

By Ernest R. Hunter Sr., P.E., ACP, MOS (Master)

his is the fifth annual article I have written for Facilities Manager exploring salary trends for educational facilities management (FM) jobs. The first article I wrote in this series was titled "Six-Year Salary Trends for Facilities Professionals" (Facilities Manager, July/August 2014). That article reported on salary trends for the period of FY 07-08 through FY 12-13.

renc

for Facilities Professionals

Using FY 07-08 as the base year and techniques generally used by the U.S. Department of Labor, we set out to determine whether salaries for people working in primarily higher education FM jobs experienced salary growth or decline during the study period. Rather than repeat all the details of the methods, techniques, and concepts used in the 2014 analysis, I refer you to the original article which can be found on the APPA website at https://www.appa.org/files/FMArticles/44-53.pdf.

The purpose of this article is to revisit the 2014

analysis and take a five-year look at the period since then. We will be using the same methods, techniques, and concepts as we used in the 2014 article for the fiveyear period of FY 12-13 through FY 16-17. We will use FY 12-13 as our base year and determine whether there has been growth or decline in salaries during this fiveyear period. In other words, the ending year of the 2014 analysis will be the base year for this year's analysis.

The source of the educational salary information for this article is the APPA Facilities Performance Indicators Report (FPI). We will also make some comparisons between trends seen in this five-year period and the six-year period studied in the 2014 article. Additionally, as we have done in all four previous articles in this series, we will supplement the FPI data with information from the Department of Labor Bureau of Labor Statistics (BLS) National Compensation Survey,

Figure 1a	FY 12-13		FY 16-17		
Administration	No of Employees	Avg Salary	No of Employees	Avg Salary	Salary Chg
Chief Facilities Officer	149	\$135,316	127	\$148,437	1.10
Assoc/Assist Director	233	\$96,539	187	\$107,536	1.11
Bus/Budget Manager	175	\$65,222	147	\$68,028	1.04
Human Resources Manager	56	\$57,101	46	\$65,860	1.15
Training Officer	36	\$57,701	26	\$59,606	1.03
Telecom Specialist	6	\$50,321	9	\$56,420	1.12
Computer Programmer/Analyst	160	\$58,244	142	\$62,175	1.07
Other Administrative Managers	218	\$63,450	159	\$68,781	1.08
Secretary Clerical	662	\$36,249	454	\$39,675	1.09
Other Administration Positions	366	\$42,880	406	\$43,807	1.02
		с	omposite Avera	ge Salary Chg	1.08

Composite Average Salary Chg

the BLS *Consumer Price Index* (CPI), and the *Employment Cost Index* (ECI).

Those familiar with the APPA FPI survey know that it includes six modules representing the six FM core functions—Administration; Architecture and Engineering (A&E)/ Construction; Custodial; Energy/Utilities; Landscape/Grounds; and Maintenance. The survey collects salary data for 52 different jobs, grouped by the core function with which

they are associated. In the 2014 article we displayed the num-

ber of employees reported on in the APPA FPI survey and the

average salary for them for each FPI job for the base and ending

KEY

- FPI APPA's Facilities Performance Indicators
- BLS Bureau of Labor Statistics
- **CPI** Consumer Price Index
- ECI Employment Cost Index

year. In this article we have included the same figures with the same numbering scheme for the new base year and new ending year of our current study period. We have added the *Composite Average Salary Change* measurement for each FPI job group. Let's discuss the Administration group as a way of illustrating how to interpret the information.

As can be seen in Figure 1a (previous page), the FPI respondents reported on 149 Chief

Facilities Officer employees in FY 12-13, and on 127 in FY 16-17. The average salary in FY 12-13 was \$135,316, compared to \$148,437 for FY 16-17, resulting in a *Salary Change* of 1.10, or a

Figure 1b	FY 1	2-13	FY 1	6-17	
Maintenance Group 1	No of Employees	Avg Salary	No of Employees	Avg Salary	Salary Chg
Shop Supervisor/Foreman	745	\$58,973	636	\$63,672	1.08
Carpenter	504	\$44,643	461	\$47,663	1.07
Electrician	906	\$48,875	751	\$53,298	1.09
Locksmith	242	\$44,451	224	\$48,386	1.09
Machinist/Welder	87	\$49,255	61	\$52,855	1.07
AC/Refrigeration	909	\$48,713	716	\$52,177	1.07
Mason	71	\$43,633	42	\$50,707	1.16
Painter	394	\$42,779	332	\$45,969	1.07
Plumber/Pipefitter	665	\$48,367	576	\$52,536	1.09
Roofer	77	\$40,121	61	\$44,042	1.10
			Composite Ave	erage Salary Chg	1.08

Figure 1c	FY 1	2-13	FY 1	6-17	
Maintenance Group 2	No of Employees	Avg Salary	No of Employees	Avg Salary	Salary Chg
Sheetmetal Worker	57	\$50,043	75	\$52,983	1.06
Other Trades Positions	514	\$43,328	456	\$48,893	1.13
Chief Superintendent Maintenance	186	\$75,583	162	\$83,346	1.10
General Zone Maintenance Worker	1,164	\$39,068	1,007	\$44,684	1.14
Elevator Mechanic	52	\$68,416	47	\$68,250	1.00
Vehicle/Equipment Mechanic	152	\$43,577	103	\$46,076	1.06
Storekeeper/Expediter	211	\$36,179	124	\$40,821	1.13
Labor/Trades Worker	357	\$38,123	270	\$41,324	1.08
Other Maintenance Positions	319	\$44,401	319	\$47,806	1.08
	all a second		Composite Ave	erage Salary Chg	1.12

THE 2017-18 FACILITIES PERFORMANCE INDICATORS SURVEY IS NOW OPEN!

Register and complete at www.appa.org/research/fpi/index.cfm



Figure 1d	FY 1	2-13	FY 1	6-17	
A&E/Construction	No of Employees	Avg Salary	No of Employees	Avg Salary	Salary Chg
Architect	146	\$83,657	108	\$89,551	1.07
Engineer	155	\$79,595	118	\$84,431	1.06
Facility Planner	109	\$68,414	83	\$76,504	1.12
Construction Manager	126	\$78,445	111	\$87,256	1.11
Estimator/Scheduler	51	\$56,338	33	\$54,973	0.98
Project Coordinator/Manager	375	\$63,574	421	\$70,082	1.10
Other Construction A&E Positions	396	\$47,800	401	\$58,305	1.22
			Composite Av	erage Salary Chg	1.10

Figure 1e	FY 1	2-13	FY 1	6-17	
Custodial	No of Employees	Avg Salary	No of Employees	Avg Salary	Salary Chg
Custodial Superintendent/Manager	159	\$64,994	163	\$72,542	1.12
Custodial Supervisor/Foreman	651	\$42,948	598	\$46,261	1.08
Custodial Crew/Team Leader	905	\$32,672	759	\$34,317	1.05
Custodian/Housekeeper	10,229	\$27,240	9,084	\$29,411	1.08
Other Custodial Positions	334	\$32,835	268	\$33,538	1.02
		Composite Average Salary Chg		1.08	

Figure 1f	FY 1	2-13	FY 1	6-17	
Landscape/Grounds	No of Employees	Avg Salary	No of Employees	Avg Salary	Salary Chg
Grounds Superintendent/Manager	105	\$66,228	106	\$72,350	1.09
Grounds Supervisor/Foreman	227	\$46,216	193	\$49,137	1.06
Grounds Crew/Team Leader	331	\$37,640	278	\$40,239	1.07
Groundskeeper	1,719	\$31,318	1,560	\$33,144	1.06
Other Grounds Positions	412	\$34,591	357	\$38,049	1.10
		Composite Average Salary Chg		1.07	

10 percent average salary growth. Reviewing the remaining job titles in the Administration job group, you can see some level of salary growth for all jobs, ranging from 2 to 15 percent. The *Composite Average Salary Change* for the Administration job group for the five-year study period was 8 percent. In fact, all 52 jobs experienced modest growth in average salary except the Estimator/Scheduler and Elevator Mechanic job titles. The Estimator/Scheduler job title experienced a salary decline of 2 percent and the Elevator Mechanic job title remained unchanged.

While taking averages of averages is generally not a preferred statistical analysis technique, in this instance by doing so we can get a good perspective of how our current five-year study period compares with our 2014 six-year study period. Figure 1h is a summary of the average salary growth reflected by the APPA FPI survey for the 2014 study period and the current study period listed by job group. As you can see, there was an *Overall Average Change* of 4 percent growth for the 2014 six-year study period, compared to 9 percent growth for our current five-year study period.

In other words, the higher education FM workforce as reflected in the APPA FPI survey experienced a 4 percent pay raise during the 2014 six-year study period and a 9 percent pay raise during our current five-year study period. Stated another way, higher education FM workers' salaries grew more than twice as much during our current five-year study period than they did during the 2014 six-year study period—good news for our community!

It would be interesting to see how Figures 1a through 1h would look if developed for your FM workforce salaries for the same periods. As you review and interpret this information and

Figure 1g	FY 12	2-13	FY 16	5-17	
Energy/Utilities	No of Employes	Avg Salary	No of Employees	Avg Salary	Salary Chg
Director of Utilities	45	\$96,197	43	\$101,521	1.06
Utilities Supervisor/Manager	168	\$66,458	156	\$73,127	1.10
Energy Engineer/Manager	78	\$72,752	85	\$74,092	1.02
HVAC Controls Technician	205	\$52,612	243	\$56,773	1.08
Utilities Operator/Maint	919	\$49,857	848	\$53,722	1.08
Other Energy/Util Positions	158	\$48,074	199	\$52,811	1.10
			Composite Ave	erage Salary Chg	1.08

	1111996994298497779296835455888°				
Figure 1h	FY 12-13 Over FY 07-08	FY 12-13 Over FY 07-08			
	Average Change	Average Change			
Administration	1.05	1.08			
A&E Construction	1.04	1.10			
Custodial	1.05	1.08			
Landscape/Grounds	1.04	1.07			
Maintenance Group 1	1.02	1.08			
Maintenance Group 2	1.06	1.12			
Energy/Utilities	1.03	1.08			
Overall Average change	1.04	1.09			

construct similar analyses for your own workforce, keep in mind that the APPA FPI respondent population is not constant and changes from year to year. Some institutions participate every year, while other institutions participate less frequently. Additionally, participating institutions may or may not report salary information each time they participate. However, even with these facts in mind, this data is an excellent, reliable source for comparative analysis when attempting to make judgments about the health of your salary program compared to national trends.

From the above discussion, we can see how salaries for our two study periods compare based on FPI data. However, in most statistical analyses it is useful to have multiple data sources or reference points for making comparisons. At this point in our discussion it is helpful to repeat some of the details of the 2014 article for ease of reference. As we did in 2014, we now introduce the CPI and the ECI into our analysis. To make use of these two external national indicators, we created a data model connecting the files from the Bureau of Labor Statistics (BLS) database to five years of APPA salary data from FY 12-13 to FY 16-17. All values in both data sources were normalized to the base year of FY 12-13, so that appropriate trend comparisons could be made. To normalize the data, the value for each year is divided by the FY 12-13 value. This sets the FY 12-13 normalized value to one. The normalized value for the other years reflects how much that year's value increased or decreased over the base year of FY 12-13. You can apply the same normalizing method to your local data to see how your trend compares to the composite trend for each of the six FPI job categories.

Figure 2 shows the normalized trend lines for the composite salary growth for the six FPI job groups for our current five-year study period. The graph shows that all FPI job groups followed a similar trend, with salary averages increasing each year. So the next obvious question is, how does this compare with the rest of the national workforce?

Turning our attention to Figure 3, and making use of the same method used by BLS, for each year we generated a composite trend line for the 52 FPI jobs; we will refer to that line as the *FPI All-Jobs Normalized Salary Trend*. This is done by computing the total salary amount reported for each job (average salary times the number of full-time equivalents (FTEs)), summing the results, and dividing by the number of FTEs reported in the FPI survey. By normalizing this composite trend data, we are now able to compare the result with the CPI, the ECI, and other normalized indicators. As shown in Figure 3, we now have normalized trend lines for three indicators that we can overlay over any of our own data to see how we compare.

A closer look at Figure 3 reveals that unlike the results for the 2014 six-year study period, the composite salary trend for our current five-year study period for all FPI jobs outpaced the CPI and ironically matched the ECI at the ending year. Since the CPI is a measure of how much we have to pay for goods (cost of living), the implication here is that the composite salary growth exceeded the growth in cost of living—another bit of good news for our community! And since the ECI is a measure of how much one FTE of labor costs employers throughout the nation, the implication here is that the APPA FPI participant community provided their FM employees raises compatible to the national average for other employers throughout the U.S.

It should be understood that Figures 2 and 3 are general comparisons made at the highest level against the composite data and therefore should not be used to draw firm conclusions.





However, they can be used as indicators of areas suggesting further "drill down" or additional analysis. Figure 4 overlays the three indicators over the graph from Figure 2 and drills down one level to the job-group level. This allows observations similar to the ones we made above—regarding the FPI All-Jobs trend to be made about each job group. Figure 4 shows that each FPI job group's composite salaries outpaced the CPI, and all except the Landscape/Grounds group outpaced or matched the EPI.

While the comparisons in Figure 4 are one level less general than those in Figure 3, further drill down is still needed to make firm judgments about individual job titles. There is not enough space in this article to drill down for each of the 52 FPI jobs. For the purpose of illustration, I refer you to Figure 5 of the 2014

article, which includes a discussion of drilling down to each individual job title.

This is where we ended our discussion on salary trends analysis in the 2014 article. However, with the space I have left, I would like to touch on the historical national unemployment rate as reflected in the BLS table, "Labor Force Statistics from the Current Population Survey." This measure profoundly impacts salary trends and the ability of higher education FM organizations to recruit qualified employees to fill vacant positions. As can be seen in Figure 5, the unemployment rate trend was dramatically different for the 2014 six-year study period versus the current study period. In 2007 the unemployment rate was 5 percent and growing. It peaked in 2009 at 9.3 percent, after which it started a downward

Figure 4: FPI Job Groups—Normalized Salary Trend







trend that has continued through April 2018.

During the 2014 study period, the unemployment rate never reached below 7.9 percent. Yet we started our current study period with an unemployment rate of 6.7 percent that steadily declined to 4.1 percent in 2017. The unemployment rate at the time of this writing was 3.9 percent. The good news is that our community salaries fared much better during our current study period than they did during our 2014 study period, partially because the unemployment rate was significantly better during our current study period. The challenging news is that higher education FM organizations will face stiffer competition for qualified employees to fill vacant positions as this positive employment trend continues.

SUMMARY

Let's summarize what was done in support of this article and

review what facilities professionals can do to understand and analyze their salary program trends. We used five years of salary data from the files we downloaded from the FPI report on the APPA website. We downloaded the ECI, CPI, occupational employment and wage data, and BLS unemployment rate data files from the BLS website. We built an Excel data model integrating the data from all sources.

Using the same methods used by BLS, we created composite normalized indicators to represent individual FPI job titles and FPI job groups. We normalized the data against the FY 12-13 base year for data compatibility and "apple-to-apple" comparisons. So, as noted in the 2014 article, FM professionals can apply this same methodology to the jobs in their organization to help make decisions regarding salary policies and practices. (**§**)

ENDNOTES

- 1. Department of Labor National Compensation Survey: *https://www.bls.gov/web/eci/echistrynaics.pdf*
- 2. Consumer Price Index (CPI): https://inflationdata.com/Inflation/ Consumer_Price_Index/HistoricalCPI.aspx?reloaded=true
- Employment Cost Index (ECI): https://www.bls.gov/web/eci/ echistrynaics.pdf
- 4. Labor Force Statistics from the Current Population Survey: *https://data. bls.gov/timeseries/LNS14000000*

Ernest Hunter is president and senior consultant/trainer for Hunter Consulting and Training, Austin, TX. He is also the developer of APPA's Operational Guidelines software tools: *CleanOpsStaff; GroundsOpsStaff;* and the just published *MainOpsStaff* programs, all available at *www.appa.org/bookstore*. He can be reached at *ernesthunter@gmail.com*.