ISU Facilities and Deferred Maintenance
Campus Master Plan
(Highway 30 to 24th Street)
ISU Could Be the 12th Largest Community in Iowa

<table>
<thead>
<tr>
<th>Community</th>
<th>2012 Census</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Des Moines</td>
<td>206,688</td>
</tr>
<tr>
<td>2  Cedar Rapids</td>
<td>128,119</td>
</tr>
<tr>
<td>3  Davenport</td>
<td>101,363</td>
</tr>
<tr>
<td>4  Sioux City</td>
<td>82,719</td>
</tr>
<tr>
<td>5  Iowa City</td>
<td>70,133</td>
</tr>
<tr>
<td>6  Waterloo</td>
<td>68,297</td>
</tr>
<tr>
<td>7  Council Bluffs</td>
<td>62,115</td>
</tr>
<tr>
<td>8  Ames</td>
<td>60,634</td>
</tr>
<tr>
<td>9  West Des Moines</td>
<td>59,296</td>
</tr>
<tr>
<td>10 Dubuque</td>
<td>58,115</td>
</tr>
<tr>
<td>11 Ankeny</td>
<td>49,080</td>
</tr>
<tr>
<td>12 Iowa State Univ.</td>
<td>48,895</td>
</tr>
</tbody>
</table>
Iowa State Physical Assets

- 140 general fund buildings
- 1,984 acres, 840 acres of manicured turf
- 23 miles of road, 34 miles of sidewalk
- 590 restrooms
- 134 elevators
- 48 emergency generators
- 2,000 street, sidewalk, and parking lot lights
- 4.85 miles of steam tunnels
- 23 miles of high voltage cables
- 10 miles of water lines
- 12.5 miles of sanitary sewer
- 28 miles of storm sewer lines
- 90 miles of telephone/data lines
ISU – All Buildings

13,803,957 GSF
Replacement Value = $5.8 Billion

- General Fund: 48.7%
- Residence: 23.3%
- Self-Support: 11.1%
- Ag Exp Station: 8.9%
- Memorial Union: 4.3%
- Athletics: 2.8%
- Power Plant: 1.0%
ISU – General Fund Buildings

6,715,686 GSF
4,088,261 NASF
Replacement Value = $ 3.2 Billion

SIMPLE
Ruminant Nutrition
8,837 gsf

COMPLEX
Carver Co-Lab
53,220 gsf
ISU General Fund Buildings

Older

Physics
79,686 gsf
1925, 1950, 1961
111,863 BTU/gsf

Newer

Hach
136,287 gsf
2010
271,949 BTU/gsf
ISU General Fund Buildings
Program and Technology Obsolescence

Molecular Biology
206,086 gsf, 1992
No major remodels in 22 years

Bessey
167,867 gsf, 1967
No major remodels in 47 years
General Fund – Building Space by Age

Net Assignable Square Footage

<table>
<thead>
<tr>
<th>Age</th>
<th>Net Assignable Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-1930</td>
<td>1,200,000</td>
</tr>
<tr>
<td>1931-1950</td>
<td>300,000</td>
</tr>
<tr>
<td>1951-1960</td>
<td>100,000</td>
</tr>
<tr>
<td>1961-1970</td>
<td>1,200,000</td>
</tr>
<tr>
<td>1971-1980</td>
<td>1,600,000</td>
</tr>
<tr>
<td>1981-1990</td>
<td>600,000</td>
</tr>
<tr>
<td>1991-2000</td>
<td>800,000</td>
</tr>
<tr>
<td>2001-2010</td>
<td>700,000</td>
</tr>
<tr>
<td>2011-Present</td>
<td>200,000</td>
</tr>
</tbody>
</table>
Deferred Maintenance: Meaning and Consequences

Deferred Maintenance occurs when there is backlog of maintenance and repairs

Consequences of Deferred Maintenance:
- Safety can be compromised
- Decreased efficiency
- Performance failure
- Energy conservation negatively impacted
- Decreased asset life

Underlying Principle:
Quality facilities for quality delivery of university programs
# General Fund – Predicted Maintenance Cycles

<table>
<thead>
<tr>
<th>25-YEAR CYCLE</th>
<th>50-YEAR CYCLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVAC*</td>
<td>HVAC*</td>
</tr>
<tr>
<td>ELECTRICAL</td>
<td>ELECTRICAL</td>
</tr>
<tr>
<td>INTERIORS</td>
<td>INTERIORS</td>
</tr>
<tr>
<td>ROOF</td>
<td>ROOF</td>
</tr>
<tr>
<td>SITWORK</td>
<td>SITWORK</td>
</tr>
<tr>
<td>FIXTURES</td>
<td>FIXTURES</td>
</tr>
<tr>
<td>25% RPV</td>
<td>36% RPV</td>
</tr>
<tr>
<td>BLDG ENVELOPE</td>
<td>BLDG ENVELOPE</td>
</tr>
<tr>
<td>WINDOWS</td>
<td>WINDOWS</td>
</tr>
<tr>
<td>PLUMBING</td>
<td>PLUMBING</td>
</tr>
</tbody>
</table>

* Heating, Ventilating, & Air Conditioning
General Fund – Deferred Maintenance by Category, Total = $268M
Deferred Maintenance Process

Building System Categories

HVAC
ELECTRICAL
INTERIORS
ROOF
SITEWORK
FIXTURES
BLDG ENVELOPE
WINDOWS
PLUMBING
SITE

* Annual assessment of condition and age

* Priority list for each category across all buildings
General Fund – Deferred Maintenance
Annual Funding vs. Actual Spent

$12,000,000
$10,000,000
$8,000,000
$6,000,000
$4,000,000
$2,000,000
$-

FY03 FY04 FY05 FY06 FY07 FY08 FY09 FY10 FY11 FY12 FY13 FY14

Base Funding
Actual Spent
Deferred Maintenance Progress
By Annual Planning

FY14 Capital Renewal Plan

- Repairs less than $5,000
- Unplanned repairs > $5,000
- Capital Projects (Matching Funds)
- Planned Repairs - Roofs, Elevators
- Planned Repairs - HVAC
- Planned Repairs - Exteriors
- Planned Repairs - Windows

- $500,000
- $1,090,000
- $500,000
- $900,000
- $500,000
- $500,000
- $500,000
- $500,000

IOWA STATE UNIVERSITY
Deferred Maintenance Progress
By Capital Projects

<table>
<thead>
<tr>
<th>Capital Project</th>
<th>Deferred Maintenance Eliminated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vet Med Phase 2</td>
<td>$5,985,000</td>
</tr>
<tr>
<td>Curtiss Remodeling</td>
<td>$1,910,000</td>
</tr>
<tr>
<td>Ag and Biosystems Engr</td>
<td>$3,492,000</td>
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<tr>
<td>Lagomarcino Remodeling</td>
<td>$361,993</td>
</tr>
<tr>
<td>Marston Remodeling</td>
<td>$2,447,380</td>
</tr>
<tr>
<td>Bio-Sciences</td>
<td>$5,838,126</td>
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</tbody>
</table>
## Deferred Maintenance Progress
### Bio-Sciences Project

<table>
<thead>
<tr>
<th>Affected Building</th>
<th>Total Deferred Maintenance</th>
<th>Anticipated Eliminated Deferred Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Biology</td>
<td>$ 5,508,969</td>
<td>$ 0</td>
</tr>
<tr>
<td>Genetics</td>
<td>$ 1,039,996</td>
<td>$ 1,039,996</td>
</tr>
<tr>
<td>Insectary</td>
<td>$ 1,353,494</td>
<td>$ 400,000</td>
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<tr>
<td>Industrial Ed 2</td>
<td>$ 3,198,130</td>
<td>$ 3,198,130</td>
</tr>
<tr>
<td>Science 2</td>
<td>$ 4,580,067</td>
<td>$ 0</td>
</tr>
<tr>
<td>Science 1</td>
<td>$ 5,655,067</td>
<td>$ 0</td>
</tr>
<tr>
<td>Bessey</td>
<td>$ 12,899,104</td>
<td>$ 1,200,000</td>
</tr>
<tr>
<td>Military Garage</td>
<td>$ 0</td>
<td>$ 0</td>
</tr>
<tr>
<td>Genetics Chick Isolation</td>
<td>$ 0</td>
<td>$ 0</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>$ 5,838,126</strong></td>
</tr>
</tbody>
</table>
Sightlines – 3rd Party Benchmarking

- Cornell University
- Indiana University - Bloomington
- Iowa State University
- Kansas State University
- Michigan State University
- Northwestern University
- Purdue University
- The Ohio State University
- The Pennsylvania State University
- University of Illinois - Urbana/Champaign
- University of Michigan
- University of Minnesota - Twin Cities
- University of Missouri - Columbia

Iowa State University
Cogeneration Facilities

- 2X more efficient than a traditional power plant
- Saving the institutions $millions every year
- Transitioning to duel fuel (Coal/Gas) in the future
  - Lower emissions
- Adding renewable energy to their portfolios
ISU Facilities and Deferred Maintenance

Thank you