

HOW DO YOU STACK UP?

What Schools are Saying about Budget and Staffing Levels:

Facilities Budget, Staffing, and Operations Survey Results



A research survey and report conducted by

**SCHOOL
DUDE**

2016 FACILITIES SURVEY:

Benchmarking Budgeting, Staffing & Operations In K-12 and Higher Education

A research survey and report conducted by SchoolDude

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KEY FINDINGS



This report establishes a benchmark for facilities management. As the first-of-its-kind survey, it was designed to establish a standard for maintenance and operations benchmarks and operational excellence in educational institutions. The study's goal is straightforward: collect financial and demographic data from districts, schools, and colleges with operational key performance indicators (KPIs) to provide insights into current budget and staffing levels while contributing valuable data to support future needs in these areas.

We found a host of challenges that face schools and colleges as they look to operate and maintain facilities and infrastructure to support the business and educational goals of their institutions. Among the key findings of this inaugural research:

Facilities Landscape

- Both K-12 schools and colleges face the task of maintaining an aging facilities infrastructure. The average age of K-12 facilities is 38 years; the average age of higher education facilities is even higher at 40 years.
- Technology is having an increasingly profound effect on how classrooms and workspaces are being designed as technology takes on an increasing role in both business and academic daily activity.
 - 91 percent of Higher Ed said that technology setup will disrupt classroom setup in the near future.
 - 78 percent of K-12 said that technology will disrupt classroom setup in the near future.
 - In terms of likely immediate impact, Higher Ed indicated a higher percentage (56 percent) than K-12 (39 percent).
- In both K-12 and Higher Ed, the overwhelming percentage of maintenance is done in-house (>84 percent in both instances).



Facilities Landscape (cont'd)

- The custodial function is structured significantly differently in K-12 and Higher Ed:
 - In K-12, 51 percent are centralized within physical plant, maintenance, and operations, while 34 percent are distributed (managed at every location by the local administration).
 - In Higher Ed, 66 percent are centralized within physical plant, maintenance, and operations, while 28 percent are outsourced to a for-profit vendor.
- K-12 custodians are nearly twice as likely to be unionized as those working in Higher Ed:
 - K-12: 45 percent unionized
 - Higher Ed: 25 percent unionized
- Age and tenure of facilities staff is remarkably consistent across both sectors: the average age is 45 in each; tenure is 12.5 years in K-12, 10 years in Higher Ed.

Facilities Budget and Staffing

- As a percentage of the overall school budget, Maintenance and Operations averages 10 percent for both K-12 and Higher Education.
- During the last five years, there was an equal split in Higher Education maintenance and operations (M&O) budgets that decreased and increased (37.5 percent), while 25 percent of Higher Ed M&O budgets stayed the same over the last five years.
- During the last five years, a higher number of K-12 institutions reported their M&O budgets increased (38 percent) rather than decreased (31.4 percent). Nearly 30 percent of K-12 M&O budgets stayed the same over the last five years.
- K-12 spends a higher percentage of its budget on payroll (46 percent) than Higher Ed (34 percent), 12 percent more.
- Higher Ed spends a higher percentage of its budget on energy (30 percent) than K-12 (22 percent), 8 percent more.
- Both sectors spend roughly equal percentages on supplies and contract services.



Facilities Budget and Staffing (cont'd)

- In terms of staffing, for both K-12 and Higher Ed, Custodial staff ranks highest, followed by Maintenance staff, then Grounds staff.
- The pressures in terms of physical area of responsibility vary widely from K-12 to Higher Ed and by function:
 - K-12 school maintenance personnel are responsible for maintaining the greatest area per employee.
 - In K-12, square feet per employee for Maintenance and Custodial decreases as school enrollment increases; however, acres per Grounds employee increases as school enrollment increases.
 - Grounds employees in Higher Ed maintain less than half the acreage that K-12 grounds employees maintain.
- Median salaries tend to be higher for K-12 facilities workers than for those in Higher Education, particularly so in larger K-12 schools.
 - Maintenance salaries are the highest of the three functions for both K-12 and Higher Ed; grounds and custodial salaries are largely comparable.
 - Grounds employees in Higher Ed maintain less than half the acreage that K-12 grounds employees maintain.
- Both sectors are generally satisfied with staff performance. Using the APPA Service Levels 1 to 5, where 1 is “orderly spotlessness” and 5 is “unkempt neglect,” K-12 ranks 93 percent 3 or higher, Higher Ed 88 percent 3 or higher.

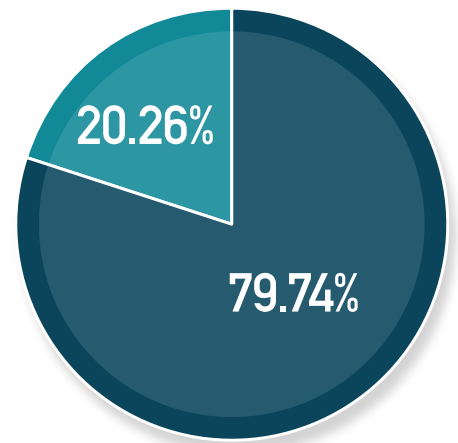
Operational Key Performance Indicators

- Comparing service levels (defined as work order percentage completed in less than one week) and maintenance staffing, the number of institutions with low staffing and high service is virtually identical to the number of institutions with low staffing and low service.
 - Staffing numbers may not be the direct cause of service and efficiency levels

SURVEY METHODOLOGY AND DEMOGRAPHICS

SchoolDude conducted a survey of facilities managers and/or decision makers in educational institutions. Institutions surveyed include Public K-12 districts, charter schools, private and independent schools, community colleges, four-year public universities, and four-year private universities. Institutions ranged in student size and type, representing the broader market. Departments represented include:

- Maintenance and Facilities
- Physical Plant
- Buildings and Grounds
- Business Operations
- Finance
- Events/Facility Use
- Superintendent’s Office



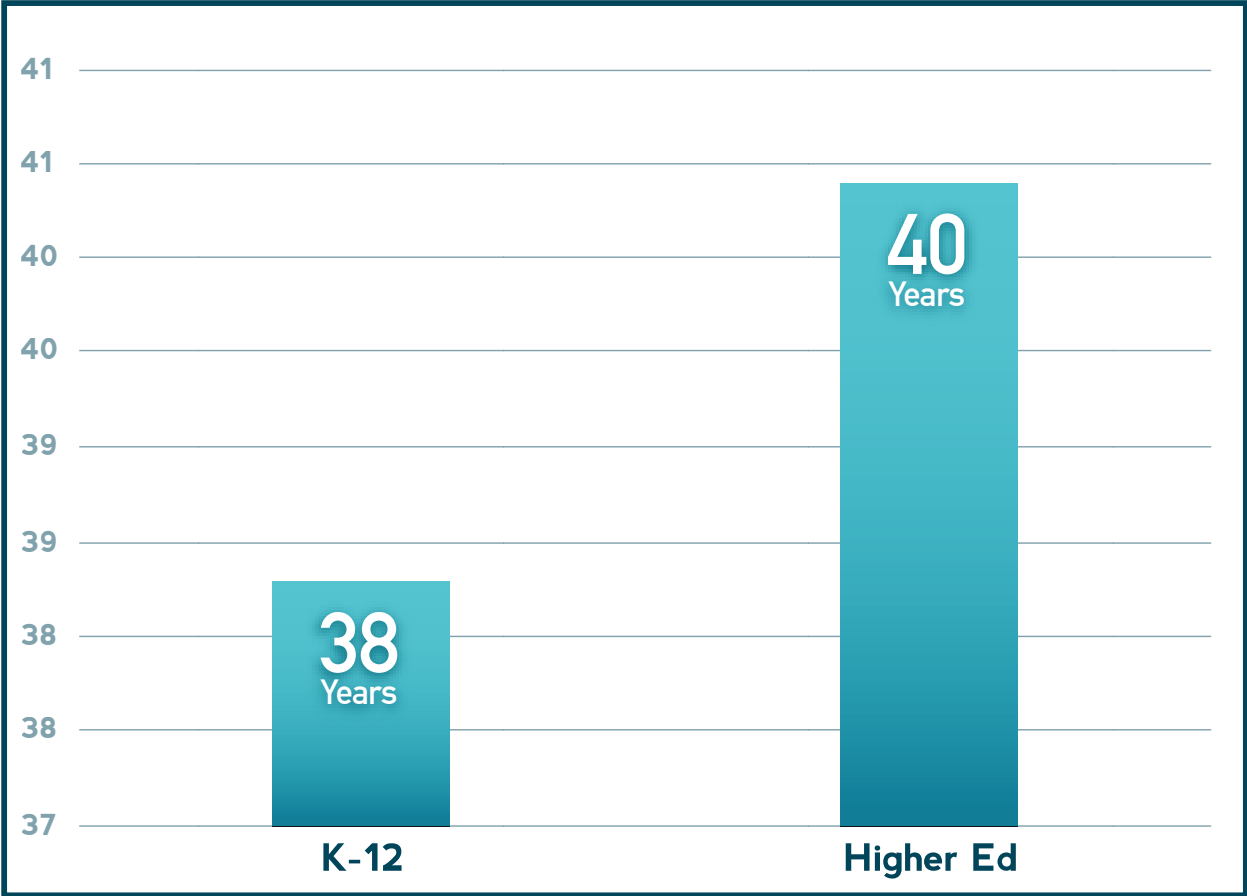
We received 385 responses to the survey: **79.74%** from K-12 schools, **20.26%** from Higher Education organizations. The size of organizations and number of respondents from each follow:

■ K-12 ■ Higher Ed

ENROLLMENT	K 12	HIGHER EDUCATION
<1,000	72	6
1,000 - 2,999	88	19
3,000 - 4,999	48	17
5,000 - 9,999	38	15
10,000 - 19,999	22	8
20,000 - 39,999	19	10
40,000 - 59,999	12	3
>60,000	8	-

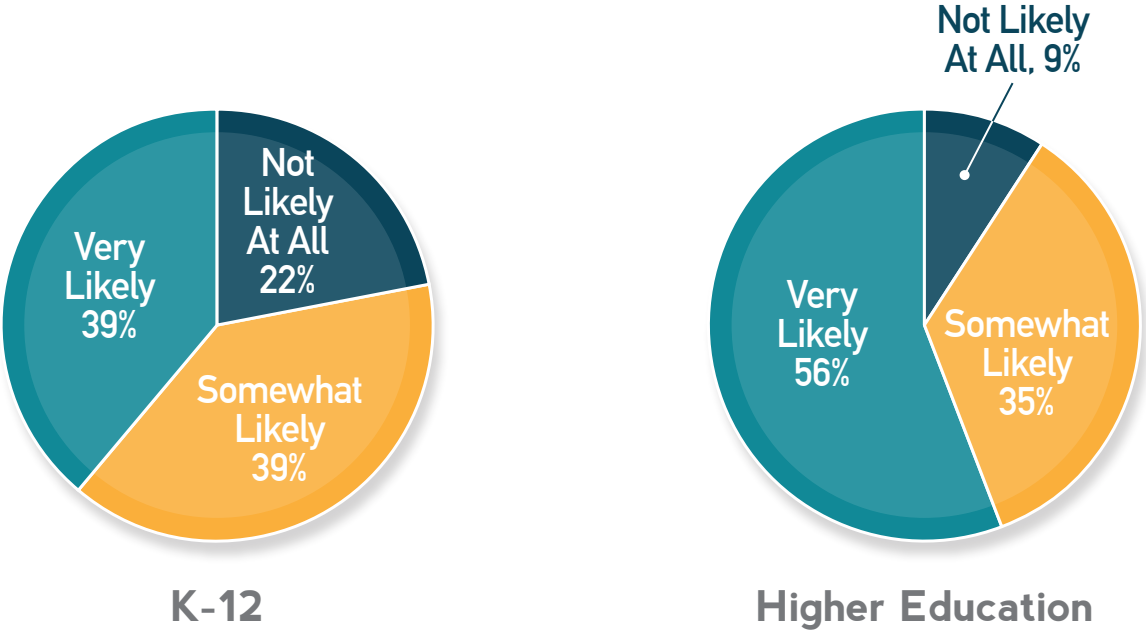
FACILITIES LANDSCAPE

Both K-12 and Higher Ed are facing an aging infrastructure. In both sectors, facilities on average are about to **enter their fifth decade of service:**



FACILITIES LANDSCAPE (cont'd)

The increasing importance and presence of technology in the classroom is affecting facilities as well as technology organizations within schools. Both sectors expect this development to be disruptive. When asked “What is the likelihood your school will consider redesigning classrooms in the near future to account for new technology coming into classrooms today?” K-12 and Higher Ed organizations indicated the following:

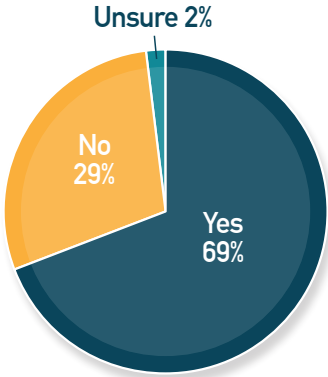


In K-12, 78 percent of schools indicated the infusion of technology was very likely or somewhat likely to affect classroom redesign in the near term. In Higher Ed, this figure rose to 91 percent. These figures underscore the increasingly crucial role of technology in day-to-day academic and administrative activities, a development gaining further momentum with the growing speed of new product introductions and a student demographic that has grown up in a digitally-enabled world. Today’s students have never known a classroom without technology, and have seen it proliferate from year to year. Facilities and Business departments are becoming more and more involved with technology infrastructure in the classrooms and on campus, as shown by these results.

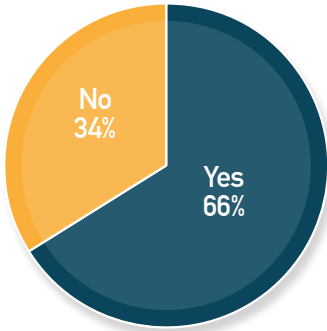


FACILITIES LANDSCAPE (cont'd)

Approximately two-thirds of both K-12 and Higher Ed facilities operations run both evening and night shifts in addition to daytime hours:

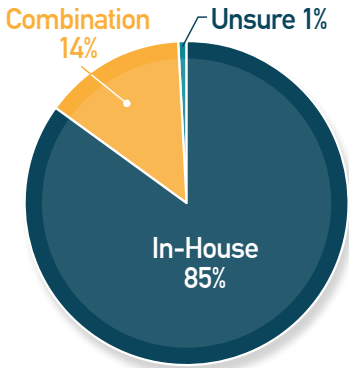


K-12 Evening and Night Shifts

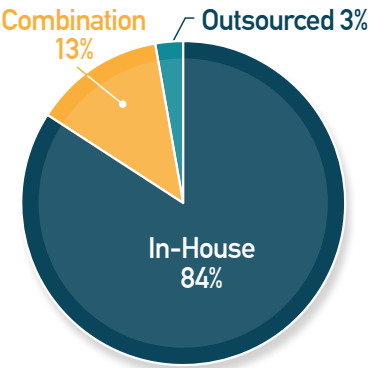


Higher Education Evening and Night Shifts

The vast majority of maintenance (approximately 85 percent) is done in-house exclusively in both sectors. A little more than 10 percent cite a combination of in-house and outsourced maintenance, and a very small percentage of Higher Ed schools show maintenance being outsourced exclusively:



K-12 In-House vs. Outsourced Maintenance Teams

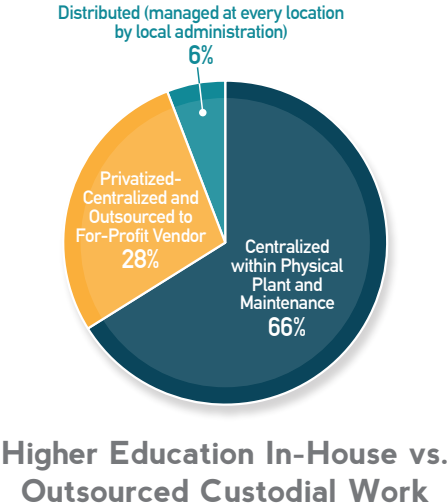
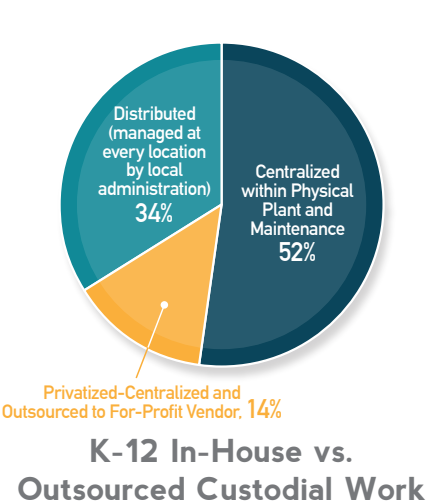


Higher Education In-House vs. Outsourced Maintenance Teams

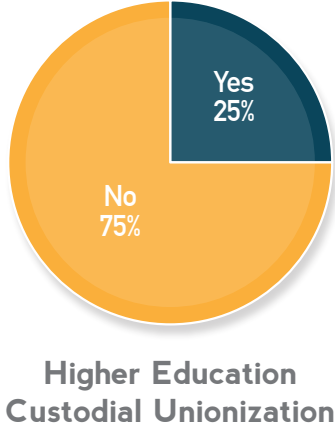
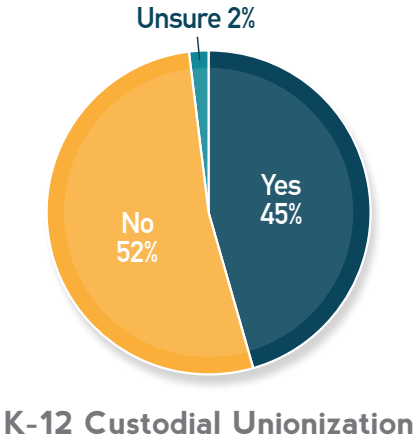


FACILITIES LANDSCAPE (cont'd)

For custodial work, Higher Ed is twice as likely as K-12 to outsource the work to a for-profit vendor. K-12 is almost six times as likely to use a distributed structure for custodial work (i.e., the work is managed at every location by the local administration).



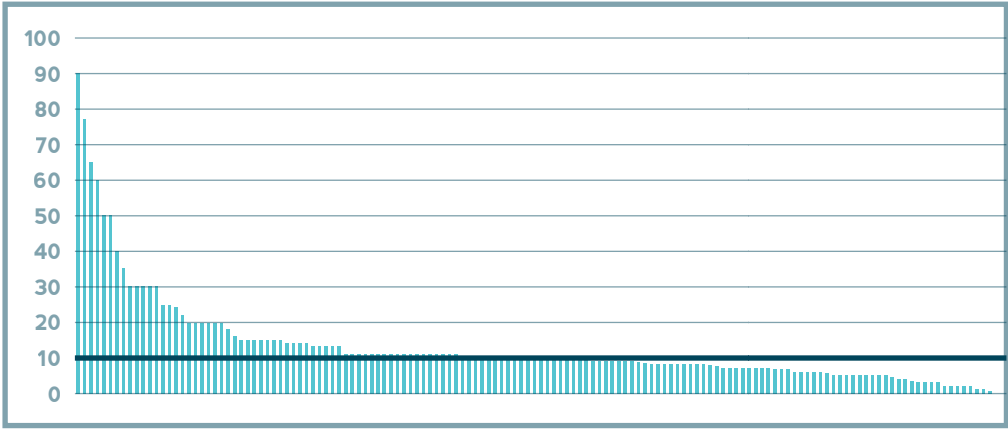
K-12 schools are nearly twice as likely as Higher Ed to have custodians unionized; only a quarter of Higher Ed schools indicate their custodians are unionized:



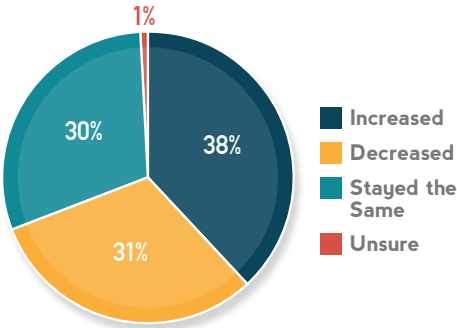
FACILITIES BUDGET AND STAFFING

Budget

For both K-12 and Higher Ed, the maintenance and operations budget comprises about 10 percent of the total school budget:

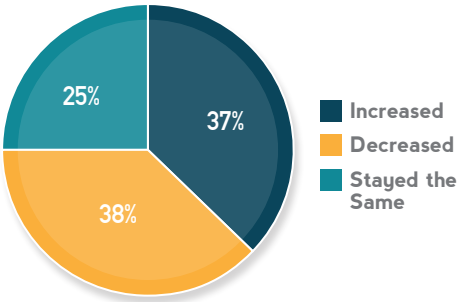


It's fair to say that budgets have remained fairly static during the last five years, when increases, decreases, and status quo are considered:



K-12 Budget Levels

During the last five years, a higher number of K-12 institutions reported their maintenance and operations budgets increased (38 percent) rather than decreased (31.4 percent). Nearly 30 percent of K-12 M&O budgets stayed the same over the last five years.



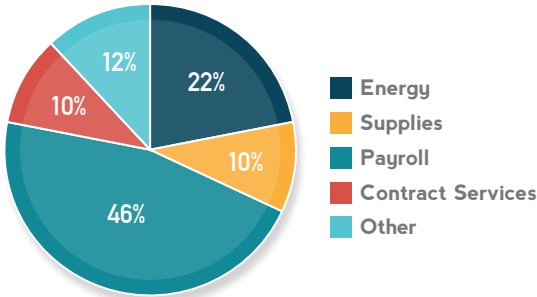
Higher Education Budget Levels

In Higher Education, budgets have increased and decreased equally (37.5 percent), while 25 percent of Higher Ed M&O budgets stayed the same. Budgets in Higher Ed have been more likely to be cut than those in K-12.

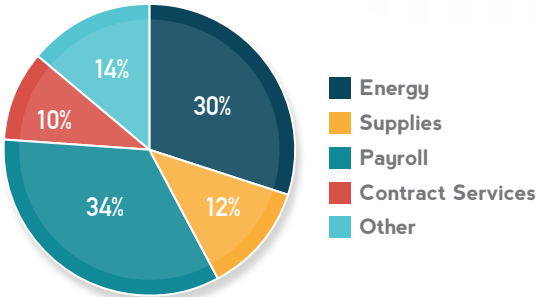


FACILITIES BUDGET AND STAFFING (cont'd)

The specific breakdown of the Facilities Budget (i.e., by payroll, energy, supplies, contract services, and other) can be seen in the pie charts below:



K-12 M&O Budget Breakdown



Higher Education M&O Budget Breakdown

In both sectors, payroll consumed the largest percentage of budget, followed by energy.

Payroll was higher as a percentage in K-12 than in Higher Ed (46 percent to 34 percent), while energy was higher as a percentage in Higher Ed than in K-12 (30 percent to 22 percent). The other categories were roughly comparable across the sectors.

Staffing

Two methodologies were used to define staffing levels results from the survey: Number of Employees per 1,000 Students and Area Maintained per Employee.

We group employees into three categories: Maintenance, Grounds, and Custodial staff. We recognize that many custodians perform light maintenance and that affects staffing and service levels. In this study, we asked respondents to qualify staff based on their main role in the organization.

of Employees per 1,000 Students

	Maintenance Employees per 1,000 Students	Grounds Employees per 1,000 Students	Custodial Employees per 1,000 Students
K-12	2.1	1.0	7.6
Higher Ed	4.7	1.8	6.6



FACILITIES BUDGET AND STAFFING (cont'd)

In terms of staffing, for both K-12 and Higher Ed, Custodial staff ranks highest, followed by Maintenance staff, then Grounds staff.

There is a significant difference in staffing for K-12 and Higher Education Maintenance employees looking at the bottom quartile. In K-12, the lower quartile has 1.1 Maintenance employees per 1,000 students. In Higher Ed, the lower quartile has 2.5 Maintenance employees per 1,000 students.

For Grounds employees, the larger the institution, the more this benchmark shifts down. Institutions with an enrollment of more than 20,000 students have only about .5 Grounds staff per 1,000 students.

Similarly to number of Maintenance employees, there is a large difference between K-12 and Higher Ed looking at the bottom quartile of Custodial employees. In K-12, the lower quartile has 2.6 Custodial employees per 1,000 students. In Higher Ed, the lower quartile has 5.4 Custodial employees per 1,000 students.

Schools, districts, and colleges can use employees per 1,000 students to easily calculate what their average number of employees by function should be and better project staffing needs. For example, if your school district has 8,000 students, you can use this benchmark to assume you will need 16 maintenance employees, 8 grounds employees, and 64 custodians. This data can help schools justify budget and staffing projections to Supervisors.

The pressures in terms of physical area of responsibility vary widely from K-12 to Higher Ed and also by function.



FACILITIES BUDGET AND STAFFING (cont'd)

The charts below detail the average amount of space maintenance, grounds, and custodial employees are responsible for covering. In K-12, employee benchmarks are split by enrollment range due to the significant difference between the amount of space employees maintain for a large district versus a small school.

K-12 Area Maintained per Employee

Enrollment Range	Median Square Feet per Maintenance Employee	Median Acres per Grounds Employee	Median Square Feet per Custodian
<5,000 Students	120,000	45	25,989
5K-20K Students	103,571	70	23,598
>20,000 Students	77,021	85	20,000

Higher Education Area Maintained per Employee

Median Square Feet per Maintenance Employee	Median Acres per Grounds Employee	Median Square Feet per Custodian
72,881	21	44,445

K-12 Maintenance personnel maintain approximately four times as much area as custodial personnel across institution size. Square footage maintained per employee decreases for both Maintenance and Custodial employees as school size grows; however, acres maintained per Grounds employee increases with student size.

Higher education employees maintain less area than K-12 employees. Higher Ed maintenance personnel maintain 72,881 square feet per employee, not quite double what custodial personnel in Higher Ed maintain, 44,445 square feet per custodian. Grounds employees in Higher Ed maintain less than half the acreage that K-12 grounds employees maintain, 21 acres per grounds employee. This could be indicative of the importance of grounds maintenance in colleges and universities due to the importance of grounds appearance in recruiting efforts; therefore, it is possible Higher Ed administration gives each grounds employee less to maintain.



FACILITIES BUDGET AND STAFFING (cont'd)

Salaries

The chart below details average salaries for facilities personnel in K-12 and Higher Education:

	Median Salary for Maintenance	Median Salary for Grounds	Median Salary for Custodial
K-12	\$41,800	\$27,500	\$30,000
Higher Ed	\$39,500	\$30,000	\$27,000

Median salaries tend to be higher for K-12 facilities workers than for those in Higher Education, particularly so in larger K-12 schools. The only area in which Higher Ed has higher pay is Grounds median salary. As noted above with the area grounds employees maintain, higher pay for grounds employees could also be due to the focus Higher Ed places on Grounds work and appearance and its impact on college recruiting efforts.

Maintenance employee salaries are the highest of the three functions for both K-12 and Higher Ed; Grounds and Custodial salaries are largely comparable.

Employee Demographics: Age and tenure of facilities staff is remarkably consistent across both sectors: the average age is 45 in each; tenure is 12.5 years in K-12, 10 years in Higher Ed.

	Median Age of Employee	Median Tenure of Employee
K-12	45 years	12.5 years
Higher Ed	45 years	10 years



FACILITIES BUDGET AND STAFFING (cont'd)

Service Levels: The chart below uses APPA Service Levels to describe average service at each institution, Level 1 being “orderly spotlessness” and Level 5 being “unkempt neglect.” Survey participants were asked to describe the average service level of their institution.

In both K-12 and Higher Ed, the large majority of respondents rated themselves at an APPA Level 2 or 3 (84 percent for K-12; 85 percent for Higher Ed), indicating both K-12 and Higher Ed sectors are fairly satisfied in terms of staff performance.

APPA Level	K-12	Higher Ed
1	9%	3%
2	40%	38%
3	44%	47%
4	4%	6%
5	0%	3%
Unsure	2%	3%

OPERATIONAL KEY PERFORMANCE INDICATORS (KPIs)

By combining staffing data with operational KPIs (such as Work Order Completion Rates and Preventive Maintenance Resource Allocation), we can start to quantify the impact staffing has on service levels. And while anecdotal evidence and conventional wisdom says more staff and budget equates to better service, the correlation is not always as direct as one might think. Schools with more staff and budget don't always have the best service levels. In fact, there is a large number of schools with comparatively low staffing and budgets that have very high service.

The national average for work orders completed in one week or less is 67% and the average number of employees per 1000 students is three (Higher Ed and K-12 combined). Using these benchmarks, we created a matrix below with four quadrants: Low Staffing/High Service, Low Staffing/Low Service, High Staffing/High Service, and High Staffing/Low Service.



*service level defined by % completed in one week or less
 **staffing defined by maintenance employees per 1000 students

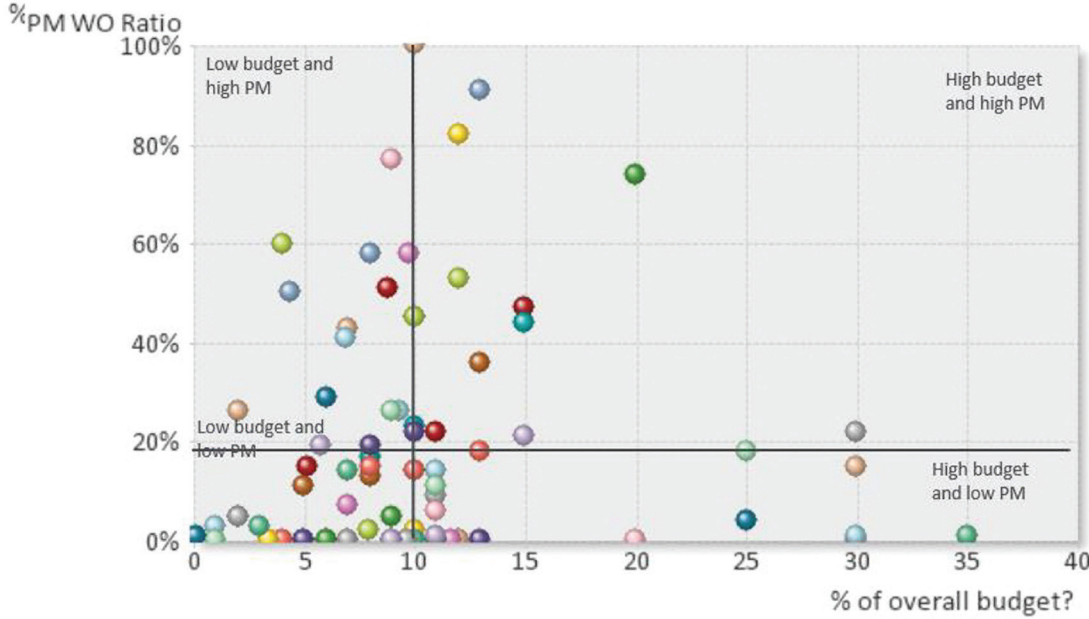


OPERATIONAL KEY PERFORMANCE INDICATORS (KPIs) (cont'd)

The number of institutions with low staffing and high service is virtually identical to the number of institutions with low staffing and low service. This finding suggests that staffing numbers is not the direct cause of high or low service; leadership has as much an impact on outcome as staffing levels do. Operations team performing at a high level are relying on excellent leadership, people, systems, and processes to achieve success.

The national average for Preventive Maintenance (PM) resource allocation (PM/Work Order ratio) is 18% and as stated above, the percent of the overall budget dedicated to M&O is 10%.

Using these benchmarks we created a matrix below with four quadrants: Low Budget/High PM, Low Budget/Low PM, High Budget/High PM, High Budget/Low PM.



*service level defined by PM resource allocation
 **staffing defined by maintenance employees per 1000 students

Setting up a sustainable Preventive Maintenance (PM) program is a challenge for nearly all institutions. However, this suggests, as with the previous matrix, that with innovative leadership, strong people, processes, and systems in place, institutions with budget constraints can implement a sustainable, successful PM program.

CONCLUSION

As an inaugural piece of research into facilities budgets, staffing, and operations in K-12 and Higher Education, this survey will be useful as a benchmark moving forward.

Some of what we discovered might have been expected: ***Both K-12 and Higher Ed facilities management are dealing with an aging infrastructure that is also facing disruptive change driven by the inexorable advance of technology into schools.***

The nature of technology is changing, both in its capabilities and pace of introduction; moreover, it has become a part of everyone's daily life and self-identification, a fact that is likely to increase its impact in facilities design and management.

The percentage of overall budget allocated to facilities appears relatively stable at 10 percent, with increases or decreases equally likely through the past five years. How that capital resource is being allocated at schools and institutions of varying sizes and scope can be seen in this industry-first snapshot, and should prove useful as those responsible for facilities seek better data to plan for future work, justify required resources, and maintain the buildings and grounds necessary for the academic mission to not only continue its course, but to thrive.