



# Alliant Energy & UW-Madison Kegonsa Research Campus Solar & Agricultural Research Project

## Project Overview

**\*UW-Madison leases Alliant Energy 15 acres of the 280 acre Kegonsa Research Campus (remaining acres continue farming as before)**

**\*Alliant Energy builds, owns, operates, maintains 2.25 MW solar array; electricity goes into grid**

**\*UW-Madison advances institutional mission through applied research, education at the site**

**\*UW-Madison reinvests lease revenue in sustainability initiatives, retires Renewable Energy Credits (RECs) from project**

**\*UW-Madison and Alliant Energy both make progress towards clean energy goals while raising awareness about solar and agricultural research and opportunities to the greater public**

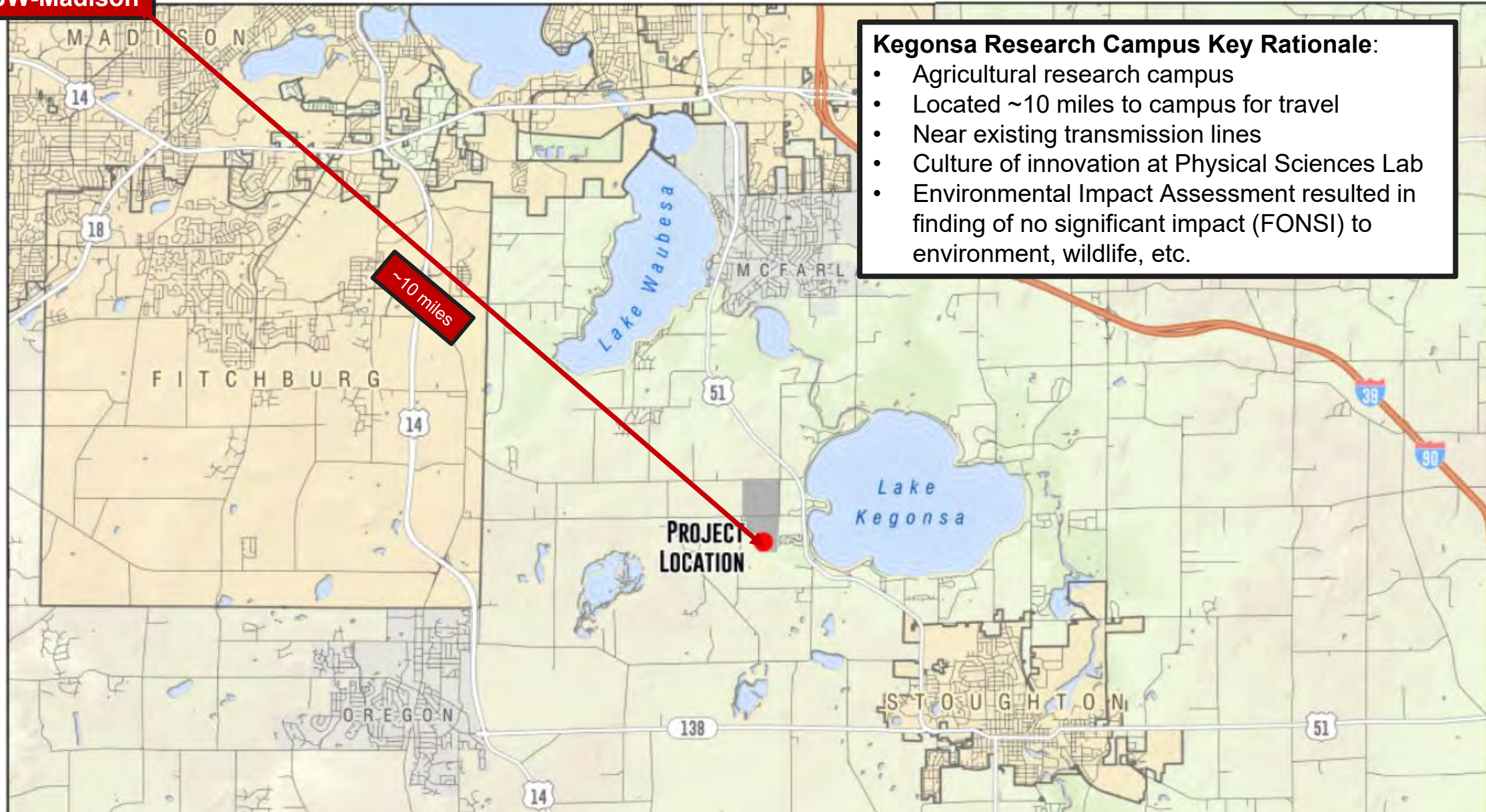
**For more information** Visit our project website:

<https://sustainability.wisc.edu/strategic-initiatives/renewable-energy/kegonsa-research-campus/>

# Regional Location Map



UW-Madison



## Kegonsa Research Campus Key Rationale:

- Agricultural research campus
- Located ~10 miles to campus for travel
- Near existing transmission lines
- Culture of innovation at Physical Sciences Lab
- Environmental Impact Assessment resulted in finding of no significant impact (FONSI) to environment, wildlife, etc.



# Aerial View – UW Kegonsa Research Campus



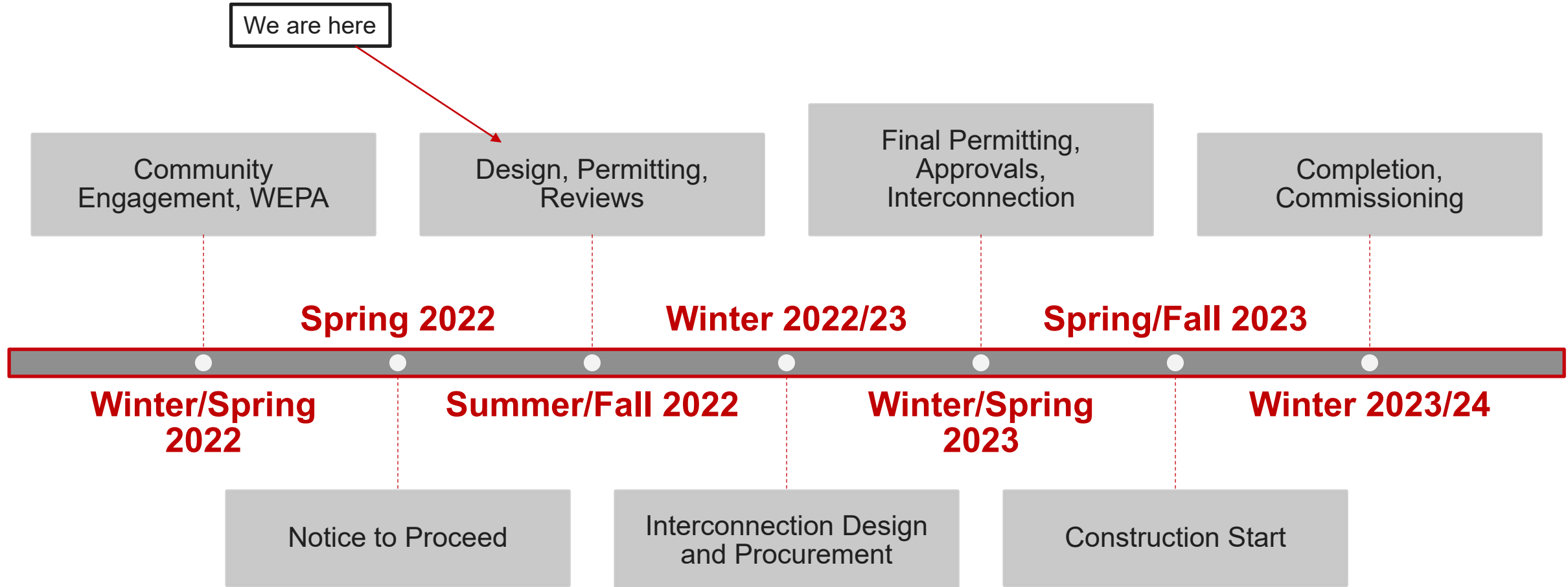
## Interior Parcel Location Key Value Points:

- Small, interior parcel (~15/280 acres) remaining area continues farming/recreation as before
- Small-scale solar array (2.25 MW) designed for consistency with local solar ordinance
- Interior location shields view from roads
- South-facing slope ideally suited for solar
- Site impacts to be studied by researchers

Source: Ayres Associates, Environmental Impact Assessment

# Project Timeline

(Schedule subject to change)



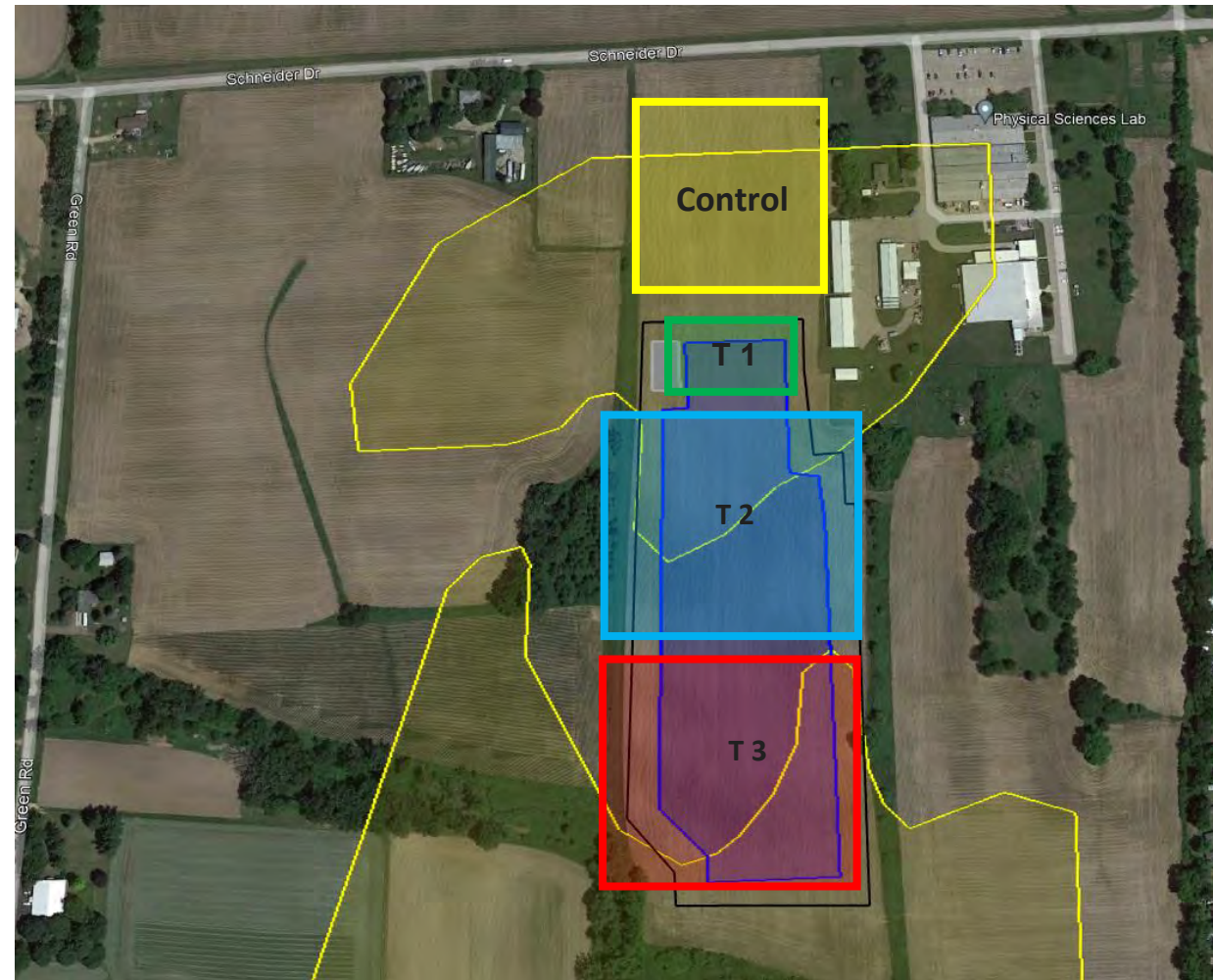


# Selected Examples of Proposed Research

## Experimental Design Concepts



- ✓ Greater understanding of community concerns about solar and agriculture
- ✓ Business models and innovation
- ✓ Soils
- ✓ Hydrology (runoff and groundwater, etc.)
- ✓ Temperature, humidity, wind speed
- ✓ Vegetation and ground cover options
- ✓ Trade-offs between energy production and plant production
- ✓ Pollinator interactions
- ✓ Use of small stock animals to manage vegetation growth





# Selected Examples of UW-Madison Research Labs



## Loheide Ecohydrology Group

Investigating the interactions between ecological and hydrological processes to make more sustainable connections between natural and built systems

- Numerical modeling
- Field methods
- Technology development
- Remote sensing

## GRATTON LAB

### LANDSCAPE ECOLOGY OF INSECTS

Claudio Gratton  
Department of Entomology  
University of Wisconsin - Madison

Conservation of beneficial insects in agricultural landscapes

Effects of management and restoration on pollinators and ecosystem services

Decision Support Tools

Grassland management

Citizen Science

## Ecometeorology Lab @ UW-Madison

Ankur Desai  
Professor of Atmospheric & Oceanic Sciences

Interests:

- Role of vegetation in climate and weather systems
- Improving models and forecasts of carbon and water cycling in ecosystems and atmosphere
- Observing land-atmosphere fluxes of heat, momentum, water, carbon dioxide, methane particularly with eddy covariance flux towers ---->

Central Sands, WI irrigated potato evapotranspiration study

## Kucharik Agroecology Lab @ UW-Madison

Investigating agroecosystems and finding ways to enhance the resiliency of ecosystems – and the services they provide – to drivers of global change.

Identify and quantify bi-directional feedbacks between land management, climate, and ecosystems

Quantify the impacts of varied land management and a changing climate on the ecosystem services we derive from landscapes

Support policy decision-making to help protect soils, water, and the climate system

Chris Kucharik  
Prof. of Agronomy and Environmental Studies

Agronomic productivity

Crop development and photosynthesis

Water use and water quality

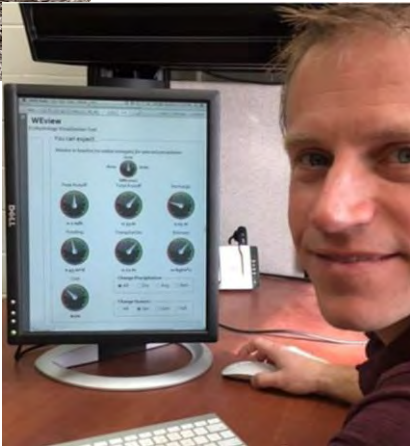
Weather variability and climate change impacts



# Goals: Inform, Engage, Inspire



Thank you!  
Please contact us  
for more  
information.





# Alliant Energy® Customer Hosted Renewables

How it works...

- Alliant Energy leases space (land or rooftop space) from a customer to place utility-owned solar or battery storage systems
- Customer receives a monthly lease payment and the ability to receive Renewable Energy Credits
- Systems sizes are a minimum capacity of 200kW and maximum of 2.25MW
- Alliant Energy will build, own, and maintain the facility
- Clean energy is delivered to Alliant Energy distribution system powering local homes and businesses



Example of a customer hosted installation





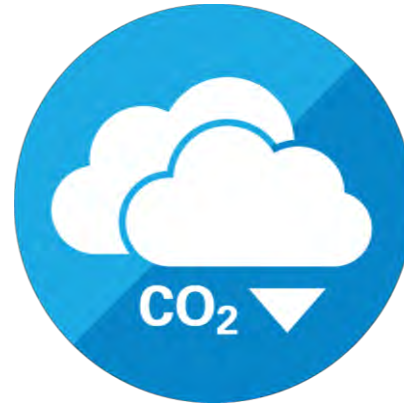


# Commitment to Sustainability

## Alliant Energy's sustainability goals



- Add nearly 1,100 MW of solar generation in Wisconsin by the end of 2023.
  - Enough energy to power more than 250,000 Wisconsin homes.



- Reduce carbon dioxide (CO<sub>2</sub>) emissions from the electricity we generate by 50% by 2030.
  - Achieve net-zero emissions by 2050.



- Eliminate all coal from our generation fleet by 2040.
  - Replacing generation primarily with renewable resources like solar, battery storage and wind.





# Standards For Conditional Use Permits

- **Standard 1** *The proposed land use will not be detrimental to or endanger the neighborhood health, safety, comfort, or general welfare.*
- **Standard 2** *The uses, values and enjoyment of other properties in the neighborhood already permitted shall be in no foreseeable manner be substantially impaired or diminished by establishment, maintenance or operation of the proposed conditional use.*
- **Standard 3** *The establishment of the conditional use will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the district.*
- **Standard 4** *There are adequate utilities, access roads, drainage, and other necessary improvements to allow the land use, or improvements are planned to provide adequate measures*
- **Standard 5** *Adequate measures have been or will be taken to provide adequate ingress /egress to public streets and the proposed conditional use will not present traffic conflicts.*
- **Standard 6** *The conditional use shall conform to all applicable regulations of the district in which it is located. Provide information on any necessary licensing, or regulations associated with the proposed land use.*
- **Standard 7** *The conditional use is consistent with the adopted Town and County Comprehensive Plans.*
- **Standard 8** *If the conditional use is to be located in a Farmland Preservation District, the conditional use must meet the findings as listed below:*
  - 1. The proposed use is consistent with the purpose of the district.
  - 2. The proposed use is reasonable and appropriate with alternative locations considered.
  - 3. The proposed use is reasonably designed to minimize the use of agricultural lands.
  - 4. The proposed use does not substantially impair the current or future agricultural use of surrounding parcels.
  - 5. Construction damage to remaining lands in agricultural use is minimized and/or repaired.



# Key Contacts



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## Aaron Williams, PLA, ASLA

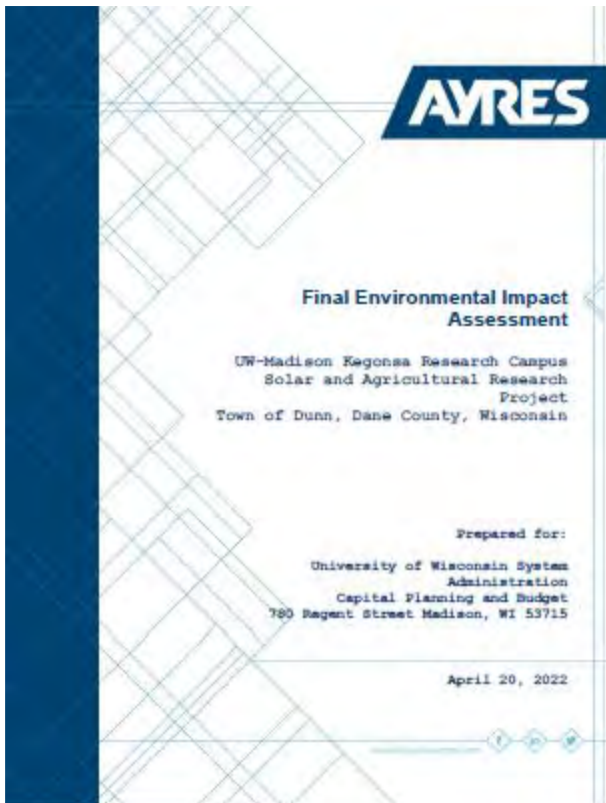
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# Environmental Impact Assessment (EIA)



Mandated by Wisconsin Environmental Policy Act (WEPA) to evaluate environmental effects of project.

Conducted by Ayres Associates (February – April 2022)

Public Notice in Wisconsin State Journal and Stoughton Courier Hub on March 10, 2022 with online public information meeting.

EIA reviewed potential impacts:

- Visual
- Physical (soils, surface water, groundwater, wetlands, others)
- Biological
- Social/Cultural
- Historical/Archaeological
- Economic
- Parking/Transportation
- Utilities

Draft document available at local libraries, project website

Comments received and incorporated into final EIA report and project design

Public meeting on March 24, 2022

Finding of No Significant Impact – April 2022

Documents are available on our project website:

<https://sustainability.wisc.edu/strategic-initiatives/renewable-energy/kegonas-research-campus/>





# View 3 from Schneider Drive

View 3 (Winter)



Source: Ayres Associates, Final Environmental Impact Assessment

View 3 (Summer) (August 25, 2022)

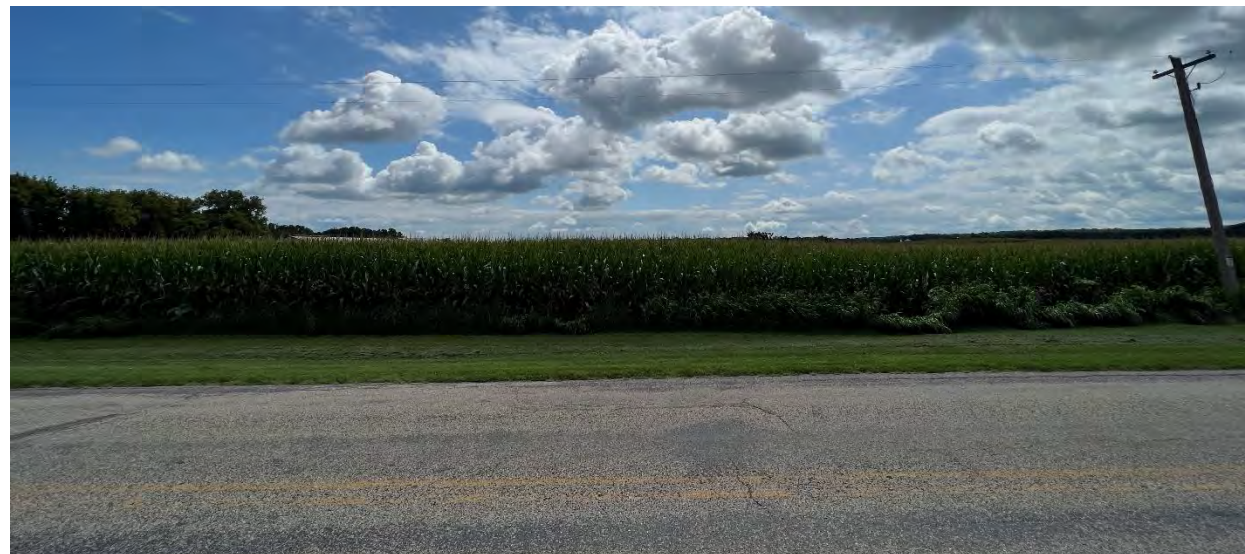


Photo Josh Arnold





## View 5 – Northeast from Green Road

View 5 (from EIA)



Source: Ayres Associates, Final Environmental Impact Assessment

View 5 (October 21, 2022)



UW Campus Planner Aaron Williams visiting with neighbors to assess View 5 (October 21, 2022) photo: Josh Arnold