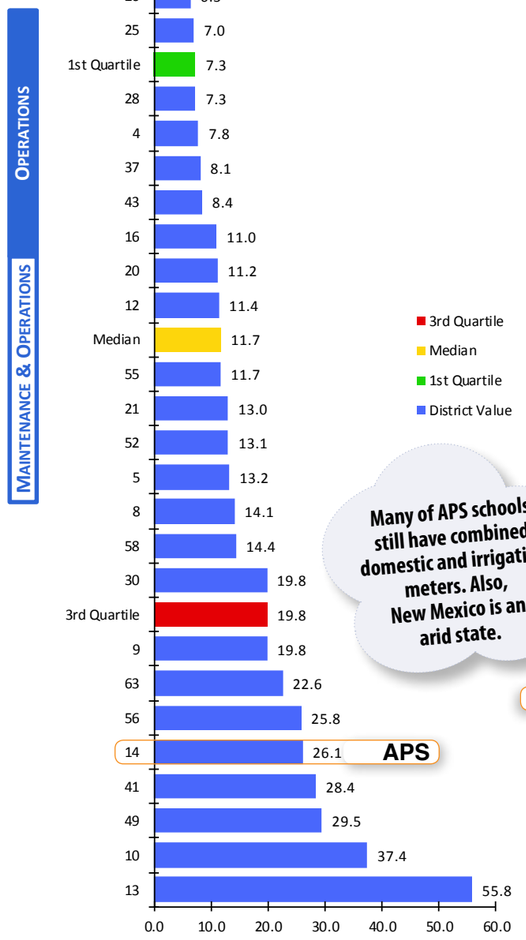
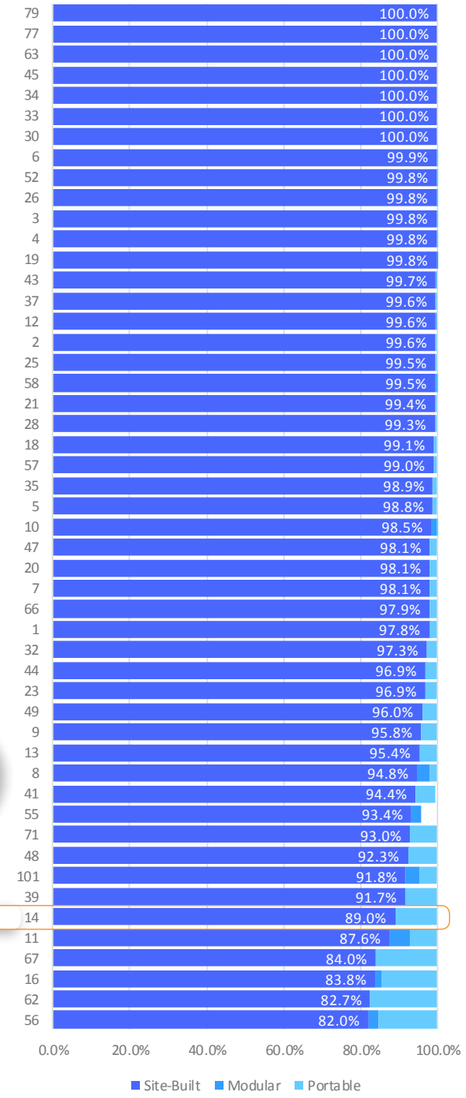


Figure 113
Building Square Footage by Type



Do your facilities provide excellent spaces for learning?

Figure 114

Building Square Footage by Usage

This shows the ratio of academic buildings to non-academic buildings. Additionally, it shows the ratio of vacant buildings to occupied buildings. Vacant buildings are often the result of shifting populations.

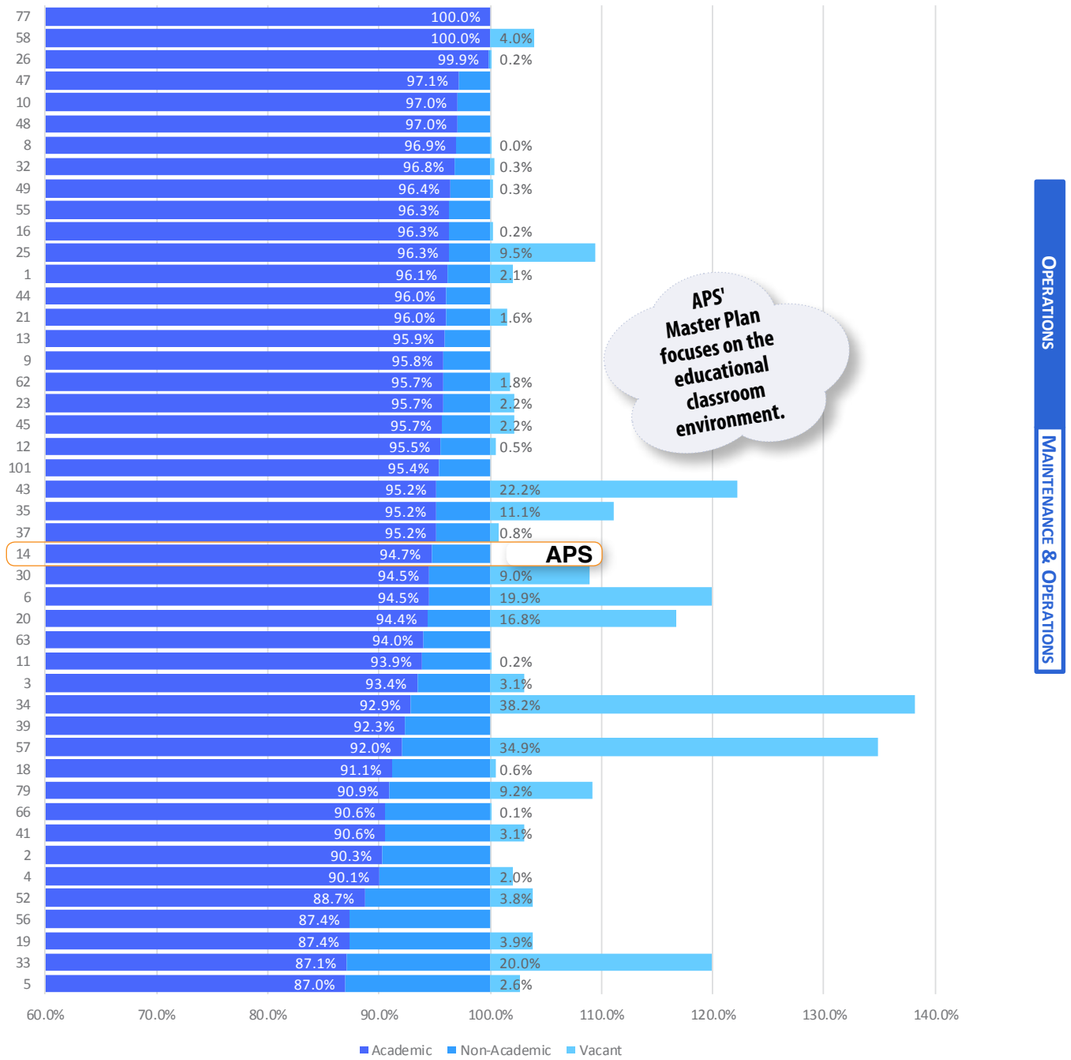
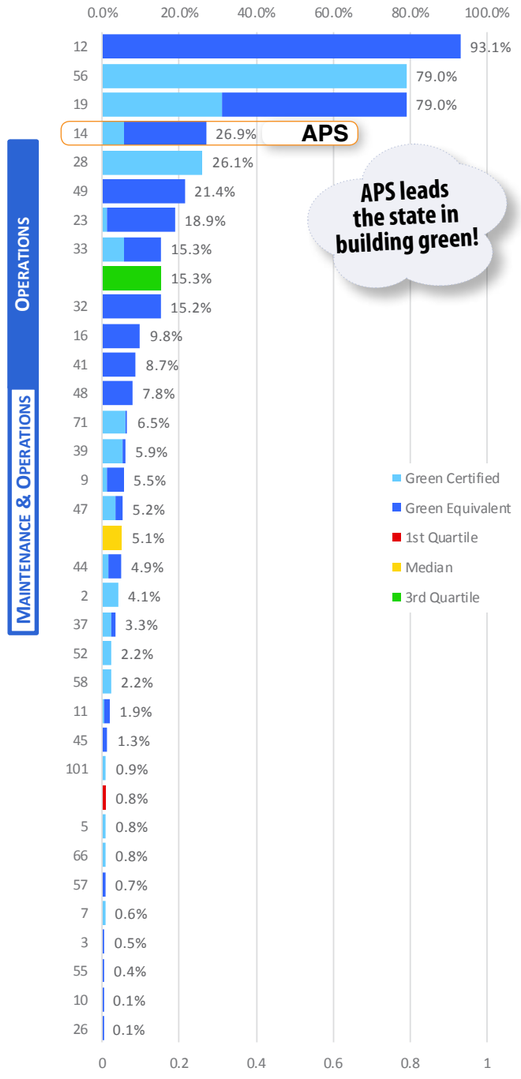


Figure 115

Green Buildings – Buildings Green Certified or Equivalent

This shows the proportion of facilities that have earned a green certificate, such as LEED, or are built in alignment with green certification criteria.



KPI DEFINITIONS

Devices - Average Age of Computers

Importance The measure creates an aging index that counts the number of computers in the district by age. Understanding the average age of computers provides data for budget and planning purposes, and impacts break-fix support, supplies, and training. Aging of machines may differ between elementary and secondary schools as well as administrative offices. Implementation of new software applications has minimum standards that user machines must meet. Understanding computer aging will help identify district readiness as applications become available to staff and students. Developing comprehensive refresh cycles impacts not only the purchasing of equipment but also training cycles.
Many organizations in the private sector use a standard of three years for age of computers before they are replaced. Many school districts refresh their computers over a five-year period to get maximum benefits out of their equipment.
Factors that Influence

- School board and administrative policies and procedures
- Budget development for capital, operational, and categorical funds
- Budget development for schools and department in refresh and computer purchasing
- Budget development in support, supplies, and maintenance.
- Implementation and project management for new software applications in both instructional and operations areas.
- Type of machine (i.e., desktop, laptop, netbook, etc.)

Calculation The weighted average age of all district computers, calculated as follows: number of one-year-old computers *plus* number of two-year-old computers times two *plus* number of three-year-old computers times three *plus* number of four-year-old-computers times four *plus* number of five-year-old computers times five *plus* number of computers older than five years old times six.

Devices - Computers per Employee

Importance Indicates the number of computers used by employees.
Calculation Total number of office-use and teacher-use laptops and desktops *divided by* the total number of district employees (FTEs).

Devices per Student

Importance This tracks the movement toward a one-to-one ratio of students to devices.
Calculation Total number of desktops, laptops and tablets that are for student-only use or mixed-use *divided by* total student enrollment.

Devices - Advanced Presentation Devices

Importance Hi-tech presentation devices are useful for technology-enhanced instruction.
Calculation Total number of advanced presentation devices (video/data projectors, document cameras/digital overheads, and interactive whiteboards) *divided by* the total number of teachers (FTEs).

IT Spending per Student / Percent of District Budget

Importance The measure provides a tool for districts to compare their IT spending per student with other districts. This measure must be viewed in relationship to other KPIs to strike the correct balance between the district's efficiency and its effective use of technology. If other KPIs such as customer satisfaction, security practices, and ticket resolution are not performing at high levels, low costs associated with IT spending may indicate an under-resourced operation.
Factors that Influence

- Budget development and staffing
- IT expenditures can be impacted by new enterprise implementations
- The commitment of community for support technology investments in education
- IT Department standards and support model
- Age of technology and application portfolio
- IT maturity of district

Calculation
Percent of Budget: Total IT staffing costs *plus* total IT hardware, systems and services costs *divided by* total district operating expenditures.
Per-Student: Total IT staffing costs *plus* total IT hardware, systems and services costs *divided by* total student enrollment.

Network - Bandwidth per 1,000 Students (Mbps)

Importance This measure compares similarly situated districts and provides a quantifiable measure toward the goal of providing adequate bandwidth to support the teaching and learning environment. Bandwidth per Student provides a relative measure of the capacity of the district to support computing applications in a manner conducive to teaching, learning, and district operations. Some district and student systems are very sensitive to capacity constraints and will not perform well. Students and staff have come to expect certain performance levels based on their experience with network connectivity at home and other places in the community, and schools must provide performance on a par with that available elsewhere.
Factors that Influence

- The number of enterprise network based applications
- The capacity demands of enterprise network based applications
- Fund availability to support network bandwidth costs
- Capacity triggers that provide enough time for proper build out and network upgrades
- Network monitoring systems and tools that allow traffic shaping, prioritization, and application restriction

Calculation Total standard available bandwidth (in Mbit/s) *divided by* total student enrollment in 1,000s. These data are expressed in Mbps.

Network - Days Usage Exceeds 75% of Capacity

Importance Staying below the metric threshold is critical to application performance and user satisfaction. This metric may also provide justification for network expansion and capacity planning.

Factors that Influence

- The number of online applications sensitive to latency, digital video, and voice will all impact the amount of bandwidth a district needs.
- School districts may experience short periods of time with exceptional network demand and large portions of time with plenty of excess capacity.

Calculation The number of days that peak daily internet usage reaches more than 75% of the standard available bandwidth for five (5) minutes or longer.

Network - WAN Availability

Importance A high amount of downtime of the Wide Area Network (WAN) will likely disrupt the students, teachers and staff in the district.
Factors that Influence

- The number of online applications sensitive to latency, digital video, and voice will all impact the amount of bandwidth a district needs.

Calculation Total minutes of all outages on WAN circuits *divided by* the total number of WAN circuits.

Support - Break/Fix Staffing Cost per Ticket

Importance This measure assesses staffing cost per incident, which may indicate how responsive and how efficient the help desk is in making itself available to customers. The goal is to improve customer satisfaction through resolving incidents quickly, effectively, and cost efficiently. There are various costs that could be included in this metric such as hardware, software, equipment, supplies, maintenance, training, etc. Staffing cost per ticket was selected because data are easily understood and accessed and salary costs are typically the biggest cost factor in a help-desk budget.
Factors that Influence

- Software and systems that can collect and route contact information
- Knowledge management tools available to help desk staff and end users
- Budget development for staffing levels

Calculation Total personnel costs of Break/Fix Support costs (including managers) *divided by* the total number of tickets/incidents.

Support - First Contact Resolution Rate

Importance This measure calculates the percentage of user initiated contacts to the help desk, which generates a ticket that is resolved without escalation to the next higher support level. FCRR is an indicator of the number of exception contacts that a support center is receiving. It can be used as a management indicator to devise strategies to lower cost, improve operational ability and workflow, and improve customer satisfaction. It is more cost effective for the organization to resolve calls on first contact because the customer is returned to productive work more quickly. Private industry expects that 85% of trouble calls are resolved on first contact. This measure can also be used as a tool to help guide quality improvement processes.
Factors that Influence

- Software and systems that can collect contact information at the help desk
- Automation tools for common help desk issues like password reset can improve performance and reduce costs – these numbers should be included in data collection
- Knowledge and training of help desk staff in enterprise applications
- Knowledge and training of end user of enterprise applications used
- New implementations will cause increase in service calls
- Permissions that are set for the help desk staff. If permissions are restricted, help desk staff will be able to resolve fewer types of problem calls.
- Capacity of the organization to respond to customer support requests
- Ability of help desk ticket application to track work tickets
- Tactical assignment of responsibilities may be different in each organization. The responsibilities of the help desk may vary from simply opening tickets to complete troubleshooting and problem resolution.

Calculation Number of tickets/incidents resolved on first contact *divided by* the total number of tickets/incidents.

Support - Help Desk Call Abandonment Rate

Importance This measure assesses the percentage of telephone contacts that are not answered by the service desk staff before the caller disconnects. CAR is an indicator of the staffing level of the service desk relative to the demand for service. The CAR can be used as a management indicator to determine staffing levels to support seasonal needs or during times of system issues (application or network problems). On an annual basis, it is a measurement of the effectiveness of resource management. This measure should be used as a tool to help guide quality improvement processes.
Factors that Influence

- Effective supervision to ensure that service desk team members are online to take calls
- A high percentage could indicate low availability caused by inadequate staffing, long call handling times and/or insufficient processes
- Length of time the caller is on hold
- Capacity of the organization to respond to customer support requests
- Proper staffing when implementing district-wide applications, which significantly increase calls
- Automation tools like password reset can reduce number of calls to the help desk and reduce overall call volume
- Increased training of help desk can reduce long handling time freeing up staff to take more calls

Calculation Number of abandoned calls to the help desk *divided by* total number of calls to the help desk.

Support - Help Desk Staffing Cost per Ticket

Importance This measure assesses staffing cost per incident, which may indicate how responsive and how efficient the help desk is in making itself available to customers. The goal is to improve customer satisfaction through resolving incidents quickly, effectively, and cost efficiently. There are various costs that could be included in this metric such as hardware, software, equipment, supplies, maintenance, training, etc. Staffing cost per ticket was selected because data are easily understood and accessed and salary costs are typically the biggest cost factor in a help-desk budget.
Factors that Influence

- Software and systems that can collect and route contact information

- Automation tools for common help desk issues like password reset can improve performance and reduce costs these numbers should be included in data collection
- Other duties performed by the help desk staff that restrict them from taking calls
- Knowledge management tools available to help desk staff and end users
- Budget development for staffing levels

Calculation Total personnel costs of the help desk (including managers) *divided by* the total number of support tickets/incidents.

Systems Cost - Business Systems Cost per Employee

Importance Can be used to evaluate total relative cost of systems. This includes recurring costs and maintenance fees only; it does not include capital costs or one-time implementation fees.

Calculation Personnel costs of staff for administration, development, and support of enterprise business systems *plus* annual maintenance fees for all enterprise business systems *plus* total outsourced services fees for enterprise business systems all *divided by* total number of district FTEs.

Systems Cost - Instructional Systems Cost per Student

Importance Can be used to evaluate total relative cost of systems. This includes recurring costs and maintenance fees only; it does not include capital costs or one-time implementation fees.

Calculation Personnel costs of staff for administration, development and support of instructional systems *plus* annual maintenance fees for instructional systems *plus* total outsourced services fees for instructional systems all *divided by* total number of students in the district.

Facility Maintenance Assessment Report

2013 ALBUQUERQUE

001330 REGINALD CHAVEZ ELEMENTARY

Combined Schools Id 1:
Id 2:

FMAR_Date: 12/13/2013 Weather: partly cloudy & cool

PSFA Reps: Levesque, Troy

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	-2.83	1.5	-12.74
	Site Utilities				•				•	5	-2.83	0	-14.15
	Playgrounds/Athletic Fields			•					•	5	-1.89	0	-9.45
	Site Drainage				•				•	8	-2.83	0	-22.64
	Sidewalks				•				•	2	-2.83	0	-5.66
	Grounds					•	•			2	-3.77	1.5	-11.31
Building Exterior	Windows/Caking				•				•	3	-2.83	0	-8.49
	Walls/Finishes				•			•		5	-2.83	3.5	-49.53
	Entry/Exterior Doors				•				•	7	-2.83	0	-19.81
	Roof/Flashing/Gutters				•		•			10	-2.83	1.5	-42.45
Building Interior	Walls/Floors/Ceilings/Stairs				•				•	3	-2.83	0	-8.49
	Interior Doors				•				•	3	-2.83	0	-8.49
	Restrooms				•				•	3	-2.83	0	-8.49
	Housekeeping					•		•		4	-3.77	3.5	-52.78
Building Equipment and Systems	Electrical Distribution				•			•		3	-2.83	3.5	-29.71
	Lighting			•					•	5	-1.89	0	-9.45
	Fire Protection Systems				•			•		10	-2.83	3.5	-99.05
	Equipment Rooms					•			•	2	-3.77	0	-7.54
	Heating/Cooling/Ventilation			•			•			10	-1.89	1.5	-28.35
	Air Filters				•				•	5	-2.83	0	-14.15
	Kitchen Equipment/Refrig		•						•	2	-0.95	0	-1.90
	Plumbing/Water Heaters			•			•			6	-1.89	1.5	-17.01
FIMS Qtr: 4 Maintenance Management	PM Plan	•								10	0		0.00
	FIMS and Equipment Data			•						7	-1.89		-13.23
	Staff Development		•							5	-0.95		-4.75
	Maintenance Safety			•						5	-1.89		-9.45
	Maint. Contractor Oversight	•								5	0		0.00
	Facilities Master Plan (Renewal)		•							3	-0.95		-2.85

Total Performance Deficiencies: -511.91 Total Score: 488.09 Overall Rating: 48.81%

Public School Facilities Authority
Facility Maintenance Assessment Report Definitions 2012

Site	Systems / Equipment / Components	What are we looking for?
Roadway/Parking:	Driveways, asphalt, striping, traffic signs, handicap & student drop off locations.	Asphalt/concrete has no splitting/holes, well maintained. Parking, handicap, directional striping and signage is clearly visible, well installed, check for tripping hazards. No damage/graffiti. Fire lanes accessible and visible.
Site Utilities:	Natural gas lines, meters, propane tanks, electrical, solid waste, water, manhole access covers, transformers, generators, Electrical panels.	Are they secure (locked & physically protected), well kept, clean, labeled. Debris and weed free. Are utility manhole covers secure/locked.
Playgrounds/Athletic Fields:	Impact surface, weed control, border conditions, tripping hazards, equipment hardware, playing surfaces, nets, scoreboard. Shade devices, sharp or protruding hardware etc.	**Playgrounds** is impact surface maintained and spread evenly; Check for presence of weedic borders in good conditions; no tripping or physical hazards; equipment hardware intact and in good condition; no splintering/no paint surface splitting. **Athletic Fields** - Playing surfaces adequate (grass/impact surface); no protruding/broken sprinklers; Fencing in good condition & secure; Scoreboards are intact; Weed Control; No tripping or physical hazards; equipment hardware intact and in good condition; no splintering. Bleacher hardware and equipment in safe operating condition.
Site Drainage:	Splash blocks, roof drain devices, surface drain grates, culverts, recessed grates, design swales, natural drainage.	Water coming from roof is steered away from building; check for potential ponding or active erosion points; splash blocks and grates intact and installed per design & debris free. Site drainage systems are functioning effectively.
Sidewalks :	General sidewalk conditions, trip hazards, scaf/step landings, ADA ramps & handrails.	Check for trip hazards, holes, excessive pitting, sidewalk cracks, lifting and heaving or physical hazards. Spalding of concrete not visible.
Grounds:	General grounds areas. Property not inclusive of playgrounds or athletic fields. Includes fences and gates. Lawns, trees, shrubs, gravel, borders, landscaping.	Check for weed control, landscape materials installed per design. Water leaks, tree/shrub/branch management (grooming). No damage or graffiti, check for trash or improper storage of items. Fencing and gates are operational with no evidence of damage.

Building Exterior	Systems / Equipment / Components	What are we looking for?
Windows / Caulking:	Seals and frames (i.e. locks/screens), hardware and levers	Observe conditions, no splitting of window seals/frames/caulking. Check for visible holes and water damage. Check window seal. Check for broken windows, frames. Check vandalism. Check if windows are secure. Check 1 or 2 for proper operation.
Walls / Finishes:	Stucco, CMU or brick, Physical walls and structure. Eaves & overhangs, awnings.	Check for cracks/damage or splitting in the exterior finish and trim (stucco, CMU, bricks, seals etc.) check for holes, physical or water damage. Review for vandalism. Check building transitions (ground to wall), pavement / building joints for proper seal / filling.
Entry / Exterior Doors:	Frames, hardware, door closures, handicap devices, thresholds, seals and finish	Check that all doors are secure. Check general conditions such as frame & hardware for physical damage. Check the seal around the doors. Is it finished? Check that all door closures and latching mechanisms are working properly. Is glass intact? Check that handicap devices are working properly.
Roof / Flashing / Gutters:	Walk pads, flashing, parapet, fascia trim, down spout, expansion joints, parapet coping, cant strips, penetrations and skylights.	**Roof:** Check for ponding and erosion points, Check for debris in the drains (and on roof) and physical damage. Is there a cover on the drains? Are there any visible immediate concerns. **Flashing:** Is flashing intact and in good condition around devices. Check for wear and tear and deterioration or physical damage. Check conditions of penetrations. **Gutters:** are downspouts and drains clean and free of debris and work by design. Check splash blocks for function Skylights: no evidence of leaks, sealed and no cracked lenses present.

Building Interior	Systems / Equipment / Components	What are we looking for?
Walls / Floors / Ceilings / Stairs:	Interior walls, paint, cove base, ceiling tiles & grids, stairway handrail, and landings.	**Walls**: Check for cracks or splitting in the finish (paint etc), water damage, bubbling, holes, physical . Review for vandalism. **Floors:** Check for overall condition & cleanliness; physical damage and trip hazards. Flooring, baseboards intact and undamaged. **Ceilings**: Check for general condition: stained, broken or missing ceiling tiles. **Stairs**: Are they intact and surface is clean; no physical damage. Are handrails present with no trip hazards. **Carpets**: No tearing or stretching areas causing trip hazards.
Interior Doors:	Doors, frames, glazing, hardware, finish, handicap devices, door closures, locking mechanisms, hardware & smoke seals.	Check that all doors are secure. Check conditions such as frame & hardware for physical damage. Check the seal around the doors. Is it finished? Check that all door closers work properly and latching hardware function.
Restrooms:	Lavatories, water closets, faucets, stalls, toiletry devices, exhausts vents, lighting, hot/cold water, flooring, cleanliness.	Are faucets and fixtures (soap/toiletries) devices working per design; is hot/cold water available, check condition of lavatories (cracks), Is there water damage present. Are hardware on doors working per design. Venting working properly, lights working properly. Are they clean and properly ventilated with partitions functioning per design and flushing properly. Check for vandalism.
Housekeeping:	Evidence of cleaning being completed in the following areas: storage areas, office areas, class rooms, mechanical rooms, trash cans, vents etc.	Check for evidence of completion of housekeeping protocols such as: cleanliness of restrooms, floors ceilings, walls, high dusting, cleanliness of return air vents, light fixtures, duct diffusers, window sills, lockers. Check for proper use of custodial closets and appropriate storage of hazardous chemicals. Verify MSDS availability, toiletries replenished, high dusting and organization of stored chemicals.

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Building Equipment and Systems	Systems / Equipment / Components	What are we looking for?
Electrical Distribution:	Electrical panels, transformers, data closets.	Based on Life Safety Code. Check they are secured from public access, labeled with no storage present, 3 ft. clearance. Check for damaged panels, lock mechanisms, breakers, outlets, switches and covers
Lighting:	Light fixtures, switches, wiring, auto sensors. Exterior lighting & sensors	Check that lighting is adequate. Determine if a trend of more than 3 light devices are out. Determine lighting conditions in classrooms, closets, mechanical/electrical rooms, Gymnasiums and bathrooms, office settings. Are they functioning with no damage, stained or broken lenses.
Fire Protection Systems:	Fire panel, fire extinguishers, kitchen hood system, electrical panel clearance. Sprinkler system inspection, exit signs and emergency lighting.	Based on Life Safety Code Hood System checked in past year/current. Cleaned Fire Extinguisher sample Check 5 for current monthly inspections and annual vendor maintenance. Are they accessible, mounted well, unobstructed and clean. Are exit lights and emergency lighting functioning. Fire panel in normal mode.
Equipment Rooms:	Electrical & mechanical / boiler / Utility rooms. Storage areas.	Check if they are well kept, clean and no storage & properly ventilated. Check for 18 inch sprinkler clearance. All mechanical rooms and equipment properly accessible. No inappropriate or excessive storage.
Heating / Cooling / Ventilation	Boilers, Roof Top Units, Exhaust fans, Make Up Air Units, Swamp Coolers, cooling towers, water softeners etc.	Check 1 or 2 units. Open panels if possible, **Visually** check for filter conditions, belt wear / tension, unusual noises / vibrations or leaks, correct size filters / loose wires etc.. Check conditions / cleanliness of coils. Are heating systems operating during summer? Ventilation – check that all return air vents are unobstructed & no excessive damage; Caps are present. Boiler Inspection/certifications in place. Pressure gauges present and functional. Check for leaks.
Air Filters:	Roof Top Units/Make Up Air Units, Heating, Cooling pads.	Check that filters are clean and limited wear and for correct size. Check for excessive dirt and debris on filters and PM date written on filters.
Kitchen Equipment / Refrigeration:	Walk in refrigerators and freezers, condensing coils, stoves, burners, deep fryer, steamers. Electrical devices, dishwashers (frayed cords).	Check overall condition of the kitchen, storage areas for proper functioning and storage. Check refrigerators for cleanliness, coils, power cords in good condition etc.. Check areas for pest management.
Plumbing / Water Heaters:	Water heaters / boiler systems, drinking fountains, custodial fixtures, drains, eye wash & shower stations, grease traps. Chemical containment systems.	Check all for proper operation. Operated wells, water, sewage, or septic treatment systems: Systems should be functional with no outstanding discrepancies. Soft water treatment systems operational with no evidence of equipment failures.

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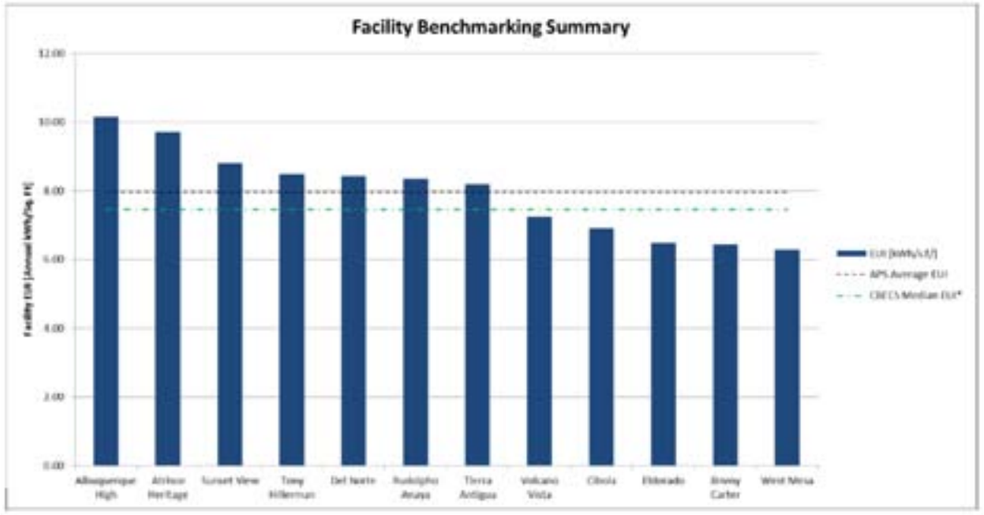
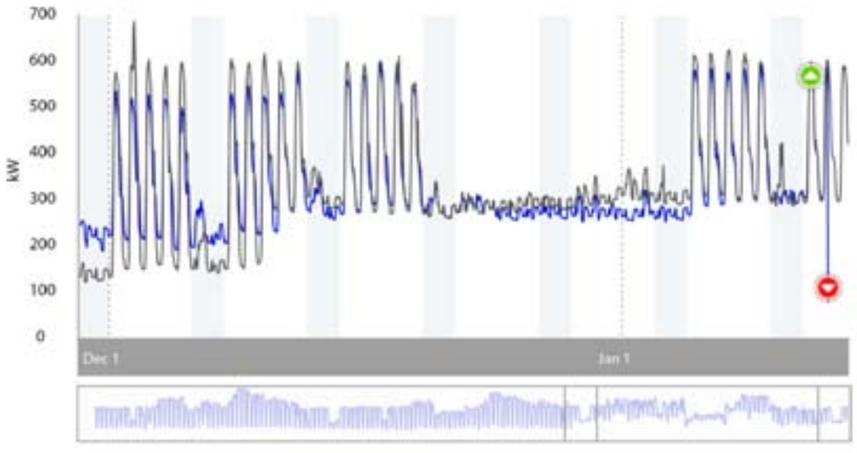
EnerNOC ELECTRIC USE SCORECARDS



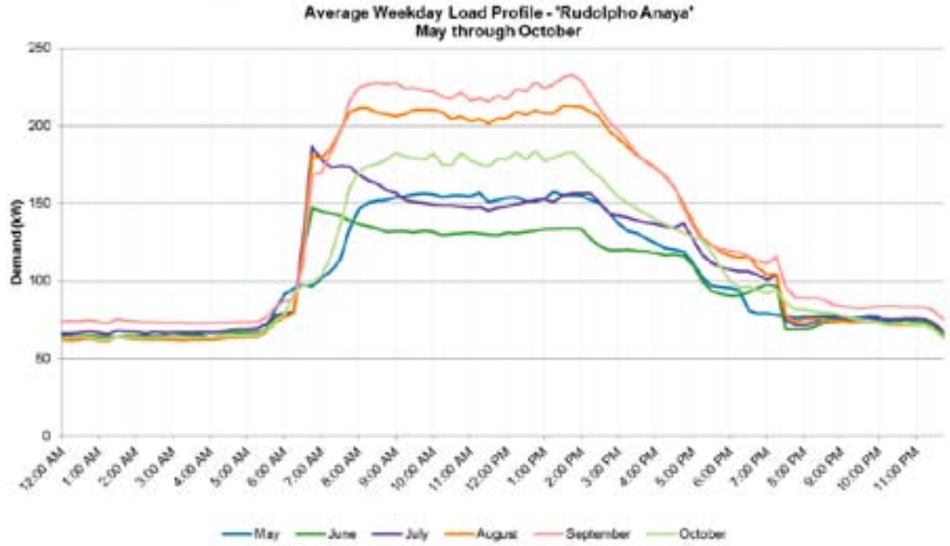
---Shows schools to improve on that are above the benchmark. Also shows schools performing well under the benchmark.

Albuquerque High School Baseline Jump



Albuquerque High base load jump. The black line is 2013 and the blue line is 2014. Shows a significant jump both years, Not good.

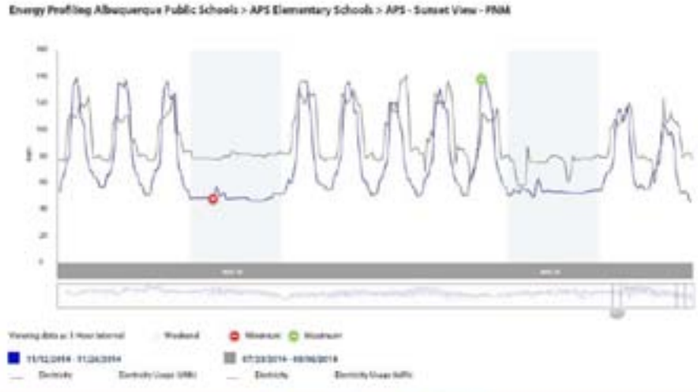
Rudolpho Anaya – Hard Startup



Month	Peak Demand Savings (kW)	Cost Savings ($)
June	40	$699
July	36	$629
Total	76	$1,328

Implemented: Sunset View – Nights & Weekends

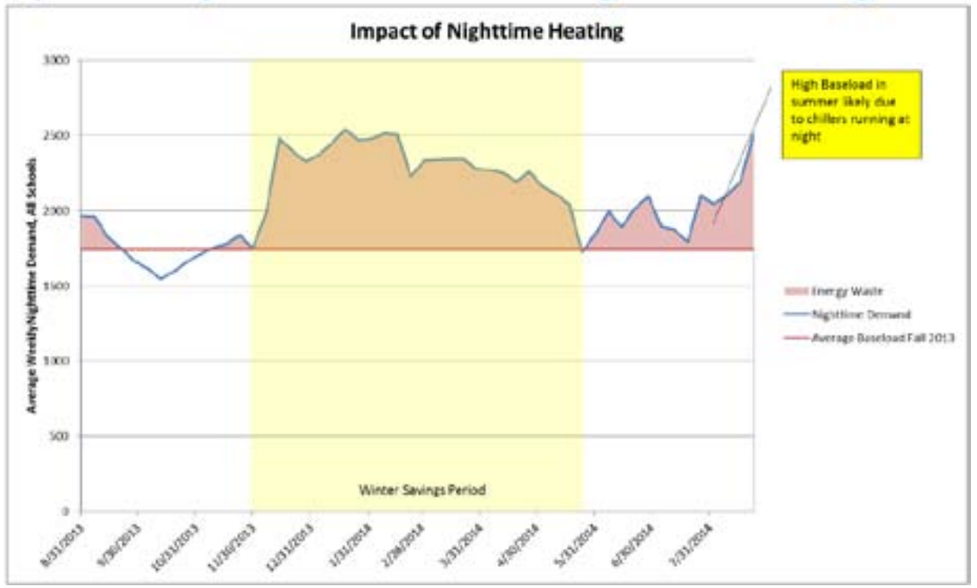
Night & Weekend Baseload at Sunset View is down 32% since July.



Baseload Reduction Savings						
School	July Baseload	September Baseload (kW)	October Baseload (kW)	November Baseload (kW)	Energy Savings (kWh)	Cost Savings ($)
Sunset View	78	79	62	63	101,703	$3,966

*It's possible that some of these savings are due to natural seasonal fluctuations, although this seems unlikely. Baseload in July 2014 is exceptionally high compared to the previous year, and current baseload is lower than year-ago baseload.

Impact Study: 2013-2014 Winter Nighttime Heating



In the following, 2014 numbers show an improvement over 2013.

Night Shutdown

Site	Total Average Night Shutdown Percentage	14 Dec	Nov-14	Oct-14	Sep-14	Aug-14	Jul-14	Jun-14	May-14	Apr-14	Mar-14	Feb-14	Jan-14	Dec-13	Nov-13	Oct-13	Sep-13	Aug-13
Alonso Heritage	51%	-	-	-	79%	80%	58%	47%	60%	42%	48%	47%	45%	44%	59%	75%	80%	76%
Volcano Vista	52%	61%	65%	75%	76%	70%	68%	65%	64%	54%	42%	39%	36%	38%	70%	73%	80%	81%
Albuquerque High	53%	40%	55%	60%	43%	36%	28%	28%	52%	48%	51%	43%	47%	51%	74%	70%	70%	74%
Cibola	58%	61%	63%	65%	72%	70%	58%	54%	50%	47%	51%	52%	50%	52%	58%	61%	67%	67%
Tony Hillerman	76%	83%	80%	87%	89%	84%	81%	80%	83%	84%	83%	80%	42%	36%	72%	70%	78%	74%
Jimmy Carter	56%	54%	55%	65%	67%	61%	8%	10%	73%	65%	53%	55%	52%	53%	59%	63%	71%	68%
Eldorado	63%	64%	67%	72%	69%	68%	46%	44%	68%	67%	63%	63%	60%	66%	61%	62%	70%	68%
West Mesa	63%	65%	63%	64%	68%	65%	42%	41%	68%	67%	63%	62%	60%	66%	65%	65%	76%	76%
Sierra Antigua	76%	74%	73%	79%	81%	80%	66%	71%	77%	85%	91%	63%	60%	62%	83%	85%	87%	86%
Sunset View	54%	61%	56%	62%	54%	49%	3%	3%	53%	49%	54%	53%	48%	50%	57%	60%	67%	64%
Rudolfo Anaya	57%	67%	55%	65%	66%	70%	58%	52%	59%	48%	51%	48%	50%	50%	57%	65%	67%	69%
Del Norte	67%	48%	51%	72%	73%	65%	67%	68%	69%	64%	61%	48%	45%	48%	63%	71%	69%	-
All Sites	62%	63%	62%	70%	69%	67%	50%	50%	65%	59%	59%	55%	49%	50%	66%	72%	74%	72%

Night Shutdown Percentage	
Excellent	x > 70%
Adequate	70% > x > 50%
Poor	x < 50%

SchoolDude KPI Dashboard Examples for APS' M&O

(52 total KPIs in SchoolDude cover general maintenance, preventive maintenance, energy, and facilities)

SchoolDude KPI Dashboard Examples for APS' M&O (cont.)

(52 total KPIs in SchoolDude cover general maintenance, preventive maintenance, energy, and facilities)

ALBUQUERQUE PUBLIC SCHOOLS

...it's all about the kids!


APS Community Stadium


Soccer Complex

Atrisco Heritage Academy

...it's all about the kids!


APS Community Stadium

M&O

ALBUQUERQUE PUBLIC SCHOOLS

APS

ALBUQUERQUE PUBLIC SCHOOLS