FY2014 ROPA+ Presentation
The University of Maine System
Jim Kadamus and Caroline Johnson
Who Partners with Sightlines?

Robust membership includes colleges, universities, consortia, and state systems

Sightlines works with
• All Mass Public Universities and CCs
• All Connecticut Public Universities and CCs
• All Maine and New Hampshire Public Universities
• Penn State and PASSHE Systems
• 35 State Land-Grant Universities

Sightlines Profile:
• 1.3B square feet in our database
• We track $6.5B in operating costs and $9B in capital expenditures annually
• 450 colleges, universities, and K-12 institutions are Sightlines clients
• 93% Annual member retention rate in FY13
• 100 new members since 2013

Sightlines advises state systems in:
• Alaska
• California
• Connecticut
• Hawaii
• Maine
• Massachusetts
• Minnesota
• Mississippi
• Missouri
• New Hampshire
• New Jersey
• New York
• Oregon
• Pennsylvania
• Texas
• West Virginia
A vocabulary for measurement

The Return on Physical Assets – ROPA<sup>SM</sup>

The annual investment needed to ensure buildings will properly perform and reach their useful life

“Keep-Up Costs”

The accumulated backlog of repair / modernization needs and the definition of resource capacity to correct them

“Catch-Up Costs”

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

Asset Value Change

Operations Success
A vocabulary for measurement

The Return on Physical Assets – ROPA℠
Changing the Conversation

Space
Release The Hidden Value in Balance Sheets

Operations
Improve Effectiveness & Lower Facilities Overhead Impact

Capital $
Multiyear Plans that Align to Mission, & Risk
UMaine System Peer Comparison

Putting UMS in context with peers

State System Comparisons

- Connecticut State University System
- Massachusetts State Universities
- Mississippi Institutions of Higher Learning
- Oregon University System
- Pennsylvania State System of Higher Education
- University of Alaska System
- University of Missouri System
- University System of New Hampshire
Maine System Density Has Gone Down Over Time

Density at Maine System Level

- **Public School Average**
- **Maine System Average**

Users/100,000 SF

<table>
<thead>
<tr>
<th>Year</th>
<th>Users</th>
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<tr>
<td>FY06</td>
<td>332</td>
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<td>FY07</td>
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<td>FY13</td>
<td>297</td>
</tr>
<tr>
<td>FY14</td>
<td>290</td>
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- **13% Decrease Since FY06**

Measures number of users / 100,000 GSF

A measure of the amount of use campus buildings receive on a daily basis

Users include student, faculty, staff FTE
Construction Waves Hitting Major Life Cycles

First wave of buildings are now 50 years old; second wave nearly 20 years old

- **Pre-War**
  - Built before 1951
  - Durable construction
  - Older but typically lasts longer

- **Post-War**
  - Built between 1951 and 1990
  - Lower-quality construction
  - Already needing more repairs and renovations

- **Complex**
  - Built in 1991 and newer
  - Technically complex spaces
  - Higher-quality, more expensive to maintain & repair

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Sightlines Database of Constructed Space (1880-Present)

How does your age profile and era of construction impact current and future capital investment needs and influence operational performance?
Construction Waves Hitting Major Life Cycles

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Maine System Constructed Space (1880-Present)

- **Pre-War** (1880-1950): 26% of Total GSF
- **Post-War** (1951-1990): 48% of Total GSF
- **Complex** (1991-Present): 26% of Total GSF

% of Total GSF
Maine System age profile, 64% of space over 25

Space over 50 years old (highest risk) grown from 27% in FY06 to 38% in FY14

Campus Age Distribution Over Time

- **Maine System 2006**
  - Under 10: 20%
  - 10 to 25: 12%
  - 25 to 50: 41%
  - Over 50: 27%

- **Maine System 2010**
  - Under 10: 22%
  - 10 to 25: 14%
  - 25 to 50: 32%
  - Over 50: 32%

- **Maine System 2014**
  - Under 10: 18%
  - 10 to 25: 16%
  - 25 to 50: 28%
  - Over 50: 38%
Renovation age distribution across System

Focusing resources on existing space halts growth of buildings over 50 years old

FY14 Renovation Age Across System

- UM: Under 10 = 15%; 10 to 25 = 23%; 25 to 50 = 32%; Over 50 = 44%
- UMFK: Under 10 = 19%; 10 to 25 = 30%; 25 to 50 = 30%; Over 50 = 26%
- UMF: Under 10 = 10%; 10 to 25 = 9%; 25 to 50 = 32%; Over 50 = 38%
- UMM: Under 10 = 18%; 10 to 25 = 21%; 25 to 50 = 35%; Over 50 = 26%
- UMA: Under 10 = 10%; 10 to 25 = 35%; 25 to 50 = 30%; Over 50 = 26%
- USM: Under 10 = 7%; 10 to 25 = 17%; 25 to 50 = 35%; Over 50 = 26%
- UMPI: Under 10 = 2%; 10 to 25 = 19%; 25 to 50 = 30%; Over 50 = 50%

Under 10, 10 to 25, 25 to 50, Over 50
Maine System age profile, 64% of space over 25

Space over 50 years old (highest risk) grown from 27% in FY06 to 36% in FY14
Renos and removal of buildings slows aging process

Public institutions average 18% of space over 50 in FY14

Maine System Percent of Space Over 50

FY14 Public University Average
Maine System Investment Profile

51% of total investment has gone towards existing space since FY06

Maine System Annual Average $49.2M

Examples of Non-Facilities work include: Study/Design fees, IT work, and demolition costs. These are necessary capital costs for Facilities Operations but do not add value/enhance existing buildings.
Peers investing $0.49/GSF more than UMaine System

Spending profile similar to peer investment mix

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<thead>
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<th>Year</th>
<th>UM System</th>
<th>Peer Group Average</th>
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<td>2008</td>
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Defining Stewardship Investment Targets

$34.2M of Stewardship funds needed in FY14 to keep-up all system campuses

Maine System Replacement Value: $2.3B

3% Replacement Value

$68.9

Life Cycle Need

$56.1M

$30.0

$26.1

Target

$34.2M

$14.6

$19.6
System exceeds target in FY14 for two consecutive years.

One-Time funds aid in the U Maine System meeting target.

- Decreasing Backlog
- Stabilizing Backlog
- Increasing Backlog

![Graph showing the annual stewardship, asset reinvestment, target need, and life cycle need over the years 2006 to 2014.](image-url)
NAV of U Maine System Stabilizes in FY2014

Strategic investments and removal of high need/low utilized buildings increase institutional NAVs

Net Asset Value = Replacement Value – Deferred Maintenance

Replacement Value
Institutional NAVs have increased in FY14

Strategic investments and removal of high need/low utilized buildings increase institutional NAVs

Investment Strategy

100% - 85%

Capital Upkeep Stage: Primarily new or recently renovated buildings with sporadic building repair & life cycle needs; “You pick the projects”

85% - 70%

Repair and Maintain Stage: Buildings are beginning to show their age and may require more significant investment on a case-by-case basis

70% - 50%

Systemic Renovation Stage: Buildings may require more significant repairs; large capital infusions; “The projects pick you”

Below 50%

Transitional/Gut Renovation/Demo Stage: Major buildings components are in jeopardy of failure. Reliability issues are widespread throughout the building.

NAV of Index

Net Asset Value = Replacement Value – Deferred Maintenance

Replacement Value

Peer Average

UMM  UM  UMF  UMFK  USM  UMA  UMPI

19
ROPA+ Prediction Overview

Regionalized costs based on comprehensive database of building systems

6 Subsystems
- Roof
- Envelope
- HVAC Systems
- Electrical
- Plumbing
- Interiors

96% of Building Costs

Scope of Analysis:
- 9 Million GSF across 7 institutions
- Data qualified with facilities leadership
UMaine Campuses: 10 Year Needs

- **Discovery (Asset Reinvestment)**
- **Prediction (Capital Risk)**

### Total Dollars (Millions)
- **Discovery**
  - $961
  - Remaining need is $499M
  - This represents the life cycle needs coming due between 2016-2023.

### Total 10 Year Need
- **Total 10 year renewal need is $143M.**
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- This represents the life cycle needs coming due between 2016-2023.

### Immediate Need
- **Deferred maintenance need today (Highest Risk)**
- **Deferred maintenance need today (Highest Risk)**

### Remaining Need
- **Remaining Need**
- **Remaining Need**

### 10 Year Renewal Need
- **10 Year Renewal Need**
- **10 Year Renewal Need**

### Immediate Need
- **Immediate Need**
- **Immediate Need**

Sightlines recommends a 10 year capital strategy to address the total need.
$319M in Immediate Need

Total 10 Year Need
- Remaining Need
- 10 Year Renewal Need
- Immediate Need

Total Immediate Need by System
- HVAC: 30%
- Building Exteriors: 22%
- Interiors: 19%
- Plumbing: 13%
- Roofing: 9%
- Electrical: 3%
- SMALL Building Renovation: 4%

MEP Projects Comprises the Majority of Immediate Needs
Historical Investment Profile Differs From Immediate Needs

2006-2014 Historical Project Investment

- Mechanical: 49%
- Envelope: 11%
- Interiors: 40%

Distribution of Immediate Need by System

- Mechanical: 44%
- Envelope: 23%
- Interiors: 33%
ROP+ Prediction 10-Year Modeled Need

Total Modeled Need by NAV Level

- **Net Asset Value (NAV):** (Current Replacement Value – Immediate Need)
  - **Low NAV:** <60%
  - **Mid NAV:** 60-80%
  - **High NAV:** 80%+

### Total 10 Year Need

- **Remaining Need:** $319
- **10 Year Renewal Need:** $143
- **Immediate Need:** $499

### Total 10 Year Need

- **Low NAV:** $444
- **Mid NAV:** $335
- **High NAV:** $182

### Total Dollars (Millions)

- $0
- $200
- $400
- $600
- $800
- $1,000
- $1,200
Net Asset Value: Distribution of Need vs. GSF

Localized Low NAV Buildings Drive 46% of Total Need

Net Asset Value (NAV):
(Current Replacement Value – Immediate Need)
Current Replacement Value

Low NAV Statistics:
- 153 Buildings Total
- 70 Buildings built during the Post-War Phase
UMaine Campuses: 10 Year Needs

Total 10 Year Need

$319
$143
$499

Immediate Need

10 Year Renewal Need

Remaining Need

Prediction
(10 Year Capital Risk)

$96M Average Need: Equals 4% of CRV
Needs vs. Potential Investment Capacity

10 Year Total Capital Need & Capacity

Total 10 Year Need: $499M
Immediate Need: $319M
Projected Investment Capacity: $278M
Remaining Need: $143M

Average Need: $96M Average Need
Average Investment: $27.8M Average Investment

Projected capital is the average of historical spending
Needs vs. Potential Investment Capacity

Projected capital is the average of historical spending
Funding Immediate Need Over 5 Years

This assumes no additional need is added over the ten year period and static GSF. The dollar amounts shown are today’s dollars.
Project NAV for UMS with $68M annual investment

Investment Strategy

- **100%-85%**: Primarily new or recently renovated buildings with sporadic building repair & life cycle needs; “You pick the projects”
- **85%-70%**: Buildings are beginning to show their age and may require more significant investment on a case-by-case basis
- **70%-50%**: Buildings may require more significant repairs; large capital infusions; “The projects pick you”
- **Below 50%**: Major buildings components are in jeopardy of failure. Reliability issues are widespread throughout the building.

**Capital Upkeep Stage**: Primarily new or recently renovated buildings with sporadic building repair & life cycle needs; “You pick the projects”

**Repair and Maintain Stage**: Buildings are beginning to show their age and may require more significant investment on a case-by-case basis

**Systemic Renovation Stage**: Buildings may require more significant repairs; large capital infusions; “The projects pick you”

**Transitional/Gut Renovation/Demo Stage**: Major buildings components are in jeopardy of failure. Reliability issues are widespread throughout the building.

**Net Asset Value** = **Replacement Value – Deferred Maintenance**

This assumes no additional need is added over the ten year period and static GSF. The dollar amounts shown are today’s dollars.
FY2014 NAV of U Maine System Institutions

Campuses are aging faster than increase in capital spending

Investment Strategy

100%-85%
85%-70%
70%-50%
Below 50%

Capital Upkeep Stage: Primarily new or recently renovated buildings with sporadic building repair & life cycle needs; “You pick the projects”

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Net Asset Value = Replacement Value – Deferred Maintenance

Replacement Value

This assumes no additional need is added over the ten year period and static GSF. The dollar amounts shown are today’s dollars.
Facilities Operating Expenditures

Similar Daily Service costs from FY13 to FY14; increased focus on Planned Maintenance

Maine System Facilities Operating Actuals

*2012 Daily Service values are low due to unfilled vacancies during this year. Utility cost increase due to higher consumption.
Energy Consumption Over Time

Increased fossil consumption in FY13 result of harsh winter, FY14 stabilizes

Degree days noted are based on the Orono, Maine location
Energy Consumption Normalized for Heating Degree Days

Normalized for weather UMS able to halt increasing consumption trend

Degree days noted are based on the Orono, Maine location
Lowest Service Process Index Among Peer Systems

Currently implementing IWMS; UMaine System processes will improve once complete
Concluding Comments

• The University of Maine System halted the rapid growth of buildings over 50 years old and declining NAV by strategically removing buildings from the inventory as well as focused capital improvements in high need buildings.

• Utilize the ROPA+ Prediction model to develop a multi-year capital program to address critical deferred maintenance and life cycles needs as they come due.

• If UMS can create a capital program for existing space of $40M-$60M/year progress can be made on both the backlog of deferred maintenance, life cycle needs and result in lower operating costs. The system has met the investment target of nearly $40M for the last two years.

• IWMS will be an important tool to track operational and preventative maintenance resources. UMS should dedicate staff who are trained and able to run the program, to ensure consistency and analyze the reports.
Questions and Comments