



# Grounds Maintenance Programs

APPA Institute for Facilities Management

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## Learning Objectives



1. Purpose & Organizational Goals
2. Maintenance Levels, Parts & Priorities
3. Organizational Structures
4. Resources - Facilities, Equipment, Financial
5. Staffing
6. Snow Removal
7. Athletics & Synthetic Turf



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## Purpose of Grounds Management



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• Organizational Goals/Mission

- Attractive
- Marketing
- Safe
- Functional
- Low Cost
- Educational Resource



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- 62% of high school seniors were most influence by the appearance of the building and grounds during their visit to college campus.



- *How Do Students Choose a College, 1986*, Carnegie Foundation for the Advancement of Teaching



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- Students visit an average of 10 college campuses.

*National Association of College Admissions Counselors*

- 47 % of students said the campus visit was the most influential factor in their college selection.

*2009, How Students Really Decide; College Selection From the Inside. Zinch.com*



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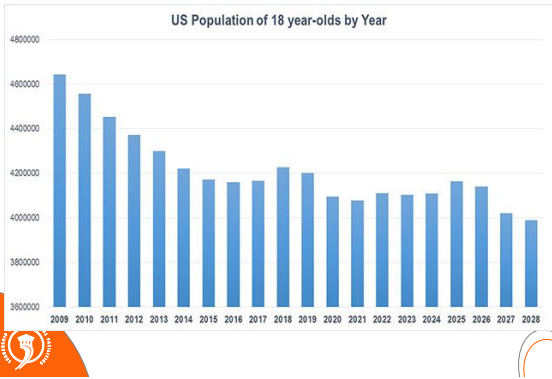
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THE CHRONICLE OF HIGHER EDUCATION NEWS OPINION DATA ADVICE

SECTIONS FEATURED: The Future of the Degree Get the Teaching Newsletter The Far Right Comes to Campus Your Daily Briefing

ADMISSIONS & STUDENT AID

### Enrollment Goals Remain Elusive for Small Colleges

By Eric Hoover and Sara Lipka | DECEMBER 11, 2016

**2023 First-year student enrollment fell at four-year colleges**

Declines in first-year students were concentrated at four-year colleges, public and private. Enrollment of this group fell 6.1% at public four-year colleges and 4% at private nonprofits.

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### APPA Grounds Maintenance Levels

- Level 6 – Natural areas
- Level 5 – Minimum-level
- Level 4 – Moderately low-level
- Level 3 – Moderate-level
- Level 2 – High-level
- Level 1 – State-of-the-art

What level is your school?

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## Parts & Priorities



### • APPA Level 3 - 'Clean & Green'

- Litter Collection
  - 2-3 /wk



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## Parts & Priorities



### • Level 3 - 'Clean & Green'

- Snow Removal



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## Parts & Priorities



### • Level 3 - 'Clean & Green'

- Mow, Trim, Blow & Go
  - Mow 1 / 7-10 days
  - Fertilize 1/yr
  - Litter 3 /wk



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## Parts & Priorities



- **APPA Level 2 – ‘The Academic Village’**

- Turf Management
  - Mow 1/wk
  - Fertilize 1+/yr
  - Irrigation
  - Weed Control
  - Aerate
  - Overseed



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## Parts & Priorities



- **Level 2 – ‘The Academic Village’**

- Tree management
- Shrub plantings
- Litter, 5+ days/wk



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## Parts & Priorities



- **APPA Level 1 – ‘The Campus Garden’**

Annual & Perennial Flowers



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## Parts & Priorities



- **APPA Level 1 – ‘The Campus Garden’**
  - Botanical Gardens & Arboreta



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## Parts & Priorities



- **APPA Level 1 – ‘The Campus Garden’**
  - Arboriculture
  - Tree inventory & appraisal



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- **Miscellaneous Services**

- Pavement Management
- Waste & Recycling
- Composting
- Site Furnishings
- Landscape Construction
- Landscape Architecture



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• Conflicting Services

- Moving & Setups
- Labor Shop



*The tyranny of the urgent trumps the completion of the important.*




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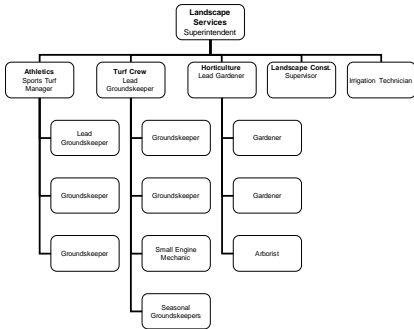
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Organizational Structure – task based




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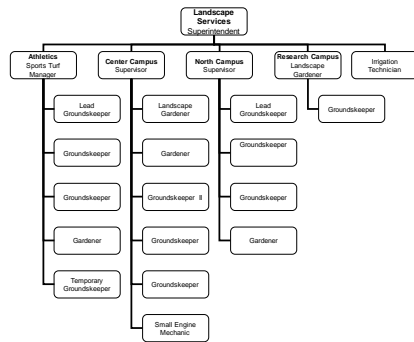
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Organizational Structure – zone based




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# Organizational Structures



## Task

- More efficient use of labor
- More efficient use of equipment
- Less ownership
- May be less pride
- Easier to train employees
- More monotony

## Zone

- Less efficient use of labor
- More equipment required
- More ownership = pride
- More accountability
- May create silos
- More training required
- Greater job satisfaction



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# Resource Requirements



## • Facilities

- Equipment shop
- Covered storage
- Bulk materials storage
- Holding nursery



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# Resource Requirements



## • Equipment

- Reel & Rotary Mowers



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# Resource Requirements



- **Equipment**
  - Blowers, edgers, etc
  - Tractors
  - Spreaders / sprayers
  - Miscellaneous

~ 5%-10% of op. budget  
in capital equipment  
annually



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- Electric Equipment options



MEANGREEN



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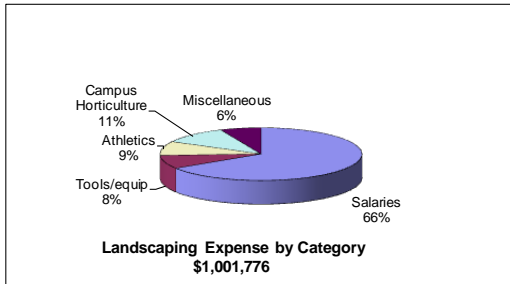
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# Resource Requirements - Financial



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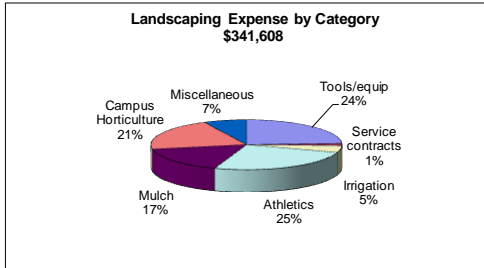
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## Resource Requirements - Financial



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## Resource Requirements - Financial

- The 95/5 rule
  - 95 % of the grounds budget is taken by tasks that only 5% of the customers notice.
  - But 95% of the customers notice what we spend only 5% of the grounds budget on.



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## Resource Requirements

- **Staffing 'The Holy Grail'**
- Comparative issues
  - Climate
  - Quality & expectations
  - Landscape style
  - Volume of use
  - Campus setting
  - Area measurements



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# Staffing



- Data Sources
  - Institutional History
  - APPA Facilities Performance Indicators (FPI)
  - Operational Guidelines for Grounds Management - APPA



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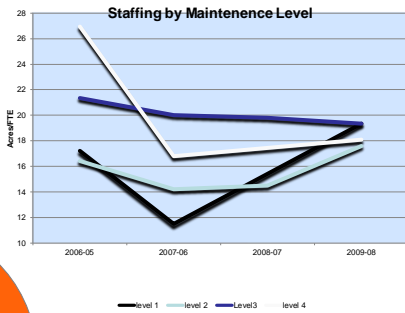
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# APPA FPI



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# Resource Requirements



- APPA Staffing Level 1
  - High use/  
high visibility areas,  
3 – 7 Acres / FTE



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## Resource Requirements



- APPA Staffing Level 2
  - Medium use & visibility areas,
  - 7 - 14 Acres / FTE



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## Resource Requirements



- APPA Staffing Level 3-4
  - Low use areas,
  - 14- 100 Acres / FTE



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## Resource Requirements



- Staffing
  - Athletic fields – NCAA
  - 1 – 3 Fields/ FTE



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# Resource Requirements



- Staffing
  - Athletic fields – Recreational
  - 3 - 6 Fields/ FTE



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	July 2023 - full staff				July 2024 - 10% Staff Reduction				20% Staff/Reduction			
	Acres Maintained	FTE Assigned	FTE/acre	APPA level	Acres Maintained	FTE Assigned	FTE/acre	APPA level	Acres Maintained	FTE Assigned	FTE/acre	APPA level
TOTALS	195	39	0.5		195	26	7.0		195	23	0.5	
GOLD Zone	76	15	0.3	2+	61	11	1.0	1.5	61	10	0.1	2+
BLUE Zone	79	10.5	7.5	2.0	79	9	9.0	2.0	79	9	9.0	2
GREEN Zone	40	1.5	7.0	2.0	55	4	13.3	3.0	55	4	13.8	3
Remarks - One Care	3				2				6			

0. All campus maintained equivalent of a high APPA level 2  
 1. Service Level Values from APPA 1.5 - 3 (light to green)  
 2. One Care is tasked based and works across campus  
 3. Reduction of One Care  
 4. Limitation of fertilizer/seed inputs  
 Gold Zone level increases  
 1. Minimization of One Care  
 2. Reduce maintenance in Gold



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Turf Maintenance - Open Area						1 year = 48 weeks	84.9 Ac
LABOR	Levels of Maintenance			Total min/acre	Total hr/acre	Labor \$/yr	
	High	Medium	Low				
	LABOR min/acre	\$/ac	\$/ac				
Mow	36.00	26.00	0.00	36.00	306.00	\$3,060.00	
72" rinder	0.00	0.00	0.00	0.00	0.00	\$0.00	
16" watering	13.00	13.00	0.00	13.00	109.80	\$1,098.00	
Fertilize PFD	15.00	6.75	0.00	15.00	125.25	\$626.25	
Weed Control	130.00	0.00	0.00	130.00	1080.00	\$10,800.00	
Overseed	48.00	1.20	0.00	48.00	403.20	\$4,032.00	
Irrigate	60.00	4.50	0.00	60.00	504.00	\$5,040.00	
Aerate	60.00	3.00	1.50	63.00	528.00	\$5,280.00	
TOTAL				904.92	7603.20	\$76,032.00	



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## Snow Removal



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## Snow Removal - Response Plans

By Priority

By Zone

By Equipment Assignment



Reasonable and Defendable

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## Snow Removal

- Equipment



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Professional Sports Field Management  
Manage for Student Athlete Safety  
(it's not just grass)



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Professional Sports Field Management

Natural vs. Synthetic

Considerations

- Capital cost
- Life cycle cost
- Maintenance needs
- Number of sports
- Multiple lines
- All weather use
- Surface temperature
- Painting and scrubbing
- Injury & playability
- Coach preferences



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