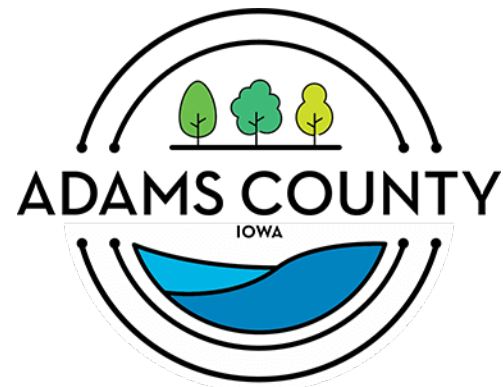


Draft Review Meeting

Adams County Renewable Energy Chapter

Wednesday, January 17th, 2024



CONFLUENCE

Presentation Outline

- **Project Scope + Schedule**
- **Draft Renewable Energy Chapter**
 - Purpose of this Chapter & Role of the Comprehensive Plan
 - Chapter Components
- **Public Input**
- **Recommended Strategies**
- **What's Next**

Project Scope + Schedule

Project Scope + Schedule

Phase One - Project Kick-Off + Public Input

Kick-Off and Public Input Meeting (**Monday, December 11, 2023**)

Stakeholder Interviews (**January 3-5, 2024**)



Phase Two - Draft Plan + Evaluation

Draft Plan Review Public Meeting with Zoning Commission

~~(Monday, January 8, 2024)~~ (**Wednesday, January 17, 2024**)



Phase Three - Final Plan + Adoption

Zoning Commission Public Hearing (**Monday, February 19, 2024**)

Board of Supervisors Public Hearing (**Monday, March 4, 2024**)



Draft Renewable Energy Chapter

Draft Renewable Energy Chapter

- Purpose of this Chapter
 - Adopted as a component of the County's existing Comprehensive Plan
 - Help guide decisions related to solar and wind energy regulations
- What is the role of the Comprehensive Plan?



Renewable Energy Chapter for the Adams County Comprehensive Plan



DRAFT JANUARY 2024

Role of the Comprehensive Plan

Comprehensive Plan Defined

“The **comprehensive plan**, also known as a general plan, master plan or land use plan; is a document designed **to guide the future actions of a community**. It presents **a vision for the future**; with **long-range goals** and objectives for all activities that affects the local government.”

Prof. Gary Taylor, Iowa State University

Role of the Comprehensive Plan

Comprehensive Plan Defined

- ❑ **A statement of policy...**
 - not a *regulation*
 - developed by the Planning and Zoning Commission
 - guided by citizen input
 - adopted by the Board of Supervisors

- ❑ Guides physical development of the community
 - Usually written with a 20+ horizon year
 - Consider review/update every 5 to 10 years to respond to changing conditions

- ❑ Serves as the basis for land use decision-making
 - Zoning and subdivision regulations and applications
 - Public Facilities
 - Infrastructure (roads, water and sewer)

Role of the Comprehensive Plan

What is typically included in a Comprehensive Plan?

- ❑ Mapping (existing conditions, **Future Land Use Plan**, sub-area plans)
- ❑ Inventory of existing conditions:
 - « Demographics and population projections
 - « Natural resources / open space / conservation
 - « Historical / cultural identification and protection
 - « Housing
 - « Economic development
 - « Transportation and mobility
 - « Services and facilities
- ❑ **Goals, policies, and action items**

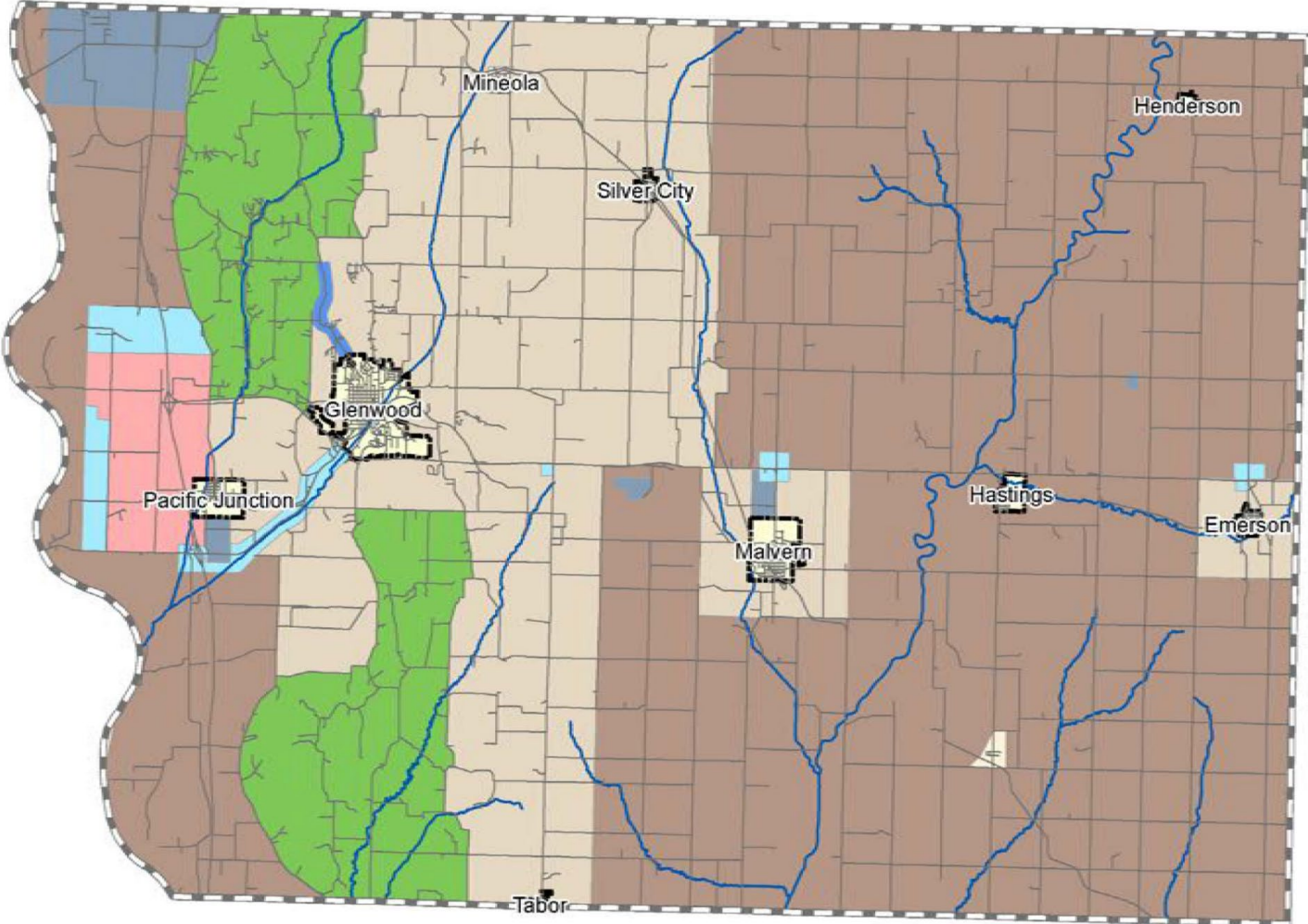
Role of the Comprehensive Plan

Comprehensive Plan Relation to Zoning

- ❑ Guides decision making related to rezonings and development regulations
- ❑ Designed to create ideal land use schemes for the future of the county
- ❑ May require modifications over time to adapt to the ever-changing economic environment
- ❑ Rezoning decisions should be consistent with the Comprehensive Plan's policy recommendations and Future Land Use Map

Role of the Comprehensive Plan

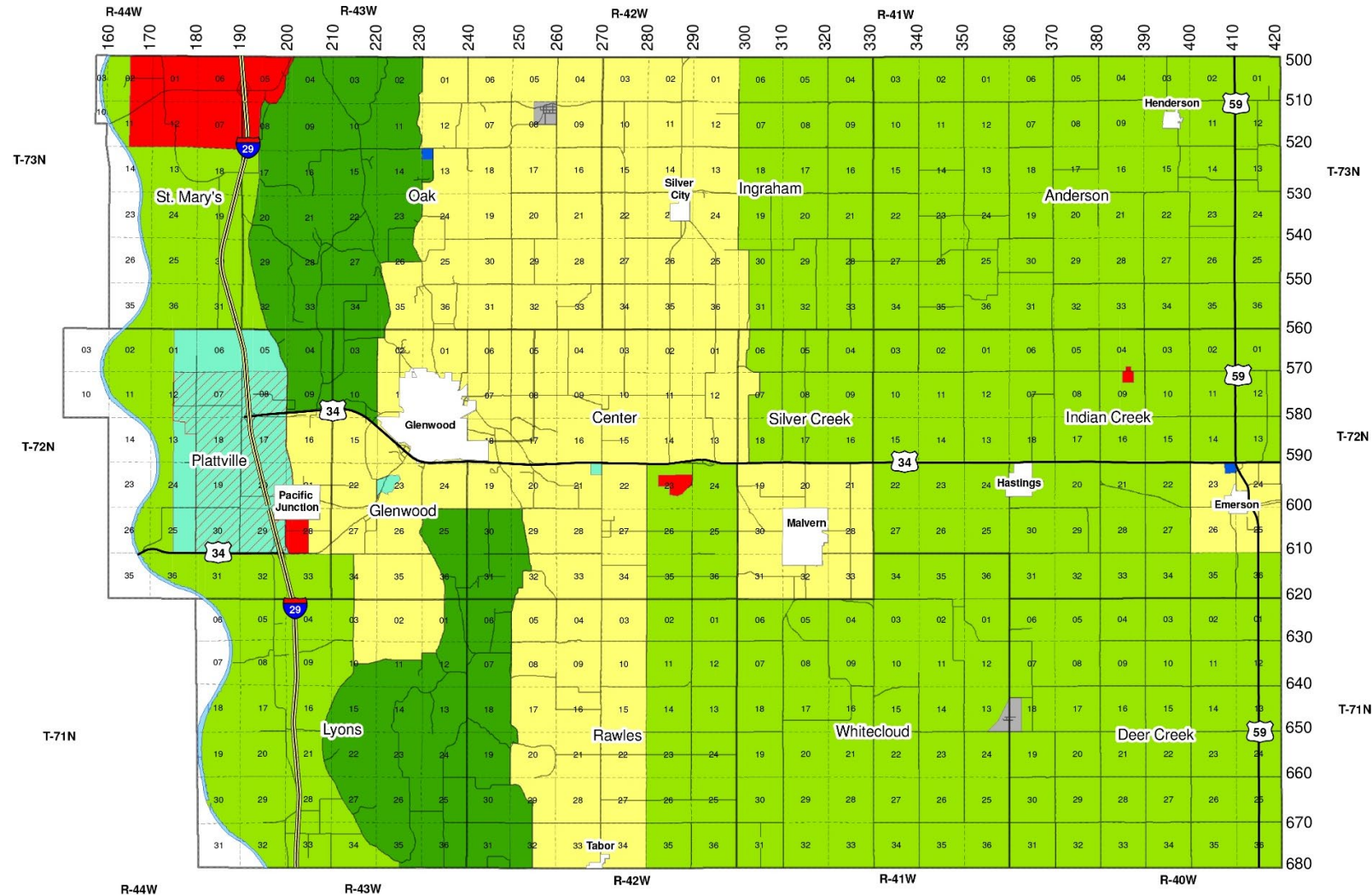
Example Future Land Use Map



Role of the Comprehensive Plan

Example Zoning Map

-  Agricultural
-  Agricultural/Residential
-  Convenience Commercial
-  Corridor Overlay District
-  Highway Commercial
-  Incorporated Area
-  Industrial
-  Loess Hills Conservation Development
-  Village



Draft Renewable Energy Chapter

- Defining Renewable Energy
- Accessory vs. Utility Scale
- Solar Farms
- Wind Farms
- Regulatory Actions
- Public Input
- Recommended Strategies



Renewable Energy Chapter for the Adams County Comprehensive Plan

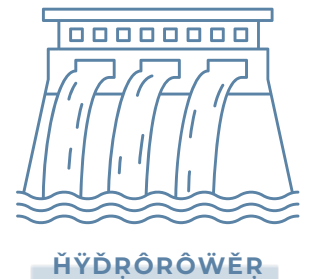
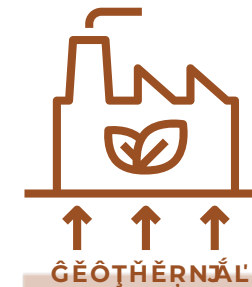


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Renewable Energy

What is renewable energy?

- Energy derived from natural sources
- In Iowa, wind turbines are most common
- Adams County's sizable amount of open space and agricultural land make it conducive to alternative energy producers



Renewable Energy

Accessory vs. Utility Scale

- Accessory scale generates power specifically for on-site use
- Utility scale is interconnected with the electric grid and produces electric power for off-site use

Accessory Scale



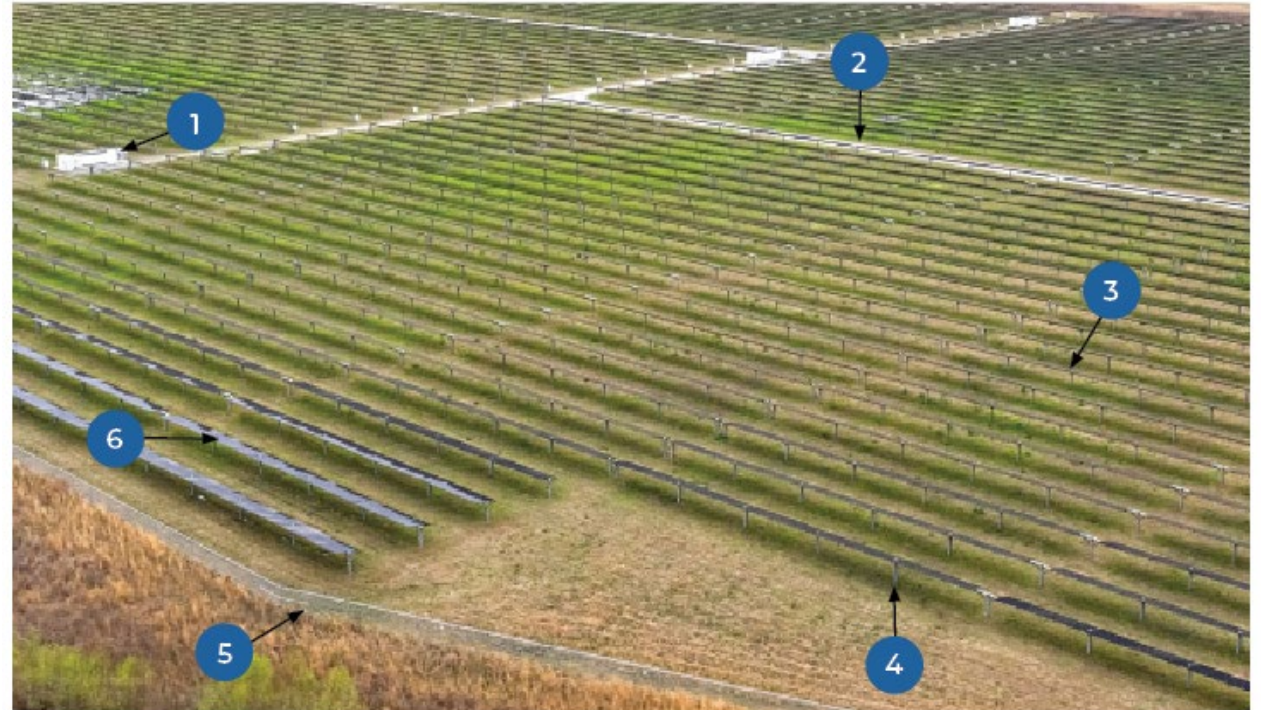
Utility Scale



Renewable Energy

Solar Farms (Utility Scale Solar Energy)

- Photovoltaic (PV) Solar Technology Components
- Sometimes referred to as Utility Scale Solar Energy



1 Central power inverter and step-up transformer

2 Interior access road

3 Single axis tracker row

4 Driven steel piles

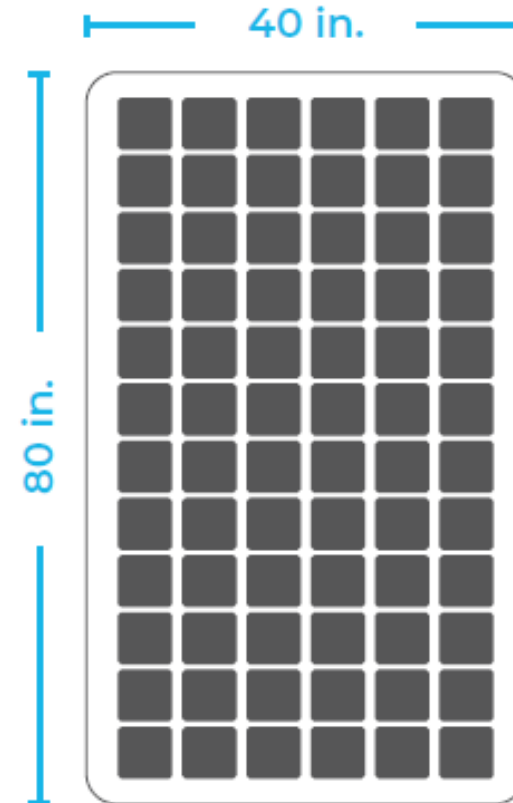
5 Perimeter security fence

6 PV panels

Renewable Energy

Solar Farms

- 5-7 acres per MW
- Typical lifespan of 25-40 years
- Considerations:
 - Visual/aesthetic impacts
 - Agricultural land impacts

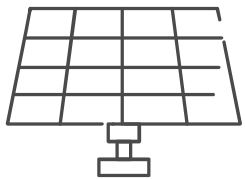


Solar panel sizes are kept moderately small to allow a single worker to be able to perform maintenance as necessary.

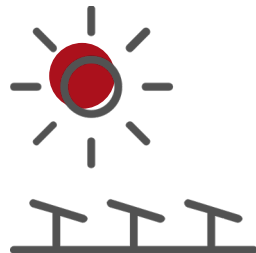
Renewable Energy

Photovoltaic (PV) Solar Technology Lifecycle

Operation



Development / Construction



25-40 years

- No operational waste
- No water discharge
- No air emissions

Decommissioning



Decommissioning plans are required



Panels are recycled

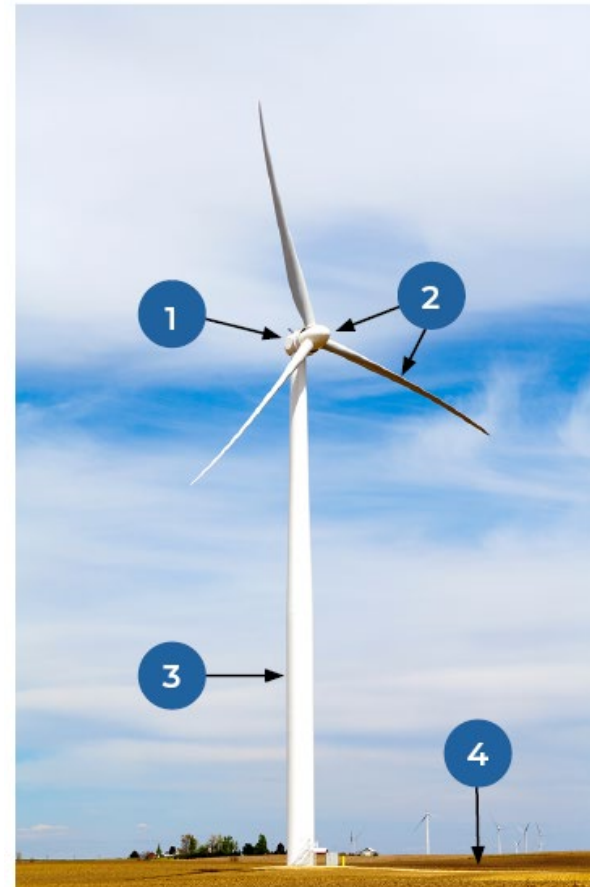


Site is restored

Renewable Energy

Wind Farms (Utility Scale Wind Energy)

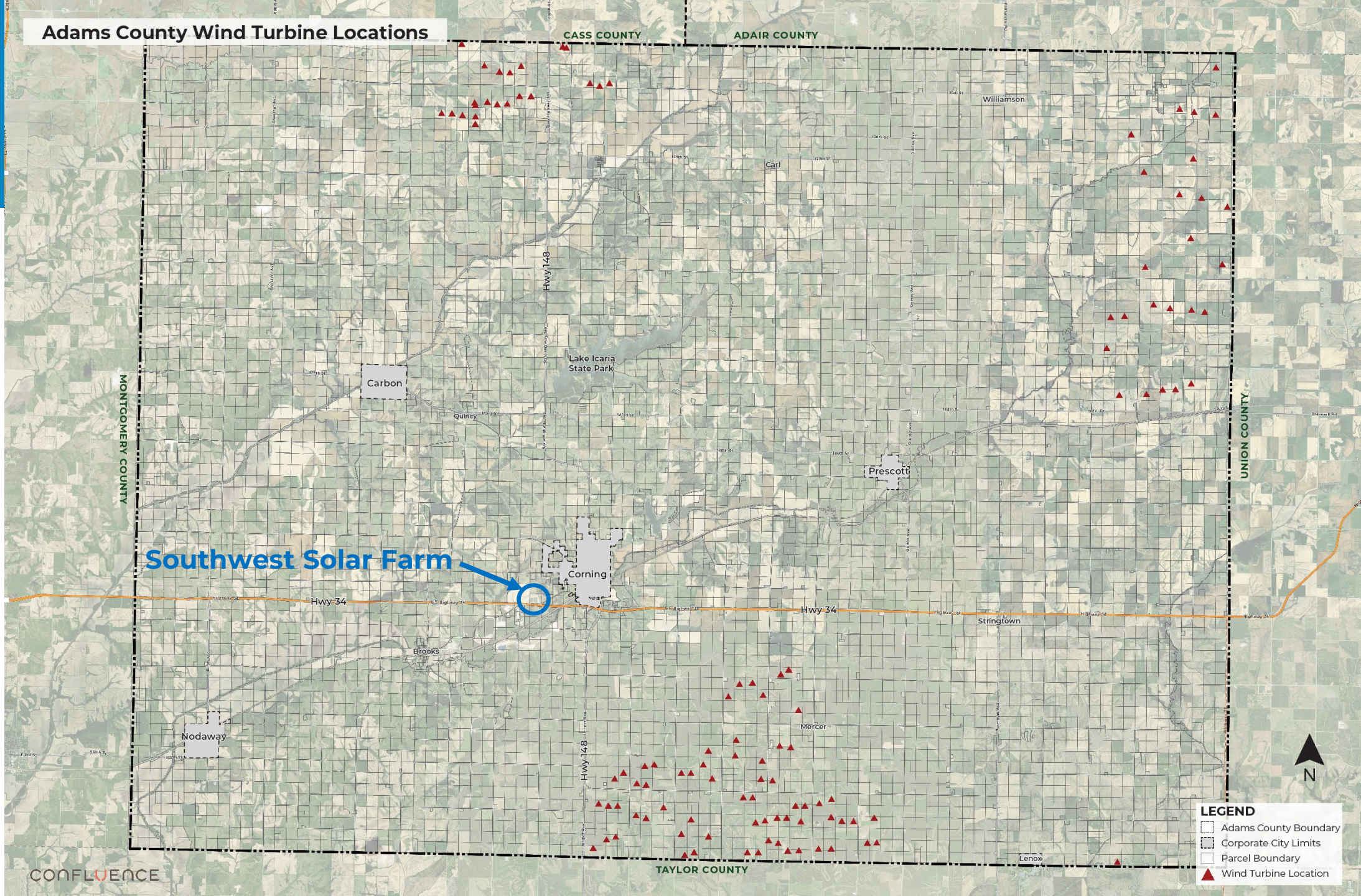
- 2-3 MW per turbine
- Up to 600 feet tall
- Approximate lifespan of 30 years
- Considerations:
 - Visual/aesthetic impacts
 - Noise
 - Shadow flicker



- 1 Nacelle
- 2 Rotor and Blades
- 3 Tower
- 4 Access Road

Adams County Wind Turbine Locations

This map identifies 112 existing wind turbine locations + 1 solar farm



Southwest Solar Farm

LEGEND

- Adams County Boundary
- Corporate City Limits
- Parcel Boundary
- Wind Turbine Location

Source: Adams County Assessor's Office

Renewable Energy

Zoning Regulations Purpose

- Well-written regulations should balance the interests of “participating” and “non-participating” landowners
 - Participating landowners (landowners who enter leases, easements, or other agreements with the solar or wind energy developer)
 - Non-participating landowners
 - Developers
- Clear and concise regulations reduce landowner disputes and therefore reduce headaches for counties and cities

Renewable Energy

Conditional Use Permit & Zoning Districts

- Counties and Cities must decide where to allow commercial solar and wind energy facilities
 - Solar and wind farms typically require a conditional use permit
 - Solar and wind farms are typically located in agricultural or transitional agricultural zoning districts
 - Solar (and sometimes wind energy) are permitted conditional use in commercial and industrial zoning districts as well
- Typical practice is to authorize broadly and rely on conditional use permit process to evaluate proposed projects

Renewable Energy

Setbacks

- Setbacks are an important tool to balance the interests of participating and non-participating landowners
- Setbacks should not be so large that they infringe on landowners' rights to develop their property, if they wish to
- Setbacks for solar facilities are different from setbacks for wind energy structures
- Counties and cities should specify setbacks from the following:
 - Non-participating property lines and/or residences
 - Participating property lines and/or residences (typically no setback)
 - Public right of ways

Renewable Energy

Visual Screening for Solar Farms

- Visual screening is the practice of using fences, walls, berms, or landscaping to obstruct the view of the solar facilities, typically from non-participating residences
- Regulations should authorize the use of natural features, topography, and vegetation for cost efficiency and aesthetics
- Be wary of the “property line” screening requirement
 - Agricultural parcels can have a property line of a half-mile, well beyond the residence to be screened
 - Limit screening requirement to necessary area
 - An overly burdensome screening requirement will disturb land and/or discourage development

Renewable Energy

Decommissioning Plans

- Decommissioning plans identify the steps necessary to bring the land as close to its natural state as possible once the development has reach the end of its lifecycle
- These plans are typically required as part of the approval process
 - Accounts for its operations from construction to deconstruction
- Plans could consider the updating, replacing, or complete removal of the development
- It is important to require some sort of financial security to ensure the removal of the wind or solar farm at the end of its lifespan

Public Input

Public Input

- Visioning questions at the kick-off meeting with the Zoning Commission on December 11, 2023
- Online survey
- Stakeholder interviews conducted January 3-5, 2024

Public Input

- Over 180 people completed the visioning questions
 - **36 physical surveys** completed at the Zoning Commission meeting on December 11, 2023
 - **152 online surveys** completed between December 13-29, 2023
- Key themes from the responses to the visioning questions include:
 - Opposition to wind farms
 - Support for the development of solar farms given there are adequate regulations in place
 - Desire to preserve agricultural land

Public Input Questions

Do you have any concerns about new **wind** farms in Adams County?

- Impact on land values
- Noise and visual pollution
- Reduction of agricultural land
- Inadequate setbacks
- Current decommissioning requirements
- Effects on wildlife
- Amount of existing wind turbines

Do you have any concerns about new **solar** farms in Adams County?

- Glare from the reflection of sunlight
- Reduction of agricultural land
- Current decommissioning requirements
- Effects on wildlife

Public Input Questions

What aspects of wind farms should be regulated in Adams County?

- Required setbacks should be increased to further protect non-participating landowner
- Enact height limits to reduce visual pollution
- Require new developments to have a decommissioning plan
- Limit the total number of wind turbines within the county

What aspects of solar farms should be regulated in Adams County?

- Total size of utility-scale solar developments
- Require adequate setbacks
- Require new developments to have a decommissioning plan
- Limit the total number of solar farms within the county

Public Input Questions

Stakeholder Interviews

In addition to the visioning questions, the consultant team conducted several interviews with community stakeholders to better understand how wind and solar developments fit within Adams County. Based on the list provided by the County Zoning Commission, the consultant team was able to hold conference calls with the following:

- **Jason McManis**, Adams County Farm Bureau President and member of the Adams County Zoning Commission
- **Ray Gaesser**, board member of Solutions from the Land
- **Jeanne Jackson**, member of Adams County Priceless Land Coalition
- **Steve Morris, Kate Millar and Merlin Bartz**, Invenergy
- **Jamie McManis**, Liberty Realty
- **Scott Akin**, Adams County Supervisor and vice president of the Adams Community Economic Development Corporation

Public Input Questions

Stakeholder Interviews

Comments regarding wind farms:

- No more wind farms
- Will devalue land
- Tower foundations may impact ground water
- Concerns with safety and impact from noise and lights
- Concerns with foreign ownership of wind farms
- Don't prohibit but establish standards for new wind farms
- Wind farms provide a large property tax benefit to the county and the local school districts, a significant percentage of their budgets
- Wind farms provide revenue to local property owners
- Concern with seeing new overhead powerlines and impact to power grid

Public Input Questions

Stakeholder Interviews

Comments regarding wind farm regulations:

- Need to balance zoning restrictions with free property owner rights
- Should measure wind turbine setbacks from property lines and not from existing homes or buildings
- Need to increase setbacks to minimum 2,250 feet or 3,280 feet
- Set a cap on maximum tower and blade height
- Require aircraft detection lighting system (ADLS)
- Increasing setbacks will limit or prevent property owners from having wind towers – keep at 1200 feet or 1500 feet from existing homes
- Require a decommission plan
- Setback from municipal limits should be 1-mile vs 2-miles
- Don't set a maximum height but use it as a basis for setbacks (height to setback ratio)

Public Input Questions

Stakeholder Interviews

Comments regarding solar farms:

- Don't allow new solar farms
- Property owner should have the right to have a solar farm
- Concern with loss of farmland
- Concern with water runoff and soil erosion

Public Input Questions

Stakeholder Interviews

Comments regarding solar farm regulations:

- Require a decommissioning plan
- Limit the overall size a of solar farm
- Need a plan to manage water runoff
- Require setbacks

Recommended Strategies

Recommended Strategies

- 1. Adopt a robust zoning code to appropriately regulate utility-scale solar and wind.**
- 2. The location of utility-scale solar and wind should be restricted from sensitive areas.**
- 3. Buffering, complete with native species and visually-screening trees, should be a key requirement of the code.**
- 4. A detailed decommissioning plan should be required for all utility-scale solar and wind projects.**
- 5. Include regulations for Battery Energy Storage Systems (BESS).**

What's Next

What's Next

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