

Briefing for  
The National Academies of Sciences,  
Engineering, and Medicine Committee on  
Facilities Staffing Requirements for Veterans  
Health Administration

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

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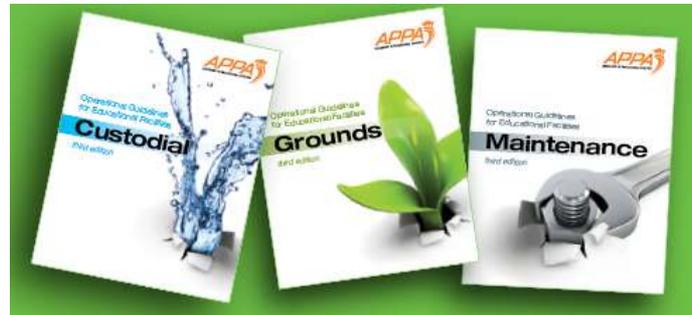
- **APPA (formerly Association of Physical Plant Administrators) mission<sup>1</sup>**
  - With one eye on providing excellence in today's educational environment, and one always trained on adapting, enhancing, and transforming the facilities of the future, APPA seeks to create positive impact in educational facilities on three important levels:
    - ❑ APPA transforms individual facilities professionals into higher performing managers and leaders, which...
    - ❑ Helps transform member institutions into more inviting and supportive learning environments, which...
    - ❑ Elevates the recognition and value of educational facilities and their direct impact on the recruitment and retention of students, faculty and staff.
- APPA is the de facto official keeper of the facilities management body of knowledge for K-12, Colleges and Universities facilities management professionals.

<sup>1</sup>Source : APPA web site at [www.appa.org](http://www.appa.org)



# Operational Guidelines Staffing General Concept

- **Staffing Concept Contained in APPA Operational Guidelines Trilogy:**
  - Operational Guidelines for Educational Facilities: Custodial;
  - Operational Guidelines for Educational Facilities: Grounds;
  - Operational Guidelines for Educational Facilities: Maintenance;



- **Media for Trilogy Content (3 books and support software):**
  - Print Book;
  - eBook;
  - Operations and Staffing software package available for each book;

# General Staffing Concept



# Operational Guidelines Staffing General Concept Custodial

## ■ APPA Operational Guidelines Staffing General Concepts for Custodial:

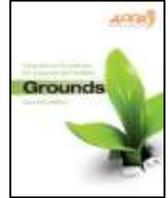
- *Task-Time-Frequency (TT&F) method*, based on Common Tasks, Time to Perform, Frequency of performance and size of space being cleaned;
- Common list of tasks to be performed for each type of building space (e.g.: Office, Classroom, Washroom, etc.);
- Average “time to clean” for each task;
- Frequency at which the tasks are performed is driven by desired level of cleanliness (APPA has defined five levels of cleanliness);
- Total time to clean is directly related to frequency at which the tasks are performed and the size of the space in Cleanable Square Feet (CSF);
- Total time to clean is directly proportional to the size of the space;
- FTEs are driven by total time to clean adjusted by the workforce productivity.



# Operational Guidelines Staffing General Concept Grounds

## ■ APPA Operational Guidelines Staffing General Concepts for Grounds:

- *Task-Time-Frequency (TT&F) method, based on Common Tasks, Time to Perform, Frequency of performance and size of area;*
- Common list of tasks to be performed for each type of grounds area (e.g.: Flowerbed, Softball field, Turf Area, etc.);
- Average “time to perform” for each task;
- Frequency at which the tasks are performed is driven by desired level of appearance (APPA has defined six levels of cleanliness);
- Total time to perform is directly related to frequency at which the tasks are performed and the size of the grounds area;
- Total time to perform is directly proportional to the size of the grounds area;
- FTE requirements driven by total time to perform adjusted by the expected productivity of the workforce, and green space growing season.



# Operational Guidelines Staffing General Concept For Maintenance

## ▪ APPA Operational Guidelines Staffing General Concepts for Maintenance Aggregate FTE Method:



- *Statistical-parametric method* – unlike Custodial and Grounds, based on statistical information and facilities portfolio parameters ;
- Based on the following parameters:
  - Net assignable square feet (NASF) of space in maintained buildings;
  - Space type profile (e.g.: offices, classrooms, laboratories and residence halls);
- Adjustment Factors:
  - Overall campus size;
  - Age of facilities;
  - Variety in types of buildings;
  - Condition of facilities;
  - Variety in mission of organization;

# Detailed APPA Staffing Guidelines

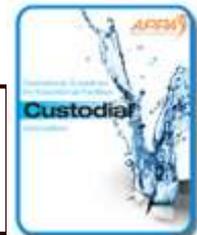
## Concept: Custodial

# Detailed APPA Staffing Guidelines Concept: Custodial

- **Cleaning industry and higher education facilities management community accepted guidelines and protocols:**
  - APPA<sup>1</sup>, the association for higher education facilities professionals, published *Custodial Operational Guidelines for Educational Facilities (APPA Guidelines)*;
  - APPA Guidelines provide custodial services organizations with standard concepts and protocols, for staffing and managing the cleaning function;
  - APPA Guidelines book, in its third edition, has been in the public domain for many years;
  - APPA Guidelines book was updated to third edition in 2011;
  - APPA Guidelines is accepted by the higher education and commercial cleaning industry as a “de facto” standard for custodial operations and staffing;
  - Estimating Process informed by ISSA<sup>2</sup> cleaning estimating times book;
- **The concepts and protocols are contained in the APPA Guidelines – click on the below icons to learn more.**

<sup>1</sup>*Custodial Operational Guidelines for Educational Facilities (APPA Guidelines)* – this is a publication of custodial staffing and management concepts and protocol that have been in the public domain for many years and has been accepted by the higher education and commercial cleaning community as a “de facto” standard for managing cleaning operations (see [www.APPA.org](http://www.APPA.org)).

<sup>2</sup>Professional association for the worldwide cleaning industry.



# APPA Custodial FTE Estimating Protocol

## Inputs, Process, and Outputs

- **APPA Guidelines Key Components:**
  - Define cleanliness APPA Level-1 through APPA Level-5 (Level-1 is best, and Level-5 is worst);
  - Provide lists of cleaning tasks and the performance frequency for different categories of spaces to achieve the five cleanliness levels;
  - Provide normalized “time to perform” guidelines for tasks from *ISSA 540 Cleaning Times*<sup>1</sup> adopted to higher education cleaning environments, normalized to the average custodial organization found in educational institutions;
  - Provide a protocol for determining the FTEs and budget needed to achieve the desired cleanliness level by average organizations;
  - Provide an audit and inspection protocol for quality assurance, and for determining what cleanliness level is actually being achieved.

<sup>1</sup>ISSA 540 Cleaning Times – published by ISSA, The Worldwide Cleaning Industry Association, and is an industry accepted reference for estimating how much time it takes to perform cleaning tasks ([www.ISSA.com](http://www.ISSA.com)).



# APPA Custodial Service Levels

## Level 1 – Orderly Spotlessness

Level 1 establishes cleaning at the highest level. It was developed for the corporate suite, the donated building, or the historical focal point. This is show-quality cleaning for that prime facility.

- Floors and base moldings shine and/or are bright and clean; colors are fresh. There is no buildup in corners or along walls.
- All vertical and horizontal surfaces have a freshly cleaned or polished appearance and have no accumulation of dust, dirt, marks, streaks, smudges, or fingerprints.
- Washroom and shower tile and fixtures gleam and are odor-free. Supplies are adequate.
- Trash containers and pencil sharpeners are empty, clean, and odor-free.

## Level 2 – Ordinary Tidiness

Level 2 is the base upon which this study is established. This is the level at which cleaning should be maintained. Lower levels for washrooms, changing/locker rooms, and similar type facilities are not acceptable.

- Floors and base moldings shine and/or are bright and clean. There is no buildup in corners or along walls, but there can be up to two days worth of dirt, dust, stains, or streaks.
- All vertical and horizontal surfaces are clean, but marks, dust, smudges, and fingerprints are noticeable with close observation.
- Washroom and shower tile and fixtures gleam and are odor-free. Supplies are adequate.
- Trash containers and pencil sharpeners are empty, clean, and odor-free.

## Level 3 – Casual Inattention

This level reflects the first budget cut, or some other staffing-related problem. It is a lowering of normal expectations. While not totally acceptable, it has yet to reach an unacceptable level of cleanliness.

- Floors are swept clean, but upon close observation dust, dirt, and stains, as well as a buildup of dirt, dust, and/or floor finish in corners and along walls, can be seen.
- There are dull spots and/or matted carpet in walking lanes, and streaks and splashes on base molding.
- All vertical and horizontal surfaces have obvious dust, dirt, marks, smudges, and fingerprints.
- Lamps all work and all fixtures are clean.
- Trash containers and pencil sharpeners are empty, clean, and odor-free.

## Level 4 – Moderate Dinginess

Level 4 reflects the second budget cut, or some other significant staffing-related problem. Areas are becoming unacceptable. People beginning to accept an environment lacking normal cleanliness. In fact, the facility begins to constantly look like it requires a good "spring cleaning."

- Floors are swept clean, but are dull. Colors are dingy, and there is an obvious buildup of dust, dirt, and/or floor finish in corners and along walls. Molding is dull and contains streaks and splashes.
- All vertical and horizontal surfaces have conspicuous dust, dirt, smudges, fingerprints, and marks that will be difficult to remove.

## Level 5 – Unkempt Neglect

This is the final and lowest level. The trucking industry would call this "just-in-time cleaning." The facility is always dirty, with cleaning accomplished at an unacceptable level.

- Floors and carpets are dirty and have visible wear and/or pitting. Colors are faded and dingy, and there is a conspicuous buildup of dirt, dust, and/or floor finish in corners and along walls. Base molding is dirty, stained, and streaked. Gum, stains, dirt, dust balls, and trash are broadcast.
- All vertical and horizontal surfaces have major accumulations of dust, dirt, smudges, and fingerprints, as well as damage. It is evident that no maintenance or cleaning is done on these surfaces. More than 5% of lamps are burned out, and fixtures are dirty with dust balls and flies. Trash containers and pencil sharpeners overflow. They are stained and marked. Trash containers smell sour.

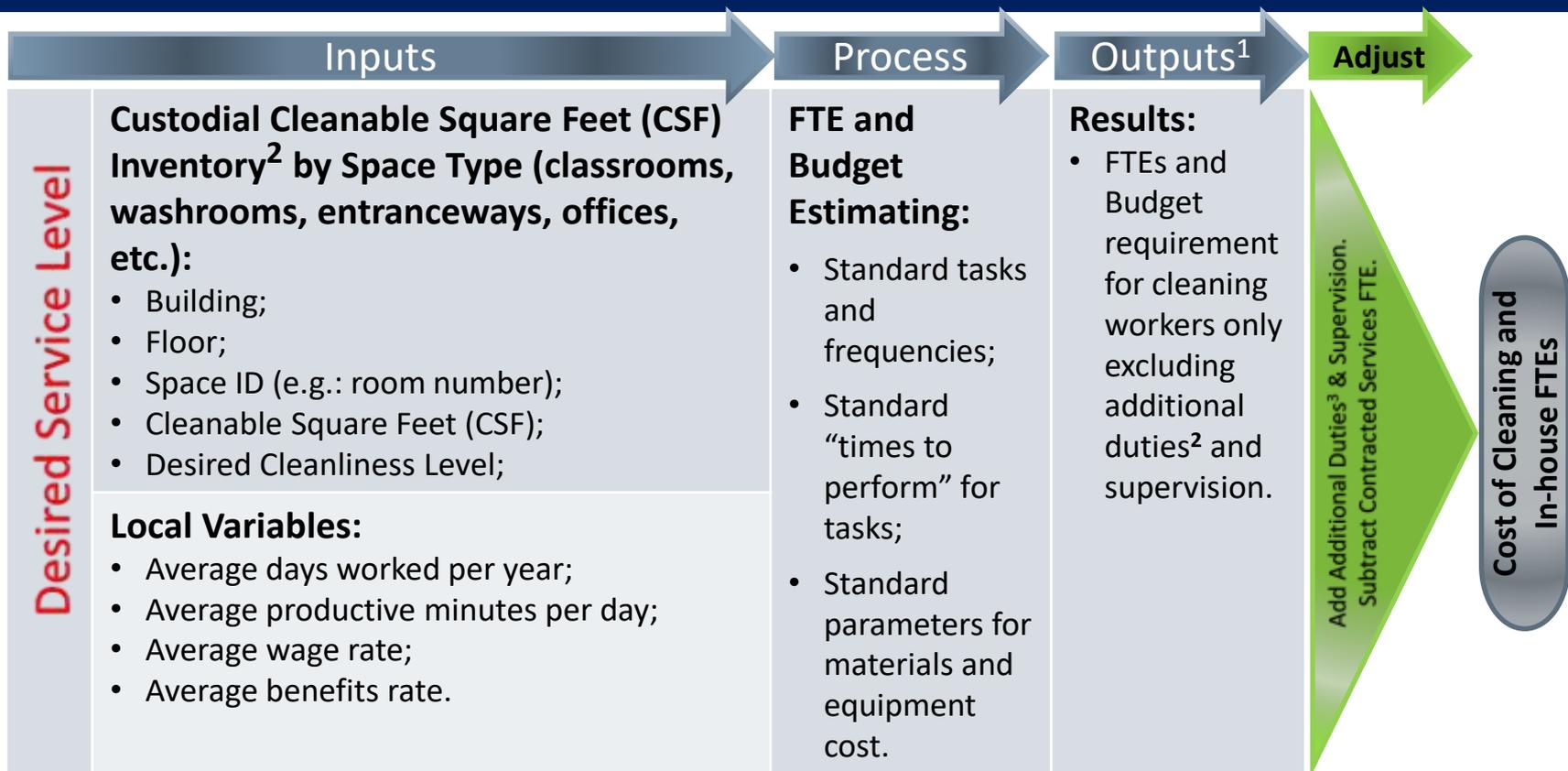
# APPA Custodial FTE Estimating Protocol

## Custodial Staffing – Example APPA Standard Space Matrix

- **The APPA FTE and budget estimating protocol makes a direct connection between cleaning tasks to be performed, base time to perform them, frequency at which they are to be performed, and the level of cleanliness to expect:**
  - Higher levels of cleanliness require higher frequencies of performance;
  - Higher frequencies of performance require more FTEs and budget;
  - Tasks and frequencies to achieve each cleanliness level based on time studies and empirical data collected by APPA from a large population of colleges and universities when the protocol was developed.

Classroom with Hard Floor Standard Space Matrix						
Routine Activities	Level 1	Level 2	Level 3	Level 4	Level 5	Base Time
Spot clean walls and doors	D	W	M	S/A		3.12
Relamp	D/A	D/A	D/A	D/A	D/A	3.46
Clean chalkboards and trays	D	D	D	A/D	A/D	3.15
Dust flat surfaces	D	W	W	M		1.16
Empty waste containers	D	D	D	A/D	A/D	0.46
Empty pencil sharpeners	D	D	D	A/D		0.40
Sweep, dust-mop floors	D	D	A/D	A/D	A/D	16.40
Clean erasers	D	D	D	A/D	A/D	0.60
<b>Total Base Time</b>						<b>28.75</b>
Project Activities	Level 1	Level 2	Level 3	Level 4	Level 5	Base Time
Dust blinds	M	A	A			4.95
Project-clean furniture and seating	Q	A	A			73.73
Clean trash containers	W	S/A	S/A	A	A	1.01
Dust vents	M	Q	S/A	S/A		1.50
Perform interim floor care	Q	Q				87.76
Strip/refinish floors	A	A	A	A		166.64
Clean windows	S/A	A	A			14.23
Project-clean light fixtures	A	A	A			101.24
Spray-buff/burnish floors	W	M	Q	S/A		14.96
Damp-mop floors	D	M	M	S/A		16.61
<b>Total Base Time</b>						<b>482.63</b>
<b>Base Square Feet: 1,200 SF</b>						<b>Base Time in Minutes</b>
(D = Daily, , A/D = Alternate Days, W = Weekly, M = Monthly, Q = Quarterly, A = Annual, etc., D/A = Special notation for relamping based expected lamp life cycle. )						

# Custodial FTE Estimating Process Summary



1. FTEs and budget for supervision and additional duties assigned to the personnel responsible for the core function must be added to the estimating protocol output to derive the total requirement.
2. Estimates are based on SDSU cleanable square feet data developed by the SDSU and review by the Consultants.
3. Further refinement and upkeep of the Cleanable Square Feet Inventory data set is necessary in order to derive full benefits from the information.
4. Examples of additional duties are custodians (i) performing special event support; (ii) performing snow removal; (iii) hanging pictures or moving furniture; and (iv) preparing dorm room after change of occupant and between semesters.



# Detailed APPA Staffing Guidelines

## Concept: Maintenance

# APPA Staffing Guidelines Concept: Maintenance

- **Higher education facilities management community accepted guidelines and protocols:**
  - APPA, the association for higher education facilities professionals, published *Maintenance Operational Guidelines for Educational Facilities (APPA Guidelines)*;
  - APPA Guidelines provide facilities maintenance organizations with standard concepts and protocols for staffing and managing the maintenance function;
  - APPA Guidelines book is in its second edition and has been in the public domain for many years;
  - APPA Guidelines book was updated to second edition in 2011;
  - APPA Guidelines accepted by the higher education facilities maintenance organizations as a de facto standard for maintenance operations and staffing;
  - Further detail can be found in the **Reference Slides** section beginning with the slide sub-titled *APPA Guidelines Maintenance Profile Concept*.

<sup>1</sup>*Maintenance Operational Guidelines for Educational Facilities (APPA Guidelines) – this is a publication of facilities maintenance staffing and management concepts and protocol that have been in the public domain for many years and has been accepted by the higher education facilities maintenance community as a de facto standard for managing facilities maintenance operations (see [www.APPA.org](http://www.APPA.org)).*

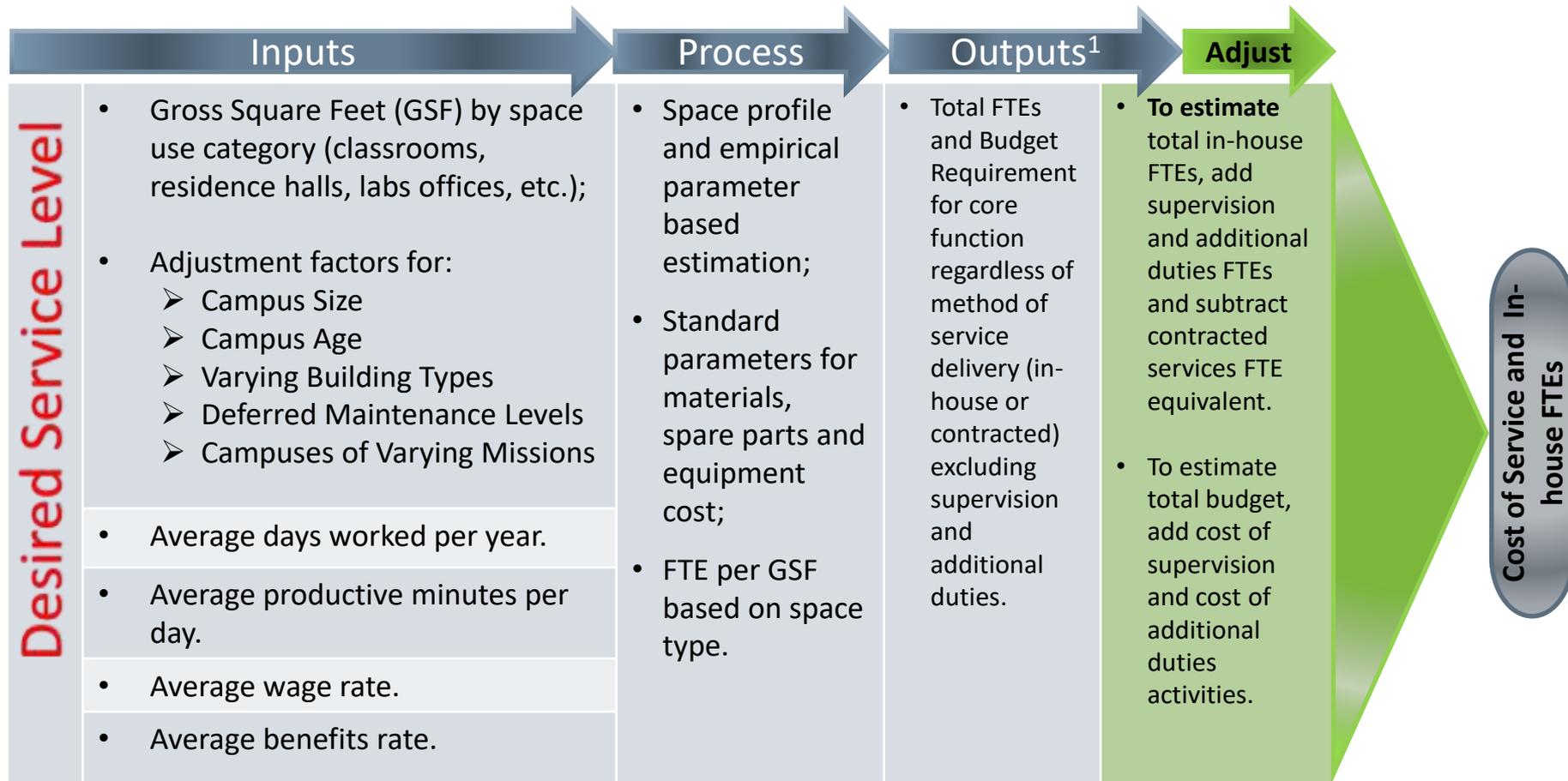


# APPA Staffing Guidelines Concept: Maintenance

## ■ Interpreting APPA Staffing and Cost Estimating Results:

- APPA has developed staffing guidelines for facilities maintenance based on the type of space to be maintained and the level of services to be provided;
- More staffing is needed for more complex spaces and for higher service levels;
- Older facilities and heavy use facilities will also require greater staffing;
- Services can be provided by either in house staff or contractors, or a combination;
- *Contracted Equivalent FTEs* must be accounted for when estimating the facilities maintenance total in-house FTE needs. Contracted cost can be converted to estimated *Contracted Equivalent FTEs* based on wage rates and other known labor costs;
- The staffing guidelines are based on **“an average organization performing an average rate of employee productivity;”**
- **Best practice organizations can surpass the defined APPA guidelines;**
- Best practice organizations employ technology, fine tuned processes, strong management practices and training to support their employees in achieving a higher level of productivity.

# Maintenance FTE Estimating Process Summary



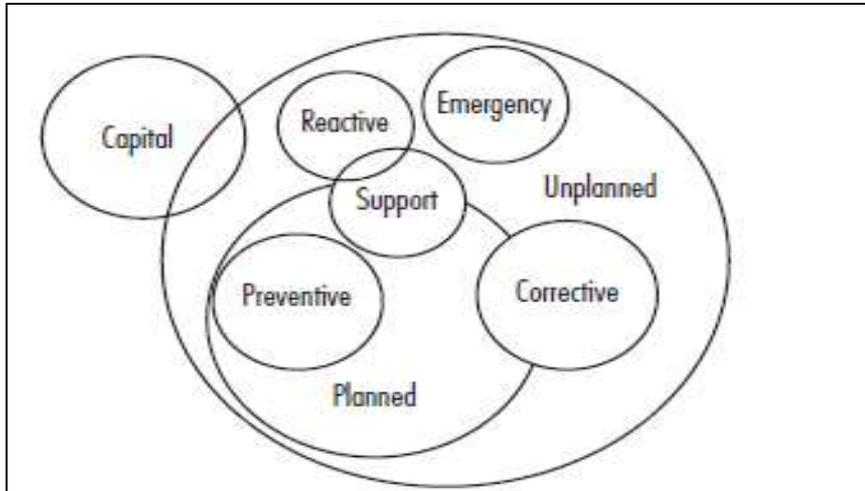
1. FTEs and budget for supervision and additional duties assigned to the personnel responsible for the core function must be added to the estimating protocol output to derive the total requirement.
2. Examples of additional duties are Maintenance workers (i) performing special event support; (ii) performing snow removal; (iii) hanging pictures or moving furniture; and (iv) performing renovation projects.



# Reference Slides

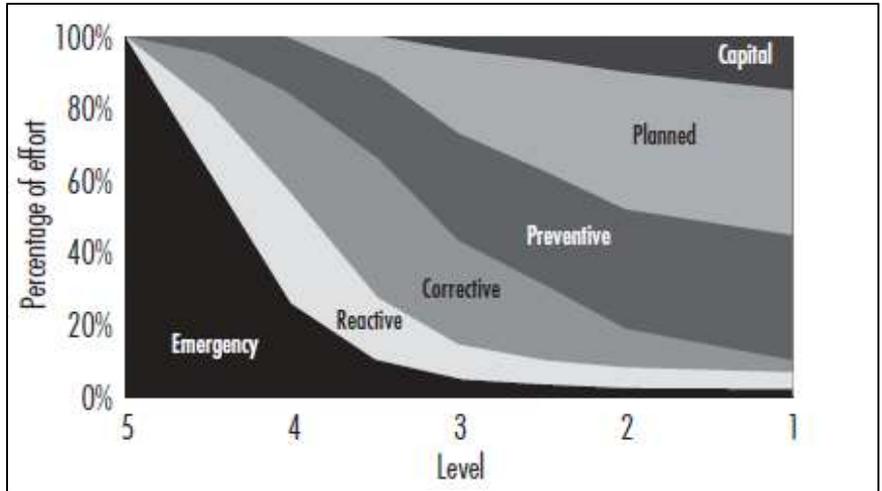
# FTE And Budget Estimating Guidelines and Protocol

## APPA Guidelines Maintenance Profile Concept<sup>1</sup>



Overlaps and Interrelationships in Types of Maintenance

Maintenance is also a continuum of activities that range from predicting or preventing (PM) to capital improvements or renovations, with repairs and “support maintenance” involving operational activities in the middle<sup>1</sup>.



Maintenance Activities as a Percentage of Total Resources (example profile)

The percentage of effort spent on the various types of maintenance activities is dependent on the service level the maintenance organization is staffed and funded to achieve. At the worst extreme all effort is consumed by emergencies. At the best extreme most activities are planned.

<sup>1</sup>Source: Excerpt from APPA Operational Guidelines for Educational Facilities, Maintenance Second Edition.

# FTE And Budget Estimating Guidelines and Protocol

## Levels of Maintenance Narrative Description<sup>1</sup>

**Level 1: Showpiece Facility.** Maintenance activities appear highly focused. Typically, equipment and building components are fully functional and in excellent operating condition. Service and maintenance calls are responded to immediately. All regulatory submittals and requirements are met at or before submission dates. Buildings and equipment are regularly upgraded, keeping them current with modern standards and usage.

**Level 2: Comprehensive Stewardship.** Maintenance activities appear organized, with direction. Equipment and building components are usually functional and in operating condition. Service and maintenance calls are responded to in a timely manner. All regulatory submittals and requirements meet submission dates. Buildings and equipment are regularly upgraded, keeping them current with modern standards and usage.

**Level 3: Managed Care.** Maintenance activities appear to be somewhat organized, but remain people-dependent. Equipment and building components are mostly functional but suffer occasional breakdowns. Service and maintenance call response times are variable and sporadic without apparent cause. Regulatory submittals and requirements typically meet submission dates, with some occasional short delays. Buildings and equipment are periodically upgraded to current standards and use, but not enough to control the effects of normal usage and deterioration.

**Level 4: Reactive Management.** Maintenance activities appear somewhat chaotic and are people dependent. Equipment and building components are frequently broken and inoperative. Service and maintenance calls are typically not responded to in a timely manner. Regulatory submittals and requirements with the largest operational impact meet submission dates, but those that have less of an impact are typically late. Normal usage and deterioration continues unabated, making buildings and equipment inadequate to meet present use needs.

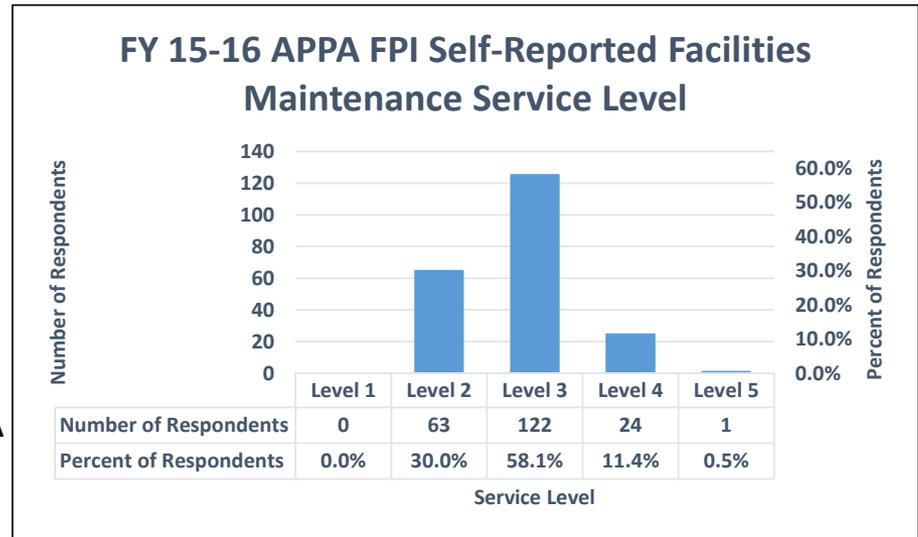
**Level 5: Crisis Response.** Maintenance activities appear chaotic and without direction. Equipment and building components are routinely broken and inoperative. Service and maintenance calls are never responded to in a timely manner. Regulatory submittals and requirements with the largest operational impact typically submitted late, with other requirements ignored unless cited. Normal usage and deterioration continues unabated, making buildings and equipment inadequate to meet present use needs.

# FTE And Budget Estimating Guidelines and Protocol

## APPA FY 15-16 FPI Respondents Reported Maintenance Service Level

### Higher Education Maintenance Service Level Trends:

- APPA and higher education facilities management community have traditionally advocated **APPA Level-2**;
- Due to limited resources and constrained budget, many colleges and universities have targeted APPA Level-3, or somewhere between APPA Level-3 and APPA Level-2;



- 53 of 210 (30.0%) institutions in the *FY16-16 APPA Facilities Performance Indicators (FPI) Survey*<sup>1</sup> reported achieving APPA Level-3, and the average level reported was 2.82;
- 122 of 210 (58.1%) institutions in the *FY16-16 APPA Facilities Performance Indicators (FPI) Survey*<sup>1</sup> reported achieving APPA Level-3, and the average level reported was 2.82
- This has been the trend for at least the last several FPI reports;

<sup>1</sup>The APPA Facilities Performance Indicators (FPI) survey is conducted annually by APPA to collect comparative analysis facilities management benchmark data from institutions through the U.S.A. and Canada (<http://www.appa.org/Research/fpi.cfm>).

# FTE And Budget Estimating Guidelines and Protocol

## APPA Facility Characteristics for Evaluating and Describing Levels of Maintenance

### Maintenance Level Matrix<sup>1</sup>:

- There are many perspectives and viewpoints on the appropriate level of maintenance services that should be performed at any given facility;
- Institutional priorities and the amount of resources available typically determine the final level of maintenance provided.;
- Some common characteristics can used to describe the campus level of maintenance and ;
- These characteristics can be used to establish an improvement goal for a higher level of maintenance or operational support;
- They can also be used as benchmarks to monitor improvements, or provide indicators when making financial decisions;
- APPA has developed thirteen such characteristics have been assembled into an extensive maintenance level matrix that allows for comparisons between each of the levels, as well as across the characteristics.
- The maintenance level matrix was developed to display facility characteristics in terms that are useful to both the facilities professional and the non-facilities administrator;
- The matrix has five maintenance levels, with a general description of the essential characteristics one might use to measure the effectiveness of maintenance and facilities operations at each level.

<sup>1</sup>Source: Excerpt from APPA Operational Guidelines for Educational Facilities, Maintenance Second Edition.

The following two slides illustrates how the matrix can be used to construct a visual of the current status of maintenance services being provided under existing conditions.

# FTE And Budget Estimating Guidelines and Protocol

## APPA Facility Characteristics for Evaluating and Describing Levels of Maintenance

Desired Level of Service	1 Showpiece Facility	2 Comprehensive Stewardship	3 Managed Care	4 Crisis Response	5 Reactive Management
<b>Customer Service &amp; Response Time</b>	Able to respond to virtually any service; immediate response.	Response to most service needs, typically in a week.	Services available only by reducing maintenance; response times of one month or less.	Services not available unless directed from the top administrator; none provided except emergencies.	Services available only by reducing maintenance; response times of one year or less.
<b>Customer Satisfaction</b>	Proud of facilities. High level of trust for facilities organization	Satisfied with facilities related services; usually complimentary of staff	Basic level of care. Able to perform mission duties. Lack of pride in physical environment	Consistent customer ridicule, mistrust of facilities services.	Generally critical of cost, responsiveness, and quality of facilities services
<b>PM vs. CM</b>	100%	75 – 100%	50 – 75%	< 25%	25 – 50%
<b>Maintenance Mix</b>	All PM is scheduled and performed on time. Emergencies (e.g. power outages) are infrequent and handled efficiently	A well-developed PM program; PM done less than defined schedule. Occasional emergencies caused by equipment failures, etc.	Reactive maintenance high due to systems failing. High number of emergencies causes reports to upper management	No PM performed due to more pressing problems. Reactive maintenance is a necessity due to worn out systems (e.g. doors won't lock, fans lock up, HVAC systems fail). Good emergency response because of skills gained in reacting to frequent system failures (no status reporting, upper administration is tired of reading the reports).	Worn-out systems require staff to be scheduled to react to failure. PM work consists of simple tasks done inconsistently
<b>Aesthetics, Interior</b>	Like new finishes	Clear, crisp finishes	Average finishes	Neglected finishes.	Dingy finishes
<b>Aesthetics, Exterior</b>	Windows, doors, trim, exterior walls are like new	Watertight, good clean appearance of exterior	Minor leaks and blemishes; average exterior appearance	Inoperable windows, leaky windows, unpainted, cracked panes, significant air and water penetration, poor appearance overall.	Somewhat drafty and leaky, rough-looking exterior
<b>Aesthetics, Lighting</b>	Bright and clean, attractive lighting	Bright and clean attractive lighting	Small percentage of lights out; well lit and clean	Shadows, bulbs and diffusers missing, cave-like, damaged, hardware missing.	Numerous lights out; missing diffusers; secondary areas dark
<b>Service Efficiency</b>	Maintenance activities appear highly organized and focused. Service and maintenance calls are responded to immediately	Maintenance activities appear organized with direction. Service and maintenance calls are responded to in a timely manner	Maintenance activities appear to be somewhat organized, but remain people dependent. Service/maintenance calls are sporadic w/out apparent cause	Maintenance activities appear chaotic and without direction. Equipment and building components are routinely broken and inoperative. Service and maintenance calls are never responded to in a timely manner. Normal usage and deterioration continues unabated, making buildings and equipment inadequate to meet present use needs.	Maintenance activities are somewhat chaotic and people dependent. Service/ maintenance calls are typically not responded to in a timely manner
<b>Building Systems' Reliability</b>	Breakdown maintenance rare; limited to vandalism and abuse repairs	Breakdown maintenance limited to system components short of MTBF	Building and systems components periodically or often fail	Many systems nonfunctional. Repair only instituted for life safety issues.	Systems unreliable. Constant need for repair. Backlog repair exceeds resources
<b>Operating Budget as % of CRV</b>	> 4.0	3.5 – 4.0	3.0 – 3.5	< 2.5	2.5 – 3.0
<b>Campus Average FCI</b>	< 0.05	0.06 – 0.15	0.15 – 0.29	> = 0.50	0.30 – 0.50

Source: Figure 2.2, page 28, 'APPA Operational Guideline: Maintenance.'

# FTE And Budget Estimating Guidelines and Protocol

## APPA Facility Characteristics for Evaluating and Describing Levels of Maintenance

Desired Level of Service	1 Showpiece Facility	2 Comprehensive Stewardship	3 Managed Care	4 Crisis Response	5 Reactive Management	
<b>Customer Service &amp; Response Time</b>	Able to respond to virtually any service; immediate response.	Response to most service needs, typically in a week.	Services available during normal business hours; emergency maintenance: less than one month or more.	Services not available unless directed from the top administration; none provided except emergencies.	Services available only by reducing maintenance; response times of one year or less.	
<b>Customer Satisfaction</b>	Proud of facilities. High level of trust for facilities organization	Satisfied with facilities related services; usually complimentary of staff	Basic level of care. Able to perform mission duties. Lack of pride in physical environment	Generally satisfied, but some ridicule, mistrust of facilities	Generally critical of cost, responsiveness, and quality of facilities services	
<b>PM vs. CM</b>	100%	75 – 100%	3.5	< 25%	25 – 50%	
<b>Maintenance Mix</b>	All PM is scheduled and performed on time. Emergencies (e.g. power outages) are infrequent and handled efficiently	A well-developed PM program; PM done less than defined schedule. Occasional emergencies caused by equipment failures, etc.	3.0	3.5	No PM performed due to more pressing problems. Reactive maintenance is a necessity due to worn out systems (e.g. doors won't lock, fans lock up, HVAC systems fail). Good emergency response because of skills gained in reacting to frequent system failures (no status reporting, upper administration is tired of reading the reports).	Worn-out systems require staff to be scheduled to react to failure. PM work consists of simple tasks done inconsistently
<b>Aesthetics, Interior</b>	Like new finishes	2.5	Average finishes	Neglected finishes.	Dingy finishes	
<b>Aesthetics, Exterior</b>	Windows, doors, trim, exterior walls are like new	Watertight, good clean appearance of exterior	Minor leaks and appearance	3.5	Inoperable windows, leaky windows, unpainted, cracked panes, significant air and water penetration, poor appearance overall.	Somewhat drafty and leaky, rough-looking exterior
<b>Aesthetics, Lighting</b>	Bright and clean, attractive lighting	Bright and clean attractive lighting	Small percentage clean	3.5	Shadows, bulbs and diffusers missing, cave-like, damaged, hardware missing.	No lights out; missing diffusers; areas dark
<b>Service Efficiency</b>	Maintenance activities appear highly organized and focused. Service and maintenance calls are responded to immediately	Maintenance activities appear organized with direction. Service and maintenance calls are responded to in a timely manner	3.0	3.5	Maintenance activities appear chaotic and without direction. Equipment and building components routinely broken and inoperative. Service and maintenance calls are never responded to in a timely manner. Normal usage and deterioration continues unabated, making building equipment inadequate to meet present needs.	Maintenance activities are somewhat chaotic and people dependent. Service/ maintenance calls are typically not responded to in a timely manner
<b>Building Systems' Reliability</b>	Breakdown maintenance rare; limited to vandalism and abuse repairs	Breakdown maintenance limited to system components short of MTBF	Building and systems or often fail	3.5	Many systems nonfunctional; repair only instituted for life safety issues.	Systems unreliable. Constant need for repair. Backlog repair exceeds resources
<b>Operating Budget as % of CRV</b>	> 4.0	3.5 – 4.0	3.0	3.0 – 3.5	< 3.0	2.5 – 3.0
<b>Campus Average FCI</b>	< 0.05	0.06 – 0.15	3.0	0.15 – 0.29	> = 0.50	0.30 – 0.50

FOR ILLUSTRATION ONLY

# Manage Care (APPA Level 3)

Desired Level of Service	1 Showpiece Facility	2 Comprehensive Stewardship	3 Managed Care	4 Crisis Response	5 Reactive Management
<b>Customer Service &amp; Response Time</b>	Able to respond to virtually any service; immediate response.	Response to most service needs, typically in a week.	Services available only by reducing maintenance; response times of one month or less.	Services not available unless directed from the top administration; none provided except emergencies.	Services available only by reducing maintenance; response times of one year or less.
<b>Customer Satisfaction</b>	Proud of facilities. High level of trust for facilities organization	Satisfied with facilities related services; usually complimentary of staff	Basic level of care. Able to perform mission duties. Lack of pride in physical environment	Consistent customer ridicule, mistrust of facilities services.	Generally critical of cost, responsiveness, and quality of facilities services
<b>PM vs. CM</b>	100%	75 – 100%	50 – 75%	< 25%	25 – 50%
<b>Maintenance Mix</b>	All PM is scheduled and performed on time. Emergencies (e.g. power outages) are infrequent and handled efficiently	A well-developed PM program; PM done less than defined schedule. Occasional emergencies caused by equipment failures, etc.	Reactive maintenance high due to systems failing. High number of emergencies causes reports to upper management	No PM performed due to more pressing problems. Reactive maintenance is a necessity due to worn out systems (e.g. doors won't lock, fans lock up, HVAC systems fail). Good emergency response because of skills gained in reacting to frequent system failures (no status reporting, upper administration is tired of reading the reports).	Worn-out systems require staff to be scheduled to react to failure. PM work consists of simple tasks done inconsistently
<b>Aesthetics, Interior</b>	Like new finishes	Clear, crisp finishes	Average finishes	Neglected finishes.	Dingy finishes
<b>Aesthetics, Exterior</b>	Windows, doors, trim, exterior walls are like new	Watertight, good clean appearance of exterior	Minor leaks and blemishes; average exterior appearance	Inoperable windows, leaky windows, unpainted, cracked panes, significant air and water penetration, poor appearance overall.	Somewhat drafty and leaky, rough-looking exterior
<b>Aesthetics, Lighting</b>	Bright and clean, attractive lighting	Bright and clean attractive lighting	Small percentage of lights out; well lit and clean	Shadows, bulbs and diffusers missing, cave-like, damaged, hardware missing.	Numerous lights out; missing diffusers; secondary areas dark
<b>Service Efficiency</b>	Maintenance activities appear highly organized and focused. Service and maintenance calls are responded to immediately	Maintenance activities appear organized with direction. Service and maintenance calls are responded to in a timely manner	Maintenance activities appear to be somewhat organized, but remain people dependent. Service/maintenance calls are sporadic w/out apparent cause	Maintenance activities appear chaotic and without direction. Equipment and building components are routinely broken and inoperative. Service and maintenance calls are never responded to in a timely manner. Normal usage and deterioration continues unabated, making buildings and equipment inadequate to meet present use needs.	Maintenance activities are somewhat chaotic and people dependent. Service/ maintenance calls are typically not responded to in a timely manner
<b>Building Systems' Reliability</b>	Breakdown maintenance rare; limited to vandalism and abuse repairs	Breakdown maintenance limited to system components short of MTBF	Building and systems components periodically or often fail	Many systems nonfunctional. Repair only instituted for life safety issues.	Systems unreliable. Constant need for repair. Backlog repair exceeds resources
<b>Operating Budget as % of CRV</b>	> 4.0	3.5 – 4.0	3.0 – 3.5	< 2.5	2.5 – 3.0
<b>Campus Average FCI</b>	< 0.05	0.06 – 0.15	0.15 – 0.29	> = 0.50	0.30 – 0.50

Source: Figure 2.2, page 28, 'APPA Operational Guideline: Maintenance.'

