University of Alaska System
Facilities Measurement, Benchmarking, & Analysis
Sightlines, LLC
FY2011
Sightlines Profile

Common vocabulary, consistent methodology, credibility through benchmarking

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

Annual Stewardship

The accumulated backlog of repair and modernization needs and the definition of resource capacity to correct them. “Catch-Up Costs”

Asset Reinvestment

The effectiveness of the facilities operating budget, staffing, supervision, and energy management

Operational Effectiveness

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

Service

System Peers

- Maine
- Missouri
- Mississippi
- New Hampshire
- Oregon
- Pennsylvania
Sightlines Profile
Common vocabulary, consistent methodology, credibility through benchmarking

Operating funds:
- State General Funds
- Student tuitions & Fees
- F&A Recovery
- Other

Capital funds:
- Bonds
- State General Funds
- Federal Grants
- Foundations Grants

Annual Stewardship

Asset Reinvestment

Facilities operating budget
- Staffing levels
- Energy cost and consumption

Campus Inspection
- Service Process
- Customer Satisfaction Survey

System Peers
- Maine
- Missouri
- Mississippi
- New Hampshire
- Oregon
- Pennsylvania

Operations Success

Operational Effectiveness

Service

Asset Value Change

Legend
- 0
- 1-10
- 11-20
- Over 20
National Trends
Liabilities to assets ratio higher in public institutions

Total Assets and Liabilities

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Assets</th>
<th>Total Liabilities</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>Private</td>
<td>Public</td>
<td>32%</td>
</tr>
<tr>
<td>2008</td>
<td>Private</td>
<td>Public</td>
<td>45%</td>
</tr>
</tbody>
</table>

Bar chart showing total assets and liabilities for private and public institutions from 2007 to 2010, with percentage changes indicated.
“Backlog of needs” are increasing

Backlogs up about $10/GSF over last five years

14% increase in total backlog since 2007
Energy consumption on the decline

Energy Consumption

9% decrease in energy consumption since 2006

Overall Database
Public custodial staffing coverage rising faster

Cuts in custodial staff raise coverage rates

![Custodial Staffing Graph]

Overall Database - Public

Sightlines
Physical Profile

Defining Context forExisting Facilities
UA System - Scope of work

UA System: 6.5M GSF; 343 buildings included in the analysis

% of Space in UA System

5 Campuses:
- Anchorage, Kenai Peninsula, Kodiak College, Matanuska-Susitna College, Prince William Sound Community College

Space Profile:
- 2.6M GSF
- 92 buildings

3 Campuses:
- Juneau, Ketchikan, Sitka

Space Profile:
- 569K
- 39 buildings

7 Campuses:
- Fairbanks (including 4 research sites), Community and Technical College, CRCD Rural Campuses: Bristol Bay, Chukchi, Interior Aleutians, Kuskokwim, Northwest

Space Profile:
- 3.4M GSF
- 212 buildings
*Excluding Seward buildings

Space Profile:
- 2.6M GSF
- 92 buildings

UA System: 6.5M GSF; 343 buildings included in the analysis
Driving factors to higher needs on campus

Asset Reinvestment Backlog FY11
UA System vs. System Average

- Users on campus—Level of users varies among campuses
- Building systems are more technically complex
- Age of campus creates more needs
- Cost of living is higher, reduces purchasing power
- Spending is below System and Sightlines’ targets

Peer System Average (FY11)
Systems Ordered by Tech Rating
Density information excludes students who are exclusively e-learners and includes all campus space (academic, residential, research, and support).
Alaska in Context: Tech Rating

UA System Tech Rating Average: 3.07

Technical Complexity by Campus
FY11

Technical Complexity
UA System vs. Peer Systems Average
Renovation Age by campus

Renovation Age FY11

<table>
<thead>
<tr>
<th>Campus</th>
<th>Anchorage</th>
<th>PWSCC</th>
<th>MatSu</th>
<th>KPC</th>
<th>KoC</th>
<th>CRCD</th>
<th>CTC</th>
<th>Fairbanks</th>
<th>Ketchikan</th>
<th>Juneau</th>
<th>Sitka</th>
</tr>
</thead>
<tbody>
<tr>
<td>UAA</td>
<td>21.6</td>
<td>23.1</td>
<td>25.7</td>
<td>31.9</td>
<td>35.5</td>
<td>25.3</td>
<td>25.9</td>
<td>31.6</td>
<td>9.1</td>
<td>20.6</td>
<td>53.3</td>
</tr>
</tbody>
</table>

Alaska Average

UAF

UAS
Alaska Space in Context

Younger space is more technically complex

**FY11 Weighted Renovation Age of MAU's:**
- **UAA:** 22.5 years
- **UAF:** 30.7 years
- **UAS:** 24.2 years

**Renovation Age Distribution**

- **UA System 2011**
  - Under 10, 26%
  - 10 to 25, 15%
  - 25 to 50, 53%
  - Over 50, 6%

- **Peer Systems 2011**
  - Under 10, 22%
  - 10 to 25, 19%
  - 25 to 50, 38%
  - Over 50, 21%

**Tech Rating by Age Category**

- Less than 10: 3.7
- 10 to 25: 3.5
- 25 to 50: 2.8
- Over 50: 2.0
Spending doesn’t go as far in Alaska

Regional Adjuster Averages
FY11

Regional adjuster vs. system peers

Peer System Average

Spending doesn’t go as far in Alaska
Defining two types of targets

UA System’s Target vs. Sightlines Target
Definition and Terminology
How to tie UA’s terminology into Sightlines’ numbers

**Annual Stewardship:**
- Recurring capital: *M&R and R&R projects*
- Planned Maintenance: *Service contracts and PM work order labor and materials*

**Asset Reinvestment:**
- One-Time Capital: *DM reduction expenditure & R&R*

**Targets:**
- Based on Replacement Value: $3.9B
- High Target: *Life Cycle Need*
- Low Target: *Functional Obsolescence*
- Spending: *Annual Stewardship*

*Stewardship and Reinvestment classifications are based on funding source rather than type of work*
1. UA System’s Annual Maintenance

<table>
<thead>
<tr>
<th>Adjusted Value:</th>
<th>$1.87B for 6.5M GSF (FY11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacement Value:</td>
<td>$3.9B</td>
</tr>
<tr>
<td>Target:</td>
<td>1.5% of adjusted value</td>
</tr>
<tr>
<td>Spending:</td>
<td>M&amp;R Spending</td>
</tr>
</tbody>
</table>

**Annual Maintenance Target**

Target: $28.1M

UA System Spending

127% of total

Target

$33.8
UA system vs. Annual Maintenance Target

Target set using 1.5% of MAU’s adjusted value

**UAA**
- Adjusted Value: $702M
- Target: $10.5M

**UAF**
- Adjusted Value: $1.025B
- Target: $15.4M

**UAS**
- Adjusted Value: $146M
- Target: $2.2M

*Actual M&R investment may be lower than figures reported due to broad definition*
Sightlines’ stewardship “Best Practice” target
Creating a target for recurring funding sources from operating budget funds

2. Sightlines Stewardship Target

<table>
<thead>
<tr>
<th>Replacement Value:</th>
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<tr>
<td>High Target:</td>
<td>Life Cycle need</td>
</tr>
<tr>
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<td>Functional Obsolescence</td>
</tr>
<tr>
<td>Spending:</td>
<td>M&amp;R, R&amp;R, Operating Budget Planned Maintenance projects</td>
</tr>
</tbody>
</table>

UA System – FY2011 Stewardship Targets

- Life Cycle Need (Equilibrium): $103.2
- Functional Obsolescence (Target): $63.1
2. Sightlines Stewardship Target

<table>
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<tr>
<th>Replacement Value:</th>
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UA System – FY2011 Stewardship Targets

- **Life Cycle Need (Equilibrium)**: $71.2
  - Current M&R Budget: $32.0
  - Additional Funds Needed to Reach Target: $39.2

- **Functional Obsolescence (Target)**: $31.1
  - Current M&R Budget: $32.0
  - Additional Funds Needed to Reach Target: $9.1

Sightlines’ stewardship “Best Practice” target

Creating a target for recurring funding sources from operating budget funds
2. Sightlines Stewardship Target

<table>
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<th>Replacement Value:</th>
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<tr>
<td>Spending:</td>
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</tr>
</tbody>
</table>

UA System – FY2011 Stewardship Targets

- **$39.3M** (Under 10)
- **$22.8M** (10 to 25)
- **$19.1M** (25 to 50)
- **$11.4M** (25 to 50)
- **$41.4M** (Over 50)
- **$26.1M** (Over 50)
- **$3.4M** (Over 50)
- **$2.2M** (Over 50)
## Renovate Existing or Demolish and Build New?

**Building A**

<table>
<thead>
<tr>
<th></th>
<th>Building A</th>
<th>New Facility*</th>
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<tbody>
<tr>
<td>GSF</td>
<td>113,748</td>
<td>113,748</td>
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<tr>
<td>FY11-FY20 Capital Needs</td>
<td>$52.9 M</td>
<td>$2.7 M</td>
</tr>
<tr>
<td>FY11-FY20 Stewardship Needs</td>
<td>$3.5 M</td>
<td>Planning/Relocation costs</td>
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<tr>
<td>Funding to Address Reliability Needs</td>
<td>$5.7 M</td>
<td>New Construction</td>
</tr>
<tr>
<td>FY11-FY20 Operating Cost</td>
<td>$5.7 M</td>
<td>FY13-FY20 Stewardship Needs</td>
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<tr>
<td>Swing Space Funding</td>
<td>TBD</td>
<td>FY13-FY20 Operating Cost</td>
</tr>
<tr>
<td>Total Associated Costs</td>
<td>$67.7 M</td>
<td>Total Associated Costs</td>
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</table>

### Total 10-Year Costs

<table>
<thead>
<tr>
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<th>$ in Millions</th>
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<tbody>
<tr>
<td>Building A</td>
<td>$53</td>
</tr>
<tr>
<td>New Facility*</td>
<td>$54</td>
</tr>
</tbody>
</table>

It is less expensive to demolish Building A and construct a new facility than to renovate the existing facility.

- Non-quantifiable factors:
  - Current building configuration
  - Program needs
  - Funding options (donors for new space vs. University/state funding for renovations)

*Opening of new facility assumed for 2013. Operating Costs based on $/GSF costs for a recently opened new building on campus.

**Demolition estimated at $23/GSF (based on recent experience demolition cost).
Total capital investment over time

On average, hitting 23% of target

UA System
Best Practice Target Range

$ in Millions

$0.0 $20.0 $40.0 $60.0 $80.0 $100.0 $120.0

Life Cycle Need

Increasing Net Asset Value

Sustaining Net Asset Value

Decreasing Net Asset Value

Renovating 10% of campus space would raise FY11 target by $2.2M

Fund 1, Operating Budget 59xxxx, and Planned/Preventative Maintenance
Total capital investment over time

Adding in asset reinvestment to show all capital and one-time influx of projects

UA System
Best Practice Target Range

$ in Millions

$0.0
$20.0
$40.0
$60.0
$80.0
$100.0
$120.0

2006 2007 2008 2009 2010 2011

Includes all sources of recurring investments through operating budget and capital projects
AR Backlog methodology comparison

UA System backlog $1.1B compared to Sightlines’ estimate at $1.0B

UA System Backlog Vs. Sightlines Methodology

$ in Millions

<table>
<thead>
<tr>
<th></th>
<th>UAA</th>
<th>UAF</th>
<th>UAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>$/GSF</td>
<td>$115</td>
<td>$97</td>
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<tr>
<td>DM&amp;R List</td>
<td>$325</td>
<td>$212</td>
<td>$27</td>
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<tr>
<td>Sightlines AR Backlog</td>
<td>$97</td>
<td>$113</td>
<td></td>
</tr>
</tbody>
</table>

$ in Millions

- $0 to $100
- $100 to $200
- $200 to $300
- $300 to $400
- $400 to $500
- $500 to $600
- $600 to $700
- $700 to $800
- $800 to $900
- $900
System Asset Reinvestment Backlog Comparison

UA System’s range above system peers and rising

**Total UA System AR Backlog**
FY06-FY11

<table>
<thead>
<tr>
<th>Year</th>
<th>AR Backlog</th>
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<tbody>
<tr>
<td>2006</td>
<td>$110</td>
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<tr>
<td>2007</td>
<td>$120</td>
</tr>
<tr>
<td>2008</td>
<td>$130</td>
</tr>
<tr>
<td>2009</td>
<td>$140</td>
</tr>
<tr>
<td>2010</td>
<td>$150</td>
</tr>
<tr>
<td>2011</td>
<td>$160</td>
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</table>

**AR Backlog FY11**

UA System vs. System Average

*Systems Ordered by Tech Rating*

- Peer System Average (FY11)
- Sightlines Database Average (FY11)
Capital investment vs. target comparison

Increasing AS by $8.2M each year will help UA System reach Sightlines’ target range

6 Year average comparison:
% of Project vs. Target

UA System’s Investment Strategy
AS Investment Strategy

Target estimated with 3% inflation and assuming no changes to the system’s space inventory.
AR is estimated at historical average.

Systems Ordered by Tech Rating

Annual Stewardship | Asset Reinvestment | Peer System Average

Target Need

Life Cycle Need

M&R ($32M) | Additional AS Needed | Estimated AR

Revamped UA Sustainment Funding Chart

Deferred Maintenance Reduction Expenditures
R&R Annual Expenditures
M&R Annual Expenditures
M&R/R&R Annual Investment Target
Deferred Maintenance Backlog with adequate M&R/R&R Funding

Status Quo Funding
Reduction in Backlog from DM Investment


Millions


- $- $50 $100 $150 $200 $250 $300 $350 $400 $450 $500 $550 $600 $650 $700 $750 $800

Deferred Maintenance Reduction Expenditures
R&R Annual Expenditures
M&R Annual Expenditures
M&R/R&R Annual Investment Target
Deferred Maintenance Backlog with adequate M&R/R&R Funding

M&M/R&R Annual Investment Target
Deferred Maintenance Backlog with adequate M&R/R&R Funding
What types of projects have been funded recently?

Shifting more into envelope/mechanical type projects

<table>
<thead>
<tr>
<th>Year</th>
<th>Envelope/Mechanical</th>
<th>Space/Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td></td>
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<tr>
<td>2009</td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Six year project spending mix by funding source:**

- **Envelope/Mechanical** = infrastructure, building systems, and envelope
- **Space/Program** = space renewal and safety/code

- **Envelope/Mechanical**
- **Space/Programming**
- **Annual Stewardship**
- **Asset Reinvestment**
What types of projects have been funded recently?

Shifting more into envelope/mechanical type projects

Six year project spending mix by funding source:

- Envelope/Mechanical = infrastructure, building systems, and envelope
- Space/Program = space renewal and safety/code

- Envelope/Mechanical
- Space/Programming
- Annual Stewardship
- Asset Reinvestment
Using the detailed analysis for multi-year investment planning
Investment strategy and project selection based on facts

Net Asset Value vs. Program Value
By Building

Building Condition (NAV)

Value of Facility to Program
1-10 scale, 1= low, 10 = high

- Low Program Value, High NAV
  ➞ Focus on system work, minimal space

- Low Program Value, Low NAV
  ➞ Emergency work only

- High Program Value, High NAV
  ➞ Maintain & protect

- High Program Value, Low NAV
  ➞ Repairs & Space Improvement
Operations Success
Facilities Operating Budget
Includes maintenance, custodial, grounds, and facilities administration

Maintenance & Operations Budget $/GSF
UA System FY06-11

![Bar chart showing the maintenance and operations budget $/GSF from 2006 to 2011. The budget includes daily service and planned maintenance. The Alaska 6 year average is also shown.](chart.png)
Information shown includes Maintenance and Operations

Operating Budget $/GSF

Adjusted Operating Budget $/GSF

Daily Service

Peer System Average (FY11)

Systems Ordered by Tech Rating

Putting the cost of living into consideration

Facilities Operating Budget vs. peers
Alaska energy consumption vs. system peers

Highest consumption in both fossil and electricity

**Average Fossil Consumption**

**Average Electricity Consumption**

*BTU/GSF/HDD*

*BTU/GSF*

System Ordered by Tech Rating
Service: Campus Inspection Index

Alaska high 83%; low 80%

Campus Inspection Index*

System Average

*Campus inspection includes general repair, cleanliness, building exteriors, grounds, and mechanical spaces (scores on a scale of 1-5, indexed)

Systems Ordered by Density Factor
Service Process Index
Alaska high 90%, low 81%

Systems Ordered by Density Factor

Range of institution in system
Peer System Average

Systems Ordered by Density Factor
University of Alaska System

Bringing it all together
**FY10 Recommendations**

Reduce effects of a **high cost structure, campus complexity and regional strain** by:

- Tracking operations and capital data consistently across all MAU’s to ensure accurate comparisons and analysis
- Quantifying the backlog consistently across all MAU’s to aid in implementing a long-range capital plan that includes both keep-up and catch-up funding
  - Monitoring daily operations to maximize efficiencies and track the correlation between change in backlog and operational metrics, including:
    - Operating budget
    - Energy consumption
    - Staffing levels
    - Campus inspection
- Monitoring academic space utilization rates to ensure efficient use of facilities

**FY11 Recommendations**

- Create a manageable target that is applicable to all the MAUs that will help reduce the backlog and maintain facilities at a sustainable level
- Understand impact of wide ranging density factors, tech ratings, and age, and develop differentiated maintenance, repairs, and stewardship strategies for each MAU
- Fund projects that will steward the space less than 10 years old (to keep your young space young), and that will reset lifecycles/address deferred maintenance in space over 25 years old (to make your old space younger).

**Area of progress since FY2010**