University of Alaska Southeast
FY20 Facilities Benchmarking & Analysis
Comprehensive Facilities Intelligence Solutions

FACILITIES ASSESSMENT & PLANNING
Plan and execute capital investment plans that are inclusive, credible, flexible, affordable and sustainable

FACILITIES BENCHMARKING & ANALYSIS
Take control of your facilities and make the case for change without the guesswork

SPACE UTILIZATION
Ensure your space is working up to its full potential

SUSTAINABILITY SOLUTIONS
Measure and improve environmental stewardship

© 2021 The Gordian Group, Inc. All Rights Reserved
Asset Reinvestment: The accumulation of repair and modernization needs and the definition of resource capacity to correct them “Catch-Up Costs”.

Operational Effectiveness: The effectiveness of the facilities operating budget, staffing, supervision, and energy management.

Service: The measure of service process, the maintenance quality of space and systems, and the customers opinion of service delivery.

Annual Stewardship: The annual investment needed to ensure buildings will properly perform and reach their useful life “Keep-Up Costs”.

Asset Value Change: The change in the value of assets over time due to depreciation, maintenance, and improvements.

Operations Success: The achievement of the objectives set forth in the annual stewardship and asset reinvestment strategies.
University of Alaska – Southeast Peer Institutions

Return on Physical Assets (ROPA+) includes all space at UAS totaling 564,796 GSF

<table>
<thead>
<tr>
<th>Facilities Peer Institutions</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Maine at Fort Kent</td>
<td>Fort Kent, ME</td>
</tr>
<tr>
<td>University of Maine at Farmington</td>
<td>Farmington, ME</td>
</tr>
<tr>
<td>University of Maine at Machias</td>
<td>Machias, ME</td>
</tr>
<tr>
<td>University of Maine at Presque Isle</td>
<td>Presque Isle, ME</td>
</tr>
<tr>
<td>Slippery Rock University of PA</td>
<td>Slippery Rock, PA</td>
</tr>
<tr>
<td>Mansfield University of PA</td>
<td>Mansfield, PA</td>
</tr>
<tr>
<td>Lockhaven University of PA</td>
<td>Lock Haven, PA</td>
</tr>
</tbody>
</table>

Comparative Considerations

Size, technical complexity, region, geographic location, and setting are all factors included in the selection of peer institutions.
UAS’s space profile is different than peer institutions in several key areas:

- Younger, lower risk space than peers due to new construction and renovation, especially at Ketchikan campus
- Lower population density
- Higher Building and Grounds intensity
- Region – Alaska is unique from other states

Investment focus on existing space has historically managed age and deferred maintenance need but has decreased in recent years. The historically reliable one-time sources of capital that helped achieve funding targets have dropped in recent years.

Historically operated with a higher budget than peers, but decreased below peer levels in recent years.

Higher percentage of budget spent on PM than peers.

Staffing levels, supervision, and materials fluctuate across trades shops, but results are consistent and competitive.
Space Profile
UAS’s Technical Complexity is On-Par With Peers

Institutions arranged by Technical Complexity

Areas Impacted by Tech Rating

<table>
<thead>
<tr>
<th>Energy Consumption</th>
<th>Maintenance Staffing</th>
<th>Replacement Values</th>
<th>Stewardship Targets</th>
<th>Operational Demand</th>
</tr>
</thead>
</table>

Tech Rating Distribution

© 2021 The Gordian Group, Inc. All Rights Reserved
UAS’ Campus has Grown Similar to Peers in GSF

However, total enrollment has decreased nearly double compared to peers

Change in campus GSF & Enrollment (indexed to 2006)
UAS has a Lower Density Campus than Peers

Density factor measures the busyness of campus

Institutions arranged by Density Factor

Areas Impacted by Density Factor
- Wear and Tear on Space
- Custodial Operations
- Energy Demand

*Density is calculated using On-Campus Student FTEs, Faculty FTE, and Staff FTE
Building and Grounds Intensity

UAS’ smaller buildings and compact grounds space produces challenges in efficiency for staff
UAS Carries a Significantly Younger Campus Age

UAS has started renovating buildings which offsets aging

Construction vs. Renovation Age

Age dropped due to renovations of the Student Housing Units A, B, D & G

UAS's Renovation Age is 11 years less than Peers
Ketchikan & Juneau are Younger through Renovations

These two campuses have firmly reduced their age through full building renovations.
Balance PM and Reactive Maintenance:
Younger components still require PM. Aging components require reactive maintenance.

Operational Demands:
- **25-50**
  - Focus on PM: Significant need for PM in young systems.
  - React as Needed: Issues in components past the end of their lifecycles will demand reactive maintenance.

- **Over 50**
  - Low Risk: "Honeymoon" period – little need for capital reinvestment.

- **Under 10**
  - Medium Risk: Lower cost space renewal updates needed.

Capital Risk:
- **Over 50**
  - Higher Risk: Life cycles of major components past due in core building components.
  - Lower Risk: "Honeymoon" period – little need for capital reinvestment.

Campus Renovation Age by Category

- **UAS**
  - Under 10 - Low Risk: 31%
  - 25 to 50 - Higher Risk: 33%
  - Over 50 - Highest Risk: 12%
- **Peer Average**
  - Under 10 - Low Risk: 23%
  - 25 to 50 - Higher Risk: 27%
  - Over 50 - Highest Risk: 39%

Lower risk affords the opportunity to plan ahead for future needs.
Understanding Campus Age

Renovations at Ketchikan make systems younger

Campus Age by Category

<table>
<thead>
<tr>
<th>Category</th>
<th>Juneau</th>
<th>Ketchikan</th>
<th>Sitka</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Age</td>
<td>72%</td>
<td>25%</td>
<td>72%</td>
</tr>
<tr>
<td>Renovation Age</td>
<td>9%</td>
<td>47%</td>
<td>28%</td>
</tr>
</tbody>
</table>

- Under 10: 13% (Juneau), 53% (Ketchikan), 28% (Sitka)
- 10 to 25: 29% (Juneau), 25% (Ketchikan), 28% (Sitka)
- 25 to 50: 43% (Juneau), 47% (Ketchikan), 72% (Sitka)
- Over 50: 6% (Juneau), 25% (Ketchikan), 72% (Sitka)
Different construction waves will have competing life cycle needs in the future.

<table>
<thead>
<tr>
<th>System</th>
<th>Life Cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plumbing</td>
<td>35 years</td>
</tr>
<tr>
<td>Exteriors</td>
<td>30 years</td>
</tr>
<tr>
<td>HVAC</td>
<td>30 years</td>
</tr>
<tr>
<td>Roofing</td>
<td>25 years</td>
</tr>
<tr>
<td>Electrical</td>
<td>25 years</td>
</tr>
</tbody>
</table>

Wave 1 Needs

Wave 2 Needs

Major needs coming due in this frame of time

Year in which building space was constructed/renovated
Capital Funding Sources

Alaska Terminology
- Utilities & Grounds & Custodial
- Maintenance & Repair – M&R
- Repair & Renew - R&R

Sightlines Terminology
- Operations & Maintenance
  - People
  - Expenses
  - Utilities
  - Daily Service & PM
- Recurring Project Dollars
- Annual Stewardship
- Funds 1-9

Projects
- One-Time Project Dollars
- Asset Reinvestment
Increased Focus on Existing Space in Recent Years

Existing Space investment decreased in recent years, but has seen high investment.
Defining an Annual Investment Target

Annual Funding Target: $4.7M

FY20 Annual Investment Target

3% Replacement Value is one of the standard depreciation models used to determine the expected total dollars needed to be put into assets annually to sustain them.

Life Cycle Need represents the total dollars needed to replace components & systems as they come due without accounting for modernization.

Life Cycle needs are discounted to account for intentional deferral, functional obsolescence and extended life cycles based on effective maintenance programs.

Replacement Value: $355.1 M

- 3% Replacement Value: $10.7M
- Life Cycle Need: $4.8M (Envelope/Mechanical: $4.0M, Space/Program: $0.8M)
- Annual Investment Target: $1.7M (Envelope/Mechanical: $0.3M, Space/Program: $1.4M)

3% Replacement Value is one of the standard depreciation models used to determine the expected total dollars needed to be put into assets annually to sustain them.

Life Cycle Need represents the total dollars needed to replace components & systems as they come due without accounting for modernization.

Life Cycle needs are discounted to account for intentional deferral, functional obsolescence and extended life cycles based on effective maintenance programs.

Replacement Value: $355.1 M

- 3% Replacement Value: $10.7M
- Life Cycle Need: $4.8M (Envelope/Mechanical: $4.0M, Space/Program: $0.8M)
- Annual Investment Target: $1.7M (Envelope/Mechanical: $0.3M, Space/Program: $1.4M)
Recurring Capital Spending Falls Short of Target

In FY19 and FY20 UAS increased its backlog
Juneau Capital Spending Sets the Trend

Unlike the combined spending trend, Juneau’s trend begins to decrease in FY18
**Ketchikan Capital Spending Frequently Meets Target**

In FY18, Ketchikan spent $3.7 Million into the Maritime Center.

![Graph showing Ketchikan Campus' Total Capital Investment vs. Ketchikan Funding Target](image)
Sitka’s Lower Capital Spending Increases Backlog and Risk

In FY13 $1.6 Million went into Campus Completion

Sitka Campus’ Total Capital Investment vs. Sitka Funding Target

- **Decreasing Backlog & Risk**
- **Maintaining Backlog & Risk**
- **Increasing Backlog & Risk**

**Fund 1 Projects:** Annual Stewardship
**Fund 2 Projects:** Asset Reinvestment
Historic Annual Stewardship Higher at UAS

Asset reinvestment, or one-time, sources of funding close the gap to reach capital targets.

Total Capital Investment as a Percent of Funding Target

University of Alaska – Southeast

Peer Institutions

Capital Spending % of Total Target

Fund 1 Projects: Annual Stewardship
Funds 2-9 Projects: Asset Reinvestment

Target

© 2021 The Gordian Group, Inc. All Rights Reserved
Disparity In Reaching Targets Across Campuses

Juneau is lowest on average but is the most consistent

Total Capital Investment as a Percent of Funding Target

Capital Spending % of Total Target

Juneau Campus

Ketchikan Campus

Sitka Campus

Target

Fund 1 Projects: Annual Stewardship
Funds 2-9 Projects: Asset Reinvestment
Total Need is Greater than Peers

Total need based on ROPA+ Asset Reinvestment

<table>
<thead>
<tr>
<th>Year</th>
<th>University of Alaska – Southeast</th>
<th>Peer Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>$80</td>
<td>$60</td>
</tr>
<tr>
<td>2007</td>
<td>$85</td>
<td>$65</td>
</tr>
<tr>
<td>2008</td>
<td>$90</td>
<td>$70</td>
</tr>
<tr>
<td>2009</td>
<td>$95</td>
<td>$75</td>
</tr>
<tr>
<td>2010</td>
<td>$100</td>
<td>$80</td>
</tr>
<tr>
<td>2011</td>
<td>$105</td>
<td>$85</td>
</tr>
<tr>
<td>2012</td>
<td>$110</td>
<td>$90</td>
</tr>
<tr>
<td>2013</td>
<td>$115</td>
<td>$95</td>
</tr>
<tr>
<td>2014</td>
<td>$120</td>
<td>$100</td>
</tr>
<tr>
<td>2015</td>
<td>$125</td>
<td>$105</td>
</tr>
<tr>
<td>2016</td>
<td>$130</td>
<td>$110</td>
</tr>
<tr>
<td>2017</td>
<td>$135</td>
<td>$115</td>
</tr>
<tr>
<td>2018</td>
<td>$140</td>
<td>$120</td>
</tr>
<tr>
<td>2019</td>
<td>$145</td>
<td>$125</td>
</tr>
<tr>
<td>2020</td>
<td>$150</td>
<td>$130</td>
</tr>
</tbody>
</table>
Operations Success
Capital Funding Sources

Total Operations and Asset Funding

- Alaska Terminology
  - Utilities & Grounds & Custodial
- Sightlines Terminology
  - Operations & Maintenance
    - People
    - Expenses
    - Utilities
    - Daily Service & PM
- Maintenance & Repair – M&R
- Repair & Renew - R&R
- Fund 1
- Recurring Project Dollars
- Annual Stewardship
- Fund 2-9
- Projects
  - One-Time Project Dollars
  - Asset Reinvestment
UAS has reduced its Daily Service expenditures in recent years.
Budget Cuts Limit Purchasing Power

2020 difference amounts to $2.1M less buying power than 2006 budget

Facilities Operating Actuals

<table>
<thead>
<tr>
<th>Year</th>
<th>Daily Service</th>
<th>PM</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2007</td>
<td>6.1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2008</td>
<td>6.2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2009</td>
<td>6.3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2010</td>
<td>6.4</td>
<td>0.7</td>
<td>0.9</td>
</tr>
<tr>
<td>2011</td>
<td>6.5</td>
<td>0.8</td>
<td>1.1</td>
</tr>
<tr>
<td>2012</td>
<td>6.6</td>
<td>0.9</td>
<td>1.2</td>
</tr>
<tr>
<td>2013</td>
<td>6.7</td>
<td>1.0</td>
<td>1.3</td>
</tr>
<tr>
<td>2014</td>
<td>6.8</td>
<td>1.1</td>
<td>1.4</td>
</tr>
<tr>
<td>2015</td>
<td>6.9</td>
<td>1.2</td>
<td>1.5</td>
</tr>
<tr>
<td>2016</td>
<td>7.0</td>
<td>1.3</td>
<td>1.6</td>
</tr>
<tr>
<td>2017</td>
<td>7.1</td>
<td>1.4</td>
<td>1.7</td>
</tr>
<tr>
<td>2018</td>
<td>7.2</td>
<td>1.5</td>
<td>1.8</td>
</tr>
<tr>
<td>2019</td>
<td>7.3</td>
<td>1.6</td>
<td>1.9</td>
</tr>
<tr>
<td>2020</td>
<td>7.4</td>
<td>1.7</td>
<td>2.0</td>
</tr>
</tbody>
</table>
Juneau’sDecreasing Budget Follows University Trend

2020 difference amounts to $1.5M less buying power than 2006 budget

Facilities Operating Actuals

$/GSF


Daily Service  PM  Inflation
Ketchikan Budget Emphasizes PM in Recent Years

Investments into PM will extend building lifecycles and decrease capital need

Facilities Operating Actuals

$/GSF

Daily Service  PM  Inflation

Sitka’s Recent Budget Lacks Purchasing Power of Past Years

Sitka’s operational spending decreased 57% since 2006, accounting for inflation.
Facilities Operating Expenditures vs. Peers

UAS has decreased its daily service expenditures since FY10 and increased PM
UAS Allocates Resources to PM in Line with Peers

Increases in PM program yield savings down the road by protecting assets

Preventive Maintenance Spending

$0.50

$0.40

$0.30

$0.20

$0.10

$0.00


PM UAS Average

Preventive Maintenance Spending

% of Total Budget

0% 2% 4% 6% 8% 10% 12% 14%

PM Peer Average

UAS Best Practice Range

$0.46

Preventive Maintenance Spending

$0.00

$0.10

$0.20

$0.30

$0.40

$0.50

$0.60

© 2021 The Gordian Group, Inc. All Rights Reserved
Utility Operating Expenditures Compared to Peers

UAS versus Peer Utility $ per GSF
Regionally Adjusted

University of Alaska - Southeast

Peer Institutions

<table>
<thead>
<tr>
<th>Year</th>
<th>UAS</th>
<th>Peer Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>$2.00</td>
<td>$2.50</td>
</tr>
<tr>
<td>2007</td>
<td>$2.00</td>
<td>$2.50</td>
</tr>
<tr>
<td>2008</td>
<td>$2.50</td>
<td>$3.00</td>
</tr>
<tr>
<td>2009</td>
<td>$2.50</td>
<td>$3.00</td>
</tr>
<tr>
<td>2010</td>
<td>$2.00</td>
<td>$2.50</td>
</tr>
<tr>
<td>2011</td>
<td>$2.00</td>
<td>$2.50</td>
</tr>
<tr>
<td>2012</td>
<td>$2.00</td>
<td>$2.50</td>
</tr>
<tr>
<td>2013</td>
<td>$2.00</td>
<td>$2.50</td>
</tr>
<tr>
<td>2014</td>
<td>$2.00</td>
<td>$2.50</td>
</tr>
<tr>
<td>2015</td>
<td>$2.00</td>
<td>$2.50</td>
</tr>
<tr>
<td>2016</td>
<td>$2.00</td>
<td>$2.50</td>
</tr>
<tr>
<td>2017</td>
<td>$2.00</td>
<td>$2.50</td>
</tr>
<tr>
<td>2018</td>
<td>$2.00</td>
<td>$2.50</td>
</tr>
<tr>
<td>2019</td>
<td>$2.00</td>
<td>$2.50</td>
</tr>
<tr>
<td>2020</td>
<td>$2.00</td>
<td>$2.50</td>
</tr>
</tbody>
</table>
Total Energy Consumption

UAS is consuming less energy than peer institutions with each year

Total Energy Consumption vs. Peers

University of Alaska – Southeast

Peer Institutions

BTU/GSF


Fossil Electric Average

© 2021 The Gordian Group, Inc. All Rights Reserved
Energy Expenses are Staying Steady Over Time

While electric costs increase slightly over time, fossil costs decrease in recent years.

Total Energy Cost vs. Peers
Regionally Adjusted

$46.85

$53.31
Differences in Unit Costs are Growing vs. Peers

Fossil unit costs surpass the peer average

Fossil Fuel Unit Cost
Regionally Adjusted

Electric Unit Cost
Regionally Adjusted
Maintenance Staffing Coverage

Coverage ratios have stayed low in recent years

Maintenance Staffing

[Graph showing Maintenance Staffing with GSF and FTE on the y-axis and years 2006 to 2020 on the x-axis]

Maintenance Coverage

[Bar chart showing GSF/FTE with years 2006 to 2020 on the x-axis and GSF/FTE on the y-axis]
Maintenance Metrics

UAS has fewer maintenance supervisors, but more staff and materials.
Custodial Staffing Coverage

Custodial staff has had to cover more in recent years
Custodial Metrics

UAS has more custodial supervisors, but less custodial staff and materials.

Custodial Staffing

Custodial Materials

Regionally Adjusted

Custodial Supervision

Cleanliness

Institutions arranged by Density Rating

Peer Average

© 2021 The Gordian Group, Inc. All Rights Reserved
Grounds Staffing Coverage

Coverage stayed mostly steady until a notable increase happened in FY19 and FY20.
Grounds Metrics

Similar staffing coverage to the peer average, but far more materials
Conclusion
Key Takeaways

- UAS’ young space profile benefits from proactive capital and operational approaches – prioritize growing recurring capital and preventive maintenance funds
- Capital focus should be reinvesting into existing space. This preserves historic investments into new space, addresses deferred maintenance needs, mitigates exposure to failures and is aligned with enrollment trends
- Small buildings and small grounds space produces efficiency challenges for maintenance and grounds staff, requiring more FTEs to tackle problems effectively
UAS FY20 Facilities Benchmarking & Analysis

Slide / Sheet Annotations

- Slide 4
  1. ROPA+ stands for Return on Physical Assets
  2. The amount of space included on the analysis varies, but is similar, for peer different institutions; we state the total included GSF for UAS to establish the space included in the ROPA analysis

- Slide 5
  1. The importance on focusing on existing space rather than new space, non-facilities work, and even infrastructure feeds into the concept of having a strategy toward the approach of capital projects. When less capital spending is being done it is important that the most valuable capital projects are completed, which means considering the relative needs of a building with the age, or associated risk, of the space. This also speaks to the concept of functional obsolescence; not doing work like replacing a boiler in a building just because it is due for replacement but rather knowing what the long-term plan is for that space and whether it makes more strategic sense to defer work or, in the case of a building being renovated or replaced in the future, not doing the work at all.

- Slide 10
  1. The challenge in efficiency comes in two forms.

    - The first is the challenge for maintenance staff due to the high building intensity, which correlates to the campus having more buildings than the average peer. Each building has components that need to be taken care of by maintenance staff and the time taken traveling between those buildings to address those components’ needs is time lost.

    - The second challenge is for grounds staff due to high grounds intensity, which correlates to smaller plots of grounds space rather than wide open grounds area. It takes more grounds staff to care for several flower patches and grassy lawns than it takes to care for one single large field with the same total area. Both challenges demand more staff to overcome the inefficiencies shown by these metrics.

- Slide 13
  1. As a building ages, the lifecycles become more expensive, frequent, & critical. Since UAS has 23% of its space under 10 years old, these building lifecycles will need to be addressed in the same period. There will need to be a plan now to meet these needs in the future

  2. The order of the colors on the right is the same order used in the bar chart and matches the legend at the bottom of the slide. It explains what to expect both operationally and capacitally as buildings gradually age.

- Slide 15
  1. These two waves go off the two largest groupings of construction/renovation that happened at UAS. For Wave 1, it assumes that the first set of life cycles that come due
are done on time. Assuming this happens, what this slide tells us is that for the two largest waves of construction, which alone are around 50% of the total GSF of UAS, all the major systems in those buildings will have their life cycles come due between 2025 and 2040. There will need to be a plan for how to effectively address the competing life cycles of assets coming due in multiple buildings throughout this time period.

- **Slide 23**
  1. When an institution is adding space, which also means that they are adding future need. The needs associated with a younger space are far lower than that of an older space. By completing renovations, you are effectively reducing your exposure to risk and one can say that you are stabilizing the future needs from increasing. This is because renovations address needs in a large scale
  2. The life cycle need line represents the amount of funding necessary to keep up with the capital needs of facilities over the course of its useful life. This figure represents replacing components/systems in-kind and does not account for any modernization
  3. By doing renovations, you are resetting the age of the building and addressing the needs of the facilities by effectively.
  4. Needs increase as a building ages over time.
  5. For the area between the lines, we are stating that
     - When funding levels are below the annual investment target you are deferring needs, and increasing the backlog and your exposure to risk
     - When funding is between the annual investment target and the life cycle need you are maintaining the backlog and risk exposure
     - When you can fund above the life cycle need line, you are able to address more needs than what is coming due in that year, thus buying down the backlog of need and reducing your relative risk

- **Slide 24**
  1. Because the Juneau campus makes up such a large percentage of UAS’ total space and capital spent, it appears visually very similar to the slide before with all of UAS included. Where it is worth noting it is different is in 2018. With all campuses, combined, capital spending in 2018 exceeded the annual investment target, but when looking at Juneau alone it has been below target for the last three years. This will have noticeable impacts on the campus as capital spending on existing space remains low

- **Slide 25**
  1. The jump in capital spending in 2018 for the Ketchikan campus was due to the work done on the Maritime Center

- **Slide 26**
  1. The jump in capital spending in 2013 for the Sitka campus was due to various Campus Completion projects that focused on the refresh and renewal of interior space.

- **Slide 27**
  1. Even despite recent years, reliable funding has been stronger at UAS than peers historically
  2. Ideally, this means that you should be able to count on those recurring dollars to help you reach your annual investment target and keep up with needs more reliably
• Slide 34

1. UAS’ reduction in operational spending can demonstrate an ability to function more efficiently than in previous years but only so long as the operational needs of campus are still being met. Daily service needs will increase as the age of campus increases due to the strains of aging components demanding attention by more staff. Preventative maintenance should be done on components that are still young in order to increase the total time they can function before needing to be replaced.