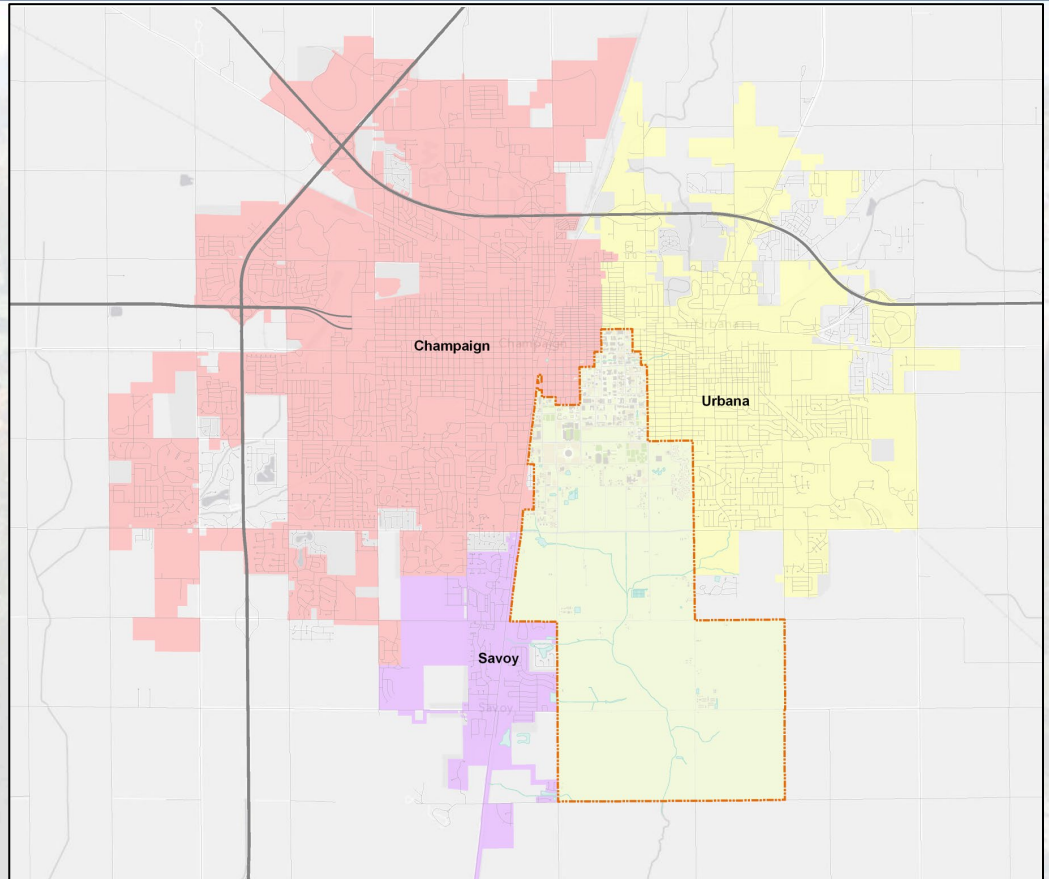
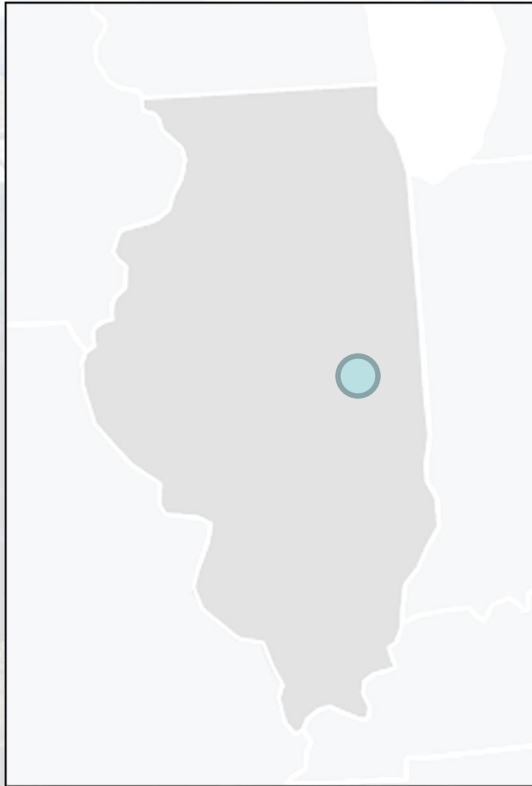


UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Renewable Energy



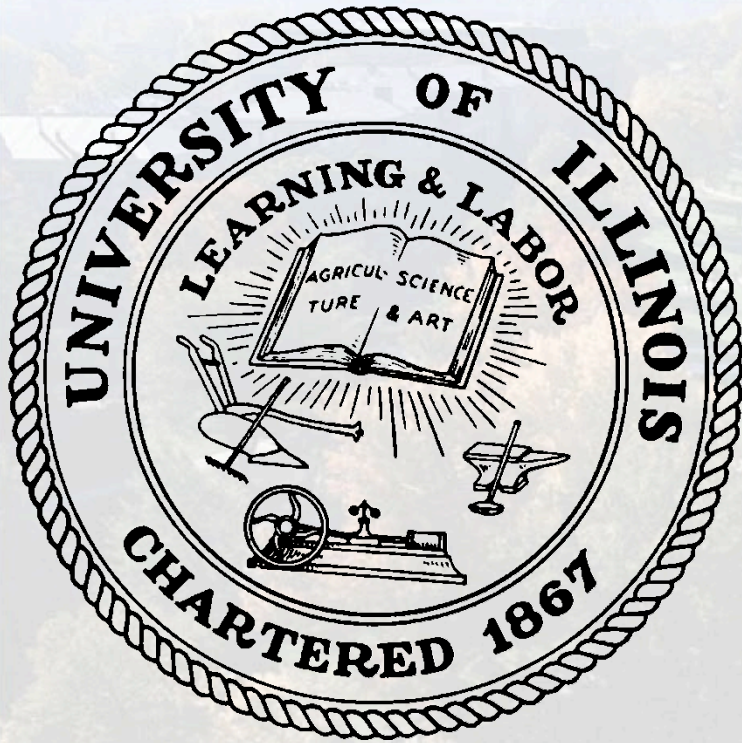
University of Illinois



UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

illinois.edu

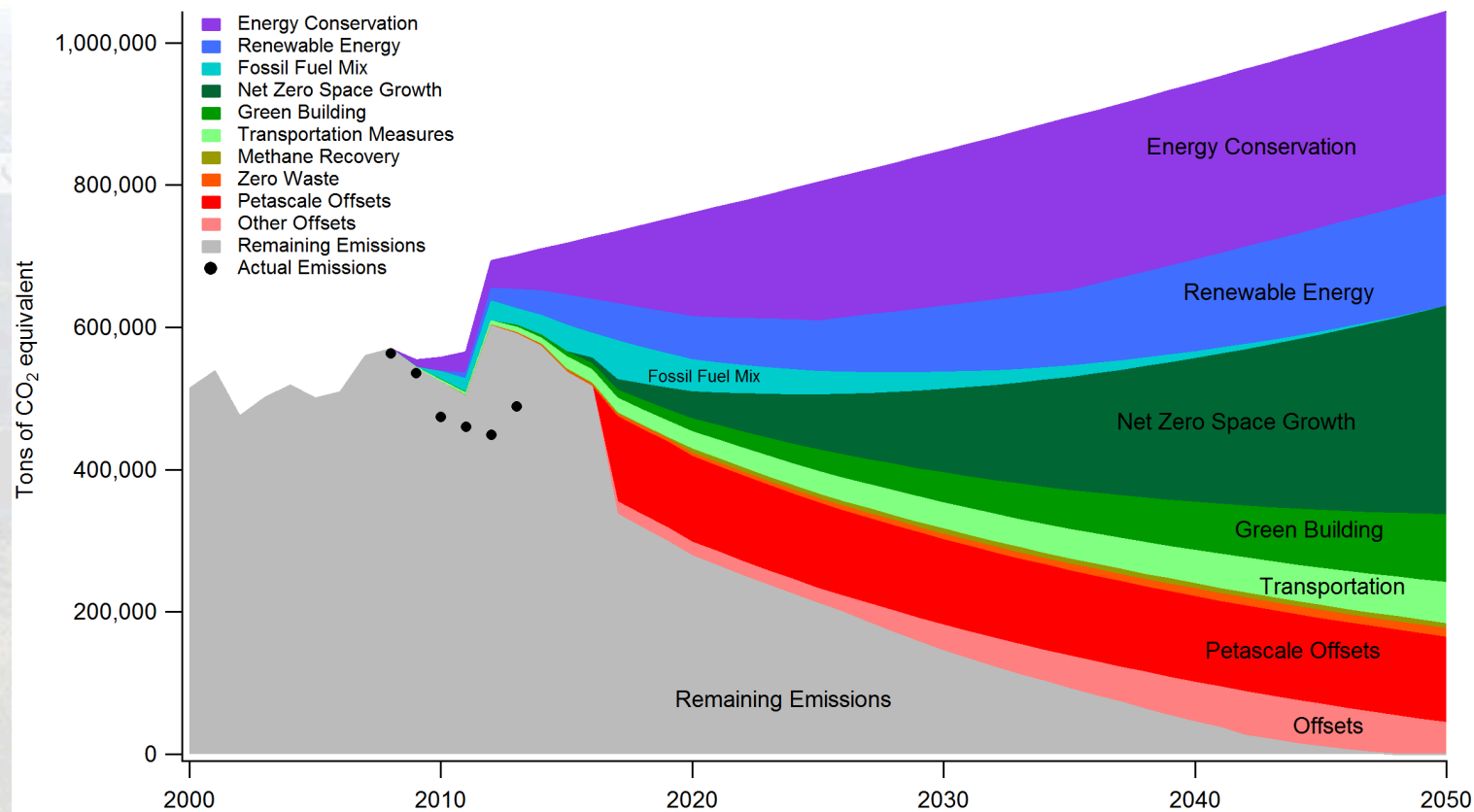
U of I Commitments



UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

illinois.edu

iCAP: A Climate Action Plan



UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

illinois.edu

U of I Renewable Energy

- Wind
- Solar photovoltaics
- Solar thermal
- Geothermal
- Biomass
- Renewable Energy Certificates



UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

illinois.edu

Renewables at U of I

- Various small scale installations of solar photovoltaics
- Solar thermal on campus recreation building for heating pool water
- Geothermal at Allerton Park
- Renewable Energy Certificates purchased



Wind Turbines



UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

illinois.edu

Project History

- 2003 – 2005: idea stage
- 2005 – 2007: feasibility stage
- 2007 – 2008: first attempt
 - project stopped by Chancellor
- 2008 – 2010: project on hold
- 2010 – 2011: second attempt
 - project stopped by Board of Trustees

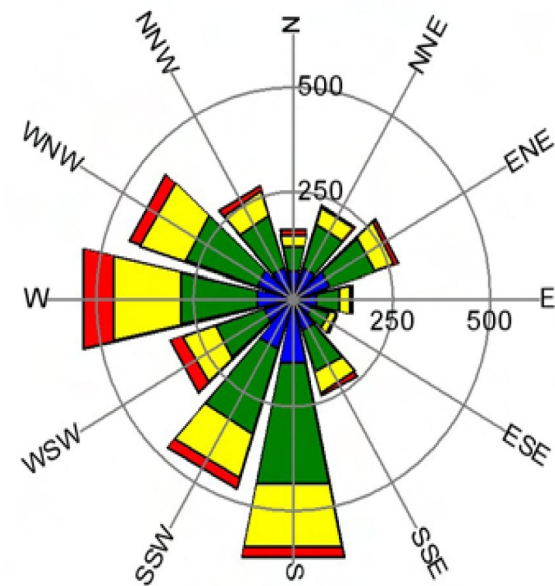
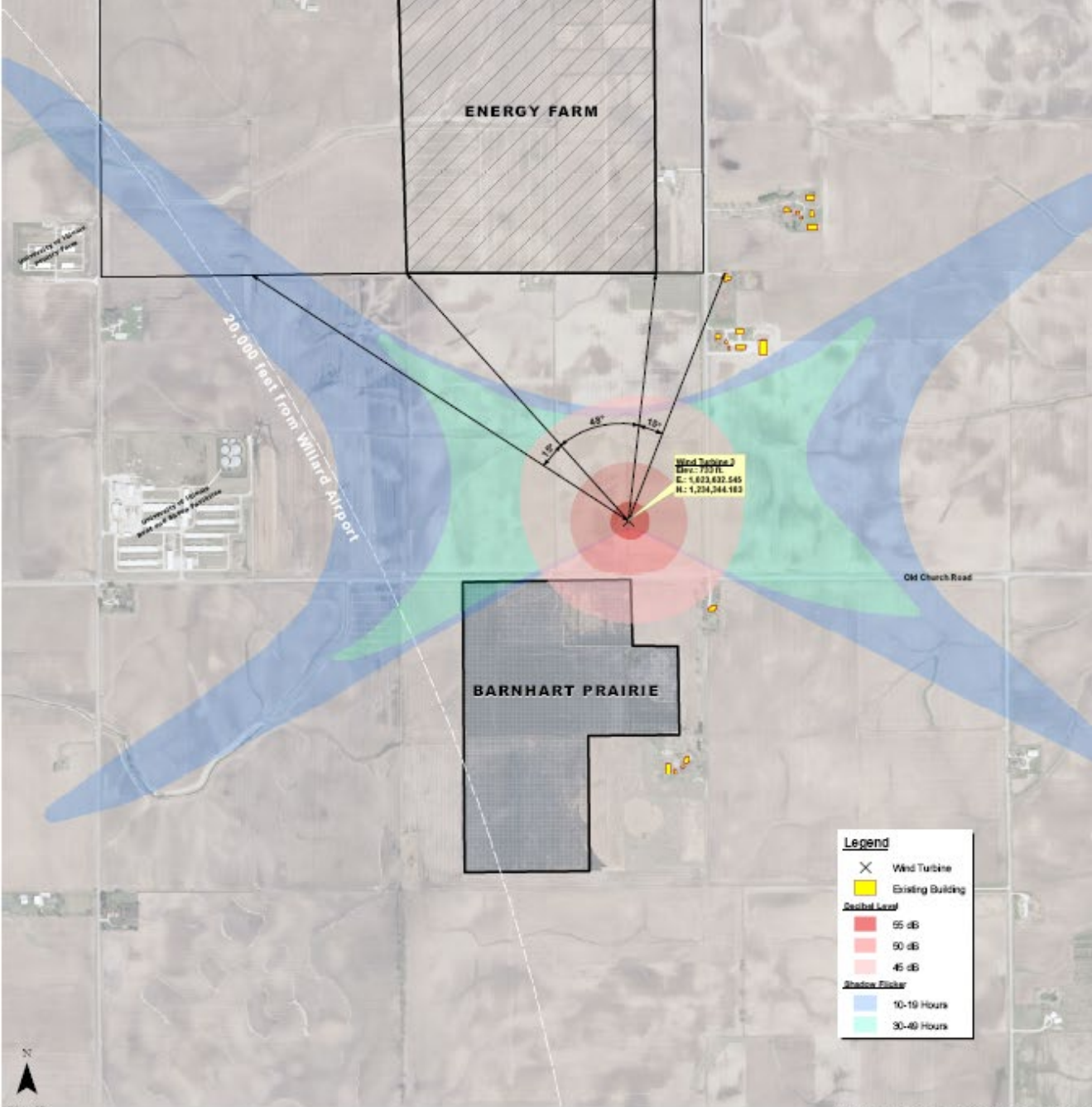


Navigant Consulting, Inc.



- Present/planned uses
- Proximity to residential areas
- Access to the electrical underground distribution system
- Elevation
- Proximity to airport runways





Legend



Wind Turbine



Existing Building

Decibel Level



55 dB



50 dB



45 dB

Shadow Flicker



10-19 Hours



30-49 Hours

PROPOSED ORIGINAL LOCATION
FOR WIND TURBINE 3
Wind Turbine Project
University of Illinois, Urbana-Champaign Campus

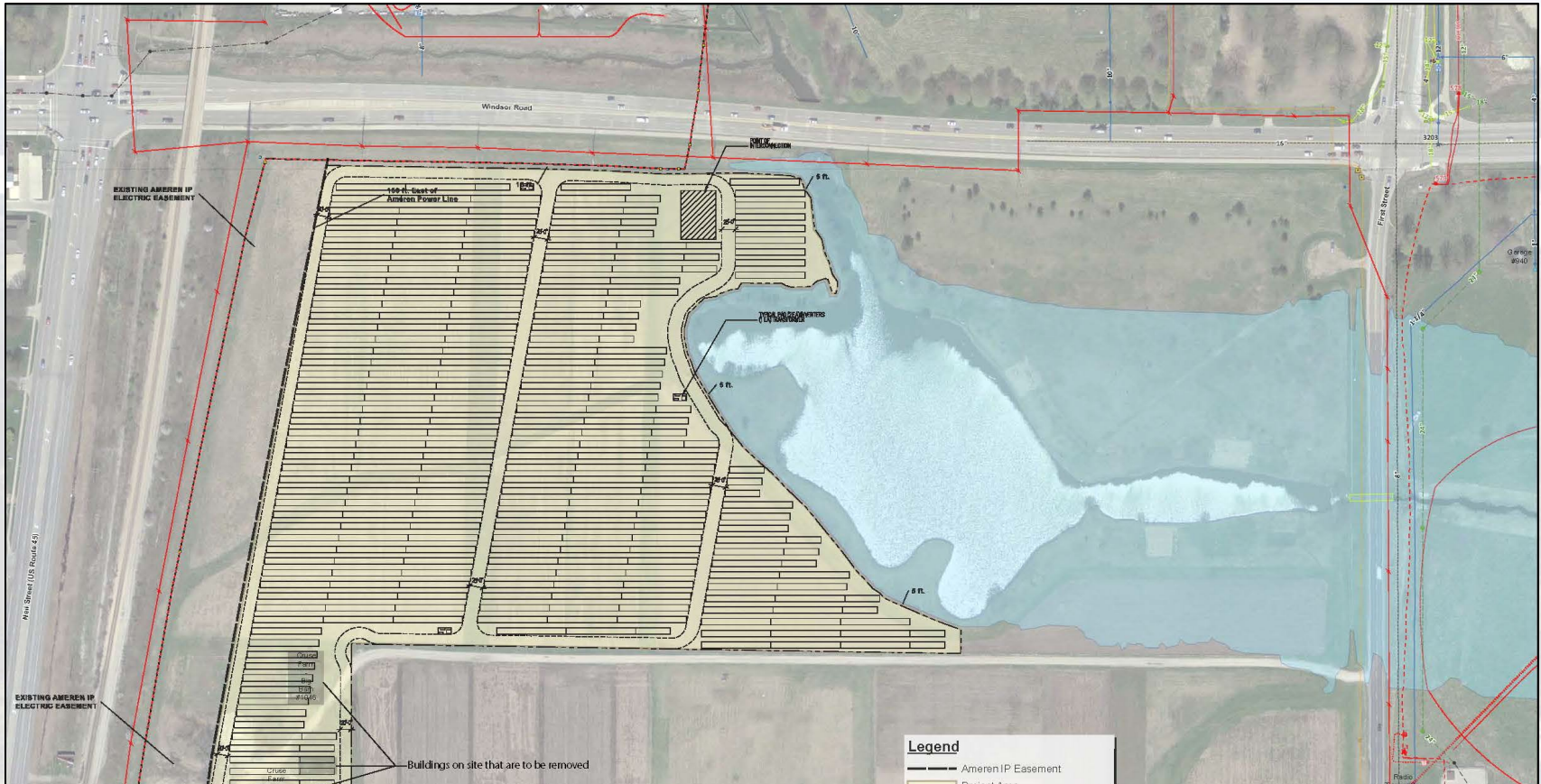
Wind Turbine

\$5.2 M Budget

Illinois Clean Energy Community Foundation	\$2M
Utilities & Energy Services	\$1M
Student Cleaner Energy Fee	\$640K
Office of the Chancellor	\$500K
Office of the President	\$640K
Shortfall	(\$420K)



Solar Farm



Solar Farm

\$5.3 M Budget

Utilities & Energy Services

\$4.25M

Student Cleaner Energy Fee

\$1.05K

The total cost is actually projected to be over \$15M, but there will be a reduction in the cost of electricity purchased from conventional sources.



UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

illinois.edu

Solar Farm vs. Wind Turbine

- **\$5.3 Million, subsidy**
 - **5.88 MWp**
 - **2.1% Electricity for Campus**
 - **Power Purchase Agreement**
 - **Option to Purchase**
- **\$5.2 Million, installation**
 - **1.65 MWp**
 - **0.8% Electricity for Campus**
 - **Design / Build**



Solar Photovoltaics (PVs)



- 2006 Business Instructional Facility
- 2014 Electrical and Computer Engineering Building
- Ground Mounted PVs at Building Research Council, & Solar Farm
- Future buildings/retrofits



Renewable Energy Certificates

- 20,000 MWh in FY15
- MISO Wind RECs
- 5.28% of projected electricity demand
- \$1.25 / MWh
- \$27,000 in FY15



Next Steps

- Review the Renewable Energy Goals
- Update the Climate Action Plan - FY15
- Complete the Utilities Master Plan

Conserve! Conserve! Conserve!



Questions

Facilities & Services

Morgan Johnston

Associate Director of Sustainability, F&S
University of Illinois at Urbana-Champaign

Email: mbjohnst@illinois.edu

