Planning for Climate Neutrality:
Process and Lessons Learned from the University of Minnesota, Twin Cities

Upper Midwest Association for Campus Sustainability Annual Conference
Presented by Shane Stennes, Sustainability Coordinator
September 24, 2011
A journey of a thousand miles begins with a single step.

- Laozi
• 24 Million GSF
• 50,000 Students
• Commuter campus
• Lots of Labs and a Hospital Too

640,000 MT CO₂
(50% Electric, 30% Steam Plants)
We have 640,000 reasons to plan...

...how do we make sure we have a good one?

- Committee led
- Inclusive process
- Targeted expertise
- Focused
- Aligned
- Guided by Principles
Efficiency Strategies

- Engage the Campus

- Recommission 40 buildings/year
Fuel Mix Strategies

Use 85% Less Coal in Steam Plants
Supply Strategies

Traditional System:
- Power Plant
- Boiler
- 45% Efficiency

CHP System:
- CHP
- 80% Efficiency

Flows:
- Electricity
- Heat
# Climate Action Plan

## Years 2011 - 2016

<table>
<thead>
<tr>
<th>Strategy Description</th>
<th>Est. Tons Reduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Efficiency</td>
<td>4,000</td>
</tr>
<tr>
<td>Lighting Efficiency</td>
<td>5,400</td>
</tr>
<tr>
<td>Building Recomissioning</td>
<td>48,000</td>
</tr>
<tr>
<td>Sustainable Building</td>
<td>35,900</td>
</tr>
<tr>
<td>Lab Efficiency</td>
<td>55,900</td>
</tr>
<tr>
<td>Reduce Campus Size</td>
<td>11,000</td>
</tr>
<tr>
<td>Reduce Coal Use</td>
<td>27,300</td>
</tr>
</tbody>
</table>

### CO₂ Reduction Goals

- **Reduction Goal from CAP 1.1**
- **Projected Reduction from Strategies TBD**
- **Estimated Reduction by 2016**

- -29%
- -49%

[Graph showing the estimated reduction by 2016 and the projected reduction from strategies TBD.]

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*University of Minnesota Driven to Discover™*
# Climate Action Plan

## Years 2016 - 2021

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<tr>
<th>Strategy Description</th>
<th>Est. Tons Reduced</th>
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<tbody>
<tr>
<td>Building recommissioning</td>
<td>52,400</td>
</tr>
<tr>
<td>Sustainable building</td>
<td>57,200</td>
</tr>
<tr>
<td>Lab Efficiency</td>
<td>111,900</td>
</tr>
<tr>
<td>Reduce campus size</td>
<td>22,000</td>
</tr>
<tr>
<td>Combined heat and power</td>
<td>65,000</td>
</tr>
<tr>
<td>Window replacement</td>
<td>4,600</td>
</tr>
</tbody>
</table>

## CO₂ Reduction Goals

- **Reduction Goal from CAP 1.1**
- **Projected Reduction from Strategies TBD**

![Graph showing CO₂ reduction goals from 2008 to 2050](chart.png)

- **Estimated Reduction by 2021**
  - -29%
  - -49%
~8% Reduction from 2008 Baseline. On target to meet 2016 Goal!
Lessons Learned

- Start Early
- Consult broadly
- Tap Expertise
- Tools
- Divide into phases