



INSTITUTE FOR SUSTAINABILITY, ENERGY, AND ENVIRONMENT



Sustainability Council

November 17, 2020

Madhu Khanna, Interim Director
Institute for Sustainability, Energy, and Environment (iSEE)

Agenda

- Key Updates
 - iSEE
 - F&S
 - Student Groups (ISG, SSC, SSLC)
- Action Items
 - Sustainability Training
 - Divestment Plans
 - iCAP 2020 Implementation
- Wrap Up



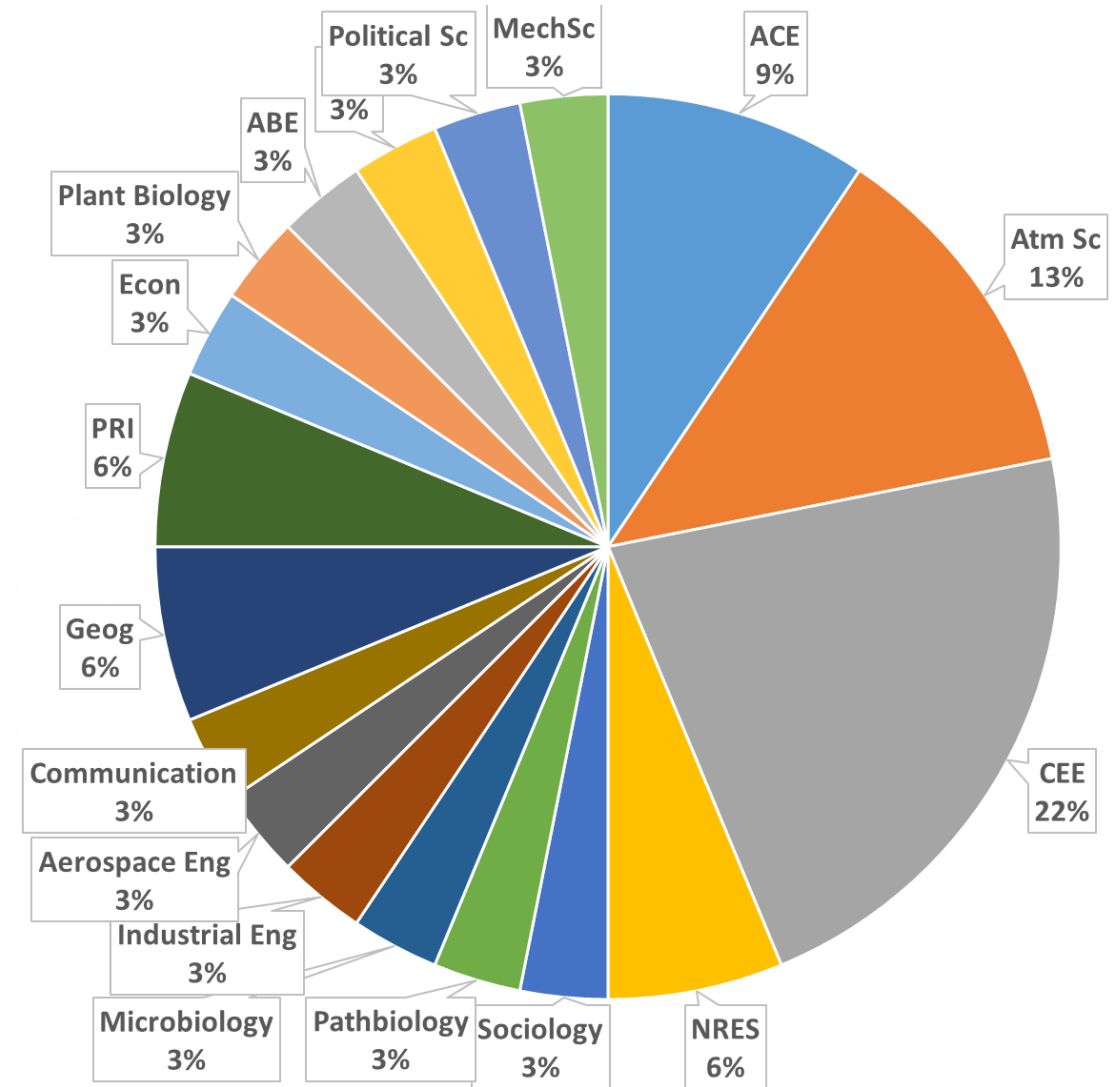
Key Updates



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External Funding (2019-2020)

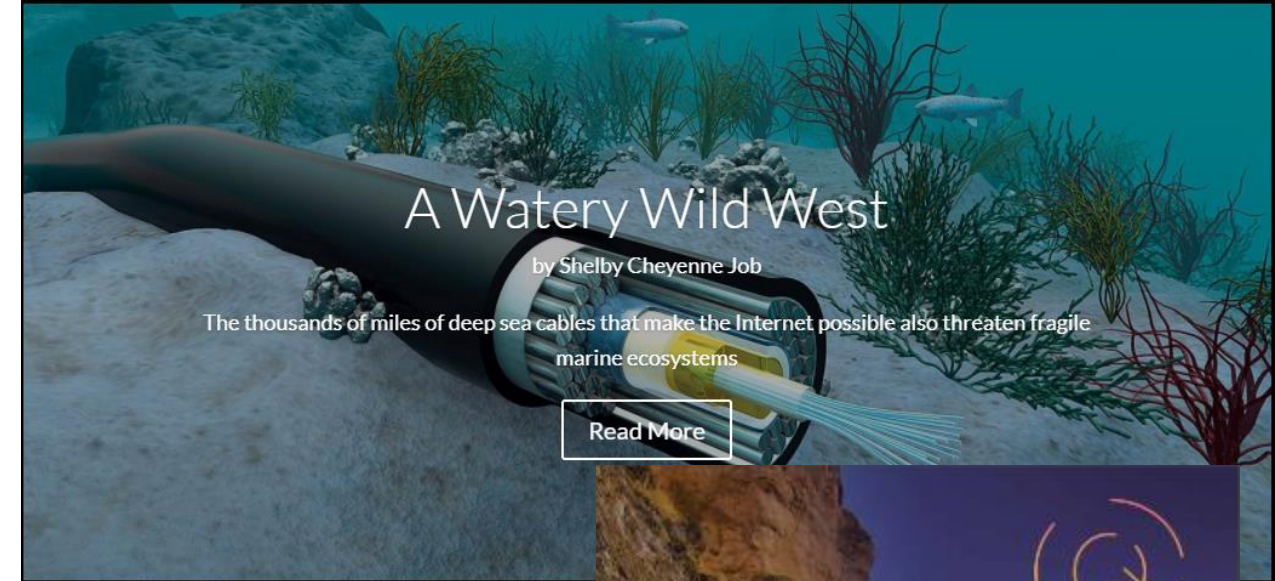
- Interdisciplinary seed grant program: 11 Grants, \$330,000
- Proposals submitted: \$69 million
- Funding received: \$13.5 million
 - ARPA-E: SMART Farm
 - DOE-BET: NextGeneration Feedstocks
 - Fresh Taste: Illinois Regenerative Agriculture Initiative
 - Gates Foundation: Sanitation Technology



Seed funding to 32 investigators across 20 academic units

Education

- Q Magazine: Turning data into narrative
 - Undergraduate Certificate in Environmental Writing (iSEE, SESE, English)
- Undergraduate Environmental Leadership Program:
 - Professional skills
 - Nexus between research, policy, advocacy, and government
 - Networking opportunities with leaders in the environmental field
 - Pilot workshops in Spring 2021



Certified Greener Campus Programs



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Awards and Recognitions

- Freezer Challenge – 3rd year in a row
- Recertified Bee Campus
- Recertified Tree Campus
- Sierra Club – Cool Schools recognition (2nd in Big Ten, 48 out of 312 nationally)
- Green Power Partnership



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Facilities & Services

Facilities & Services (F&S) provides all physical plant, operational, and essential services for sustaining an environment that fosters the research, teaching, and public engagement activities at Illinois.



Facilities & Services
UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

Inspiration • Innovation • Leadership • Perseverance • Agility

Zero Waste



← Pledge to
“Use the Bin”



- 29% diversion rate in FY20 (with COVID impacts)
- PPE recycling program
 - 35 buildings have mask collection points
- Indoor Bins
 - 35 buildings have the new bins
 - 10 more will be installed this winter
 - F&S loaned 14 bins to Housing
- Outdoor Bins
 - \$310,000 from Carbon Credit Sales Fund
 - Installation planned for spring 2021



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Transportation

- Bicycle Friendly University designation
 - Progressed from Bronze to Silver
 - Launched National Bike Registration Program
- Truck Pool renewed as Accredited Sustainable Fleet
- SmartWay Affiliate





ISG Sustainability

Environmental Advocacy Education

- Environmental Justice
- 5th and Hill

Sponsored Students for Environmental Concerns Divestment Teach-in

- Continuation of pushing for divesting from fossil fuels

Gaining Support for Micro-Reactor on Campus

- Researching feasibility

Next Semester Environmental Quad Day

- Zoom based - interactive

Better waste Management

- Covid-19 increased use of plastics
- Working on recycling resolution and working with F&S

Kingfisher Merchandise that is sustainable

- Creating second hand of print press for most sustainable route of clothing

President, VP and Committee members met with F&S to explode faucet pressures for water preservation

- Research being done

Now working with wildlife society to author resolution about bird strimpe windows on campus

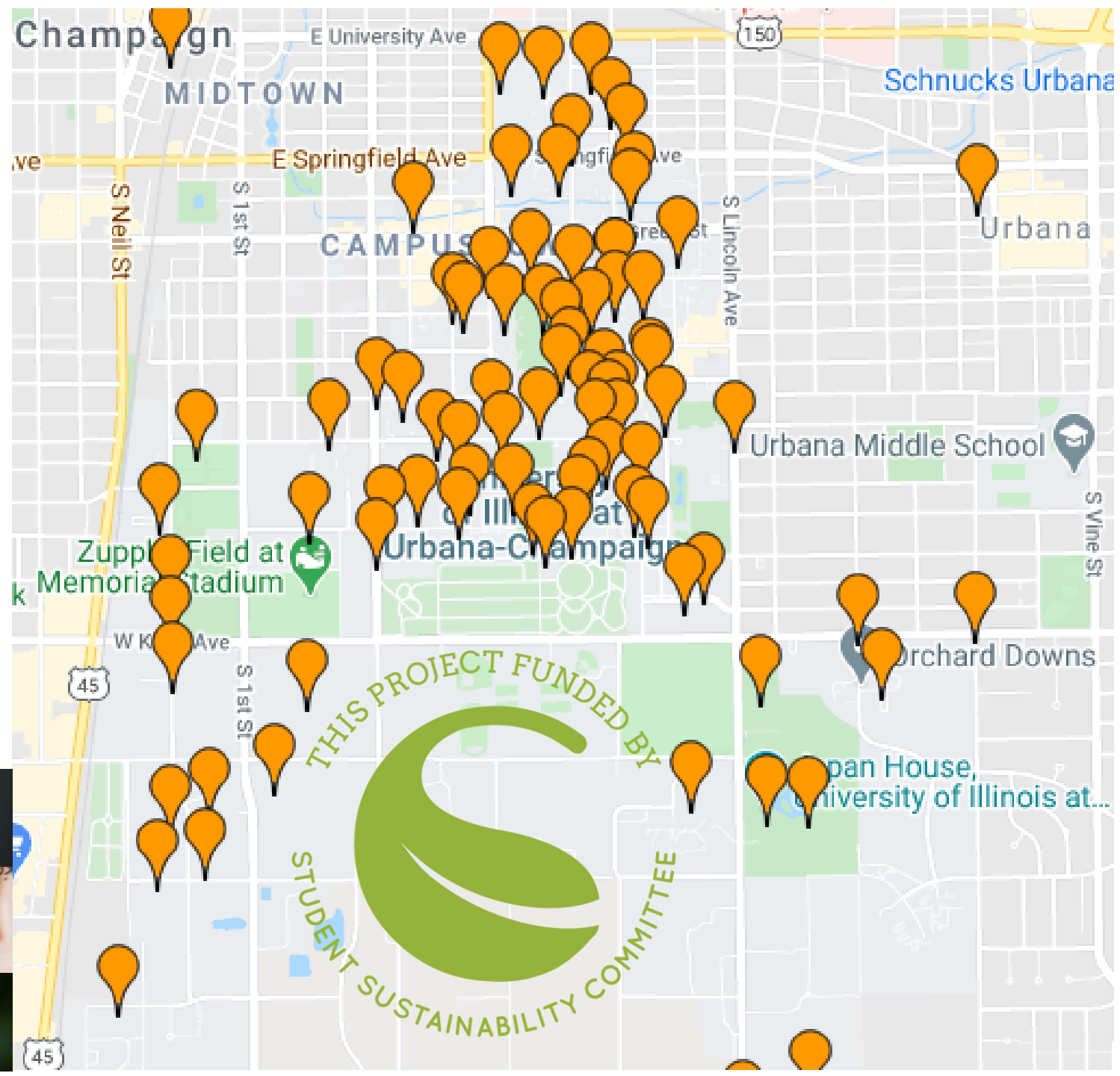
STUDENT SUSTAINABILITY COMMITTEE



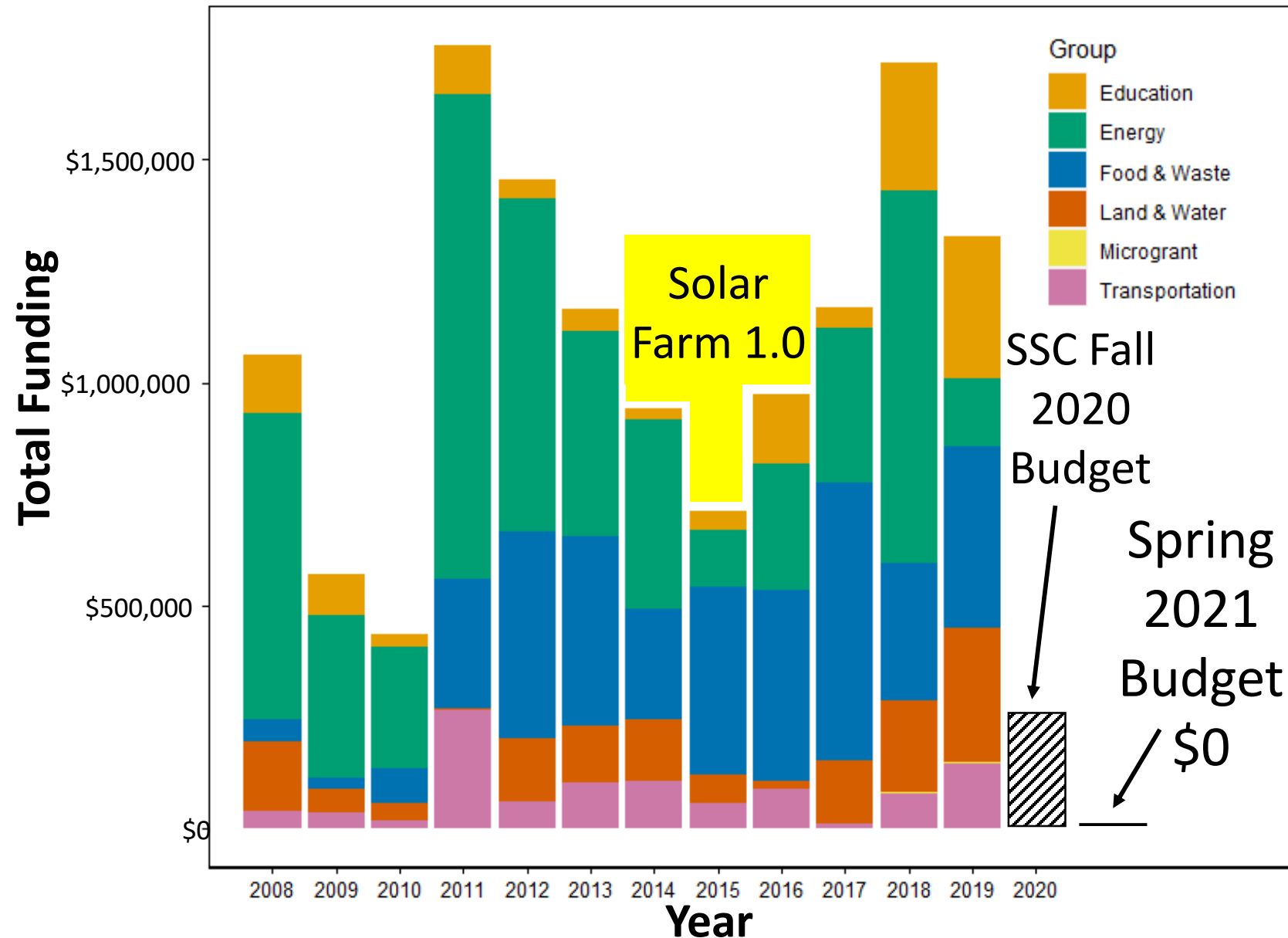


STUDENT SUSTAINABILITY COMMITTEE

Funding 297 Projects
with \$14.5 Million
For Campus Sustainability
Since 2008



We've made a big impact so far



In 2020 we've:

- Created an Environmental Justice working group to promote diversity
- Made student-led applications more accessible
- Increased our reach to important campus organizations like cultural houses and OIR

We've received over \$1.3 million in funding requests for the Fall semester alone

SSC is one of the only reliable funding sources for:

- Large collaborative student projects like Illini Solar Car and Solar Decathlon
- Sustainable transportation infrastructure like bike paths
- Sustainable landscaping to manage storm water and beautify our campus
- Agricultural practices to reduce our farms' carbon and water footprint
- Environmental justice programing and education



Student Sustainability Leadership Council



Action Items

- Sustainability Training
- Divestment Support Letter
- iCAP 2020 Implementation

Sustainability Training

- Create a culture of sustainability by increasing understanding of actions to improve sustainability of campus
- Training Resource on System Ethics website
- 978 people have watched the [video](#)
- 116 people have taken survey
 - 54% students, 38% staff, 7% faculty
 - 65% think the training should be required
 - 94% support to upgrade the training course



Divestment/Sustainable Investing

Fully divest from fossil fuel companies by FY25

Commit to a Sustainable Investing Policy by FY24

- \$160M invested in BlackRoc “new environmentally and socially focused strategy” in 2020
- iCAP 2020 recommends a letter from Chancellor Jones supporting divestment to
 - President Killeen
 - Board of Trustees
 - UIF CEO/President
 - UIF Board



iCAP 2020 Implementation

- Increasing Use of Renewable Energy
- Resilient Landscape
- Space Utilization
- Energy Conservation
- Green Procurement
- Local Foods
- Sustainable Agriculture

2020

“Our hope is that this spirit of environmental stewardship permeates campus on administrative and individual scales...I am confident that all of us at the university will join together with the shared commitment it will take to make the ambitious goals of this plan a real and sustainable future here at Illinois.”

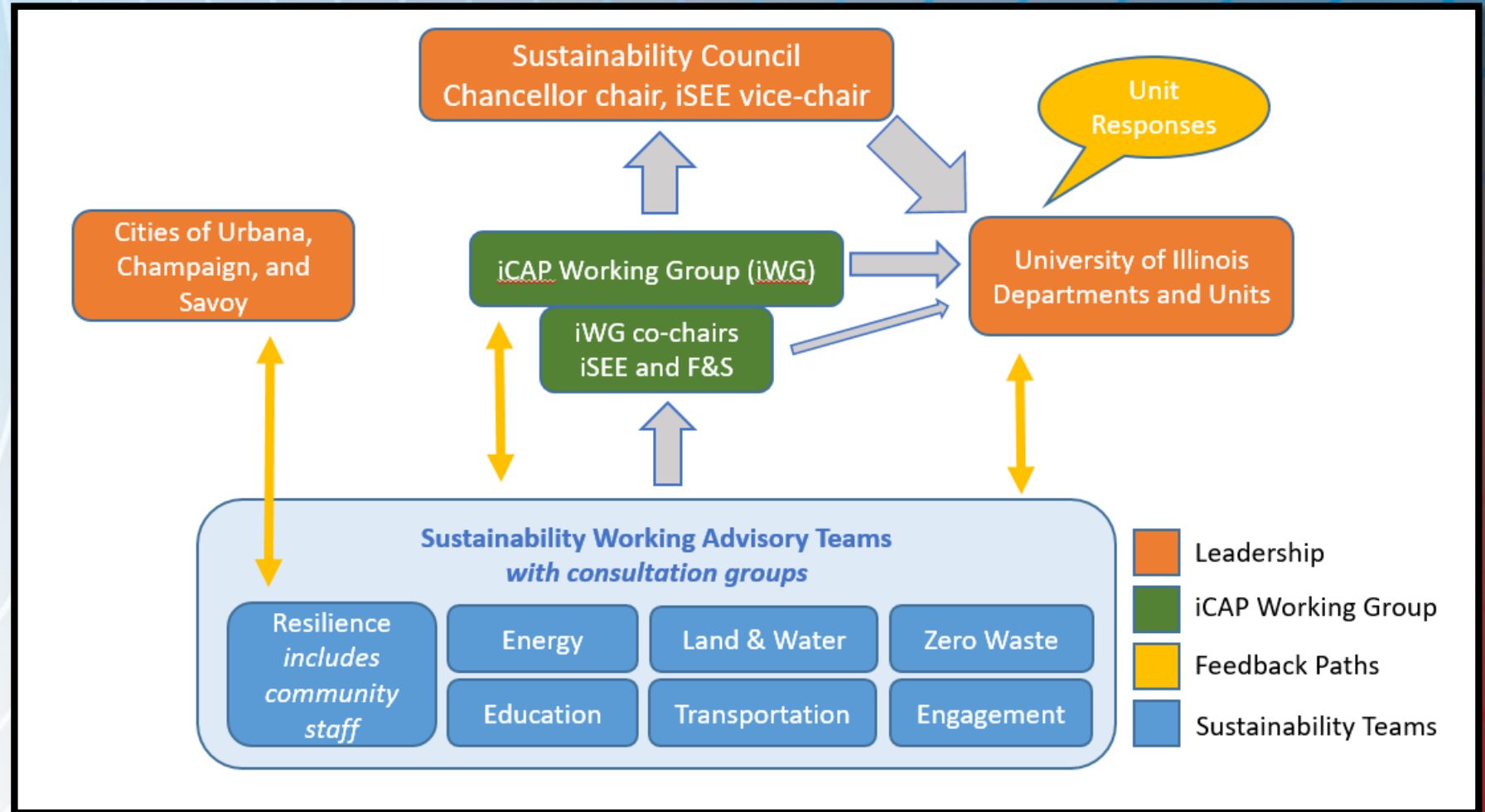
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Robert J. Jones
Chancellor, University of Illinois Urbana-Champaign

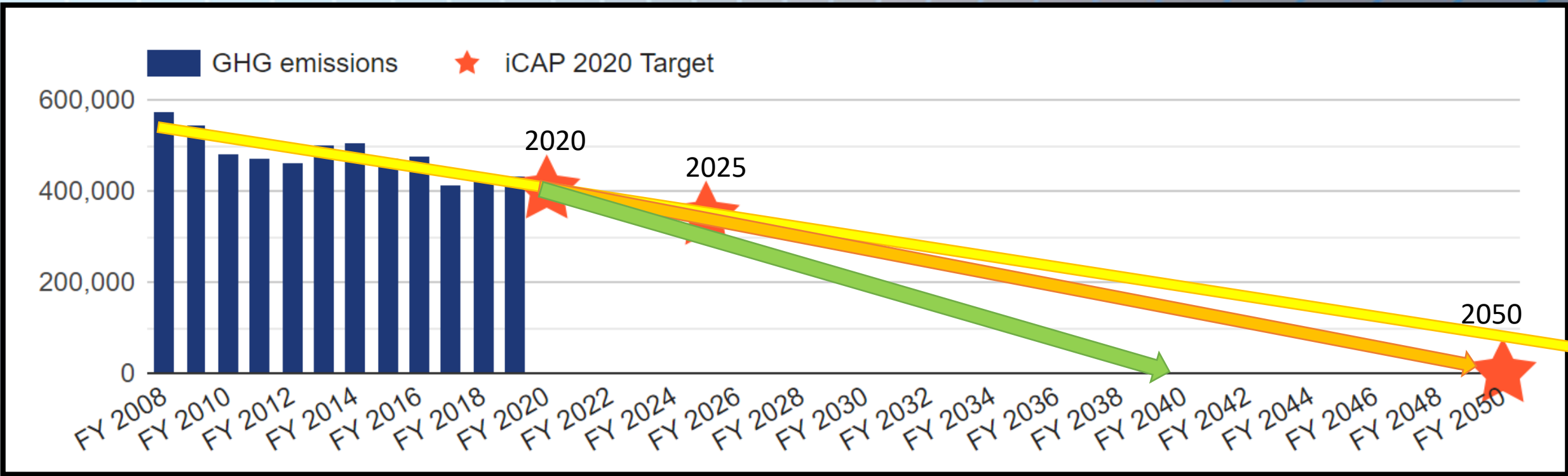


New Procedures – iCAP Process

- iSEE and F&S as co-chairs of iCAP Working Group
- Council subcommittee task force
- New section: The Role and Responsibility of Campus Units for Campus Sustainability



Total Campus Greenhouse Gas Emissions



Clean Energy Successes

Illinois Geothermal Coalition



Low-Temperature Geothermal Research and Applications

IWRC ILLINOIS WATER
RESOURCES CENTER



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ISEE

Illinois Geothermal Coalition



Biomass Boiler



Wind Agreement
(25,000 MWh/yr)



Solar Farm 1.0 (5 MW → 7,000 MWh/yr)



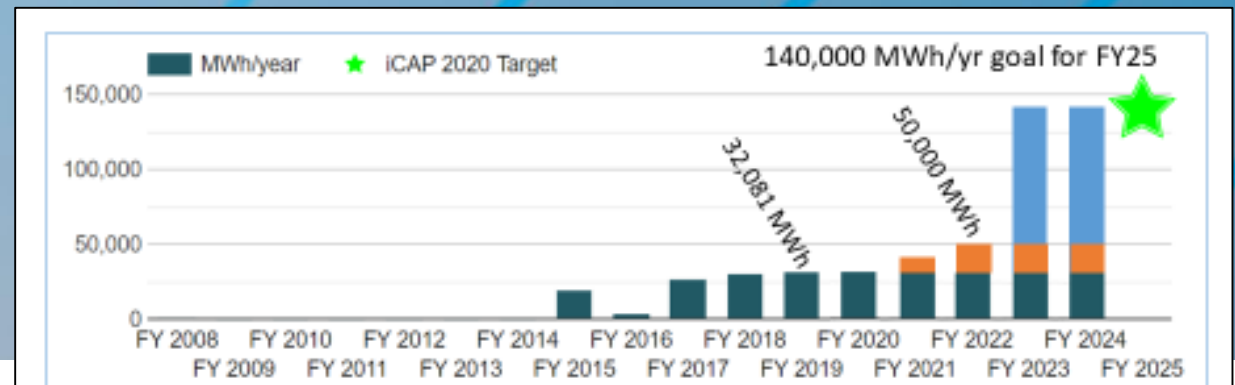
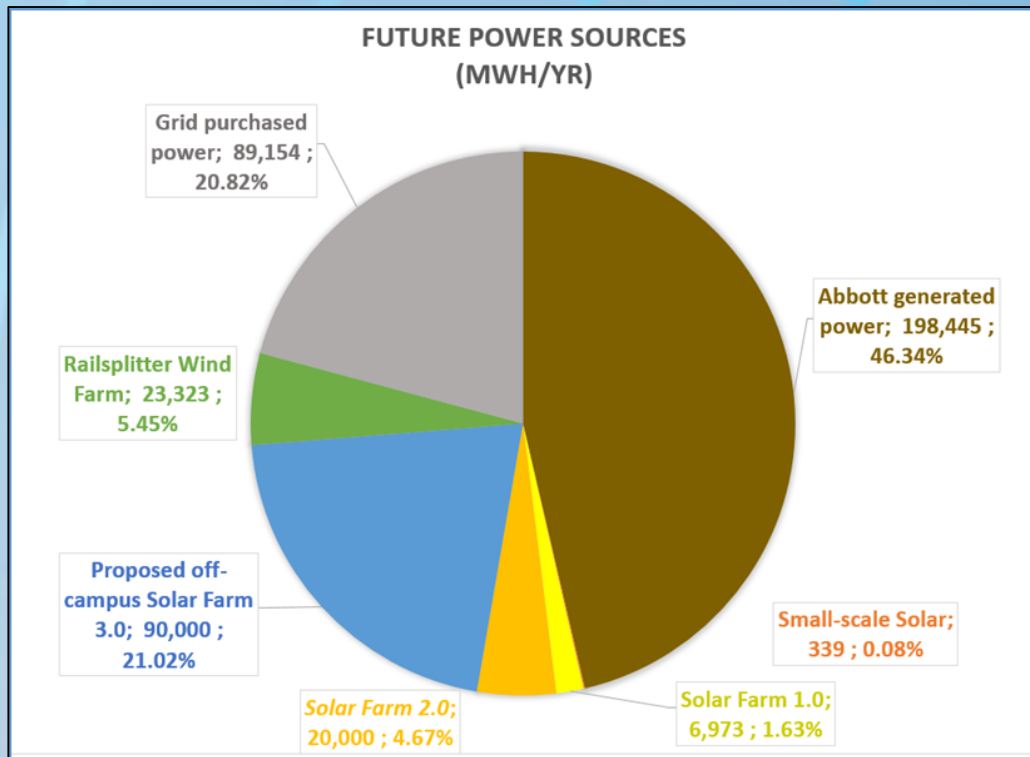
Solar Farm 2.0 (12 MW → 20,000 MWh/yr)

obtain
140,000
megawatt hours/year
from clean energy by FY25

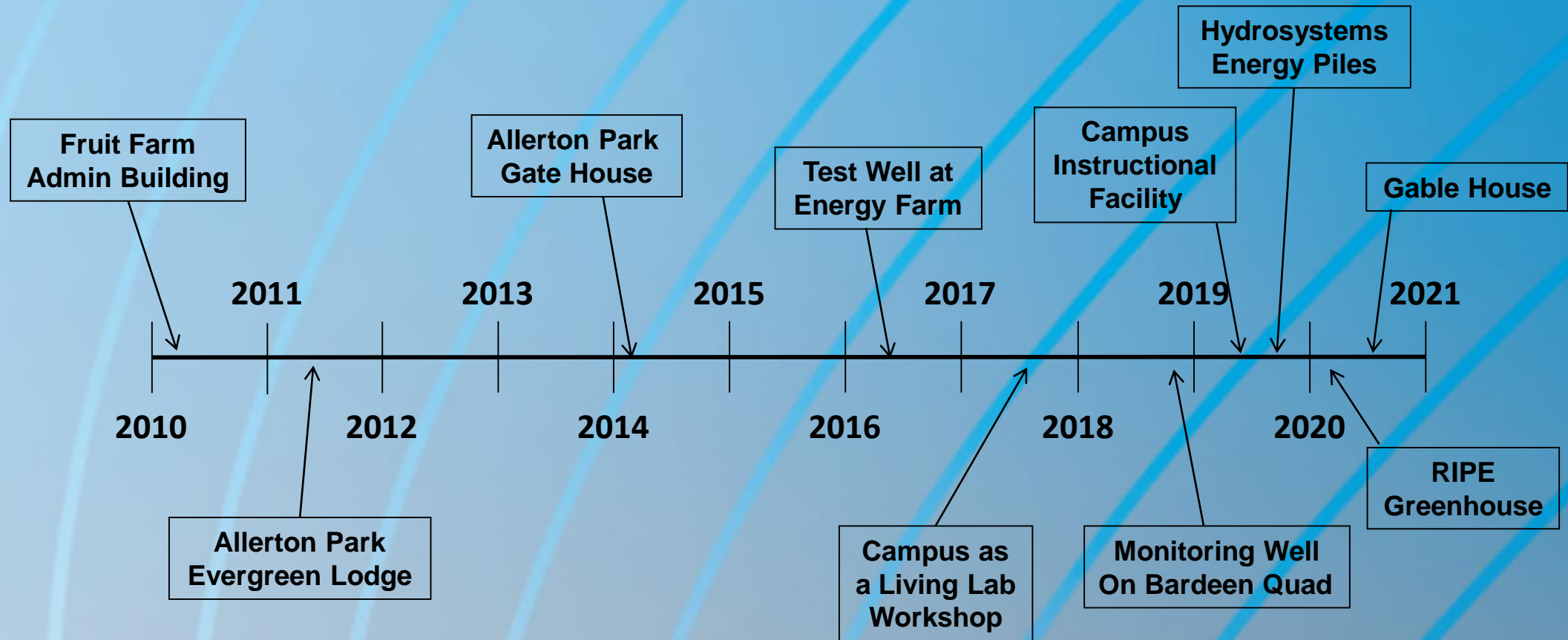


Solar Farm 3 Update

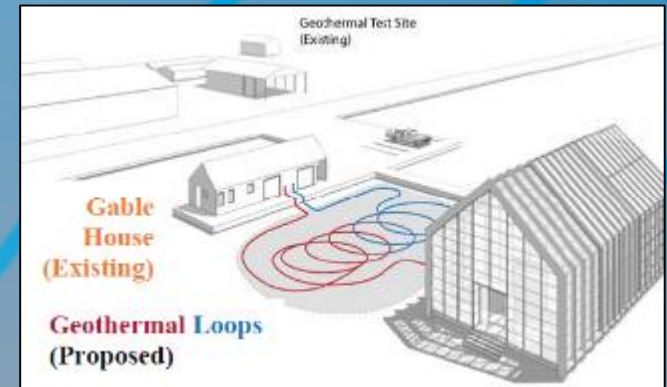
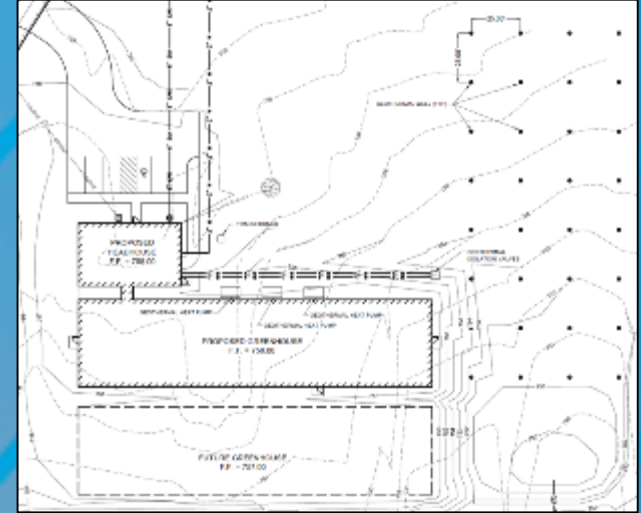
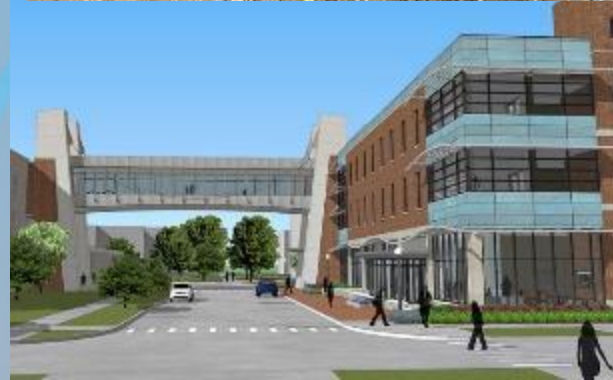
- Approved to move forward with the RFP.
- Developing the specific scope of RFP now.
- Off-campus virtual power purchase agreement for 90,000 MWh/year
- Derivatives-use policy can be legally changed
- Total costs estimated to increase by ~\$1.5M for a 7-12 year VPPA
- 67,043 tons/yr reduction in carbon footprint



Geothermal Timeline



Geothermal Projects



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ACTION
PLAN



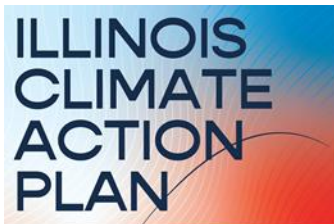
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Geothermal System Life Cycle Cost Analysis for the U of IL President's House

- The University has been investigating a renewal of the HVAC systems for the property leading to a study of life-cycle cost for several of the potential scenarios.
- Five alternatives included two geothermal systems were considered, along with a code minimum baseline system scenario, a UIUC standard high efficiency option, and a modification to one geothermal system to include supplemental heat rejection and addition
- 25 years LCC study that a hybrid ground-source heat pump option has the lowest life cycle cost with a saving of 6% comparing to baseline followed by individual heat-pumps option at 4% saving



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Resilient Landscape Strategy

Key Recommendations

1. Develop a Landscape Master Plan
2. Establish a Landscapes Department in F&S
3. Achieve exemplary rainwater management
4. Revise staffing and training at F&S Grounds
5. Allocate \$1M/year to Landscape Improvements
6. Create a Rainwater Utility Fee in UES Enterprise

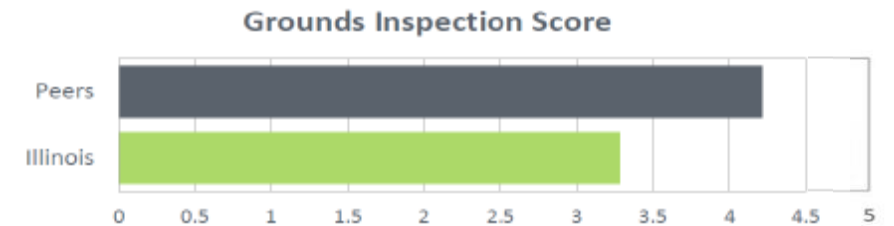
RESILIENT LANDSCAPE STRATEGY

NOVEMBER 1, 2019

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Grounds Inspection Scores

Before: 3.3 vs. 4.2



After: 4.8 vs. 4.3



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ACTION
PLAN



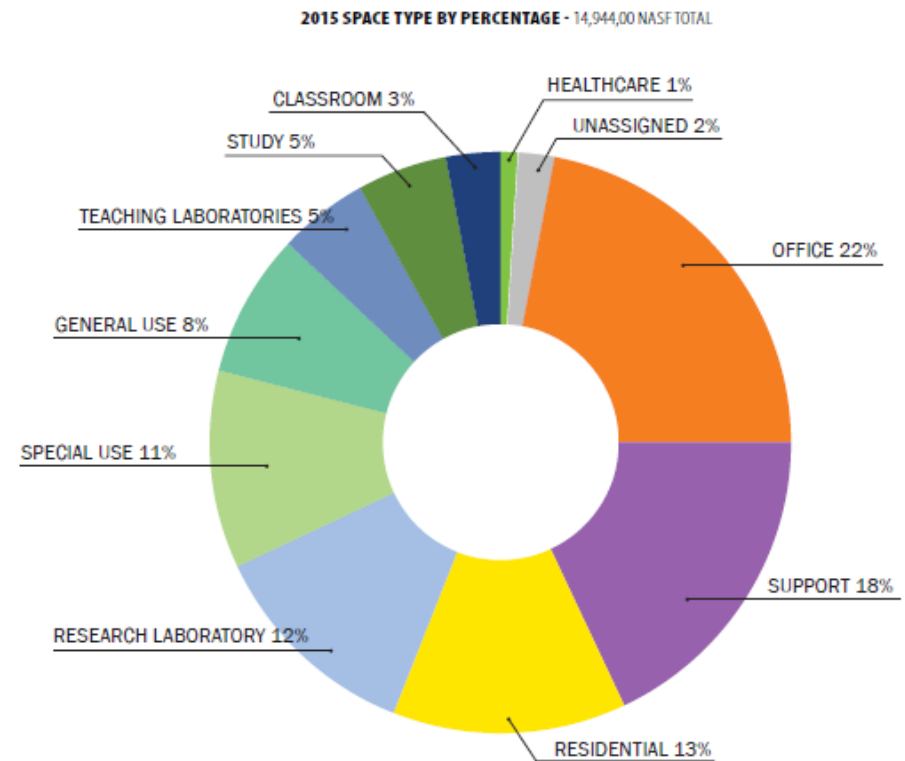
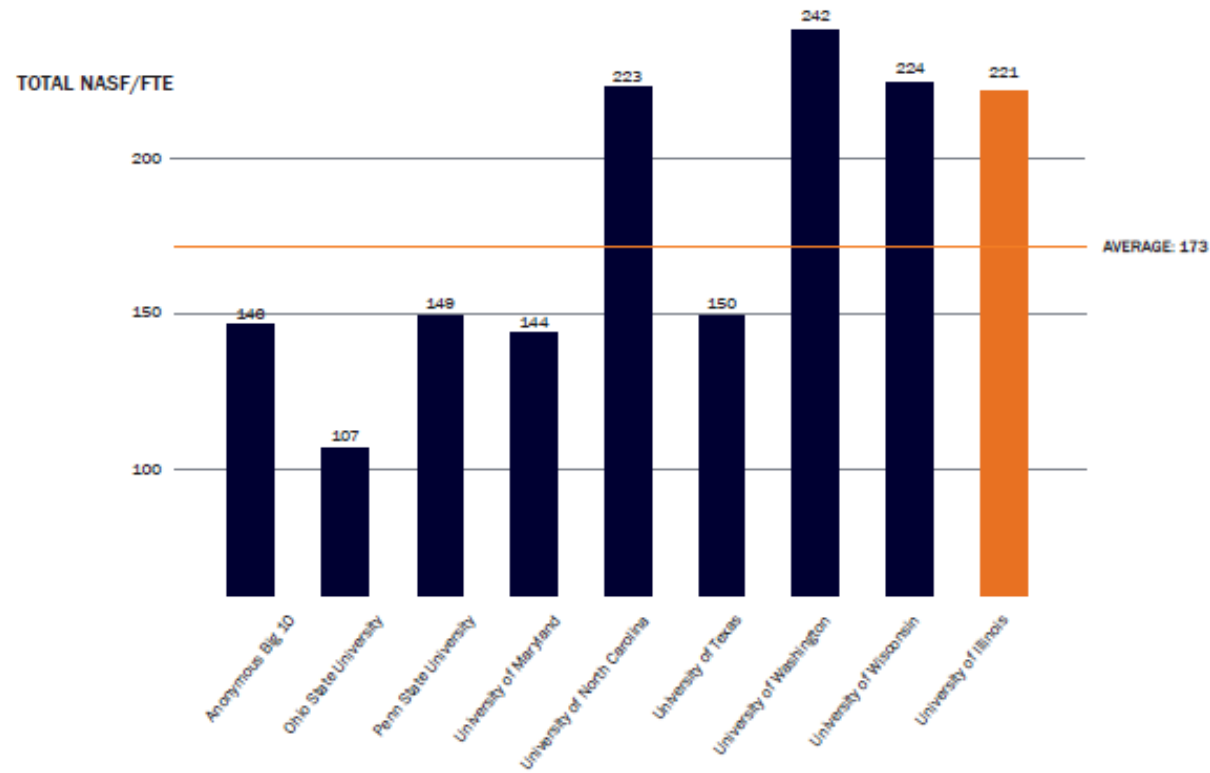
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Improve Space Utilization

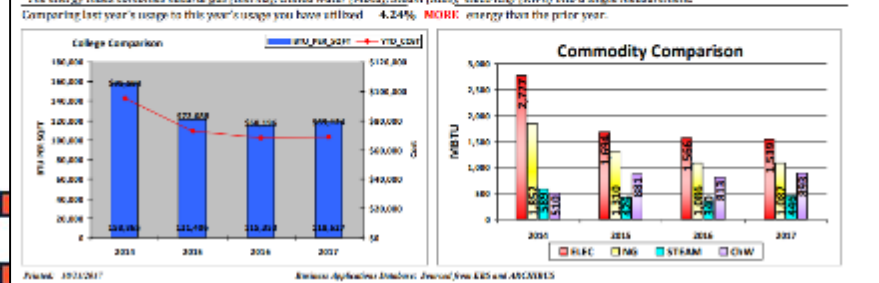
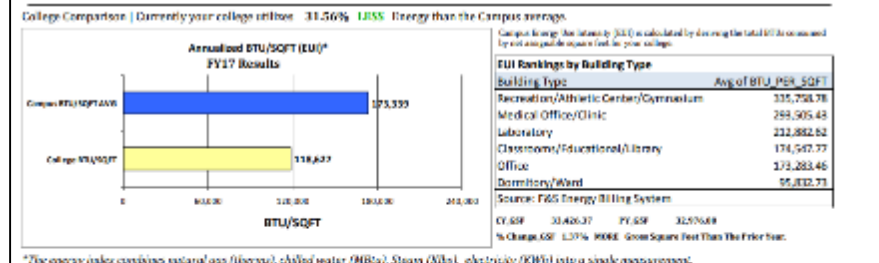
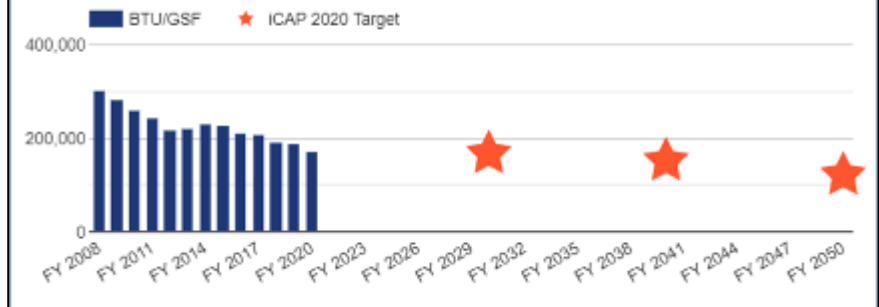
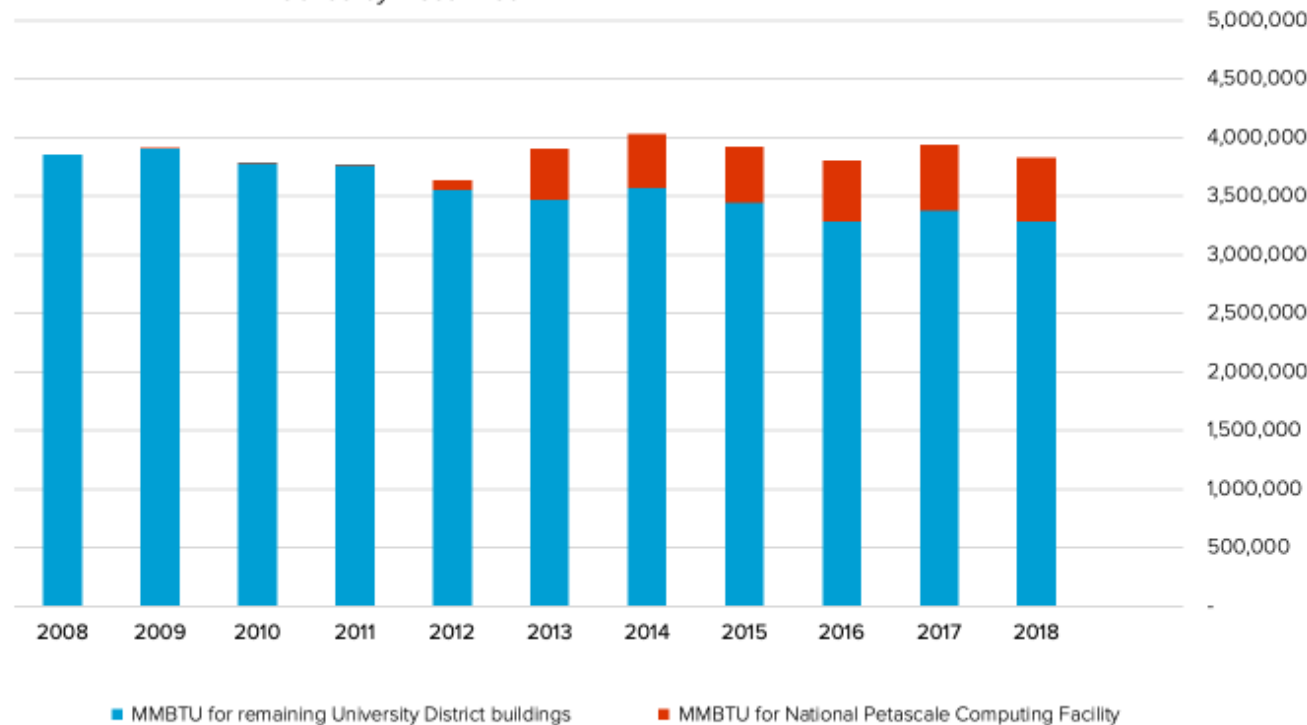
Improve efficiency of space use by minimizing the square footage per person and updating the Space Policy in the Campus Administrative Manual (CAM) by FY23.



Reduce College Energy Use

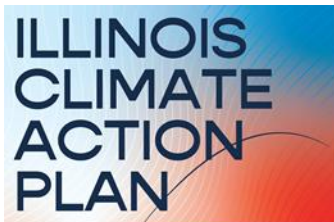
Reduce the total annual energy consumption of each college-level unit by at least 20% from an FY15 baseline by FY35.

Total Energy Consumption for University-owned Buildings in the University District (MMBTU)
Tracked by Fiscal Year



Sustainable Procurement

Create sustainable procurement guidelines and increase compliance to 100% of business managers through training and outreach by FY24.



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Use Local Food

Increase the use of local food to 35% by FY30

Dining Halls

- 25% local food in FY20

Sustainable Student Farm

- Awesome!

Sustainable Agricultural Food System

- Provided 25% of pizza sauce



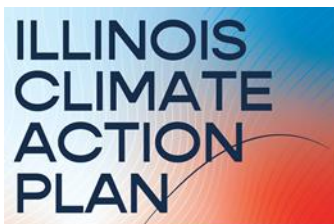
Sustainable Agriculture

Use cover crops in at least 20% of South Farms acreage by FY24

Cover Crops Equipment Needed



Illinois Regenerative Agriculture Initiative



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Sustainable Agriculture

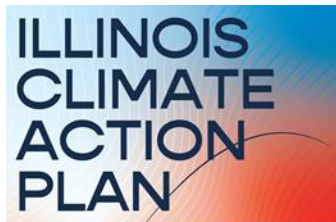
Monitor soil health by collecting soil analyses for all South Farms land parcels by FY24.

Monitoring Stations

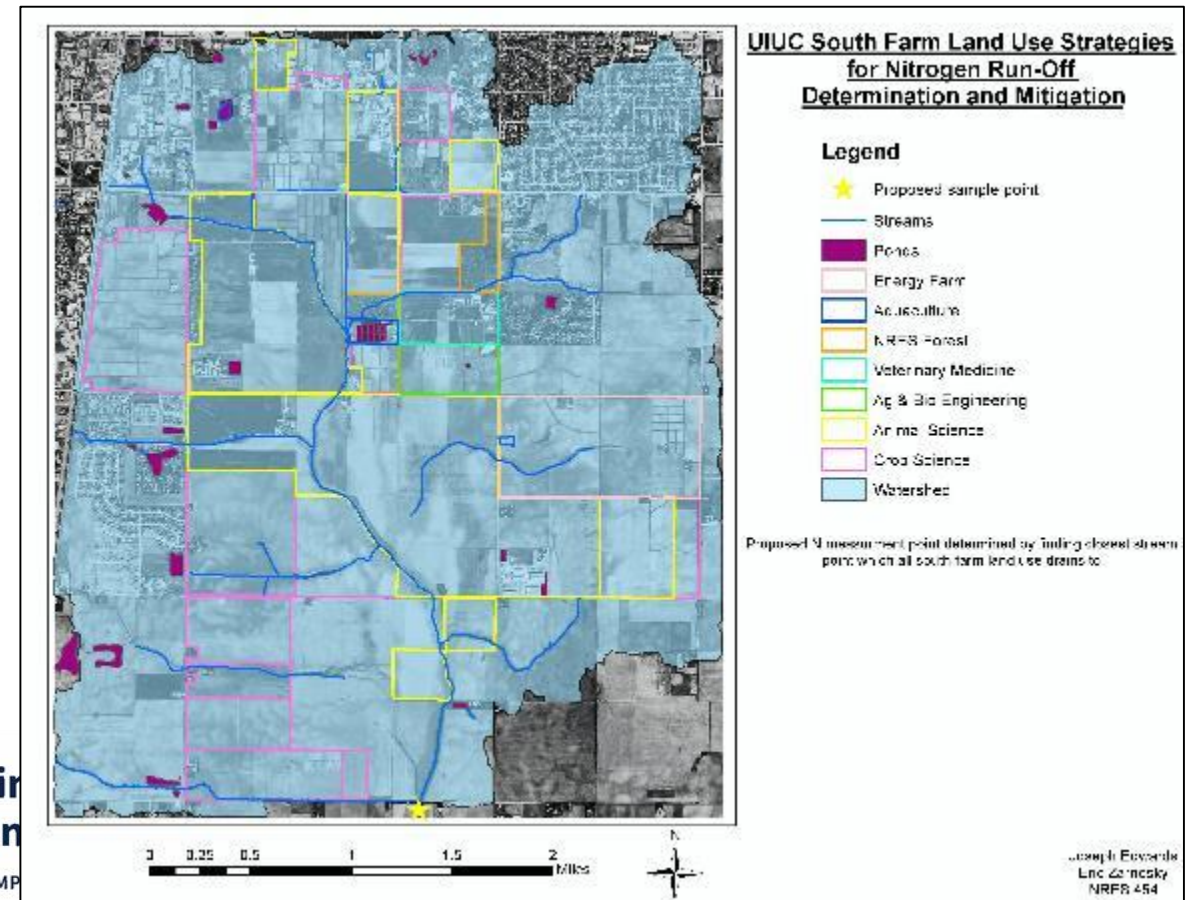
- SSC funded \$103,228
- Two nitrate monitoring stations

SWATeam recommendation

- Collect existing data centrally
- CEE has developed a natural-resources data-management system



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Other iCAP Objectives



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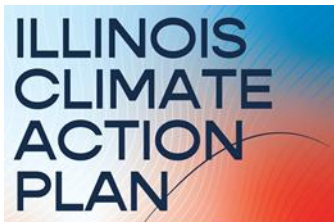
Imminent Objectives

- Comprehensive Energy Planning Document (F&S)
- Commuter Program (Parking w/F&S)
- Increase pollinator friendly areas (F&S)
- Zero Waste Messaging Campaign (F&S)
- Clean Thermal Energy (F&S)
- EV Task Force (Parking)
- Double green infrastructure installations (F&S)
- Plan for Organic Waste (F&S)



Further Out

- Graduate Certificate in Sustainability (iSEE)
- Green Sports Alliance (DIA)
- Local Sustainability Issues (iSEE)
- Become STARS Platinum (iSEE)
- Environmental Justice Plan (iSEE)
- Broaden Sustainability Education (iSEE)
- Sustainability at Career Fairs (Career Center w/iSEE)
- Sustainable Events Program (Illini Union)
- Support Youth Sustainability (Extension)



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Thank you

