

APPA's Operational Guidelines for Educational Facilities: A Focus on Staffing

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One of the most challenging issues facing facilities management professionals is determining the number of employees needed to perform the facilities maintenance and operations functions for colleges and universities. Much has been written about the APPA Facilities Performance Indicators survey (FPI) and the wealth of facilities management data and information contained in the FPI report for close to 300 survey participants. Some facilities professionals rely almost exclusively on comparative analysis of FPI cohort staffing data and summary benchmarks to determine what their staffing should be.

While the FPI is a valuable tool and while comparative analysis, used in the appropriate context, is certainly a legitimate approach to making judgments about staffing needs, APPA has also published a set of three books meant to serve as guidelines for several areas of educational facilities. The set is titled *Operational Guidelines for Educational Facilities*, and each book concentrates on a separate area:

- *Custodial* (third edition)
- *Grounds* (second edition)
- *Maintenance* (second edition)

In this article, we will refer to the *Operational Guidelines* Trilogy as *Guidelines*.

In addition to providing guidance for facilities professionals on a wide range of facilities management subjects, the *Guidelines* contain definitive protocols for estimating staffing and funding needs for the maintenance, custodial, and grounds functions.

ESTABLISHING PROTOCOLS

All three *Guidelines* contain a protocol or procedure for estimating the number of *Full-Time Equivalent* staff (FTEs) and the budget required to perform

the function in question. The protocols require specific asset inventory data and local variables as basic estimating model inputs. For custodial, the asset inventory data is the *Cleanable Square Feet* (CSF) data set, which contains cleanable spaces by category and size. For grounds, the asset inventory is the *Grounds Area* data set, which contains grounds areas by area type and size. For maintenance, the asset inventory is the *Maintained Space* data set, which contains maintained spaces by APPA maintenance type and size.

The *Guidelines* provide standard space categories for custodial as well as standard grounds area types for grounds, to reflect the fact that different type of assets require different amounts of labor. The maintenance *Guidelines* treat inventory data slightly differently in that they use a conversion table to convert local space types to one of four APPA staffing guidelines maintenance space types based on NCES or FICM codes.¹

All three estimating protocols require the input of local variables in order to capture elements such as 1) worker productive minutes per day; 2) days of worker authorized absence per year; 3) average worker wage rate; 4) fringe benefits rate; 5) factor for worker equipment cost; and 6) factor for worker consumers cost.

The *Guidelines* estimating protocols for the grounds and custodial functions are similar in that they both use what I will refer to the *Task-Time-Frequency* (TT&F) method. The TT&F method bases its estimates on 1) specific tasks to be performed for each type of asset; 2) predetermined standard time estimates to perform those tasks; and 3) the frequency at which the tasks are to be performed.

The maintenance estimating protocol is unique and does not use the TT&F method. It is referred to in

the *Guidelines* as the *Aggregate FTE* method (AFTE). I consider the AFTE method to be a parametric process that applies empirical data calculations on parameters derived from the maintained space inventory profile to calculate baseline FTEs. The baseline FTEs are then adjusted by five adjustment factors:

1. Campus Size;
2. Campus Age;
3. Facilities Type Variation;
4. Deferred Maintenance Facilities Condition Index (FCI); and
5. Campus Mission Type.

These adjustment factors are added to become the aggregate adjustment factor, which is applied to the baseline FTEs to produce the estimated number of frontline worker FTEs.

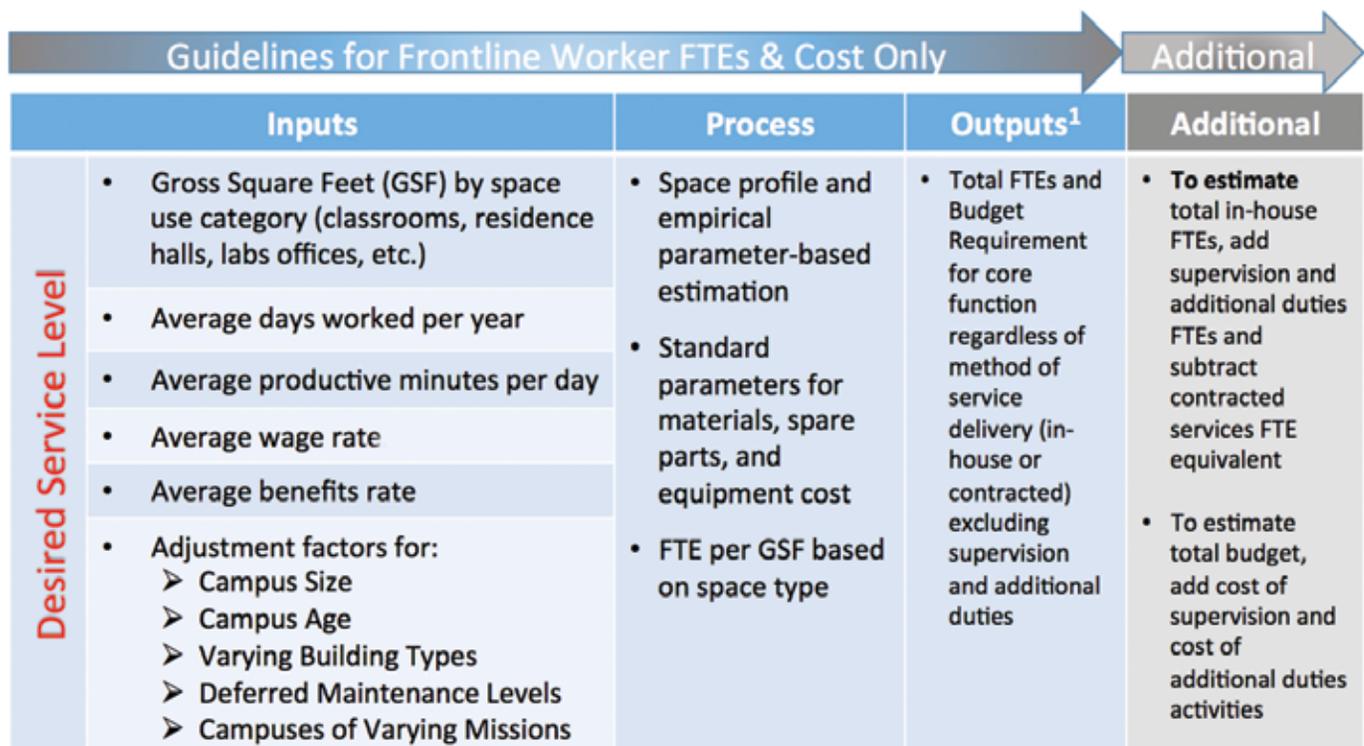
Figure 1 is a graphical representation of the estimating protocol for maintenance (a custodial and grounds graphic would be similar). The protocols estimate the FTEs based on which of the five APPA service levels the institution wishes to achieve (Level 1 through Level 5). Figure 1 begins with denoting the desired APPA level of service. All three protocols estimate the number of FTEs and the budget requirement for frontline workers only, and they do so without regard to whether the work

is to be performed with in-house workers or through contracted services. The protocols do not estimate the number of FTEs or budget required for administration, management, and supervision. Nor do they estimate the FTEs or budget requirement for all the other tasks the maintenance, custodial, and grounds frontline workers perform above and beyond their core functions (e.g., custodial providing event support, maintenance workers performing renovation projects, grounds workers providing moving service, any frontline worker performing any type of work in spaces not included in the asset inventory data set, and the many other noncore functions performed by frontline workers). I refer to these above-and-beyond tasks as “additional duties.”

DETERMINING FTES

It falls to the facilities management professional to determine the appropriate number of FTEs for administration, management, and supervision based on institutional policy, practices, and accepted local norms. The bigger challenge comes when estimating FTEs and cost requirements for additional duties. Those fortunate enough to have work-order information in a Computerized Maintenance Management System (CMMS) or an Integrated Workplace Management System (IWMS) can run reports to

Figure 1: Maintenance guidelines for in-house FTEs and cost-estimating protocol.



see how many hours of additional duties have been performed in the past, and extrapolate that a similar number of hours would be required in the future.

These hours are converted to FTEs and added to the FTEs produced by the Guidelines protocol along with the FTEs for administration, management, and supervision. If the organization did not perform work through contracted services that otherwise would need to be performed by in-house workers,

this would be the end of the process and the in-house FTE and cost requirement would be as follows:

6. FTEs estimated by the protocol; plus
7. FTEs for administration, management, and supervision; plus
8. FTEs for additional duties.

However, to be a credible representation of the in-house FTE needs, what I refer to as “contracted equivalent FTEs” must be subtracted from the above total to arrive at the final in-house total.

While we generally do not know how many FTEs contractors use to perform our contracted service work, we always know the contract cost. We can convert contract cost to contracted equivalent FTEs by dividing the cost by an appropriate wage rate. An appropriate wage rate can be based on the in-house fully burdened labor rate for the function in question, or it can be the prevailing wage rate for the local contractor community. This gives you the final figure for how many in-house frontline workers you will need.

OBJECTIVE ESTIMATES

In times of scarce resources, I highly recommend that facilities management professionals use some form of objective estimating protocol to estimate FTEs and cost needs for their core facilities functions. I would then caution that most estimates are based on averages, thus the answers produced by them are guidelines and not absolutes. High-performing organizations can achieve more than average-performing organizations with the same resources. ☺

ENDNOTE

- 1 NCES or FICM codes: National Center for Education Statistics (NCES) space use codes or Postsecondary Education Facilities Inventory and Classification Manual (FICM) codes are nationally accepted standards for collecting and reporting data related to education facilities in the United States and other nations.

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