WOODBURY COUNTY ZONING COMMISSION

Monday, January 22, 2024 at 5:00 PM

The Zoning Commission will hold a public meeting on **Monday, January 22, 2024** at **5:00 PM** in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, IA. Please use the 7th St. entrance. Public access to the conversation of the meeting will also be made available during the meeting by telephone. Persons wanting to participate in the public meeting and public hearings on the agenda may attend in person or call: **(712) 454-1133** and enter the **Conference ID: 638 086 537#** during the meeting to listen or comment. It is recommended to attend in person as there is the possibility for technical difficulties with phone and computer systems.

AGENDA	
1	**CALL TO ORDER**
2	**ROLL CALL**
3	**PUBLIC COMMENT ON MATTERS NOT ON THE AGENDA**
4	**APPROVAL OF MINUTES:** 11/27/23 & 1/17/24
5	**ITEM(S) OF BUSINESS**
»	**ZONING COMMISSION PUBLIC HEARING FOR PROPOSED UTILITY-SCALE SOLAR ENERGY SYSTEMS ZONING ORDINANCE AMENDMENT(S). DEBATE SUMMARY:** To discuss and consider proposals to amend the Woodbury County Zoning Ordinance to include provisions for the permitting of utility-scale solar energy systems in the unincorporated areas of Woodbury County in the General Industrial (GI), Limited Industrial (LI), and Agricultural Preservation (AP) Zoning Districts. SUMMARY OF PROPOSED ZONING ORDINANCE TEXT AMENDMENTS (Three Potential Concepts): 1) A utility-scale solar energy systems conditional use permit process for specific zoning districts. 2) A utility-scale solar energy systems overlay district to facilitate utility-scale solar permitting within the AP Zoning District. 3) Adopt the first concept and/or transfer the utility-scale solar debate on AP land to the "Comprehensive Plan" adoption process. Each proposal includes amending portions of: the Table of Contents; Section 3.03.4 entitled: Land Use Summary Table of Allowed Uses in Each Zoning District; Portions of: Section 6.02 entitled definitions; and the renumbering of definitions and page numbers as well as the renumbering of sections. The proposal(s) would include the addition of sections pertaining to the Utility-Scale Solar Energy Systems Conditional Use and the Utility-Scale Solar Energy Systems Overlay District. The Zoning Commission will consider the proposals for the purpose of establishing a recommendation to the Board of Supervisors.
»	**ZONING COMMISSION PUBLIC HEARING FOR PROPOSED WOODBURY COUNTY COMPREHENSIVE PLAN 2040. SUMMARY:** To discuss and consider a comprehensive plan for the purpose of establishing a recommendation to the Board of Supervisors pursuant to Iowa Code Chapter 335.5. The proposed Woodbury County Comprehensive Plan 2040 is intended to serve as an advisory document that outlines the county's vision. The purpose of this comprehensive plan is to provide a current inventory of community services and resources and a thoughtful statement of the community's vision and goals for the future. The comprehensive plan includes analysis of the following planning topics: Housing, Economic Development, Transportation, Public Infrastructure and Utilities, Community Facilities and Services, Land Use and Natural Resources, and Disaster Response, Recovery and Resiliency. The draft copy is available for inspection online at: **http://tinyurl.com/CompPlanWC**
6	**PUBLIC COMMENT ON MATTERS NOT ON THE AGENDA**
7	**COMMISSIONER COMMENT OR INQUIRY**
8	**STAFF UPDATE**
9	**ADJOURN**

Minutes - Woodbury County Zoning Commission Meeting – November 27, 2023

The Zoning Commission (ZC) meeting convened on Monday, November 27, 2023, at 5:00 PM in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, IA. The meeting was also made available via teleconference.

Meeting Audio:
For specific content of this meeting, refer to the recorded video on the Woodbury County Zoning Commission "Committee Page" on the Woodbury County website:

- County Website Link:
  - https://www.woodburycountyiowa.gov/committees/zoning_commission/
- YouTube Direct Link:
  - https://www.youtube.com/watch?v=Me_SPKOFaHM

ZC Members Present:	Chris Zellmer Zant, Corey Meister, Jeff O'Tool, Barb Parker
County Staff Present:	Dan Priestley, Dawn Norton
Public Present:	Roger Brink, Gwen Brink, Russ Petersen, Bob Fritzmeier, Christopher Widman, Leo Jochum, Bev Jochum, Naomi Widman, William Widman, Ezra Widman, Eliyanah Widman, Aliza Widman, Steve Corey, Denise Knaack, Robert Knaack, Bill Jochum, Tony Ashley, Doyle Turner, Greg Jochum, Tom Jochum, Mike Wright, Jeanette Williams, Mark Wetmore, Bethany Widman, Kalyn Heetland, Josh Heetland, Deb Harpenau, Kevin Alons, Rebekah Moerer, Ann Johnston, Emily Segura, Daniel Segura, Elizabeth Widman, Jenny Barber, Genise Hallowell
Telephone:	Tom Treharne, Robert Wilson

Call to Order
Chair Chris Zellmer Zant formally called the meeting to order at 5:02 p.m. Tom Bride was absent.

Public Comment on Matters Not on the Agenda
None

Approval of Previous Meeting Minutes – October 23, 2023
Motion to approve the minutes: Parker. Second: Meister. Motion carried: 4-0.

Public Hearing: Solar Energy – Utility-Scale Solar Systems – Consideration of Solar Ordinances for Recommendations(s) to the Board of Supervisors
Priestley offered background about the utility-scale solar energy system proposals. Staff and the Commission have been mindful these past several weeks aboutthe harvest season and have used the available meeting opportunities to collect resources and input from the public. During this timeframe, three potential concepts for consideration have been established including: 1) Consideration of a new utility-scale solar energy conditional use process for the General Industrial (GI) Zoning District only; 2) Establishment of an overlay district to facilitate utility-scale solar within the Agricultural Preservation (AP) Zoning District; 3) Adoption of the first concept and then transfer the utility-scale solar debate on agricultural land to the "Comprehensive Plan" adoption process that will likely occur in early 2024.

Priestley stated that he received materials Alex Delworth from the Center for Rural Affairs and asked that they be received into the record. Motion to receive O'Tool. Second by Parker, Approved 4-0. Copy available for review in the appendix.

Bob Fritzmeier (Sioux City) addressed the Commission offering support for a utility-solar overlay district and the evaluation scorecard by referencing positive benefits to the environment. Fritzmeier indicated that 75% of flowering plants are dependent on pollinators, native grasses and plants would provide good habitat, pollination, improve environment, and air quality. He requested that information from USDA, National Institute of Food and US Department of Energy be received and placed into record. Motion by Meister to receive. Second by O'Tool. Carried 4-0. Copy available for review in the appendix.

Kevin Alons (Salix) addressed the Commission offing his opposition to the utility-solar overlay district over agricultural land. He indicated that utility-solar is not compatible with agriculture. He referenced the fall of or degrading of production of solar as systems degrade and he questioned how long they operate. Alons referenced concerns with federal subsidies and indicated that most of the proposed solar options abut the City of Salix.

Robert Wilson (Rangeland Energy Management) addressed the Commission in support of solar projects by discussing the changing nature of projects and compatibility with agriculture with agrivoltaics. He referenced practices such as sheep herding for vegetation control and made reference to CRP land and decommissioning and bond requirements. Wilson addressed solar as replacement when coal plants are retired.

Doyle Turner (Moville) addressed the Commission in support of completing the comprehensive plan for 2040. He indicated that solar doesn't create revenue from property tax, it creates revenue from the electricity that is produced. Turner said that the overlay is something that is worth looking at but not until after the comprehensive map has been developed.

Christopher Widman (Bronson) addressed the Commission indicating that solar does not have a place on agricultural preservation land. He indicated that utility-solar should stay on industrial. Widman referenced the comprehensive plan and said it could be taken into consideration to increase industrial parks and not cherry pick out in the middle of the county. He indicated that contracts signed by landowners in areas are not compatible with the comprehensive plan and should be for the general welfare of the county and not a few. Widman encouraged waiting until the comprehensive plan is complete. Widman made a request that materials including questions be received and placed into record. Motion by O'Tool to receive. Second by Parker. Carried 4-0. Copy available for review in the appendix.

Elizabeth Widman (Sergeant Bluff) addressed the Commission urging them to delay the decision until the comprehensive plan is completed. She indicated that the comprehensive plan is a guide for the next 20 years and that board members and others come and go. Widman asserted that utility-solar belongs on industrial land and the agricultural preservation district is meant to protect ag.

Tom Treharne (NextEra Energy) addressed the Commission inquiring about the consideration of a specific proposal. He requested that in the development of a proposal that it consider issues that would pose challenges such as the 1000 ft. setbacks from dwellings, grading limitations, and the restriction to industrial ground only. Treharne indicated that the restriction to industrial land would create a host of challenges to industrial areas. He indicated that the overlay district is a good way to go and used Linn County as an example.

Roger Brink (Onawa) addressed the Commission indicating that government is paying farms to set aside CRP land and suggested that spraying field is worse than solar panels would be. Brink stated that the solar farms in Monona County don't seem to bother anyone.

Leo Jochum (Salix) addressed the Commission in support of Option #2 to allow for the overlay district. He offered concerns about the discrepancies with CSR1 vs. CSR2 because of the rainfall factor. Jochum discussed compatibility with grass and plant selection to ensure soil quality will be preserved. He stated that no concrete and blacktop is used which allows for transition back to agriculture. Jochum discussed setbacks of 150 to 300 ft from residences and questioned the two mile setback from the cities and the distances from the county right-of-way. He requested for material be received and placed into record by the Commission. Motion to receive Parker. Second by O'Tool. Carried 4-0. Copy available for review in the appendix.

Naomi Widman (Bronson) addressed the Commission and suggested that the motivations of people for ag solar need to be looked at, individuals will profit, not the county as a whole. Widman indicated that she is not opposed to solar, just not on ag land or an overlay district. She stated that the solar debate should be delayed until the comprehensive plan is completed. She indicated that it is important to the best interest of the entire community versus particular individuals who have a very significant financial interest. Widman stated that cherry picking parcels in the middle of ag land is not the best route.

Steve Corey (Salix) addressed the Commission indicating that Salix is in the dark in this debate. He offered concerns with what the county has to deal with as far as carbon sequestration, wind farms, and solar. Corey indicated that he is concerned about subsides and the weight on the taxpayers and the pandora's box this creates.

Greg Jochum (Salix) addressed the Commission offering support for the overlay on the Agricultural Preservation (AP) Zone. He indicated that the infrastructure is already in place with area transmission lines. Jochum is in favor of the overlay scorecard in place of the CSR2 rating that he explained at the Moville meeting. He suggested that the scorecard encourages more desirable native grass, plans, and pollinators. The NRCS would be involved in the selection of the best seed.

Rebekah Moerer (Sioux City) addressed the Commission asking about the benefit to those who live in the cities and to the people who own the land. She offered information about her experience of potentially equipping her property with solar and offered concerns about the expense. Moerer offered concerns about the costs to taxpayers with decommission fees. She suggested that utility-solar should be subject to land restrictions.

Motion to close public hearing by Parker. Second by O'Tool. Carried 4-0.

Priestley discussed the three utility-solar options and suggested for a work session in preparation of a recommendation to the Board of Supervisors.

Parker expressed interest in having a work session to prioritize the concepts before the Commission. She suggested streamlining this with the development plan process. Meister concurred. O'Tool indicated that it would be important to look into whether you expand industrial areas which would be part of the development plan versus an overlay district. He also stated it would be important to get more valid information about land values near solar. O'Tool indicated he would support another work session and expressed the importance of getting this right the first time. Zellmer Zant facilitated a scheduling discussion that resulted in January 17, 2023 at 5:00 PM for the work session. The regular meeting will be held on January 22, 2023 at 5:00 PM.

Public Comment on Matters Not on the Agenda
None

Commissioners Comment or Inquiry
None

Staff Update
None

Adjournment
Motion to adjourn Meister. Second by O'Tool. Carried 4-0. Meeting conclude 6:12 p.m.

Daniel Priestley Received from Alex Delworth, 11-27-23 - Woodbury County Zoning Commission Meeting

From: Alex Delworth <alexd@cfra.org>
Sent: Monday, November 27, 2023 10:58 AM
To: Daniel Priestley
Subject: Utility - Scale Solar Zoning
Attachments: Policy Approaches for Dual-use and AgriSolar Practices.pdf; making-the-case-for-solar-grazing-web.pdf; Environmental Impacts of Renewable Energy.pdf; Woodbury Zoning Comment.docx.pdf

Good Morning Daniel,

I am reaching out to provide a comment on behalf of the Center regarding the zoning meeting on utility-scale solar. Attached is our comment and a few resources that we shared earlier but may still be useful.

Feel free to reach out if you have any questions.

Thank you,

--
Alex Delworth | Clean Energy Policy Associate
Center for Rural Affairs
1400 Fawcett Pkwy, Suite D2 | Nevada IA 50201
(402) 687-2100 x 1016
alexd@cfra.org | cfra.org

CENTER *for* RURAL AFFAIRS

11/27/23

Daniel Priestley
620 Douglas Street, 6th Floor
Sioux City, IA 51101

Re: Utility-Scale Solar Ordinance

The Center for Rural Affairs is a private non-profit organization that advocates for policies that strengthen rural communities to create a more vibrant future. Renewable energy projects have demonstrated significant potential to bring in new tax revenue, provide additional income for landowners, and create new jobs in rural areas. Given these benefits, we think ordinances regarding wind and solar should be fair and balanced. We commend the zoning board for their time and invitation for public input in this process for the two main proposals.

The first proposal being considered for the Utility-Scale Solar Energy Systems (US-SES) includes prudent requirements around the native vegetation and decommissioning sections. Planting native or perennial vegetation under the panels can increase soil health and provide pollinator habitat over the lifespan of the US-SES. Decommissioning plans ensure that the county won't bear any of the costs when projects are deconstructed and allowing the financial surety to be paid in intervals allows project owners to absorb the expense as an operating cost.

The second proposal for the US-SES Overlay District includes a few items that the commission may want to consider. The setback of 1,000 feet away from occupied dwellings is far greater than the distances we have seen most often, which are between 50-300 feet. However, the inclusion of a waiver will allow impacted landowners the flexibility to make decisions that affect their land.

Finally, the inclusion of a restriction on development on lands with a CSR2 of 65 or more for the US-SES Overlay District will severely limit the potential for solar development in Woodbury County. Using CSR2 designation restricts private property rights for landowners with higher-quality land. Renewable energy facilities can help keep the family farm financially sustainable by providing supplemental income to the operation. Additionally, restricting development on lands with a CSR2 of 65 or more would automatically eliminate almost 50% of land in Woodbury County for potential development.

Solar projects generally have minimal impact on land quality, and land can be returned to farming at the end of the project's life cycle if desired. Practices such as planting native or perennial vegetation under the panels can increase soil health and provide pollinator habitat. Site vegetation can also be managed through grazing, offering local farmers additional income opportunities and providing an avenue for the land to stay in agricultural use at the same time. Additional dual-use practices such as beekeeping and crop production under the panels offer additional opportunities to combine solar and agriculture, demonstrating that clean energy and agriculture do not require an either/or approach.

CENTER *for* RURAL AFFAIRS

This letter includes a few of our solar energy siting resources we hope you will find useful during discussions. One of our recent reports, *Policy Approaches to Dual-Use and Agrisolar Practices*, might be especially helpful given the central discussion around CSR and preserving agricultural lands. Additionally, our full clean energy siting library can be viewed at cfra.org/cleanenergysiting.

Sincerely,

Alex Delworth
Policy Associate
402.687.2100 EXT. 1016
alexd@cfra.org

Resources:
Policy Approaches for Dual-Use and Agrisolar Practices
Amplifying Clean Energy with Conservation
Native Vegetation and Solar Projects in Iowa

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Policy Approaches for Dual-Use and Agrisolar Practices

By Heidi Kolbeck-Urlacher, Center for Rural Affairs
April 2023

CENTER *for* RURAL AFFAIRS

CONTENTS

INTRODUCTION

As demand for clean energy increases, solar deployment is expected to rise. Because utility-scale solar requires considerable land use, many state and local governments are prudently discussing the impact future solar development will have on agricultural lands. The practice of dual-use solar, which refers to allowing two uses to be accomplished in the same space, can

address concerns about solar on agricultural land.[1]

Agrisolar, also called agrivoltaics, is the co-location of agriculture and solar within the landscape. It includes solar co-located with crops, grazing, beekeeping, pollinator habitat, aquaculture, and farm or dairy processing. In addition to photovoltaics, it also includes concentrated solar installations.[2] The practice of combining agriculture and solar energy systems can provide numerous economic and environmental benefits. This includes improving economic viability for landowners and agricultural entities, providing beneficial ecological services, and expanding siting

1 Marieb, Dugan. "Dual-use Solar in the Pacific Northwest: A Way Forward." Renewable Northwest, 2019. Accessed March 2023.
2 Personal communication, Stacie Peterson, Energy Program Director, National Center for Appropriate Technology, March 2023.

opportunities for solar deployment.[3]

The purpose of this report is to provide decision makers and others an overview of policy approaches to combining solar with agriculture and offer considerations on how regulations can facilitate dual-use.

First, we will look at land use and solar, examining the impact expected by the rapid increase of solar development in the near future, and the varying level of responses occurring around clean energy siting regulations and guidance. Next, we will explore the types of dual-use applications and the benefits associated with them, and then move into an overview of policy mechanisms at the federal, state, and local levels that facilitate dual-use. Lastly, we will take a closer look at how local governments have the most impact on solar development, and offer considerations for decision-makers who are interested in creating ordinances or incentives around dual-use.

LAND USE AND SOLAR

How Much Land Will Be Needed?

As the U.S. moves toward setting ambitious decarbonization goals, solar energy is forecasted to grow considerably. Based on solar deployment scenarios by the U.S. Department of Energy (DOE), ground-based solar technologies may require a land area equivalent to 0.5% of the contiguous U.S. However, it is estimated that this requirement could be met using less than 10% of already disturbed or contaminated lands.[4]

By county, it does not appear that current or planned solar projects would require significant land allocation as a proportion of local area. In an analysis of all counties in the contiguous U.S., the Great Plains Institute found that existing solar development comprises on average 0.04% of land per county and that if all proposed solar projects were built, development would average 0.22% of land per county. As of 2021, no county in the U.S. had more than 4% of total county area in solar development. In contrast, cultivated lands comprise up to 75% of the total county area in much of the central Midwest.[5]

Some state and local governments have created restrictions around using farmland for solar development. However, clean energy development does not appear to pose an immediate threat to the availability of farmland. As of 2022, Iowa had 30.6 million acres of farmland, about 17.5 million of which meets the U.S. Department of Agriculture's (USDA) definition of "prime."[6,7] If all of the 2,290 MW of proposed solar projects in Iowa were sited on prime farmland, it would use only 0.11% of prime farmland in the state.[8]
According to Minnesota Solar Pathways, powering 70% of Minnesota's electrical load by 2050 would require adding 22 gigawatts of solar,

3 Macknick, Jordan, et al. "The 5 Cs of Agrivoltaic Success Factors in the United States: Lessons From the InSPIRE Research Study." National Renewable Energy Laboratory, 2022. Accessed March 2023.

4 "Solar Futures Study Fact Sheet." U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy, September 2021. Accessed March 2023.
5 Wyatt, Jessi, and Maggie Kristian. "The True Land Footprint of Solar Energy." Great Plains Institute for Sustainable Development, Sept. 14, 2021. Accessed March 2023.
6 "Prime Farmland Definition." Natural Resources Conservation Service, March 2015. Accessed March 2023.
7 "Iowa Solar and Agriculture Fact Sheet." Clean Grid Alliance. Accessed March 2023.
8 Ibid.

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which would use 220,000 acres of land. Even if all of this solar were to be sited exclusively on prime farmland, it would still only use 1.32% of prime farmland in the state.[9]

Alternatives to Land-use Restrictions

Even though the land needed for solar development is proportionally low, many state and local governments have enacted or are considering enacting restrictions on clean energy development on farmland. In Iowa, some counties have considered using Corn Suitability Ratings (CSR) to restrict development,[10] [11] and state legislators have introduced bills prohibiting solar development on farmland.[12] [13] [14]

In Minnesota, the Public Utilities Commission's administrative rules restrict large electric generation plants from being located on prime farmland.[15] In Midwest states where a large percentage of the land qualifies as farmland, blanket restrictions such as these can severely impact opportunities for clean energy development.

However, some organizations concerned about the land use impacts of clean energy development have developed siting guidance that mitigates impacts to sensitive areas. For example, the American Farmland Trust, an organization dedicated to the preservation of farmland, has created a series of Smart Solar principles, which they believe meet three goals: accelerate solar energy development, strengthen farm viability, and safeguard land well-suited for farming and ranching.[16]

These principles include:[17]

Prioritize solar siting on buildings and land not well suited for farming

Including buildings, irrigation ditches, brownfields or other marginal lands.

Safeguard the ability for land to be used for agriculture

If developed on farm or ranch land, policies and practices should protect soil health, especially during construction and decommissioning.

Grow agrivoltaics for agricultural production and solar energy

Agrivoltaics sustain agricultural production under/between the solar panels.

Promote equity and farm viability

Farmers and underserved communities should benefit from solar development and should be included in stakeholder engagement processes.

9 "Minnesota Solar and Agriculture," Clean Grid Alliance. Accessed March 2023.
10 Whiskeyman, Danny, "Scott County Board of Supervisors approves new solar ordinance," KWQC, Sept. 20, 2022. Accessed March 2023.
11 Klotzbach, John, "County Considering Wind Turbine Ordinance Changes," Independence Bulletin Journal, Sept. 6, 2022. Accessed March 2023.
12 "Senate Study Bill 1077," Iowa Legislature, Jan. 24, 2023. Accessed March 2023.
13 "Senate File 2127," Iowa Legislature, Jan. 26, 2022. Accessed March 2023.
14 "Senate File 2321," Iowa Legislature, Feb. 17, 2022. Accessed March 2023.
15 "Minnesota Administrative Rules," Minnesota Legislature, Sept. 18, 2009. Accessed March 2023.
16 Sallet, Lori, "Growing Renewable Energy While Strengthening Farm Viability and Safeguarding Healthy Soil," American Farmland Trust, Sept. 22, 2022. Accessed March 2023.
17 Ibid.

This type of siting guidance offers a more nuanced approach to clean energy development. By taking a wider array of factors into consideration, including economic impacts and dual usage, this approach demonstrates that clean energy siting does not require an either/or mindset.

Through thoughtful planning, local decision makers can craft policies that respect the property rights of local landowners and allow them to take advantage of opportunities to diversify their income, while at the same time encouraging dual-use practices that preserve the agricultural values of the local community.

TYPES OF DUAL-USE

There are several types of dual-use practices that can be combined with solar energy sites including cultivating different types of crops such as vegetables and berries, utilizing livestock grazing for managing vegetation, beekeeping, and planting native vegetation and pollinator habitat. These practices can create environmental and economic benefits such as new revenue streams for local farmers, increased pollinators, wildlife habitat, enhanced soil health, reduced erosion, and carbon storage. These projects are not mutually exclusive, however, and multiple activities can occur simultaneously, or at different times of the year.[18]

Crops

A variety of agricultural crops can be grown in co-location with solar installations, including fruit, vegetables, and berries. Any crops that are successful in a region are likely to be suitable for co-location with solar projects. Crops can be grown under the panels, between rows, or outside the perimeter of the installation. Panel height, spacing, water access, equipment needs, and whether the system is fixed or tracking, all will play a role in the success of integrating specific types of crop production into a solar installation. Research is ongoing to better understand the performance and feasibility of co-locating crops with solar energy systems.[19] [20]

Iowa State University recently announced it will kick off a $1.8 million, four-year research project on dual-use and food crop production.[21] Similar food crop-focused research is ongoing through the Sustainably Colocating Agricultural and Photovoltaic Electricity Systems (SCAPES) projects at University of Illinois Urbana-Champaign, University of Arizona, Colorado State University, Auburn University, and

18 Macknick, Jordan, et al. "The 5 Cs of Agrivoltaic Success Factors in the United States: Lessons From the InSPIRE Research Study," National Renewable Energy Laboratory, 2022. Accessed March 2023.
19 "Suitable Agricultural Activities for Low-Impact Solar Development," InSPIRE, Aug. 11, 2022. Accessed March 2023.
20 Macknick, Jordan, et al. "The 5 Cs of Agrivoltaic Success Factors in the United States: Lessons From the InSPIRE Research Study," National Renewable Energy Laboratory, 2022. Accessed March 2023.
21 "ISU researchers to study growing crops in solar farms footprint," Iowa State University, Feb. 15, 2023. Accessed March 2023.

University of Chicago. [22]

Outside of food crops, researchers are also looking into whether more traditional row crops can be co-located with solar installations. For example, Purdue University is conducting field trials combining traditional crops like corn and soy with raised solar panels.[23]

Grazing

Solar grazing is the utilization of livestock, usually sheep, to manage vegetation at solar sites. It takes the place of traditional mowing and offers both environmental and financial benefits. For project developers, contracting with local farmers to use solar grazing as a management tool can reduce operations and maintenance costs. Solar grazing can offer local livestock owners additional pasture opportunities and the opportunity to be paid for a valuable service, increasing income to their business and adding to the economy of the rural communities where these projects are usually located.[24]

22. Harwood, Lori. "UArizona Partners on $10M USDA Grant to Expand Research on Growing Crops Under Solar Panels." University of Arizona, Oct. 6, 2021. Accessed March 2023.
23. Bowman, Sarah, et al. "Can solar panels and row crops coexist on farmland across the skeptical Corn Belt?" Indy Star, Sept. 13, 2022. Accessed March 2023.
24. "Fact Sheet: Making the Case for Solar Grazing." Center for Rural Affairs, Dec. 20, 2021. Accessed March 2023.

Beekeeping

Solar beekeeping is the practice of placing beehives on or near solar sites that have been planted in native vegetation or other pollinator habitats. Solar beekeeping can offer new revenue streams for local beekeepers, as well as the opportunity to gain resiliency from a diverse source of pollen for honey production.

Additionally, the landowner sees a positive impact from improved soil health, and nearby farmers profit from pollination services.[25] Pollinators are critical to crop production, with the USDA estimating that wild and managed bees together add $15 billion in crop value each year.[26] An Argonne National Laboratory case study found that the value of pollinator habitat on U.S. lands designated as proposed or potential solar sites is between $1.5 billion and $3.2 billion.[27]

Native Vegetation and Pollinator-Friendly Solar

Sites with native or naturalized, non-invasive, flowering vegetation are commonly referred to as "pollinator-friendly solar sites." Pollinator-

25. "Fact Sheet: Making the Case for Solar Beekeeping." Center for Rural Affairs, Dec. 22, 2022. Accessed March 2023.
26. Marieb, Dugan. "Dual-use Solar in the Pacific Northwest: A Way Forward." Renewable Northwest, 2019. Accessed March 2023.
27. "Case Study: Economics of Pollinator Habitats at Solar Facilities." Argonne National Laboratory. Accessed March 2023.

friendly solar project sites offer habitat for honey bees, native bees, and other species of pollinators, all of which can positively benefit local agricultural production. Using native or pollinator-friendly vegetation provides numerous benefits, including reduced erosion, improved water quality and soil health, and increased habitat for wildlife. It can also reduce long-term operation and maintenance costs for project developers and site managers.[28]

Determining the appropriate types of dual-use projects most likely to be successful at a specific site can be daunting. However, research is ongoing to understand the components needed for successful deployment and operation of agrisolar projects. From 2015 to 2021, the Innovative Solar Practices Integrated with Rural Economies and Ecosystems (InSPIRE) project studied field research sites and identified five key elements that enable success. These elements were explored in the report *"The 5 C's of Agrivoltaic Success Factors in the United States: Lessons from the InSPIRE Research Study."* They include:[29]

Climate, soil, and environmental conditions
The ambient conditions and factors of the specific location that are beyond the control of the solar owners, solar operators, agrivoltaic practitioners, and researchers.

Configurations, solar technologies, and designs
The choice of solar technology, the site layout, and other infrastructure that can affect light availability and solar generation.

Crop selection and cultivation methods, seed and vegetation designs, and management approaches
The methods, vegetation, and agricultural approaches used for agrivoltaic activities and research.

Compatibility and flexibility
The compatibility of the solar technology design and configuration with the competing needs of the solar owners, solar operators, agricultural practitioners, and researchers.

Collaboration and partnerships
Understandings and agreements made across stakeholders and sectors to support agrivoltaic installations and research, including community engagement, permitting, and legal agreements.

POLICY APPROACHES TO DUAL-USE

Policies at the federal, state, and local levels of government can influence the implementation of dual-use solar. These policies interact, but overall, local land-use policies have been shown to be the most significant catalyst or inhibitor of agrisolar development.[30]

We will be looking at a variety of policy approaches at each level of government, including tax incentives, land use laws, renewable portfolio standards, and others.

28. Smith, Cody. "Amplifying Clean Energy with Conservation, Part One: Pollinator-Friendly Solar." Center for Rural Affairs, October 2020. Accessed March 2023.
29. Macknick, Jordan, et al. "The 5 Cs of Agrivoltaic Success Factors in the United States: Lessons From the InSPIRE Research Study." National Renewable Energy Laboratory, 2022. Accessed March 2023.
30. Pascaris, Alexis S. "Examining existing policy to inform a comprehensive legal framework for agrivoltaics in the U.S." Energy Policy, December 2021. Accessed March 2023.

Federal

Because land use decisions are typically made at the local level, the role of federal policy in encouraging or discouraging dual-use applications is limited. However, two primary incentives exist for solar development—the Business Energy Investment Tax Credit (ITC) and USDA's Rural Energy for America Program (REAP). Additionally, federal investments in dual-use can help bolster the practice.

Tax incentives

The ITC is the sole corporate tax credit available for solar. The tax credit does not include any restrictions that would disallow solar on specific locations, making it acceptable for combination with dual-use.[31]

Land-use laws

Authority over land use in the U.S. is held by state and local governments.[32]

Portfolio standards

Renewable portfolio standards are policies that require electricity suppliers to provide customers with a stated amount of electricity from renewable sources. Although the idea of a federal renewable portfolio standard has been proposed, no such policy currently exists.[33]

Other

REAP grants and loan guarantees offer financial assistance to agricultural producers and small businesses for energy improvements or investments. This can include construction of solar energy systems and does not present conflicts with dual-use integration.[34]

In 2022, DOE announced an $8 million investment in agrivoltaic research projects. The

Foundational Agrivoltaic Research for Megawatt Scale-funding program is aimed at developing best practices, seeking replicable models, providing new economic opportunities, and reducing land-use conflicts.[35] In 2022, USDA's Partnerships for Climate Smart Commodities awarded the University of Arizona $4.7 million[36] and the University of Texas Rio Grande Valley $2.2 million[37] for agrivoltaic research projects.

State

State policy approaches to dual-use include tax and other financial incentives, state-level land-use laws, renewable portfolio standards, and pollinator scorecards. State-level policies interact with local decision making in ways that can either enable or restrict local governments from enacting certain practices or policies.

Tax incentives

States can incentivize solar dual-use practices through land use taxes. If landowners are able to integrate solar development into their farming operation without a land-use tax change, they may be more receptive to the development. For example, Rhode Island has amended its Farm,

31 Ibid.
32 Ibid.
33 "Renewable energy explained: Portfolio standards," U.S. Energy Information Administration, November 30, 2022. Accessed March 2023.
34 Pascaris, Alexis S. "Examining existing policy to inform a comprehensive legal framework for agrivoltaics in the U.S." Energy Policy, December 2021. Accessed March 2023.

35 "DOE Announces $8 Million to Integrate Solar Energy Production with Farming," U.S. Department of Energy, Dec. 8, 2022. Accessed March 2023.
36 "Media Advisory: USDA awards over $4.7M to support and promote 'climate-smart' food production," University of Arizona, Dec. 19, 2022. Accessed March 2023.
37 Gonzalez, Maria. "UTRGV receives $2.2M grant for 'Climate-Smart' Commodities project," University of Texas Rio Grande Valley, Dec. 12, 2022. Accessed March 2023.

Forest, and Open Space Land law to exempt landowners from a land-use change tax if they are integrating a dual-use renewable energy generation system, which is defined as a wind or solar system that allows agricultural practices to continue around it under normal practices.[38] [39]

Similarly, in 2021, New Jersey enacted a Dual-Use Solar Law, which provides an incentive for keeping land at solar sites in agricultural production. The law established a pilot program allowing unpreserved farmland used for dual-use solar projects to be eligible for farmland assessment under certain conditions.[40]

The AgriSolar Clearinghouse maintains an interactive map detailing dual-use financial incentives throughout the United States, including potential funding sources, assistance programs, utility incentives, and tax breaks. It can be found at: agrisolarclearinghouse.org/financial-information-map.

Land-use laws

State-level land use laws can significantly impact where solar development can happen. For example, Illinois' Agricultural Areas Conservation & Protection Act creates land areas where only agricultural production is allowed.[41]

As dual-use has evolved, debates about whether implementation of these practices at solar sites should qualify as agricultural land use are ongoing. One practice states can employ to help facilitate dual-use at solar sites is to review land use planning goals and definitions of solar generation, farmland, and farm uses to ensure they do not preclude dual-use solar.[42]

Some states have created statewide siting standards to regulate clean energy development. For example, in early 2023, lawmakers in Illinois passed House Bill 4412, which dictates statewide setbacks for wind and solar development.[43] Alternative approaches, such as the creation of state-specific best practices, model ordinances, or voluntary siting matrices offer ways to preserve local control while also providing helpful guidelines for local decision makers.[44] [45]

38 "Rules and Regulations for Enforcement of the Farm, Forest, and Open Space Act," Rhode Island Department of State. Accessed March 2023.
39 Marleb, Dugan. "Dual-use Solar in the Pacific Northwest: A Way Forward," Renewable Northwest, 2019. Accessed March 2023.
40 "Chapter 170," New Jersey Legislature, 2021. Accessed March 2023.

41 Guarino, Jessica, and Tyler Swanson. "The Illinois Agrivoltaics Regulatory and Policy Guide Analyzes State and Local Laws," AgriSolar Clearinghouse, Feb. 1, 2023. Accessed March 2023.
42 Marleb, Dugan. "Dual-use Solar in the Pacific Northwest: A Way Forward," Renewable Northwest, 2019. Accessed March 2023.
43 Moore, Brenden. "New Illinois state energy project standards welcomed by some, resisted by others," The Pantagraph, February 11, 2023. Accessed March 2023.
44 Marleb, Dugan. "Dual-use Solar in the Pacific Northwest: A Way Forward," Renewable Northwest, 2019. Accessed March 2023.
45 Mouw, Lindsay. "Exploring Siting Guidance: Agriculture Siting Matrices Inform Renewable Energy Siting," Center for Rural Affairs, July 2022. Accessed March 2023.

Portfolio standards

As of 2021, 31 states and the District of Columbia had adopted renewable portfolio standards or clean energy goals.[46] Within these standards, "carve out" provisions can be used to encourage the adoption of certain technologies, such as solar and dual-use. As of 2021, 21 states had solar carve-out provisions in their renewable portfolio standards. Massachusetts' SMART program is one example of such a renewable portfolio standard that also incorporates incentives for dual-use.[47]

Other

Under the Massachusetts Department of Energy's Solar Massachusetts Renewable Target (SMART) program, specific kinds of dual-use solar systems, known as Agricultural Solar Tariff Generation Units (ASTGU), can qualify for financial incentives. To qualify, the land under the solar system must be in continuous agricultural production. The SMART program offers a base cents-per-kilowatt-hour compensation rate for new solar arrays. Systems using these practices that qualify as an ASTGU receive an additional 6 cents per kilowatt-hour to the base rate.[48] [49] [50]

Many states across the U.S. have created policies or programs to encourage or require implementation of pollinator habitat at solar

sites. These initiatives can vary widely in their structure and implementation. One tool is a pollinator scorecard, which provides a model to score pollinator-friendly practices. This score can be used to gauge if a site meets state or local requirements, to designate a site as pollinator-friendly, or to determine if a site qualifies for other types of incentives.[51]

For example, Minnesota state code (§216B.1642)[52] authorizes the Board of Soil and Water Resources to establish statewide guidance for solar project developers aiming for recognition under the Habitat Friendly Solar Program. The statute reads, "...an owner of a solar site implementing solar site management practices may claim that the site provides benefits to gamebirds, songbirds, and pollinators only if the site adheres to guidance set forth by the pollinator plan provided by the Board of Water and Soil Resources."[53] [54]

Local

Local land-use policy is the key leverage point

46 Bowers, Richard. "Five states updated or adopted new clean energy standards in 2021." U.S. Energy Information Administration, February 1, 2022. Accessed March 2023.
47 Pascaris, Alexis S. "Examining existing policy to inform a comprehensive legal framework for agrivoltaics in the U.S." Energy Policy, December 2021. Accessed March 2023.
48 "Dual-Use: Agriculture and Solar Photovoltaics." University of Massachusetts Amherst. Accessed March 2023.
49 "Guideline Regarding the Definition of Agricultural Solar Tariff Generation Units." Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs, Department of Energy Resources, Department of Agricultural Resources, April 26, 2018. Accessed March 2023.
50 "SMART Program Incentives for Solar Arrays." University of Massachusetts Amherst. Accessed March 2023.
51 "Pollinator-Friendly Solar Scorecards." Fresh Energy. Accessed March 2023.
52 "2019 Minnesota Statutes." Office of the Revisor of Statutes, Minnesota Legislature. Accessed March 2023.
53 "Minnesota Habitat Friendly Solar Program." Minnesota Board of Water and Soil Resources, 2019. Accessed March 2023.
54 Smith, Cody. "Amplifying Clean Energy with Conservation, Part One: Pollinator-Friendly Solar." October 2020. Accessed March 2023.

for enabling development on land suitable for combining agriculture and solar energy production.[55] This is because local governments usually have the most influence over land use, including the ability to regulate zoning and develop siting ordinances that dictate how and where development can occur. Tax incentives and renewable portfolio standards are seen more in state-level policy.

Tax incentives

Local governments have the ability to create tax incentives, though these are more common in state-level policy.

Land-use laws

Land-use laws are the primary lever for local governments to facilitate dual-use. However, despite rapid expansion of solar energy development, many local governments have not addressed siting in their ordinances. In a review of local-level policies in Illinois, researchers found that many counties had no solar siting ordinance on the books, and the counties that did represented drastically different approaches to zoning and land-use policy.[56] As of 2020, only 19% of zoning ordinances in Michigan addressed utility-scale solar siting.[57] When counties lack an ordinance, it can create uncertainty for decision makers and developers, who won't know if the land use is permitted or prohibited.[58]

Solar siting often depends on the county's comprehensive land-use plans and resulting zoning and siting ordinances. When developing ordinances, local decision makers often use the county's land-use planning goals to help guide the process. For example, in Buchanan County, Iowa, county supervisors cited language in their comprehensive land-use plan about preserving agricultural lands with highly productive soils to propose a restriction on clean energy development on lands with high CSR.[59] Expressing similar concern, Scott County, Iowa passed an ordinance restricting solar development on lands with high CSR.[60] [61]

Conversely, some counties have identified renewable energy development as a priority within their comprehensive land-use plan. Linn County, Iowa's comprehensive plan contains a section on renewable energy, which identifies an objective to "encourage development of local alternative and renewable energy resources through identification and removal of regulatory

55 Pascaris, Alexis S. "Examining existing policy to inform a comprehensive legal framework for agrivoltaics in the U.S." Energy Policy, December 2021. Accessed March 2023.
56 Guarino, Jessica, and Tyler Swanson. "The Illinois Agrivoltaics Regulatory and Policy Guide Analyzes State and Local Laws." AgriSolar Clearinghouse, Feb. 1, 2023. Accessed March 2023.
57 Pascaris, Alexis S. "Examining existing policy to inform a comprehensive legal framework for agrivoltaics in the U.S." Energy Policy, December 2021. Accessed March 2023.
58 Ibid.
59 Klotzbach, John. "County Considering Wind Turbine Ordinance Changes." Independence Bulletin Journal, Sept. 6, 2022. Accessed March 2023.
60 "Scott County Ordinance NO. 22 -04." Scott County, Iowa, Sept. 15, 2022. Accessed March 2023.
61 Whiskeyman, Danny. "Scott County Board of Supervisors approves new solar ordinance." KWQC, Sept. 20, 2022. Accessed March 2023.

barriers."[62]

Additionally, local governments can adopt siting ordinances that dictate specific dual-use management practices at solar sites. For example, ordinances can require sites to be planted in native vegetation or pollinator habitat, or to be maintained by livestock grazing.

Portfolio standards

Both municipalities and utilities have the ability to set their own renewable electricity goals.

Other

Community agrisolar projects can improve local buy-in by providing an opportunity for community members to become shareholders.[63]

CONSIDERATIONS FOR LOCAL DECISION MAKERS: HOW ORDINANCES CAN FACILITATE DUAL-USE

Decision makers who want to facilitate the combination of clean energy development and agriculture should consider the following topics when engaging in the ordinance development or amendment process:

Land-use Planning

Comprehensive land-use plans are commonly used by counties to help guide development. These plans reflect the values and vision of the community and, in rural areas, they often contain language relating to the preservation of agricultural heritage and farmland. The way this language is interpreted varies widely between counties, and some decision makers may have difficulty interpreting how language around agricultural resource protection relates to dual-use.[64]

Implementation of dual-use practices can provide an alternative to an either/or mindset relating to agriculture and clean energy development, as they allow land to stay in agricultural use. Combining livestock grazing, crop production, and other endeavors with solar sites preserves the agricultural roots of rural communities while also allowing landowners and counties to take advantage of the environmental and economic benefits of clean energy development.

Including renewable-energy development within the county's comprehensive plan can ensure the economic benefits of this development are taken into consideration when ordinances are created or amended in the future. Clean energy can benefit counties in the form of increased tax revenues, lease payments to local landowners, and job creation. Combining this development with dual-use can offer increased environmental benefits and provide new revenue streams for local farmers.

Zoning and Siting Regulations

Local decision makers can ensure that development is done in a way that meets the needs of the community by engaging in a proactive ordinance development process. By taking the time to create an ordinance before development has been proposed, decision makers can ensure there is time to receive

62 "Linn County Comprehensive Plan: Volume 1." Linn County, Iowa, July 19, 2013. Accessed March 2023.
63 Brunswick, Sarah, and Danika Marzillier. "The New Solar Farms: Growing a Fertile Policy Environment for Agrivoltaics." Minnesota Journal of Law, Science & Technology, March 4, 2023. Accessed March 2023.

64 Marieb, Dugan. "Dual-use Solar in the Pacific Northwest: A Way Forward." Renewable Northwest, 2019. Accessed March 2023.

community input and feedback on proposed language. Additionally, considerations can be made about setting additional land use expectations, such as dual use.

Counties wanting to enable dual-use integration should consider zoning schemes that allow for mixed land usage. This could include overlay districts, which would allow a special permit for solar in certain zones, or allowing development when certain land use standards are met, such placing a certain percentage of land into pollinator habitat.[65]

Siting regulations should be carefully crafted to ensure they don't restrict dual-use. For example, setting restrictions on panel height or developing overly prescriptive vegetation management requirements can limit dual-use opportunities.

Definitions

When creating definitions within zoning and siting regulations, local governments can ensure they do not preclude dual-use solar. This could include refining definitions for solar generation, farmland, and farm uses to ensure compatibility with desired dual-use practices.[66]

It is also important to determine wich applications and practices will be considered dual-use. For example, in Oregon, a rule was adopted allowing for dual-use practices on high-value soils. However, the rule only specifies agrivoltaics and grazing, meaning pollinator habitats or other conservation dual-use do not qualify.[67]

Interaction of Dual-use Goals

When creating policies, it is especially important to carefully consider how the dual-usage goals interact. Certain requirements may unintentionally restrict beneficial practices. For example, native vegetation or pollinator-friendly habitat requirements may unintentionally limit grazing opportunities if plants on the site are not suitable. In the same vein, to meet pollinator requirements vegetation must be allowed to bloom to ensure it is actually benefiting pollinators, requiring grazing schedules be modified to accommodate bloom times.[68]

65 Pascaris, Alexis S. "Examining existing policy to inform a comprehensive legal framework for agrivoltaics in the U.S." Energy Policy, December 2021. Accessed March 2023.
66 Marieb, Dugan. "Dual-use Solar in the Pacific Northwest: A Way Forward." Renewable Northwest, 2019. Accessed March 2023.
67 Ibid.

It is wise to consider that 100% of land may not be able to be integrated into dual-use. Setting overly strict guidance could deter development if prescriptions are not feasible. Instead, requiring a percentage of land to be used for dual-use purposes introduces a level of flexibility while ensuring that the original intent of the usage policy is preserved.

Site Construction, Decommissioning, and Restoration

Although not directly related to dual-use, local governments can use ordinances to minimize land impacts during the construction and decommissioning of solar systems.

Solar projects generally have minimal impact on land quality, and land can be returned to farming at the end of the project's life cycle, if desired. However, being clear about how land will be

68 "Fact Sheet: Making the Case for Solar Grazing." Center for Rural Affairs, Dec. 20, 2021. Accessed March 2023.

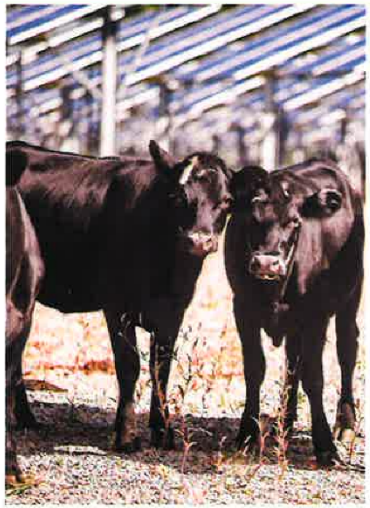
managed during construction as well as once a project is decommissioned can help protect land quality. Local governments can set requirements for construction, vegetation management, and decommissioning that spell out the expectations and obligations. This can also include requiring financial guarantees to ensure funds are available for decommissioning purposes and that local governments are not responsible for costs.[69]

KEY TAKE-AWAYS

Solar development is expected to rise significantly in the coming years. Although deployment models reflect that will require a large amount of land, it is expected it will require 0.5% of land in the contiguous U.S. and, in many cases, can be placed on already disturbed or marginal lands. Even if all proposed projects in Minnesota and Iowa were sited on prime farmland, it would only represent 1.32% and 0.11% of all prime land in those states, respectively.

Clean energy and agriculture do not require an either/or approach. Through thoughtful planning, local decision makers can craft policies that respect the property rights of local landowners and allow them to take advantage of opportunities to diversify their income, while at the same time encouraging dual-use and agrisolar practices that preserve the agricultural values of the local community.

Dual-use and agrisolar practices can include cultivating crops, utilizing livestock grazing, beekeeping, and planting native vegetation and pollinator habitat. These practices can create a variety of environmental and economic benefits, such as new revenue streams for local farmers, increased



pollinators, wildlife habitat, and soil health, reduced erosion, and carbon storage.

Policies exist at the federal, state, and local levels of government that can influence the implementation of dual-use solar and agrivoltiacs. These policies interact but overall, local land-use policies have the most significant role in impacting solar and agrivoltaic development.

By engaging in a proactive ordinance development process, local decision makers can ensure that development is done in a way that meets the needs of their community. Creating an ordinance in advance of development ensures there is time to receive community input and feedback on the proposed language.

69. Kolbeck-Urlacher, Heidi. "Decommissioning Solar Energy Systems Resource Guide." Center for Rural Affairs, June 2022. Accessed March 2023.

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FACT SHEET:

MAKING THE CASE FOR SOLAR GRAZING

As solar projects across the nation continue to expand, solar grazing has emerged as a valuable tool. Using livestock to manage vegetation at solar sites can enhance site value by keeping land in agricultural use, providing new income streams for local farmers, and adding environmental benefits such as decreased erosion and enhanced soil health.

"Agrivoltaics" is a term used to describe combining agriculture with renewable energy. Other types of agrivoltaics include producing hay, berries, vegetables, and honey at solar sites.[1]

ECONOMICS

Solar grazing is the utilization of livestock, usually sheep, to manage vegetation at solar sites. It takes the place of traditional mowing, offering numerous environmental and financial benefits and meeting clean energy and agricultural goals simultaneously. For project developers, contracting with local farmers to use solar grazing as a management tool can reduce operations and maintenance costs. A 2018 Cornell University study found that managing solar site vegetation with sheep grazing required two and half times less labor, making it less expensive than traditional landscaping.[2] Meanwhile, solar grazing provides livestock owners with additional pasture opportunities and the chance to be paid for a valuable service, increasing income to their business and adding to the economy of the rural communities where these projects are usually located.

ENVIRONMENTAL BENEFITS

Solar grazing can also add environmental benefits to a project site. Introducing livestock onto the landscape and partnering them with native vegetation can improve soil health and reduce runoff. The deep, complex root systems of native vegetation help retain water, reduce topsoil loss, and provide wildlife and pollinator habitat.[3] Sites with native vegetation can have three and one-half times more pollinators than sites without.[4] This vegetation provides habitat for bees and other pollinators, as well as ground nesting birds including sage grouse, pheasants, and quail. Pollinator plantings can coexist with solar grazing with careful planning and management, such as developing a rotational grazing plan that accommodates vegetation bloom periods.[5]

Sources

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2 Kochendoerfer, Nikola, et al. "The agricultural, economic and environmental potential of co-locating utility scale solar with grazing sheep." David R. Atkinson Center for a Sustainable Future, Cornell University, 2019, solargrazing.org/wp-content/uploads/2021/02/Atkinson-Center-Full-Report.pdf. Accessed November 2021.

3 Dreves, Harrison. "Beneath Solar Panels, the Seeds of Opportunity Sprout: Low-Impact Development of Solar Installations Could be Win-Win-Win for Food, Water, and Renewable Energy." National Renewable Energy Laboratory, 2019, nrel.gov/news/features/2019/beneath-solar-panels-the-seeds-of-opportunity-sprout.html. Accessed November 2021.

4 Schulte, Lisa A., et al. "Prairie strips improve biodiversity and the delivery of multiple ecosystem services from corn–soybean croplands." Proceedings of the National Academy of Sciences of the United States of America, Oct. 17, 2017, pnas.org/content/114/42/11247. Accessed November 2021.

5 "Solar Grazing FAQ." American Solar Grazing Association, solargrazing.org/faq. Accessed November 2021.

PLANNING

Including solar grazing as a goal in the beginning stages of project planning will allow developers to tailor sites for optimal grazing management. Solar grazing is most successful when deployed as part of a strategic, rotational grazing plan.

Photo courtesy of Minnesota Native Landscapes

STEP 1

Goal setting

Developers should identify their project goals and build a site plan that reflects the solar grazing co-usage goals. Other beneficial practices, such as pollinator or wildlife habitat and establishment of native vegetation, should be considered, but weighing how these goals can complement or impede each other is important.

STEP 2

Determine site conditions

Developers should develop a timeline for site establishment. Introduction of regular livestock grazing should be withheld until native vegetation at the site is fully established—between one and three years. Flash grazing during this period can be used for weed control. Consulting with local experts is key when selecting a seed mix for the site that is regionally appropriate and suitable for livestock grazing. Other factors that should be considered include site size, accessibility of the site, electricity and water access, and fencing. Although wildlife fencing provides benefits to sites with native plantings, it is not suited for grazing sites due to the gaps at the bottom.[6]

STEP 3

Select livestock species and determine population

Sheep are the most widely used and best-suited livestock for solar grazing.[7] They are smaller than cattle and are not likely to damage equipment. Cattle have been successfully used in solar sites, but panel height becomes a necessary consideration.[8] Determining the number of animals used during grazing management will depend on available forage and the length of the grazing period.

STEP 4

Establish a robust rotational grazing and vegetation management plan for the site

Creating a rotational grazing plan is key to ensuring proper management of vegetation and for the health of grazing animals. Consult with local grazing experts to create a goal-oriented, site-specific plan. Temporary fencing may be employed for "mob" or rotational grazing. Sheep should be moved at least once a week to allow recovery of grazed plants and should not return to a previously grazed paddock for at least six weeks.[9]

Sources, continued

6 Personal communication, Audrey Lomax, Grazing Manager, Minnesota Native Landscapes, October 2021.

7 "What is Solar Grazing?" American Solar Grazing Association, solargrazing.org/what-is-solar-grazing. Accessed November 2021.

8 Sharpe, K.T., et al. "Evaluation of solar photovoltaic systems to shade cows in a pasture-based dairy herd." Journal of Dairy Science, March 2021, sciencedirect.com/science/article/pii/S0022030220310730. Accessed November 2021.

9 Frenay, Erica. "Solar Grazing: Livestock as Landscapers at Utility-Scale Solar Arrays." Cornell Small Farm Program, July 20, 2020, smallfarms.cornell.edu/2020/07/solar-grazing-livestock-as-landscapers-at-utility-scale-solar-arrays. Accessed November 2021.

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CONSIDERATIONS

Developers and farmers must work together to develop contracts that serve the needs of both parties. Longer-term contracts allow farmers to make investments in best practices. Site managers should ensure fencing, gates, and water access are maintained.[10] Carrying proper insurance and having clear contracts that spell out who is allowed at the site is important for the safety of the animals, equipment, and people.

SOLAR GRAZING AND SEED MIXES

Seed mixes should be regionally appropriate and site-specific. Consult with local experts to develop a location-specific mix. Many seed mixes can support both pollinators and livestock. If pollinator habitat is a goal, carefully timing grazing schedules is necessary to accommodate bloom times.

POLICIES

Policymakers can develop zoning and tax policies that incentivize beneficial practices, such as solar grazing. It is important to recognize that vegetation management goals may differ from site to site. Ordinances that include native vegetation and/or pollinator-friendly rules should not be so strict that they reduce opportunities for other beneficial practices, such as grazing.

- In 2021, New Jersey enacted a "Dual-Use Solar Law" which provides an incentive for keeping land at solar sites in agricultural production. S3484 established a pilot program allowing unpreserved farmland used for dual-use solar projects to be eligible for farmland assessment under certain conditions.[11]
- Under the Massachusetts Department of Energy's Solar Massachusetts Renewable Target (SMART) program, specific kinds of dual-use solar systems, known as "Agricultural Solar Tariff Generation Units," can qualify for financial incentives. To qualify, the land under the solar system must be in continuous agricultural production.[12]

Sources, continued

10 "Recommendations." American Solar Grazing Association, solargrazing.org/recommendations. Accessed November 2021.

11 "Chapter 170." New Jersey Legislature, 2021, njleg.state.nj.us/2020/Bills/PL21/170_.PDF. Accessed November 2021.

12 "Dual Use: Agriculture and Solar Photovoltaics." University of Massachusetts Amherst, Center for Agriculture, Food, and the Environment, May 2018, ag.umass.edu/clean-energy/fact-sheets/dual-use-agriculture-solar-photovoltaics. Accessed November 2021.

FACT SHEET: ENVIRONMENTAL IMPACTS OF RENEWABLE ENERGY— WIND AND SOLAR

Renewables have been the fastest growing energy source since 2017 when costs reached a key milestone. Costs dropped enough to make wind and solar the cheapest form of conventional energy.[1] Rural communities often carry this infrastructure. This fact sheet looks at the environmental impacts of wind and solar development.

WIND

Bird and bat species are a top concern for protection from wind turbines.

Especially key protected, threatened, or endangered species: Indiana bat, northern long-eared bat, little brown bat, tri-colored bat, and bald eagles.

Wind developers are now performing acoustic surveys and radio tracking of threatened species to understand migration, mating, and nesting habits.

- Each developer must file for an Incidental Take Permit with the nearest U.S. Fish & Wildlife Service Ecological Services Office, which sets a limit to the amount of damage by wind turbines to vulnerable species.

That application includes a Habitat Conservation Plan detailing how the developer will not only avoid damaging, but protect vulnerable species.[2]

- These plans are part of complying with the Endangered Species Act.[3]
- Operating wind farms must conduct baseline bird and bat fatality monitoring in compliance with state and federal law.

Turbines are checked weekly for bird and bat fatalities.

- Investing in habitat conservation and considering the nesting and migration patterns are also options to meet requirements.

1 "Levelized Cost of Energy and Levelized Cost of Storage 2018." Lazard, Nov. 8, 2018, lazard.com/perspective/levelized-cost-of-energy-and-levelized-cost-of-storage-2018/. Accessed December 2018.
2 "Habitat Conservation Plan Handbook." U.S. Fish & Wildlife Service, Jan. 18, 2018, fws.gov/endangered/what-we-do/hcp_handbook-chapters.html. Accessed December 2018.
3 "Habitat Conservation Plans: Section 10 of the Endangered Species Act." U.S. Fish & Wildlife Service, Aug. 29, 2018, fws.gov/midwest/endangered/permits/hcp/hcp_wofactsheet.html. Accessed December 2018.

SOLAR

- Land used for utility scale solar projects can cause habitat loss.
  - Pollinator-friendly solar sites can combine habitat for pollinators with solar arrays, and has been supported through state policy in Maryland, Minnesota, New York, and Illinois.[4,5]
- Three states—Connecticut,[6] North Carolina,[7] and Washington[8]—have passed policies restricting siting solar projects on agricultural land through either state legislation or county ordinances.
  - As an alternative, low-impact solar and co-location of solar and agriculture is a growing area of research with three categories of design:
    1. Solar-centric
    2. Vegetation-centric
    3. Co-location[9]

Solar developers have found that combining solar generation with pollinator habitat or grazing land can reduce operations and maintenance costs.[10]

4 "Conservation: (525 ILCS55/1) Pollinator Friendly Solar Site Act." Illinois General Assembly, Aug. 21, 2018, ilga.gov/legislation/ilcs/ilcs3.asp?ActID=3900&ChapterID=44. Accessed December 2018.
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7 "PB 16-28." Currituck County Board of Commissioners, Feb. 20, 2017, co.currituck.nc.us/wp-content/uploads/2017/12/pb-16-28-currituck-county-udo-amendment-chapter-4-use-standards-02-20-2017.pdf. Accessed December 2018. This ordinance was put in place in February 2017 and repealed 18 months later.
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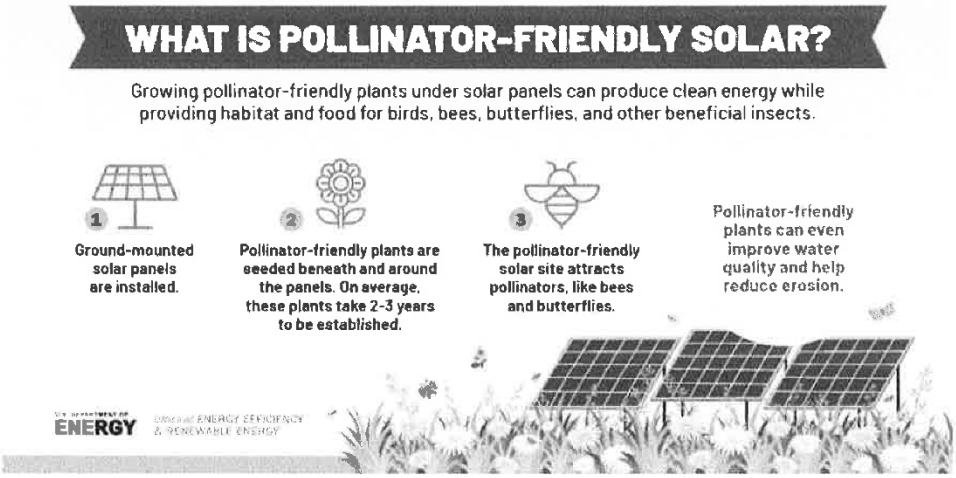
9 Mow, Benjamin. "Solar Sheep and Voltaic Veggies: Uniting Solar Power and Agriculture." U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy-National Renewable Energy Laboratory, June 6, 2018, nrel.gov/state-local-tribal/blog/posts/solar-sheep-and-voltaic-veggies-uniting-solar-power-and-agriculture.html. Accessed December 2018.
10 Macknick, Jordan. "Overview of Opportunities for co-location of agriculture and solar PV." U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy-National Renewable Energy Laboratory, June 14, 2016, eanvt.org/wp-content/uploads/2013/01/NREL-Overview-of-opportunities-for-co-location-of-agriculture-and-solar-PV-1.pdf. Accessed December 2018.

Solar Energy Technologies Office

Buzzing Around Solar: Pollinator Habitat Under Solar Arrays

JUNE 21, 2022

By: Michele Boyd, Program Manager, Strategic Analysis and Institutional Support



Pollinators—such as bees, butterflies, and other insects—are critical to the success of about 35 percent of global food crop production. In order to thrive, pollinators must have a suitable habitat. Establishing pollinator-friendly plants under and around ground-mounted solar arrays has the potential to provide this critical habitat and benefit both the pollinators and nearby agriculture. But a number of important questions remain about the impacts of pollinator-friendly solar and how to implement it at a large scale.

The U.S. Department of Energy Solar Energy Technologies Office (SETO) is working to better understand the economic, ecological, and performance impacts of co-locating pollinator habitat and solar arrays. This research is part of our broader agrivoltaics research, which studies how solar and agriculture can co-locate. Some of that research includes:

- Seed mixes and stormwater management in Georgia: A pollinator-friendly solar farm on former U.S. President Jimmy Carter's land is one of five solar sites being used to study stormwater infiltration and runoff at solar farms. They are testing three different seed mixes, including the

industry-standard grass, a low-diversity pollinator mix, and a high-diversity planting pollinator mix.

Black-eyed Susan flowers are blooming at sunrise at the Carter Farms solar site.

Jill Stuckey

- Ecological and performance impact studies in the Midwest: SETO funded a project led by the University of Illinois to investigate solar co-located with pollinator plantings at large-scale installations, with teams of researchers working at seven separate sites in the Midwest. From their findings, they will develop a pollinator planting manual, cost-benefit calculator, native seed mix selection tool, and pollinator assessment tool. Together, these tools will address questions on project cost, return on investment, logistical needs, and site- or project-specific constraints.

National Institute of Food and Agriculture
UNITED STATES DEPARTMENT OF AGRICULTURE

Protecting Pollinators Critical to Food Production

June 10, 2022

NIFA AUTHORS

Margaret Lawrence, Writer-Editor

Pollinators help ensure the world eats. Scientists estimate that about 75% of the world's flowering plants and about 35% of the world's food crops depend on animal pollinators to produce.

While more than 3,500 species of native bees help increase crop yields, pollinators include many more species than just bees. Flowers can be pollinated by both insects and animals - such as bees, wasps, moths, flies, butterflies, birds and even small mammals such as bats.

Despite their importance, many pollinators are declining in numbers, posing a threat not only to the world's ecosystems but to global food security as well. To help address overall pollinator decline, USDA's National Institute of Food and Agriculture (NIFA) partners with Land-grant Universities (LGUs), U.S. government laboratories, and private and nonprofit organizations to support research, education, and extension programs advancing pollinator health.

Since 2020, NIFA has awarded $15.98 million via more than 40 competitive grants including Agriculture and Food Research Initiative grants as well as non-AFRI grants. Additionally, NIFA capacity funding to Land-grant Institutions supported 28 additional research and Extension projects.

Multi-State Project Reaping Rewards

NIFA's Multi-State Research Fund also provides crucial support to projects that incorporate multiple institutions tackling vital projects. One such grant brought together the **University of California**, **Cornell University**, **Cornell Cooperative Extension**, **Delaware Cooperative Extension**, **University of Illinois**, **Louisiana State University**, **University of Massachusetts**, **Michigan State University**, **University of Minnesota**, **Mississippi State University**, **University of Nebraska**, **University of New Hampshire**, **North Carolina Cooperative Extension**, **Pennsylvania State University**, **Purdue University**, **Rutgers University, University of Vermont**, and **Virginia Tech.** Their goal—harness chemical ecology to address agricultural pest and pollinator challenges. To reduce reliance on pesticides, scientists explored ways to harness natural plant defenses, such as emitting chemicals that slow insect feeding, inhibit infections, call beneficial insects to their aid or warn other plants.

Received from Christopher Widman, 11-27-23 - Woodbury County Zoning Commission Meeting

To: Woodbury County Zoning Commision

Questions Submitted at Nov 27, 2023 meeting

1. Does the county have a map showing where the signed solar easements are located in the county? If so, can you provide this map to the public with a listing of parcels and owners?

2. Can the Solar Utilities within Ag Preservation Land designate a setback from a residence to a one mile radius? Studies have shown that property values within 0.5 miles of solar farms are negatively impacted by solar farms (See attached article or link) (link: Do Solar Farms Lower Property Values? A New Study Has Some Answers - Inside Climate News)

3. If the county grants an overlay within Ag Preservation Land and does not designate the setbacks greater than 0.5 miles, does the county think there is precedent to win a legal case brought from landowners within 0.5 miles of the solar farms who believe their land values are decreased due to the solar farm? Please provide a listing of legal cases that show legal precedent has been made in other counties.

4. Per the packet provided at the meeting today, it appears that the majority of the people who have spoken at prior meetings in favor of the solar projects on Ag Preservation land have signed easements with solar companies or utility companies. (See attached listing of landowners and parcels that have signed easement contracts.) It would appear those people are primarily promoting private interest rather than the general welfare of the county. If the Woodbury County Zoning Commission makes the changes to allow an overlay that would allow these landowners with existing easement contracts to build solar utilities on the Ag Preservation Land, does the county believe they can show that the changes were made within a comprehensive land use plan and promotes the general welfare of the county? If the county begins making changes to include more parcels from the landowners with easements, it could be seen as promoting private interest rather than the general welfare of the county.

5. In the packet provided it discusses the possibility of using the original Corn Suitability Rating (CSR) Vs the Corn Suitability Rating 2 (CSR2). The county assesses taxes based on CSR2 not CSR. When the county began using CSR2 to assess property taxes, property owners in the river bottom tried to argue that it was not a suitable rating for the land. However, the county and state disagreed and stated that CSR2 was a suitable rating for Ag Land. If the commission decides to use a CSR rating instead of a CSR2 rating, please provide evidence as to why they believe the old rating is better than the new rating? If they believe CSR values are more correct than CSR2, should the commission petition the Treasurer's Office to change the property valuations from CSR2 back to the old CSR valuation that was used over 10 years ago?

Christopher Widman
1866 220th Street
Bronson, IA 51007

Clean Energy

Do Solar Farms Lower Property Values? A New Study Has Some Answers

Researchers looked at sale prices of 1.8 million homes near utility-scale solar plants in six states—the largest analysis ever done on this subject.

By Dan Gearino
March 15, 2023

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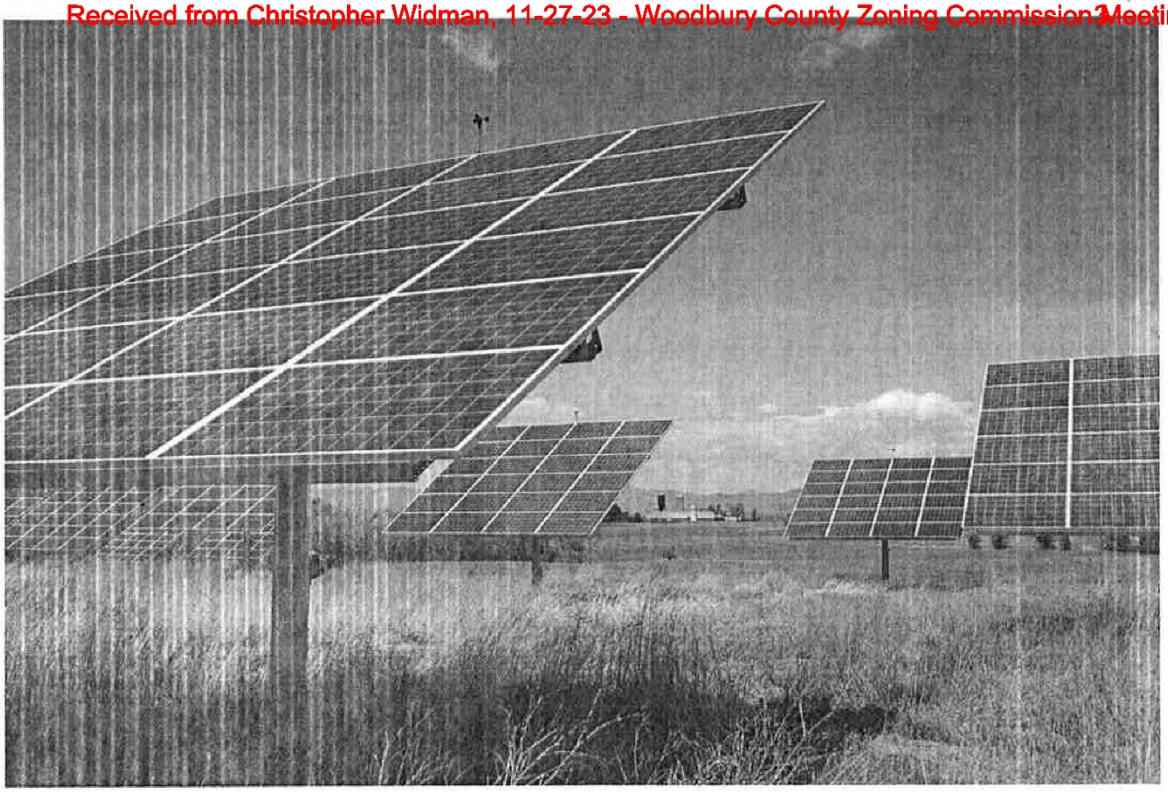


Solar tracker panels follow the sun's path on May 17, 2014 on a Champlain Valley dairy farm near West Haven, Vermont. Credit: Robert Nickelsberg/Getty Images

A new study finds that houses within a half-mile of a utility-scale solar farm have resale prices that are, on average, 1.5 percent less than houses that are just a little farther away.

The research from Lawrence Berkeley National Laboratory helps to refute some of the assertions of solar opponents who stoke resistance to projects with talk of huge drops in property values. But it also drives a hole through the argument made by people in the solar industry who say there is no clear connection between solar and a drop in values.

The authors analyzed 1.8 million home sales near solar farms in six states and found diminished property values in Minnesota (4 percent), North Carolina (5.8 percent) and New

were within their margins of error, which means the price effects were too close to zero to be meaningful. The paper was published in the journal Energy Policy.

The authors accounted for differences in property features, inflation and other factors in order to isolate the effect of proximity to solar.

Ben Hoen, a co-author and research scientist at the Lawrence Berkeley lab, said the numbers are clear but additional research is needed to understand what's happening on the local level to lead to these price effects.

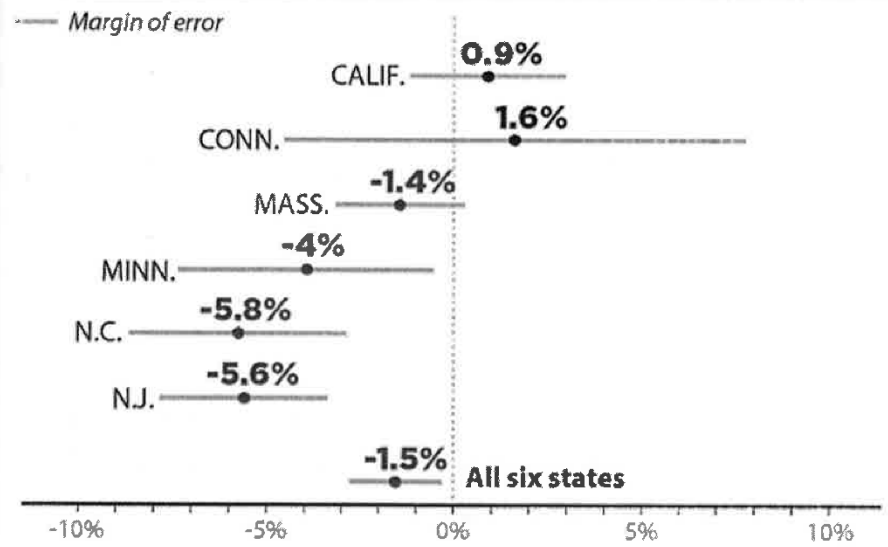
"We have a sense of the 'what,' but we don't know the 'why,'" he said.

Solar's Effect on Home Resale Prices

A new study looked at resale values of houses near utility-scale solar plants and found the properties closest to a solar project sell for slightly less than properties that are a little farther away. The research covered six states, only three of which (Minnesota, North Carolina and New Jersey) showed pricing effects outside of the study's margin of error.

HOME RESALE VALUES

Price difference between half-mile and 2-to-4 mile proximity of utility-scale solar plant



For example, he doesn't have a thorough explanation for why the price differences are higher in some states than others.

The researchers chose this group of states because they were, except for Connecticut, the top five in the country for the number of solar installations of at least 1 megawatt as of 2019. They included Connecticut because it is an example of a state with a high population density near solar projects.

Hoen emphasized that the results show a period in time, with transactions that occurred from 2003 to 2020, and may not reflect prices right now.

Also, he noted that the paper's analysis doesn't take into account any of the financial benefits of solar for landowners and communities, which may include payments from the developer and a decrease in local taxes.

The study is being released at a time of rapid expansion in the number and size of solar projects, which is a key part of the country's push to reduce the emissions that contribute to climate change.

The scale of growth in solar development has been met with an intensifying resistance in local communities where some people argue that the projects are ugly and pose a threat to property values and human health. Solar opponents amplify these concerns on social media.

Of all the arguments against solar, the idea that it will hurt property values has been among the most potent, based on prior reporting by Inside Climate News about the local debates. At public hearings and in comments filed with regulators, some residents talk about how they fear reductions of 40 percent or more.

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Asked if he saw anything in his data to support these claims, Hoen said there is "no evidence that an effect that large exists."

Jeffrey Jacquet, an Ohio State University professor who has written about conflicts over renewable energy projects, said the new paper is impressive in its depth and shows the need to ask more questions about the benefits and drawbacks of

"I think the takeaway is that the effect of renewables on property values is small on average, but it is not zero, and we need to correct for that negative impact," he said.

Before this latest study, the largest one done in the United States was in 2020 by researchers at the University of Rhode Island who looked at about 400,000 real-estate transactions in Rhode Island and Massachusetts. They found that the value of houses within one mile of a solar project decreased by an average of 1.7 percent following construction of the project.

The two studies each show a small decrease in values of properties near solar projects, although Hoen cautioned against comparisons because the two are different in their geographic scope and the number of transactions reviewed.

The Solar Industry Reacts

Clean energy advocates and the solar industry may be pleased that the study finds no large negative effect on property values, but they also are wary of the core finding that there is a measurable, albeit small, effect.

"There is nothing revelatory in this study—the results are not definitive and only cover a narrow data set," said Jason Ryan, a spokesman for the American Clean Power Association, a trade group, in a statement. "The report, which found no evidence of adverse impacts on property values in half the states studied, is largely consistent with many prior studies finding that solar projects don't adversely affect property values. Appraisal data from across the country also show similar conclusions."

property appraiser in Raleigh, North Carolina. He has spent about 15 years analyzing property values near solar projects. He often works on behalf of solar companies in regulatory cases before state and local regulatory agencies.

"You can't really measure things that small in real estate from an appraisal standpoint," he said.

Among the many problems with drawing conclusions from such a small difference is that there are many factors at play, including the desirability of the house and the features of the land, he said. The presence of a solar project is one of those factors, and it's difficult to say how much weight it has.

In his experience, solar projects do not lead to a pattern of a negative effect on the values of nearby properties.

Kirkland is far from alone in coming to this conclusion. In Chisago County, Minnesota, which has more solar projects than any other county in the state, officials have been monitoring real-estate transactions to try to detect any changes in resale prices as a result of solar development. They haven't found any negative effects, either in 2017 after the construction of the state's largest solar array, or as recently as December, according to the county assessor's

Hoen said that a 1.5 percent difference may not be significant for an appraiser looking at a small number of transactions, but it is significant in a statistical analysis like the one in the paper.

And, even if there are many factors at play, he is confident that proximity to solar is a strong factor explaining the price difference.

He is eager to ask follow-up questions in additional studies to get an idea of what solar-related factors are contributing to negative effects of pricing. For example, he wonders if an increase in local controversy surrounding a project leads to larger decreases in property values.

"Unpacking these types of mechanisms will take further study," he said.

Share this article

Dan Gearino

Clean Energy Reporter, Midwest, National Environment Reporting Network

Dan Gearino covers the midwestern United States, part of ICN's National Environment Reporting Network. His coverage deals with the business side of the clean-energy transition and he writes ICN's Inside Clean Energy newsletter. He came to ICN in 2018 after a nine-year tenure at The Columbus Dispatch, where he covered the business of energy. Before that, he covered politics and business in Iowa and in New Hampshire. He grew up in Warren County, Iowa, just south of Des Moines, and lives in Columbus

@DanGearino dan.gearino@insideclimatenews.org

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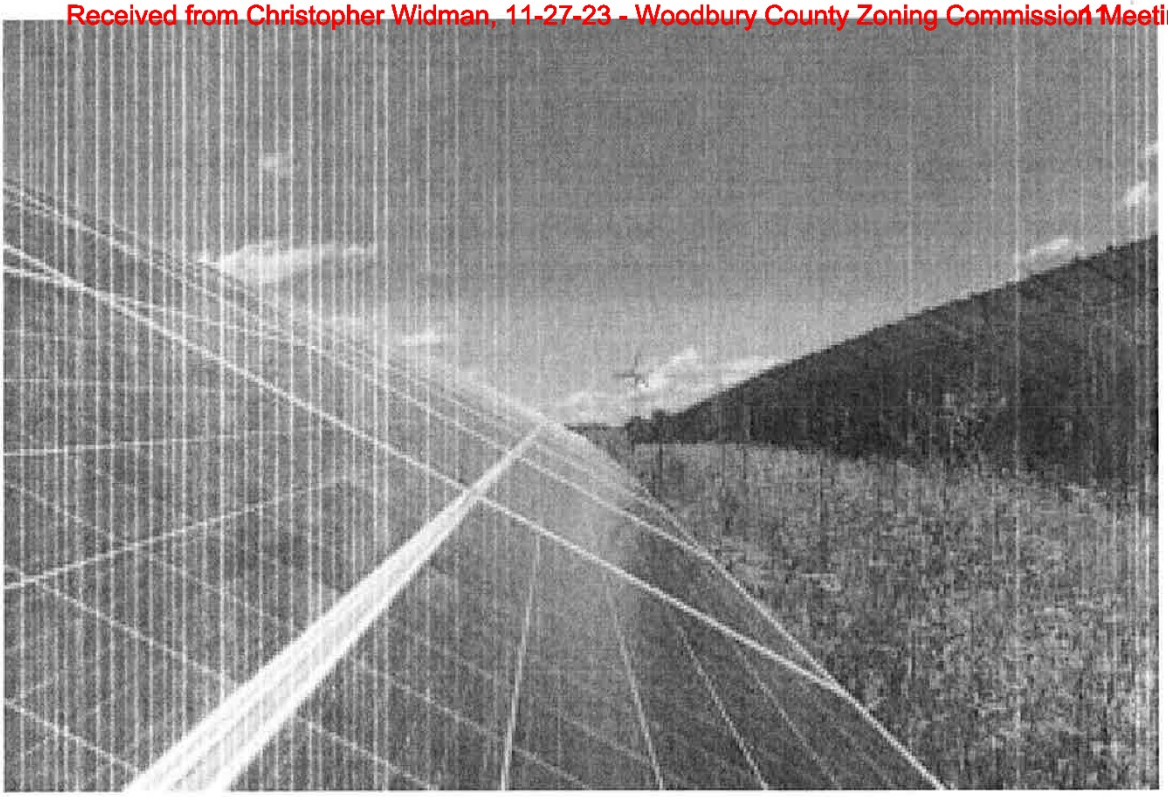
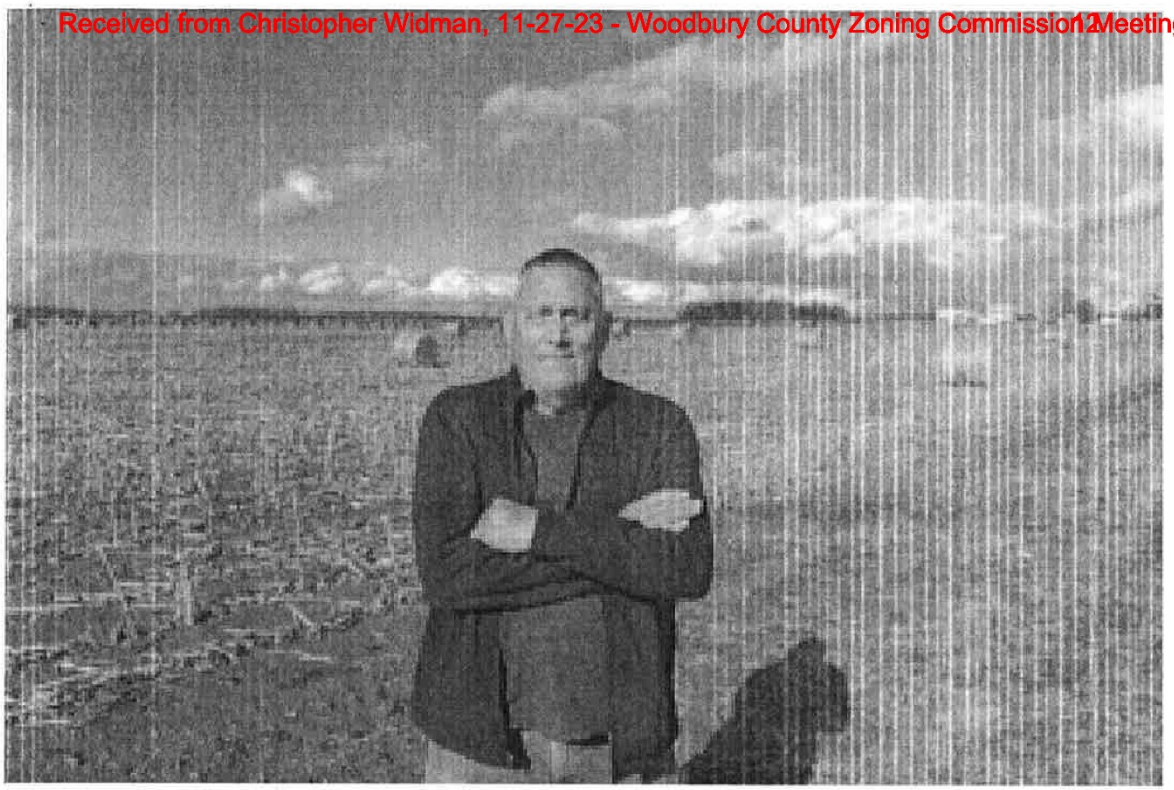


Community Solar Is About to Get a Surge in Federal Funding. So What Is Community Solar?

By Dan Gearino



In the End, Solar Power Opponents Prevail in Williamsport, Ohio

By Dan Gearino

One Farmer Set Off a Solar Energy Boom in Rural Minnesota; 10 Years Later, Here's How It Worked Out

By Dan Gearino

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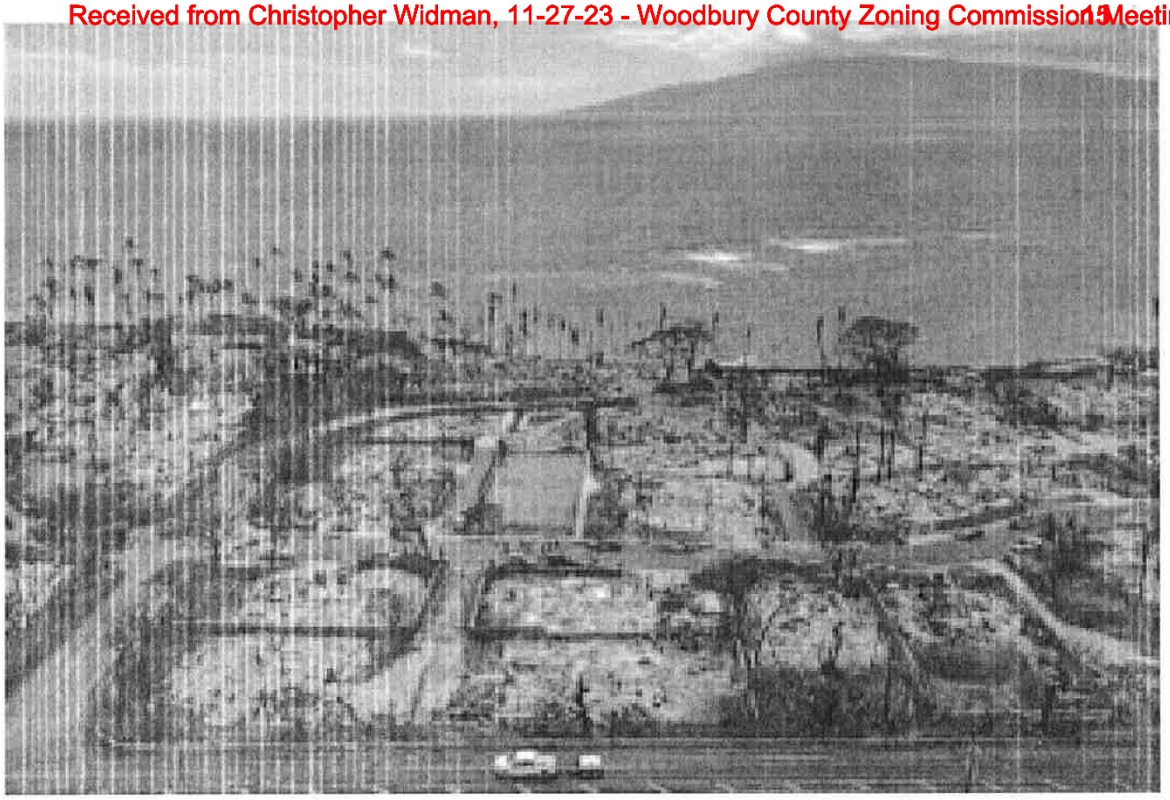
Pumped Storage Hydro Could be Key to the Clean Energy Transition. But Where Will the Water Come From?

By Wyatt Myskow



US Regions Will Suffer a Stunning Variety of Climate-Caused Disasters, Report Finds

By Nicholas Kusnetz, Lee Hedgepeth, Amy Green, Phil McKenna, Dylan Baddour, Aydali Campa, Wyatt Myskow, Marianne Lavelle and Kristoffer Tigue

New Research Makes it Harder to Kick The Climate Can Down the Road from COP28

By Bob Berwyn

Clean Energy

What Happened to the Great Lakes Offshore Wind Boom?

Offshore wind projects cropped up all over the Great Lakes region in the early 2010s. By the end of the decade, all but one were gone. Developers, though still drawn to the lakes' powerful winds, have been reluctant to return.

By Nicole Pollack

A New Solar Water Heating System Goes Online as Its Developer Enters the US Market

As New York Officials Push Clean Hydrogen Project, Indigenous Nation Sees a Threat to Its Land

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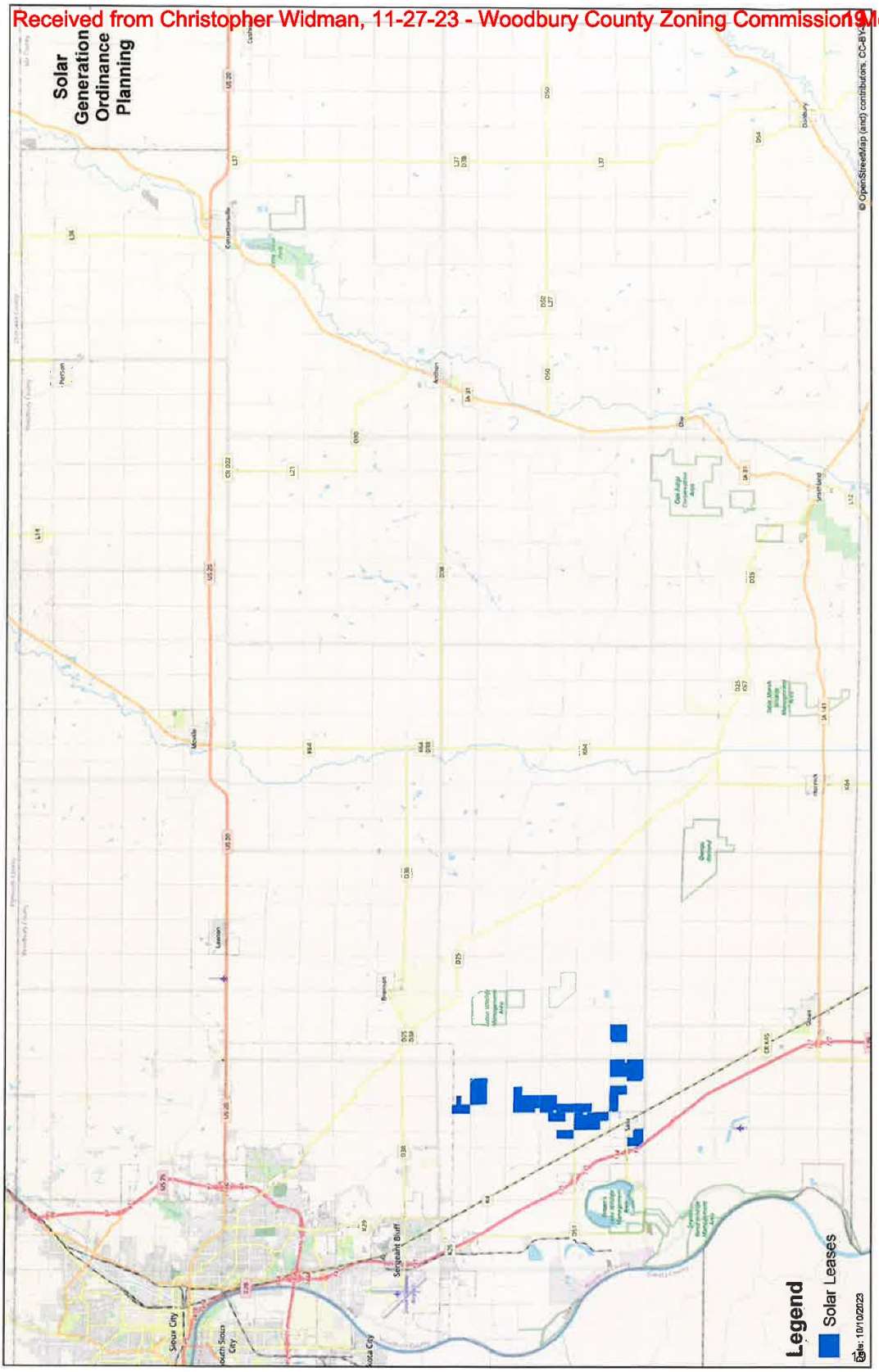

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	Leo Jochum	874714400004	29
	Leo Jochum	874714400005	39
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	Leo Jochum	874702400003	38
	Leo Jochum	874702400005	20
	Leo Jochum	844702400006	39
	Leo Jochum	874702400042	19.53
	Leo Jochum	874734452001	34.39
	Leo Jochum	874734476001	39
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	Leo Jochum	874711200001	38
	Leo Jochum	874711200003	39
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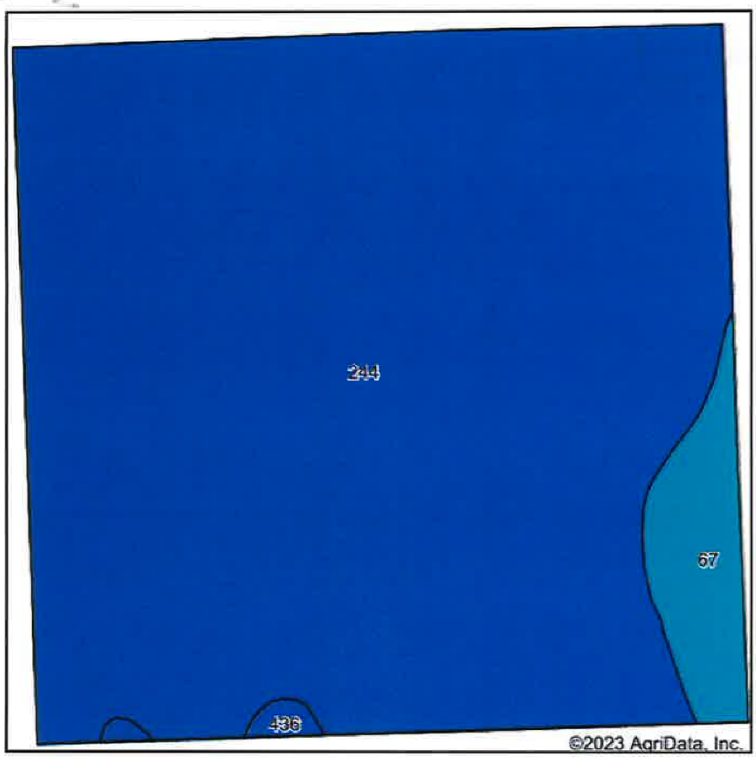
Soils Map



Soils data provided by USDA and NRCS.

State: **Iowa**
County: **Woodbury**
Location: **5-86N-46W**
Township: **Sloan**
Acres: **153.5**
Date: **11/27/2023**

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N W E S

Area Symbol: IA193, Soil Area Version: 33

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
244	Blend silty clay, 0 to 2 percent slopes, rarely flooded	144.57	94.2%		IIIw	81	47	52
67	Woodbury silty clay, 0 to 2 percent slopes, rarely flooded	8.00	5.2%		IIIw	74	51	52
436	Lakeport silty clay loam, 0 to 2 percent slopes, rarely flooded	0.93	0.6%		Iw	89	74	71
				Weighted Average		**2.99**	**80.7**	**47.4**	***n 52.1**

**IA has updated the CSR values for each county to CSR2.
*n: The aggregation method is "Weighted Average using all components"
*c: Using Capabilities Class Dominant Condition Aggregation Method
Soils data provided by USDA and NRCS.

The CSR established an index rating soil map units (SMU) on their potential crop productivity. A CSR rating is based on the inherent properties of each SMU, average weather, and the frequency of use of the soil for row-crop production (Equation 1). The rating also assumes a SMU is adequately managed, artificially drained where required, SMUs located on lower landscapes are not frequently flooded, and there is no land leveling or terracing. Corn suitability ratings can range from 100 for SMUs that have no physical limitations for continuous row cropping to as low as 5 for SMUs with severe limitations for row cropping.

Equation 1

CSR = S - E - B ± W - C - D - SG - P - DSM - PM - MP (modified from Fenton et al., 1971)

S = slope
E = erosion
B = biosequence
W = wetness
C = calcareous soils
D = depth phase
SG = sandy or gravelly soils
P = precipitation factors
DSM = deposition and special soil modifiers
PM = parent material
MP = muck and peaty soils

Since the establishment of the CSR in 1971, the science for calculating CSR for a SMU became more robust as the knowledge base of soil properties was significantly enhanced and expanded. Another change since the establishment of the CSR in 1971 was the soil classification system in use at that time has since been replaced with the current classification system. With the change in soil classification systems, there are currently 500 soil series recognized in Iowa. That is 150 additional soils recognized than when the CSR was first established in 1971.

As the knowledge of soil's increased and more SMUs were recognized, the CSR calculation became more expert driven. In 2013, ISU introduced a new method for calculating CSR values called the Corn Suitability Rating 2 (CSR2) (Equation 2). The CSR2 method provided an index with ratings comparable to CSR, but was more consistent and transparent. This provided interested individuals the ability to calculate a CSR2 value from parameters that can be clearly understood and used.

Equation 2

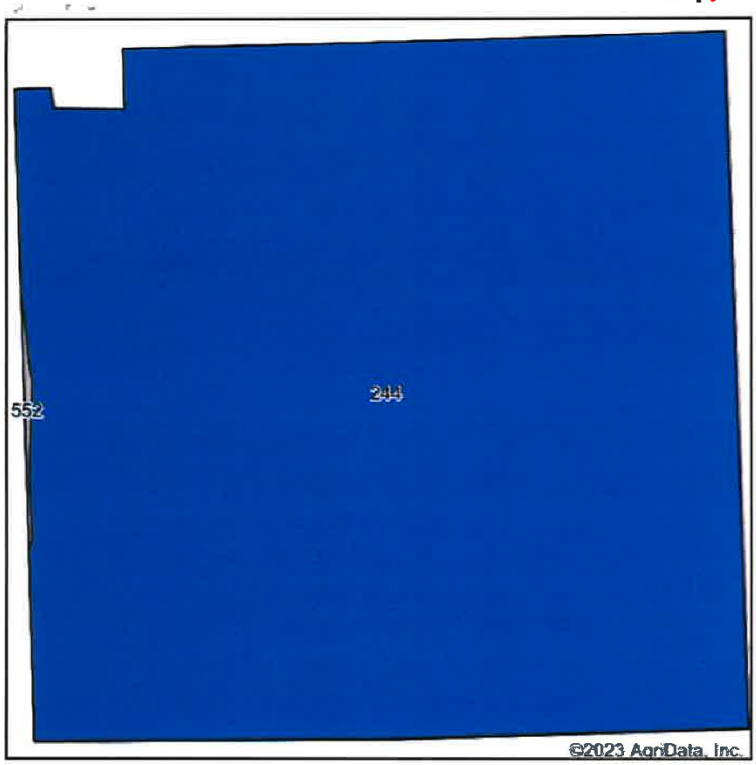
CSR2 = S - M - W - F - D ± EJ (Burras et al., 2015)

S = taxonomic subgroup class of the series of the soil map unit (MU)
M = family particle size class
W = available water holding capacity (AWC) of the series
F = field condition of a particular MU
- Slope
- Flooding
- Ponding
- Erosion class
- Topsoil thickness

D = soil depth and tolerable rate of soil erosion
EJ = expert judgement correction factor
- Normally used with parent materials with very high bulk density and/or are usually clayey or sandy

Similar to the original CSR, the CSR2 assumes a SMU is adequately managed, artificially drained where required, and there is no land leveling or terracing. A major difference between the CSR and the CSR2 is the CSR included a rainfall correction factor where the CSR2 does not.

Soils Map



Soils data provided by USDA and NRCS.

State: **Iowa**
County: **Woodbury**
Location: **31-87N-46W**
Township: **Grange**
Acres: **153.97**
Date: **11/27/2023**

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N W E S

Area Symbol: IA193, Soil Area Version: 33

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
244	Blend silty clay, 0 to 2 percent slopes, rarely flooded	153.62	99.8%		IIIw		81	47	52
552	Owego silty clay, 0 to 2 percent slopes, rarely flooded	0.35	0.2%		IIIw	IIIw	67	42	51
				Weighted Average	**3.00**	***-**	**81**	**47**	***n 52**

**IA has updated the CSR values for each county to CSR2.
*n: The aggregation method is "Weighted Average using all components"
*c: Using Capabilities Class Dominant Condition Aggregation Method
*- Irr Class weighted average cannot be calculated on the current soils data due to missing data.
Soils data provided by USDA and NRCS.

The CSR established an index rating soil map units (SMU) on their potential crop productivity. A CSR rating is based on the inherent properties of each SMU, average weather, and the frequency of use of the soil for row-crop production (Equation 1). The rating also assumes a SMU is adequately managed, artificially drained where required, SMUs located on lower landscapes are not frequently flooded, and there is no land leveling or terracing. Corn suitability ratings can range from 100 for SMUs that have no physical limitations for continuous row cropping to as low as 5 for SMUs with severe limitations for row cropping.

Equation 1

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M = family particle size class
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- Flooding
- Ponding
- Erosion class
- Topsoil thickness

D = soil depth and tolerable rate of soil erosion
EJ = expert judgement correction factor
- Normally used with parent materials with very high bulk density and/or are usually clayey or sandy

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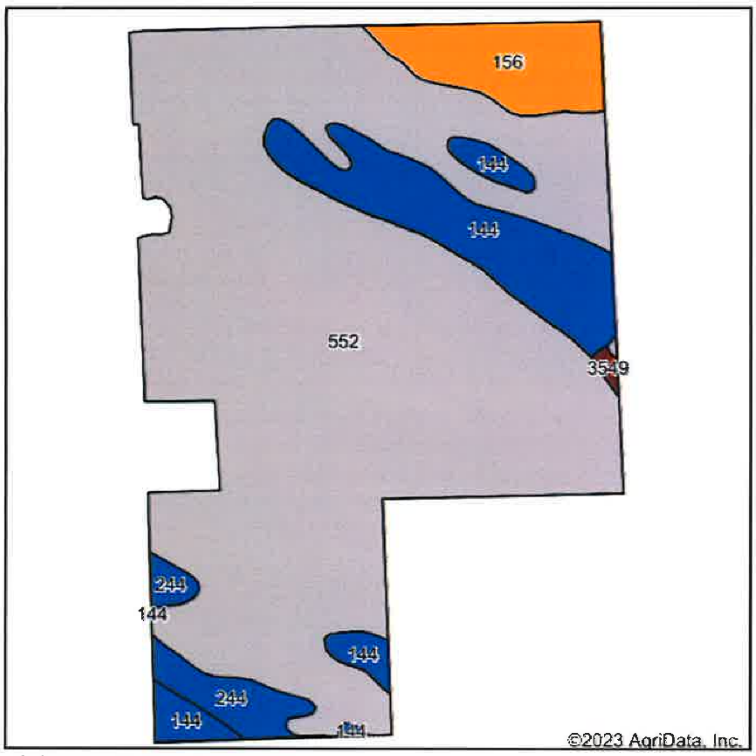
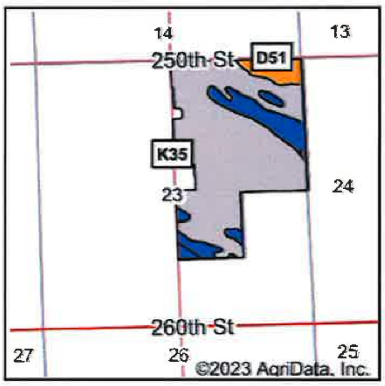
Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Woodbury**
Location: **23-87N-47W**
Township: **Liberty**
Acres: **187.71**
Date: **11/27/2023**

Maps Provided By: surety CUSTOMIZED ONLINE MAPPING © AgriData, Inc. 2023 www.AgriDataInc.com

N W E S

Area Symbol: IA193, Soil Area Version: 33									
Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
552	Owego silty clay, 0 to 2 percent slopes, rarely flooded	146.95	78.3%		IIIw	IIIw	67	42	51
144	Blake silty clay loam, 0 to 2 percent slopes, rarely flooded	23.10	12.3%		Iw	Iw	91	70	74
156	Albaton silty clay, 0 to 2 percent slopes, rarely flooded	11.21	6.0%		IIIw		58	51	49
244	Blend silty clay, 0 to 2 percent slopes, rarely flooded	5.99	3.2%		IIIw		81	47	52
3549	Modale complex, 0 to 2 percent slopes, rarely flooded	0.46	0.2%		Iw	Iw	77	63	57
				Weighted Average	**2.75**	*-	**69.9**	**46.2**	***n 53.8**

**IA has updated the CSR values for each county to CSR2.
*n: The aggregation method is "Weighted Average using all components"
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*- Irr Class weighted average cannot be calculated on the current soils data due to missing data.
Soils data provided by USDA and NRCS.

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Equation 1

CSR = S - E - B ± W - C - D - SG - P - DSM - PM - MP (modified from Fenton et al., 1971)

S = slope
E = erosion
B = biosequence
W = wetness
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Equation 2

CSR2 = S - M - W - F - D ± EJ (Burras et al., 2015)

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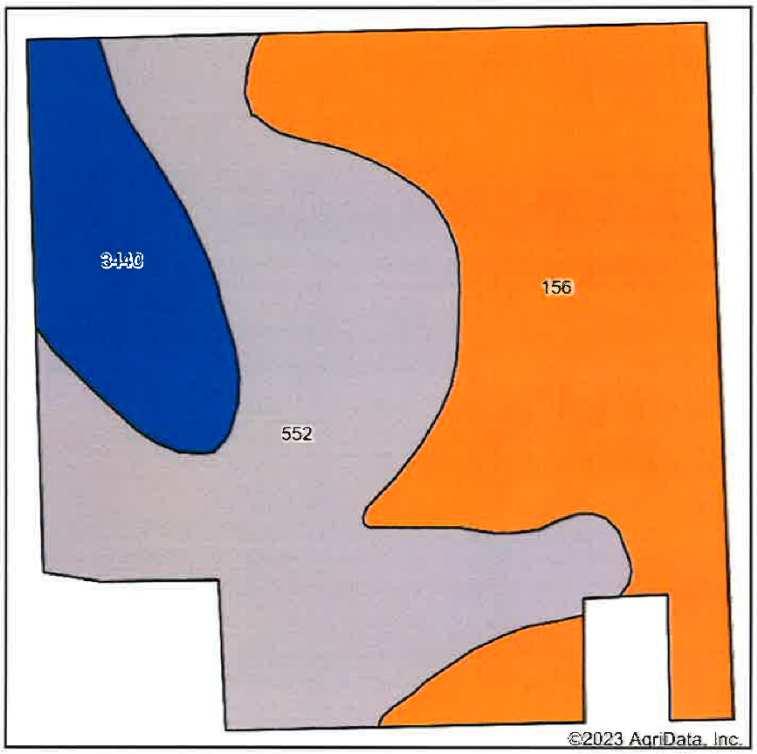

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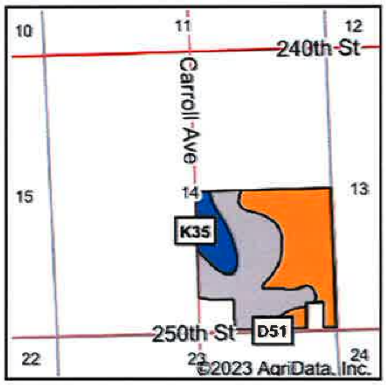

State: **Iowa**
County: **Woodbury**
Location: **14-87N-47W**
Township: **Liberty**
Acres: **140.07**
Date: **11/27/2023**

Maps Provided By: surety CUSTOMIZED ONLINE MAPPING
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N W E S

Area Symbol: IA193, Soil Area Version: 33

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
156	Albaton silty clay, 0 to 2 percent slopes, rarely flooded	61.74	44.1%		IIIw		58	51	49
552	Owego silty clay, 0 to 2 percent slopes, rarely flooded	60.39	43.1%		IIIw	IIIw	67	42	51
3440	Blencoe-Woodbury silty clays, 0 to 2 percent slopes, rarely flooded	17.94	12.8%		IIw		84	63	55
				Weighted Average	**2.87**	***-**	**65.2**	**48.7**	***n 50.6**

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B = biosequence
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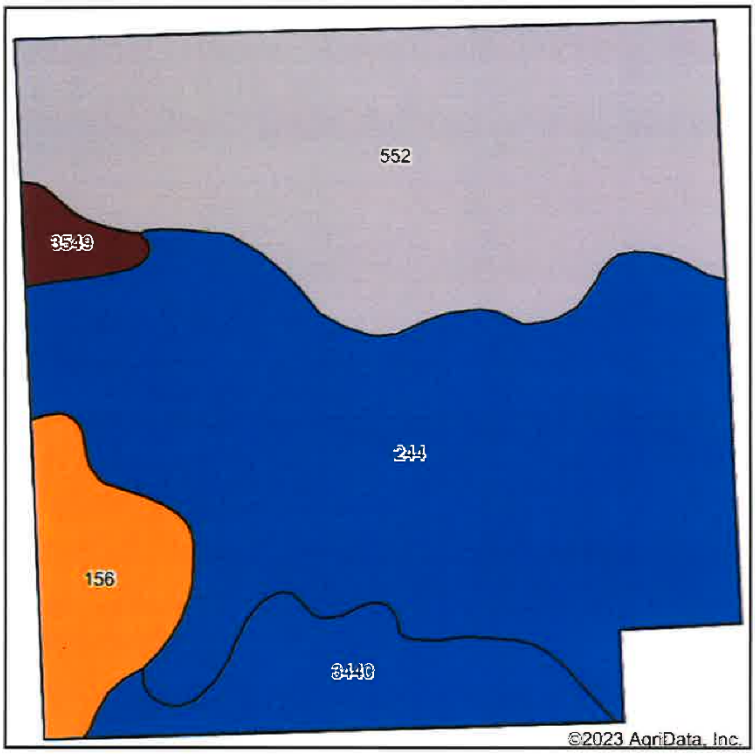

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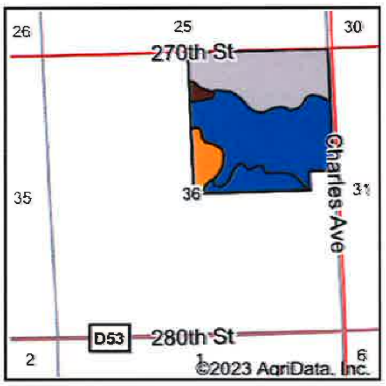

State: **Iowa**
County: **Woodbury**
Location: **36-87N-47W**
Township: **Liberty**
Acres: **152.17**
Date: **11/27/2023**

Maps Provided By: surety CUSTOMIZED ONLINE MAPPING © AgriData, Inc. 2023 www.AgriDataInc.com

N W E S

Area Symbol: IA193, Soil Area Version: 33									
Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
244	Blend silty clay, 0 to 2 percent slopes, rarely flooded	71.47	47.0%		IIIw		81	47	52
552	Owego silty clay, 0 to 2 percent slopes, rarely flooded	54.10	35.6%		IIIw	IIIw	67	42	51
3440	Blencoe-Woodbury silty clays, 0 to 2 percent slopes, rarely flooded	13.35	8.8%		IIw		84	63	55
156	Albaton silty clay, 0 to 2 percent slopes, rarely flooded	10.72	7.0%		IIIw		58	51	49
3549	Modale complex, 0 to 2 percent slopes, rarely flooded	2.53	1.7%		Iw	Iw	77	63	57
				Weighted Average	**2.88**	***-**	**74.6**	**47.2**	***n 51.8**

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Minutes - Woodbury County Zoning Commission Special Meeting – January 17, 2024

The Zoning Commission (ZC) meeting convened on the 17th of January, at 5:00 PM in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, IA for a special meeting. The meeting was also made available via teleconference.

Meeting Audio:
For specific content of this meeting, refer to the recorded video on the Woodbury County Zoning Commission "Committee Page" on the Woodbury County website:

- County Website Link:
  - https://www.woodburycountyiowa.gov/committees/zoning_commission/
- YouTube Direct Link:
  - https://www.youtube.com/watch?v=9eSTtLzBTA8

ZC Members Present:	Chris Zant, Barb Parker, Tom Bride, Jeff Hanson
County Staff Present:	Dan Priestley, Dawn Norton
Public Present:	David Linn, Genise Hallowell, Kim Alexander, Marty Dougherty, Chris Madsen, Rebekah Moerer, Greg Jochum, Tom Jochum, Deb Harpenau, Elizabeth Widman
Telephone:	Leo Yochum, Grant Fisher

Call to Order
Chair Chris Zellmer Zant formally called the meeting to order at 5:02 p.m. Corey Meister was absent.

Election of Chair of Zoning Commission for 2024:
Parker made a motion to nominate Zellmer Zant. Second: Bride. Motion carried 3-0.

Election of Vice-Chair of Zoning Commission for 2024:
Parker made a motion to nominate Bride. Second: Hanson. Motion carried 3-0.

Public Comment on Matters Not on the Agenda
None

Work Session for Proposed Utility-Scale Solar Energy Systems Zoning Ordinance Amendment(s).
Priestley offered a summary of the status of the solar debate and discussed the staff report including three potential options for consideration including the use of the 1) Comprehensive Plan; 2) Retention of the current policy and revision of the conditional use permit process; and 3) the establishment of a utility-scale solar energy systems overlay district.

Priestley requested for the Zoning Commission to receive an email document submitted by Naomi Widman concerning "Solar Farms Cause Decline in Surrounding Property Values." Motion to receive Parker. Second by Bride. Approved 4-0. Received item is available in the "Appendix" section.

Priestley stated that the local jurisdictions have been reached out to for comment, but feedback has not been received up to this point.

The Commissioners and Dan Priestley discussed numerous topics related to the siting of utility-scale solar systems. Topics that were discussed include: impacts on incorporated jurisdictions; impact on land value; MidAmerican's existing solar project; federal initiatives for renewable; the comprehensive plan process; comparison with other counties; the overlay district concept; acre caps; megawatt caps; agrivoltaics; the existing conditional use permit process; lack of public involvement requesting solar in the development plan process; transmission lines; utility-substations; ideal locations; lack of information regarding requested locations; overlay limitations including timeline and expiration; leases; separation distances (setbacks); overlay vs. conditional use; the use of conditions for an overlay; impact on personal use; site plan review process carry through Zoning Commission and Board of Supervisors, etc.

The Commissioners welcomed for the public present to offer any comments. The following addressed the Commission:

Kim Alexander (Hornick) – *Comments available in transcript below.*
Stated this is all driven by government and federal incentive and intervention. He inquired about the federal initiatives including the January 12, 2024 meeting conducted by the Department of Agriculture and Department of Energy as referenced by Priestley earlier in the meeting. Alexander indicated that this utility-solar is not a free market or grass roots initiative from the public and is being supported with government money. Alexander stated there is no need.

Marty Dougherty (City of Sioux City) – *Comments available in transcript below.*
Offered concerns about the impact of utility-scale solar on the industrial areas. Dougherty commented on the city's interest in the industrial areas for development. If industrial solar were placed in the GI Zoning District, this could adversely impact industrial growth. Dougherty referenced the partnership with the IDOT for the new interstate interchange project and offered concerns of how utility-solar might impact the industrial growth potential for the area.

Chris Madsen (City of Sioux City) – *Comments available in transcript below.*
Discussed Sioux City's general concern over the city's two mile jurisdiction. He discussed other setbacks including FAA setbacks and indicated that they are working with the airport on getting further language for the concerns about solar setbacks. Madsen stated that Sioux City does permit accessory solar. Madsen indicated that they appreciate the larger notification area for potential projects.

David Linn (Correctionville) – *Comments available in transcript below.*
Questioned why not to expand GI area to accommodate industrial solar? Linn indicated he is not a fan of it. He suggested that it should keep within industrial areas. Linn indicated that land value may increase in GI and said these should be on land out of site, west of interstate. He inquired about the future land use mapping.

Elizabeth Widman (Sergeant Bluff) – *Comments available in transcript below.*
Offered concerns about property values asserting that property values could drop as much as 5% according to an article submitted to the county. Widman indicated that about $15 per month would be saved on bills by ruining ag land. Widman suggested that money is the incentive and the motivation. Widman offered concerns about the leases and offered concern about who is in control of the land with the leases leaving questions about the ag purpose.

Greg Jochum (Salix) – *Comments available in transcript below.*
Stated that location is the reason why utility-solar not feasible in GI area. Jochum asserted that transmission lines are not there. He suggested that GI can still have farming, rather a CUP or overlay, not close to highway and land would go back to AP. Jochum is in favor of the scorecard/overlay.

Leo Jochum (Salix) – *Comments available in transcript below.*
Offed the Commission with some farm economic history during the 1970s and 1980s. Offered a comparison of agricultural economic figures between Woodbury, Sioux, and Plymouth Counties. Offered support for utility solar as an economic benefit.

The following is an attempt at a transcript. Due to it being computer generated, this transcript is not intended to be perfect but is being provided to offer context of the discussion. The transcript may include issues related to grammar and punctuation. The full audio and transcript is available online at: https://www.woodburycountyiowa.gov/committees/zoning_commission/. The direct hyperlink is available at: https://www.youtube.com/watch?v=9eSTtLzBTA8

WORK SESSION TRANSCRIPT – BEGINS AT 5:06 PM CST

Dan Priestley

yes again tonight's meeting
5:06

is a work session for the continuation of the uh debate uh that has been
5:11
presented to us by the Board of Supervisors uh concerning uh an
5:17
option to look at proposals to address solar energy policy in the
5:22
unincorporated areas of Woodbury County um it's important to point out that the
5:28
current policy in place is for the permitting of industrial assets in
5:34
particular solar panels for industrial uses are geared toward the general industrial zoning district in Woodbury
5:41
County if there was an applicant at this time uh for these type of projects uh
5:48
the eligible area would be in that industrial area which is predominantly uh south of the uh airport Sioux Gateway
5:57
airport and west of Interstate State uh 29 in that respective area so at this
6:03
point that's the only areas where utility solar could be considered um
6:09
the Board of Supervisors have asked uh the commission to look at this in
6:15
terms of permitting it in other uh locations uh such as the agricultural uh
6:21
preservation zoning district and over the course of several months and a
6:26
series of meetings we've collected input uh from uh many land owners and various
6:31
others that have opinions on all different sides of the issue uh We've looked at a good amount of literature uh
6:39
We've consulted with comprehensive plans uh and presented a few options uh for
6:46
consideration one of the options is to transfer this debate as part of the
6:51
comprehensive plan uh the comprehensive plan is at the 11th Hour meaning it's
6:57
pretty much in place uh input has been collected uh and information is uh ready
7:03
in fact we will have a public hearing on Monday uh to kind of present to where we
7:08
are at with the comprehensive plan in nature however the comprehensive plan uh
7:14
remains open to discussion uh for the priorities of the mapping throughout
7:20
unincorporated Woodbury County and that kind of leads to the other uh proposals
7:26
uh such as an overlay district uh which would be kind of considering a
7:32
particular area over AG land with a set of parameters uh that could possibly
7:39
open up uh the ability to permit over there over AG land if uh certain criteria
7:46
met uh that's included within the backup materials and the other option is to
7:52
retain the current policy and revise the conditional use permit process the uh uh
7:59
overlay district is geared toward involving the zoning commission and the Board of Supervisors in terms of the
8:05
level of permitting uh as far as the current policy that involves the zoning commission and the board of adjustment
8:13
uh the uh retention of the current policy with added features would entail
8:18
um adding additional ordinance language with protections uh such as agreements
8:24
decommissioning etc uh where we had left off in the last public hearing
8:29
uh was to um push this out to tonight's meeting January uh to have us have a
8:35
chance to of course collect more uh public input uh more concepts to be introduced into the record those were
8:42
put into uh the backup materials included uh with the packet um
8:47
Additionally the only other uh major item that I had received since the last meeting was a citizen comment uh from

8:57
no Naomi Widman and I uh ask that the zoning commission receive this
9:03
into the record for the minutes uh which would require of course a motion in a second but this is this general comments
9:10
from the public and so

Barb Parker

do you want to do that now

Dan Priestley

yeah I think it' be a good idea

Barb Parker

I'll make a motion that we accept those
9:18

Chris Zellmer Zant

a motion a second second favor say I I Opposed same sign.
9:25
sign okay

Dan Priestley

with uh everything that I've said which is of course a broad
9:31
Viewpoint this is a very uh um uh significant consequential debate on the
9:38
future of Woodbury County I've reached out to the local jurisdictions the uh
9:43
the cities etc and have definitely asked for them to offer input on the
9:50
potential effects with their respective communities I have not received a lot of input uh back at this point but uh
9:57
there's definitely lots of considerations that you could keep in mind for the ordinance as far as uh
10:04
respect for the respect uh local jurisdictions um with that said uh the
10:10
three concepts are laid out within there and so I would basically turn it
10:16
back to the board and ask that we kind of look through at least uh
10:21
those three possible options and so we can all better acquaint ourselves with the uh kind of the details uh the for us
10:30
in a conversational
10:40
format

Jeff Hanson

Dan has there been any previous applications for conditional use permit
10:46
for this use

Dan Priestley

yes Mid-American Energy a couple years ago um uh down by Port
10:52
nail road on the corner uh uh near their campus uh about a 73 acre or so parcel
10:59
located a uh a solar site down there uh they went through the uh protocols that
11:06
the county has at the time uh for the conditional use uh for notifying the neighbors uh actually a notification at
11:13
that under the current rules are 500 ft within the property and the that are notified by letter everything's
11:20
published in the legal section and the zoning commission uh scrutinize the site plan uh the respective uh
11:29
locations where they're going to be on the parcel and uh um looked at potential

11:35
effects that it could have on the area we consulted with a number of area agencies including the FAA considering
11:42
the location there of the airport and took a lot of information into consideration through our typical
11:49
conditional use funnel as we try to investigate all the different aspects of
11:54
that and um it was turned over to the board of adjustment uh they uh our system is designed where
12:02
the commission uh conducts a review meeting and the public hearing is held
12:07
at the board of adjustment level so the commission kind of does the homework as far as uh where the shortfalls and the
12:14
positives negatives all those are transfer that over to the board of adjustment and the board of adjustment
12:20
has that information available as well as the public input at hand and so that information is funneled in and they make
12:27
a determination on how to uh write the resolution and the standards for permitting that respective
12:33
project so that is the one and only project that I I'm aware of since my
12:38
tenure

Jeff Hason

and no pending applications

Dan Priestley

no
12:44
pending

Tom Bride

was there a decommission plan with that site

Dan Priestley

I don't believe so. [Tom Bride: Okay]
12:50
um and that's why uh that's why part of the proposal is is to have direct language in there specific to
12:57
decommissioning

Tom Bride

any other companies that have approached
13:04
the county at all or anything in the general industrial area?

Dan Priestley

we um once in a
13:10
while we get inquiries of course but as far as actually permitting and uh selecting that as a site location
13:19
no

Chris Zellmer Zant

that's 11,000 Acres

Tom Bride

yeah I mean I'm just kind of you
13:25
know there's been stuff talked about that it doesn't pay what it would deem necessary to acquire
13:34
that ground is what I've heard

Chris Zellmer Zant

because of the

13:39
infrastructure

Tom Bride

the general industrial businesses will pay more than
13:45
the solar solar panels so I mean that's just couple comments that I've had made
13:52
to me

Chris Zellmer Zant

and then mid America that they owned that 73 Acres

Dan Priestley

that was that was their private property yeah
14:05

Chris Zellmer Zant

okay so I mean if we start at the comprehensive plan debate which is number one just a couple of things that
14:12
I saw that I highlighted that I thought were significant was even in the 2005
14:18
comprehensive plan we for policy by 2.5 States fully explore alternative
14:24
renewable energy sources so I don't think that's really a debate I think that's
14:31
something that is still exists today but I mean what is everybody else's
14:37
thoughts renewable energy is here to stay

Jeff Hanson

I would agree

Tom Bride

yeah I think
14:44
that's back then and now and more so now

Chris Zellmer Zant

and I think so into the future from what
14:50
I can understand I mean I'm looking at articles from that are portraying
14:55
2050 that renewal renewable energy is just going to expand maybe not to the
15:01
extent that they think it is but and that's something else I found they still
15:07
said coal oil natural gas is going to be our primary energy
15:12
sources well that's even the um guy from mid America and that was his comment it's more of a mix than a one source

Chris Zellmer Zant

One
15:22
Source situation right

Dan Priestley

if I may in the lit review
15:29
uh references the uh this has been uh kind of a a federal initiative the
15:35
Administration has put forward uha priority as far as introducing uh the
15:42
local communities to renewable initiatives and uh there's been

15:48
priorities uh 2035 which was referenced in there and I
15:53
know that they've been carefully watching the communities there's been meetings uh there was a meeting last
15:58
Friday from the Department of Agriculture as well as the Department of Energy that was kind of assessing uh
16:05
where the local communities are what kind of potential positives and negatives there are as far as the
16:11
permitting and trying to understand where communities are with the different aspects of addressing it and as kind of
16:19
coincides with the lit review um many communities there's not one size fits
16:24
all in terms of addressing these respective issues some communities uh do
16:30
it by conditional use permits some do it by allowed use by certain areas
16:36
and uh some have employed the overlay district scenario which is of course
16:42
heavily referenced with Linn and Scott County even though those two are overlay they significantly do it much different
16:48
as one relies much more on corn suitability rating while the other uh has more of
16:54
that rubric aspect but uh uh the point I'm making is uh this this is part of uh
17:00
the economy or the future economy as far as renewable being a part of it and there's a compelling interest at the
17:07
federal level um asking communities to look at this as part of the land use
17:13
measures and as we know a lot of times these unincorporated areas have uh aged development plans that are not up to
17:21
uh where these uh future standards are and if you're looking at uh particular areas or priorities across the board for
17:29
the county to recognize these type of land uses it's more than appropriate to look at the development plan as a way to
17:37
prioritize uh what the initiatives are and where you want to put these assets just uh you look at the history of
17:43
Woodbury County and the nature of our population and U as SIMPCO has worked
17:49
towards this current uh uh draft of the development plan uh we found a lot of
17:54
similarities uh from 2005 as far as as the priorities of where we locate our
18:00
industrial base is where we where we have the priority on agriculture and the
18:05
uh zoning ordinance that grew out of that 2005 plan put the emphasis much on
18:11
the uh um agricultural area or excuse me the industrial areas and kept it off of
18:17
the agriculture land at that time uh lots of debates have been in Woodbury
18:23
County about whether you take the Farmland out of production we've also had quite a bit of debates on uh
18:29
protection of Loess Hills and uh we've ran into a number of issues as far as the uh
18:35
uh the interpretation of of landowner rights however uh development plans are
18:40
put in place on purpose so that we can have a moment to stop and look and see the Innovations of how the world has
18:48
changed in a lot of respects and go back and poll the public so that the public
18:53
understands and can has the ability to present to the to the uh leadership
18:58
on what type of community that we want to be and that's why we label these that's why we say 2040 we're projecting
19:06
forward and as technology grows uh we're kind of here at a juncture um uh these
19:13
um solar assets can definitely take up a significant footprint and so it does
19:18
offer us the question we have quite a bit of ag land out there are there areas that might be suitable to facilitate uh
19:27
uh the permitting of this uh growing technology um it's imperative to
19:33

point out that we have a lot of significant uses that can definitely play affect a footprint on
19:39
agriculture land that are conditional use permitted however the most distinguishing factor is that uh solar
19:47
can take up a lot more acres than any other use that is presented in our
19:52
zoning ordinance they could probably go from 500 acres up to 2,500 3,000 and some
19:58
Acres of agricultural land that could be uh debated within there and I think
20:03
that's important uh as the uh uh community decides if this is a fit uh
20:10
for how Woodberry County wants to be in that meeting uh that I attended it was a
20:15
zoom meeting they talked about nationwide kind of affecting less than 2% of ag land or about 1% kind of
20:23
spreading it out as addressing some of the alternative energy priorities uh uh
20:30
to address the grid in the future and uh they um they pointed out uh quite a bit
20:36
in their presentation about coexistence uh agrivoltaics things that we've
20:41
talked about in some of the previous meetings uh uh where that technology continues to be studied on whether it
20:49
can go further than sheep grazing whether it could coexist with uh crops
20:55
etc but uh that's kind of a growing uh uh thing to look at as well as the
21:00
compatibility and the literature definitely says uh in the uh the the
21:06
proponents of uh adding this to ag land see it as compatible uh depending on how
21:13
the farmer wants to prioritize uh uh their uh their farm operation with this
21:20
uh so the the literature definitely kind of goes across the board talking about
21:26
land values uh it's tough there's various studies out there from Texas Rhode Island Massachusetts that are uh
21:33
placed into the uh um kind of direct comparison Woodbury County is unique
21:39
we're definitely not Rhode Island but we can definitely learn something uh some of the data says that within a half mile
21:47
it could affect land values at 1.5% but then you're talking about housing and so I I cannot consciously
21:54
take that data and 100% apply it or even attempt to apply it to our situation
22:00
but it's definitely helpful to understanding the perception this is a
22:06
lot of a assessment is based on perception how people feel there's some that might uh really value the renewable
22:14
uh aspect and see it as a as a gain as far as having it in your community and
22:20
actually positively affecting we've seen that in some of the literature we've seen that some that have strongly
22:26
oppose it because it couldn't adversely affect things such as viewscape quality of life Etc so what we find is there's a
22:35
significant level of opinions on the aspect of how it affects ground zero
22:42
meaning your own backyard your own respective community and I think that's why um I know that's why we've spent so
22:49
much time trying to carefully consider uh what is an appropriate fit or not and
22:55
going back to the previous determination the citizens of Woodbury County uh
23:01
placed those in the industrial basically labeling them an industrial type of
23:07
activity and that's that's pretty much where the plan is and that's why we put so much emphasis on the development plan
23:15
as looking at does that remain our priority or is there an openness to
23:20
expanding out and if you're going to expand out uh the development plan could
23:25
either back an overlay district or even back the concept of not necessarily spot

23:31
zoning where you can uh maybe address areas that are suitable and prioritized
23:39
for a type of General Industrial Development or even reworking the limited industrial kind of concept as
23:46
well uh then we would have to look at the law of unintended consequences you fix something some way then all of a
23:53
sudden what did you end up doing the other way as far as if you make something industrial but there's a
23:58
desire to continue agriculture um do you handle that with the overlay District or do you uh adjust
24:05
and allow farming in limited industrial and uh the grandfathering rights or uh
24:11
legal non-conforming rights I should say that are applied in our current industrial area mean that the farmers
24:18
can basically continue fully with their operation until that use ceases to exist
24:24
after a set period of time and so if you were to flip a district and allow
24:30
something maybe in a limited industrial do you address it for long-term farming
24:35
or do you have a grandfathering type of scenario so the question is how do you
24:40
look at each unique location and I think the fallacy that I've ran into a staff
24:46
throughout this whole debate is I haven't had any um direct target
24:51
locations which is very helpful for understanding the priority of the county
24:57
and so when we talk about the future development map and looking at it as a
25:02
debate as far as development planning I think it would be helpful to kind of
25:07
know where are some alternative areas if not industrial that could be presented
25:13
to us so that we could understand if it might be a priority and that goes beyond
25:19
the CSR and the various other indicators that we're talking about because we had the question in our last work session
25:25
what about the CSR on Industrial land well you're already an industrial land and it's already a permitted use or
25:33
conditional use so you're not talking about those aspects once you're inside of the industrial land so if you decide
25:40
up front and you have the information before you up front and if something's going to be a future industrial area you
25:47
plan for it ahead of time you lay that out as the priority then you're not
25:52
debating CSR and those type of things you're the public comes together as far
25:57
as an area that they all find appropriate so those are some of the I think the challenges and that's why this
26:04
is strung out so long as uh the debate has been more of we're looking at all
26:10
these options but we don't have okay uh this proposal this proposal this
26:17
proposal when you when you have a set of proposals or priorities it it uh it
26:22
shows transparency as far as okay that might work that might not work and so uh
26:29
that's why development plan is an option
26:34

Chris Zellmer Zant

so I I might be going Beyond tonight's
26:40
meeting and going into the next meeting that we have on com the comprehensive plan there wasn't a lot of feedback from
26:46
the community from the public as far as what they saw in the comprehensive plan
26:52
the time when Simco was developing everything

Dan Priestley

um specific to the the whole
26:58
plan or to solar policy **Chris Zellmer Zant:** solar policy

Dan Priestley

there was not a lot there was actually no major uh um uh submissions
27:06
that I got I would have to uh touch base with Erin more further as far as the
27:11
solar policy but the the meetings that I've been at the they were not uh not I
27:17
wish they were more attended in fact as well but uh um solar was never that you
27:24
know shining uh priority at the time

Chris Zellmer Zant

right yeah I mean we talk about solar
27:29
kind of as a as a whole with the renewable energy sources but I know that includes wind but that's off the you know that's off the table I don't want
27:35
to include that but I mean there wasn't a lot of push back or a lot of concern about that terminology or language in
27:42
this proposed new comprehensive plan yeah so you know that kind of surprises
27:48
me a little bit too but then we don't hear things until we have a problem and then we hear
27:54
funny that's

Dan Priestley

that's the the one thing as a as a college instructor when I'm
28:00
teaching the students we'd oftentimes talk about proactive policy versus the reactive policy and you can't get more
28:07
proactive than a development plan you're basically asking the community what kind of community do you want to be over the
28:14
long run and that's the opportunity to chime in and show us but most policy is
28:19
reactive you know eventually and we do and that's fine and that's that's definitely a big part of it but uh this
28:26
is one of the most wonderful opportunities that any Community has to to collect on the priorities because
28:33
it's the hope that there's some sort of uh unity as far as the priorities as
28:38
much as possible

Dan Priestley

and the other thing that I see even in this map versus the proposed
28:46
map um there isn't a lot of change but I see around a lot of the towns there's
28:51
transitional Agriculture and solar could potentially feed into those towns and I
28:58
mean we're talking transmission lines and it sounds like that's where the solar wants to be is near transmission
29:04
line we don't know where those are we don't know the key information about
29:09
okay where are they so we can plan around this where is this going to happen it sounds like they want to be within a half mile yeah it's uh what
29:17
I've been told is I I mean common sense and practicality is you need to be near
29:24
where the energy is so substations or the transmission lines the literature
29:29
definitely backs that up and uh so you can generally understand where a lot of
29:34
those assets are but it's uh in order to have a priority to have a layout on
29:41
what the expectations are the community would have to come to some type of consensus through mapping on where there

29:48
might be some reasonable priority areas and uh um
29:53
that's that's a good point though energy assets are something that should be
29:59
definitely considered as part of those locations

Chris Zellmer Zant

right and we've gotten no information from those small the
30:04
communities in Woodbur County as far as their interest in renewable energy

Dan Priestley

well the the communities as far as the
30:10
development plan have been consulted and looked at as far as the uh uh their development plans when Erin and Corinne
30:17
have worked on uh putting this together the one of the first things they looked at was the city's future land use maps
30:24
because we want full out compatibility never want to run into any kind of conflict based on the land use there's
30:32
got to be a full out agreements as far as uh and you you look at even our
30:39
normal role regular order and how we handle subdivisions uh the two mile is
30:44
taken very seriously we work with Sioux City on that quite a bit with the subdivisions and and the other community
30:51
uh when we revisited the wind debate one of the things that came up was two mile setback and so to mile setback was
30:58
brought in there not because it was it it was not actually not associated with wind policy or even a section in Iowa
31:05
Code but we went back to the tradition of understanding that two mile territory as far as subdivision and and other uh
31:13
zoning scenarios or cities actually if you County does not have zoning the city still has a compelling interest in Iowa
31:19
Co within the two mile range there so uh yes the cities have been respected
31:25
through the development

Chris Zellmer Zant

right but have they even said that this is what we're trying to plan we might be planning this
31:31
in this area too or we're interested in this so This AG land that's transitional
31:37
we're looking at this for the potential that this might be so that helps us plan
31:42
overall

Dan Preistley

yeah specifically and running these proposals out and and right now
31:48
we're talking in hypotheticals so the cities have basically received information how do you feel about solar
31:54
policy being that General but and that's the fallacy in the debate is we don't have a specific target area so if you're
32:01
talking about an entire district whether it's AP the the citizen or the community leader we're all left with okay it's
32:09
it's possible but we don't know because it gets project specific and that's
32:14
definitely the Challenge from that chasing a policy without a direct
32:20
mapping and so if we get into the ordinance and we start talking about AG
32:25
areas or these other areas we can still discuss setbacks or discuss ways that we
32:31
can protect the cities and their rights within those areas and their priorities for sure

Chris Zellmer Zant

so we're talking
32:37
about 427,000 Acres of ag land AP and yet
32:43
we're supposed to figure out where these solar things are supposed to fit and work with a maybe a conditional use or
32:49
whatever it happens to be without knowledge of what the cities
32:55
are thinking or those transmission
33:00
lines we can narrow the field by using a our two mile you know setbacks we can
33:08
use up some by our csrs that eliminate some of the land slope that can
33:15
eliminate some more of the land so that narrows the field a little bit but it's that going to be enough are those the
33:21
issues that we want to

Dan Priestley

well the the issue is if you're looking at an or
33:27
if you're looking at the overlay specifically where you're trying to facilitate it on agricultural land uh
33:34
you need to know the priorities of what the regulations are um you owe it to
33:40
developers you owe it to land owners you owe it to the public that there's a clear transparent process that they can
33:47
go through and have an expectation uh to meet the permitting requirements by the time they work
33:54
through the ordinance they work through staff they work through other leaders uh uh most proposals should be in shape to
34:00
be feasible typically when somebody calls the zoning office and they try to they they expect you in a sense to have
34:07
an understanding when I know number one thing we say we can't speak for board members we can't speak for appointed or
34:14
elected officials but we can certainly show them a process that has been put into place by the community that is
34:21
clear and uh makes you know hopefully makes sense to everybody uh whether it's a clear setback you can be this far away
34:29
whether it's a a soil standard having uh specific regulations built in there uh
34:37
uh to the point uh we get into the uh larger uh scale of how other communities
34:43
have addressed this uh I've seen acre caps I've seen megawatt caps but if you
34:49
to even put an acre cap on and you still have the whole level of agricultural available that still leaves the
34:55
uncertainty as far as where these uh could be sited and so uh going down to I
35:02
know one of the communities puts an acre cap in and where the supervisors would
35:07
probably have to because it's an ordinance they'd have to go revisit the acre cap if something were to ever
35:13
change and actually debate it through the three typical public hearings on whether an acre cap uh should be at a
35:20
certain level

Chris Zellmer Zant

and that's all 14 counties that actually have some kind of zoning regulations for this out of of the state
35:27
of Iowa

Dan Priestley

and as you can tell through the sample counties that were presented in the report there's a mix but a lot of
35:33
them do rely on the conditional use

Chris Zellmer Zant

some kind of special use

35:40
permitting

Tom Bride

we discussed a little bit on size the
35:45
uh Port Neal plants the there they about
35:50
a 500 megawatt each um that 500 megawatt would would equate
35:57
to somewhere between 500 to 1,000 Acre Site per solar
36:06
depending on how it's done

Jeff Hanson

more than that I think your literature in five to 10 acres per megawatt it's going like

Tom Bride

36:14
I thought that the uh what was the yeah there was a five to 800 acre 500 megawatt site that Mid
36:22
America or somebody currently has in Iowa. **Chris Zellmer Zant:** that's it by Fort Dodge
36:27
trying to think of this I can't remember the name

Tom Bride

and I thought that was a 500 megawatt site and it was 800
36:34
acres right

Barb Parker

this this says 10 acres to produce one megawatt on page
36:40
five

Tom Bride

I just I don't know where the difference would come into play
36:45

Dan Priestley

on it roughly gives you an idea how many acres per a project if they're going for
36:51
a certain amount of megawatts could take out of out of egland or
36:59
or coexist with
37:05
it find information in here there's a
37:11
lot

Tom Bride

but is that am I incorrect then on that site that's currently a 500 megawatt site with 800 acres have to
37:19
probably go back and look at did that that came out of the work session yeah that was in one of the I think that was
37:25
a question I asked the largest one was in yeah Iowa 800 AC oh that's 100
37:33
megawatt eight yep eight acres for yeah so that fits
37:40
within that ballpark part so that but is that the largest one
37:46
currently in the state of Iowa holiday Creek
37:53
project

Dan Priestley

have to look back transcript
38:01

Tom Bride

so yeah I mean you'd be and that's where the cap I can't remember what it was around 8,000 some acres is was the
38:08
supervisors when we discussed that start with they have the percentage

Chris Zellmer Zant

2,540 it's
38:15
2% I think we talked about that was even too much at one

Tom Bride

that would allow for two
38:21
two sites to if they were full 500 megawatt sites **Chris Zellmer Zant:** maybe three if you get
38:27
2500 acre piece three plus right

Tom Bride

what's that it'd be 4,000 acres for a
38:36
five right okay 500 megawatt okay so if they were to say we're going to replace
38:42
this plant which it wasn't well what I can't think the M
38:49
Americans Will um he said that wasn't that's not what the plan would be and
38:57
uh I mean even so you'd have two sites would meet the
39:03
cap if they replaced every or the whole capacity that mid american currently would
39:10
have on two PL or was it South which ones are
39:18
run south and there there's two right yeah um but I you know he said that coal
39:26
is going to still be part of the picture and it's not going to be taken over by
39:31
solar right um I mean I think the 2% cap I guess what I'm saying is would
39:37
probably allow enough acres to cover what's going to be needed in the short term you know 20 years or
39:45
whatever maybe that'll change down the road

Chris Zellmer Zant

do we want to commit to something like that over 20 years or you want to
39:51
review that like they down here in the industrial area they're going to review it they wanted to review it every four
39:56
years

Tom Bride

and that's the other thing too is if it's if it's left that hey just put it in the general industrial there's
40:03
11,000 Acres 10,000 ACR so you could eat up a big chunk of that if somebody were
40:10
to put that in there so then the other answer is do you expand General industrial um but then where do you put
40:19
it you know how how do you expand that and if if you take away the ability to
40:25
put it elsewhere outside General industrial if you stay with what we currently have and that's the only spot
40:31
for it is it even going to be feasible I mean if nothing's went there now
40:37

nobody's looking at the general industrial site that you're aware of or
40:43
and has and hasn't and hasn't for how many years I mean so I guess it's
40:52
either the way I look at it is right now General Industrial
40:58
doesn't work for solar to the land owner because they don't get the money that they want to get out of it that they can
41:06
potentially get for General industrial use other than solar I mean that's I guess I'm thinking
41:12
the reason why it hasn't gone there yet and like I said I've had a couple individuals say I'm not going to take
41:20
that payment because it's worth this much it isn't enough but

Chris Zellmer Zant

it didn't sound like M American was really even a
41:26
player as far as the solar goes I got the indication that a

Tom Bride

there's um the
41:33
options that are being bought right now are I'm assuming not Mid American
41:38
purchasing them that's what I'm guessing I don't know we don't we don't know those answers but uh somebody's out
41:44
there looking somebody's got options on ground land
41:50
but none of those are within the general industrial currently so I'm assuming either they looked and
41:56
they realized it was too costly or they just didn't look there I don't know what the answer is on that
42:03
but right now our plan only allows for it in that area so I would think that they would have at least looked there to
42:09
start with right unless there's a different reason that I'm not seeing why it doesn't work in the general
42:15
industrial

Dan Priestley

well the um I think we got to be careful with hypotheticals and what
42:21
what uh folks might Envision I I do think that the literature speaks to the fact that they're they're looking for
42:27
the most feasible locations they're not Nationwide probably when the when this
42:33
kind of comes from you know a nationwide priority and you have
42:38
developers uh um finding it very lucrative to get into uh industrial
42:45
solar and uh they're they're going to look at various factors on where the
42:51
most suitable locations are of course zoning would likely be a factor uh but
42:57
uh you're going to always try to find the path of least resistance I'm sure they would love to line up the zoning
43:03
perfectly but there's times that uh you gotta you got to tell the local community that we've got this you know
43:11
this endeavor here that might be lucrative and um your zoning may not fit
43:17
up exactly right and so uh the burden is on them to demonstrate to the community
43:23
on how uh this will fit uh with that area and that's that's really what a rezone application does is it shows the
43:31
very public way on whether that this is a suitable priority and going back
43:36
through normal order and development plans and mapping all of those things can be helpful to backing up a
43:44
particular project but uh I think there's a number of reasons why or why
43:50
not folks may have considered uh an industrial area not an industrial area

43:55
there's on the the other hand folks will argue that industrial areas are not a good location because uh you might take
44:03
other uh economic activity that could be placed in the industrial area that uh
44:08
solar may not do so well for well those

Tom Bride

that activity won't fit anywhere else
44:13
but it would fit there and the economic gain is going to be high and I guess the other thing when Chris was talking about
44:21
um transmission lights those those we can't
44:27
it's it's a Federal Regulation we can't put a map out there with them drawn
44:32
through and say oh these are the areas in Woodbury County that we should be looking at because you can't do that so
44:39
so that makes it was that well they know where they are but we can't put together that map and put it in our plan and say
44:45
well here's these correct

Dan Priestley

yeah a lot of the um um utility asset things there's
44:52
there's knowledge of them obviously Planning Group

Tom Bride

people know where they are but we can't put that map in our
44:59
plan in our public you're not going to get down to specific foot and then go
45:04
out and say okay here's an area that's you know there's transmission lines through here this is suitable this is an
45:10
area we would

Dan Priestley

but I I do think if you're a developer and you're looking at you know the the key assets and why you want
45:17
a project in a certain spot you're that's going to catch your eye and you're going to definitely go for it and
45:22
that might very well be the case on why there's some areas out there I'm just saying kind of through the planning
45:28
process without having a a good grasp on what those areas are I we you can always
45:34
uh track options like but you know with the recorder's office you can generally understand where those options are as
45:42
was reflected in the packet at certain points but uh not knowing the full scope
45:47
uh makes it much more challenging as far as uh uh the priority of uh which lands
45:54
that you take out and this debate is very much centered in on um doesag go
46:00
in does Egan go out we're concerned about uh corn suitability rating we know
46:05
that it's uh it's heavily went into the debate of CSR one csr2 Etc but uh which
46:12
csr2 is of course the current metric across the board uh from assessment but
46:18
uh um like with Scott County Scott County basically says we're using the
46:23
csr2 but when you do use the csr2 it does limit uh depending on the quality
46:30
of the soil limits those available acres and so that's that's where this is kind
46:36
of goes back and forth and uh again if we uh had a better understanding on what
46:43
some of these particular areas are it would definitely be helpful for for the planning process it's sort of sort of
46:49

like the theory you get a rezone application we all know what happens with that you get a rezone application
46:55
we bring it in do they meet the criteria we look down the criteria and I know the
47:00
the first thing that we run to right away is that a spot Zone run into the spot Zone and that that's what's kind of
47:07
hindered the process right now from the developer standpoint uh because they know they could submit an application it
47:13
could come to you tomorrow uh they'd go through and then they'd run into that criteria they'd have the CSR to look at
47:20
but then they would have your spot Zone to look at and the commission depending on the fact that you glean out of all
47:27
the proceedings and everything might recommend to the Board of Supervisors you know that's a nice project and
47:32
everything but it just does not fit with the letter of the law right now uh within the ordinance and so you make
47:38
that recommendation to them and that's the overall effect and so you go back to the looking at this process the
47:45
question is how do you address those metrics for whether the area of land that
47:53
footprint is suitable or not and because it's on ag land that's that's why we're
47:59
in the midst of this the overlay is a way of um uh your original
48:05
recommendation to the supervisors back in May and June was to go the conditional use route and I think that
48:12
the commission at that time really highlighted you look at the area you scrutinize the area you look at the
48:18
application you look at the surroundings you run it through each of the criteria you come up with a determination and
48:25
then you send that over to the board of adjustment um uh I know you're very well versed and used to doing that that was a
48:33
result of the recommendation it's sort of like when you go to the overlay how do you replicate that in a sense but
48:40
involve the supervisors with some type of criteria and you'll see in the the proposed
48:46
option there in the packet there's sort of some red ink in there that kind of highlights the similar process
48:52
that you do for the conditional use on scrutinizing in the area uh some of that
48:58
U scorecard that Linn has adopted is in there to kind of mitigate some effects
49:05
uh but uh it sort of amplifies the conditional use process in a sense I kind of call it a super conditional use
49:11
because it involves the supervisors but um and involves the the public hearing proceedings and everything at maximum
49:18
level with the three and then the the zoning commission but um
49:24
uh it's so if you're going to go with a solar policy or a solar proposal you
49:29
need those clear goal posts on what constitutes that area as being
49:36
acceptable or not it's just that if you run that through the existing right now
49:41
on ag land to switch it to Industrial I mean that's that's what you we would do
49:46
right now to try to facilitate IT staff would tell them you know that's not suitable because there's no C in the
49:53
column and so uh they could try for the rezone and then
50:00
run the application here and then maybe run into that brick wall because of that
50:05
criteria so

Jeff Hanson

in your overlay option and I apologize if these questions have been
50:11
answered this is my first meeting so trying to get caught up to speed on all the work that you guys have put into
50:17
this but on the overlay option have you looked at limiting that overlay in the other zoning districts have you said the
50:25
overlay is allowed in AP D LI or have you looked at those additional

50:30
parameters of limiting it elsewhere?

Dan Priestley

yeah um so the overlay could be conditioned
50:36
for only a specific zoning District so you could uh say that it's only eligible
50:42
on AP land and uh some counties some jurisdictions have actually put setbacks
50:47
from the overlay from other zoning designations as well to kind of create a
50:53
buffer in there from it but yes um the the way that it's kind of presented in
50:59
here is the overlay becomes an ordinance option and it gets confusing sometimes
51:04
when you say you're creating an overlay District I think the public might think that you're laying a district over top
51:10
the map right away when it's approved but what it is is the it's an available
51:16
tool that the county has the commission supervisors have uh to approve an area
51:23
where you're virtually creating the overlay for the project footprint so that district is being created at the
51:31
time to facilitate that project on that respective District so yeah you could
51:36
say no it can't go nowhere near suburban residential it can't go near agricultural Estates uh if you even went
51:44
that far uh agricultural Estates is our most dense District in terms of the two
51:49
acre lots and density land density so um that's really kind of how the overlay
51:56
can be used and in a sense it it has the feeling of a conditional use because you
52:02
you're dealing with a footprint of land on a conditional use as well uh but as
52:08
far as a a zoning overlay District we would end up with a legal description basically defining what this new overlay
52:16
district is and we have we have all kinds of overlay districts out there we do have a pre-existing one which is the
52:22
flood plain it sits out there it is a fun District that that coincides it's
52:27
just that we we create a recognized area for an additional use that's created to
52:34
innovate that is not allowed underneath the base District basically and the
52:39
the overlay um has a bit more flexibility than a standalone um zoning
52:45
District because uh if you go and rezone to General industrial the way it's written right now or limited industrial
52:52
you're going specific to that use and any use that's available within that District which can create other concerns
53:00
the law of unintended consequences but the overlay could be geared toward uh
53:05
okay here is this use and uh but you retain your full agricultural rights and
53:11
everything that the rights and privileges of agricultural preservation underneath and so that's definitely the
53:18
I think the compatibility that uh um Scott and Linn County have seen as far as
53:24
their proposal and it's a smart kind of smart planning type of principle to if you're going to
53:31
go into overlay is to again go into the development plan and maybe reference
53:37
those type of uh Concepts so that there's some something to hang the Hat on as far as a a policy and the use of
53:46
those things and this is something that would be very new to Woodbury County we don't have uh um we we have language in
53:54
there overlays for conservation and other uh uses but they're they're not they haven't been actively employed or
54:01
re rezoned to and so it's it's not a regular process for us

Tom Bride

and other thing
54:07
that could or would limit is if there was a cap and you have that two you know
54:13
if it's X Acres that's really the only way you can limit the because you don't
54:18
know where it's going to go or where where people are going to want to put it in AP so you just have to acres and once
54:26
that caps it then that's it yeah

Chris Zellmer Zant

and once once the use is done like your your
54:31
lease or your contract is up the overlay disappears in your back tag and this you
54:37
would

Tom Bride

change that CH Zing classification for that property and end up with this
54:42
General industrial out in the middle the spot zoning that we're trying to stay away from

Dan Priestley

and it depends on how you word
54:48
the overlay ultimately in the ordinance what the rights and privileges are of the overlay uh what the decommissioning
54:56
situation is what the when the youth stops uh what are the expectations there
55:01
for that respective District we've got our countywide regulations on things but if you're going to get specific you're
55:09
going to want the overlay to cover a lot of those options and uh again I I would
55:14
my recommendation would be everything that is considered we immediately go to the law of unintended consequences
55:21
because this is one of those things right away that you make one adjustment here and you may not realize oh we're
55:27
affecting it over here so we've got to be very very careful as far as uh how
55:33
those could be if if an overlay is something that's uh desired for
55:51
recommendation

Chris Zellmer Zant

so condition wise I know we've talked talked about condition we already had flood zone or the you know
55:57
the flood zone that's kind of a condition that we use typically we talked about csrs they have an impact on
56:04
what we approve and what we don't approve as a condition in my reading I've read that
56:11
they're looking for areas within a half mile of transmission lines and so do we make that one of our
56:20
conditions mean that narrows the field that much more
56:29
I mean I don't want to be too restrictive but you lose 5% in the transmission lines as it is of solar and
56:34
solar's already 20% efficient you know so it's like we're
56:40
kind of playing with their rules ideal rules maybe a little bit
56:47

Dan Priestley

again it kind of comes down to generally mapping I think that's definitely kind of a very helpful ideal as far as
56:57
placement I do think that you know there's there's land out there that may
57:04

may very well fit some criteria that we're looking for and I think that there's uh industry standards where they
57:11
where they want to be located and uh I'd like to know much more from the developer side you know what what is
57:20
what is your ultimate goal on these spots why would why would you seek out
57:25
certain areas certain land owners and see that be the prime ground on on put
57:31
putting it at that location I think that's that's helpful I think the more that becomes transparent I think that
57:37
makes their their process even more smoothn other counties because
57:43
it uh gives a sense of understanding and what folks are looking for

Chris Zellmer Zant

but on the
57:49
flip side that can be used against them so I can see where they're trying to
57:54
protect that information information

Dan Preistley

competition

Chris Zellmer Zant

competition yeah

Tom Bride

I mean I guess to answer your
58:02
question is put it putting the restriction on the distance for a transmission line I I I think they're
58:08
going to do what they're going to do that's going to work better for them for them [Chris Zellmer Zant: absolutely] so and if it is the case
58:14
that their half mile is their limit or their unless they put in their [Chris Zellmer Zant: ideal
58:21
Standard] or whatever you know a different transmission line you know I I think that'll fix
58:27
itself for that just that part of it I mean they're going to go where it's going to work best right and to say well
58:33
that has to be within a half mile of that I don't know that that's [Chris Zellmer Zant: necessarily has to be put in
58:40
writing] I I guess I don't know what that's going to fix okay because it still might be in an area where people
58:46
don't that you know the neighbor don't want that anyhow right if they're within that half mile but if they're outside
58:53
the half mile maybe the people are fine there and and they can go a little further I I don't know

Dan Priestley

I would probably
58:59
suggest to you all uh more scrutiny on separation distances those are more of
59:06
the feasibility things I think that the public has a a a greater understanding
59:12
for they know how far they want to be away from things that are affected in their neighborhood we've seen a number
59:19
of debates that come down directly to setbacks and separation distances we've
59:24
seen the center of rural Affairs offer us different ranges from 200 to 300
59:30
there some of the most uh counties that have had on the far end have used a 1000 foot setback specific to residential I
59:38
think if we're going to start kind of parsing specifically each area we're
59:44
going to want to look at how far do they need to be from a single family dwelling a house how far do they need to be from
59:50
the corporate line uh from the cities uh the cities uh offer us more detail on

59:57
that if they're in support of that or not that'd be helpful the uh we looking
1:00:03
at the wind ordinance that we did we had uh I think airport uh separation distances there was uh separation
1:00:10
distances from cemeteries uh from uh um conservation
1:00:15
areas and uh I know that the speaking a setbacks the conservation board did send
1:00:21
us it was in the back of the packet a recommendation of a mile setback uh from
1:00:26
the respective conservation areas so there are groups out there that want to
1:00:31
have a input on how far away they are from things and I I think that could be
1:00:38
helpful to the debate as well on when you know that okay I can only be so far
1:00:43
away from uh these respective points that offers us a bit more clarity as far
1:00:48
as citing where these can be as well so I I do think that the debate should
1:00:54
discuss if an overlay or if another form is adopted that we need to go into each
1:01:00
one of those setbacks specifically and decide which ones are the most
1:01:05
appropriate because setbacks are a mechanism used to try to create compatibility that's the whole goal of a
1:01:12
setback is to try to you know give you the ability to be there and give you the
1:01:17
ability to not be so impacted U generally so

Tom Bride

well it offers the
1:01:23
protection for the people who are already there that
1:01:33

Dan Priestley

yeah the the center of rural Affairs definitely offers something that they they promote as being reasonable um and
1:01:41
some may say they're not reasonable and I just want to highlight both ends of the debate because we've we've
1:01:46
definitely seen that

Jeff Hanson

one issue I see on the overlay
1:01:55
is and it can be fixed with the parameters that are established as part of that ordinance Amendment but is
1:02:02
setting the timing of the installation of the solar panels because I think it would come down to an issue where you
1:02:09
may have vendors apply for an overlay to get to the cap whatever that
1:02:15
cap may be established and then it never gets built for two three four five years whatever it may be I think a discussion
1:02:21
needs to be had in those parameters that if you request overlay it goes through the appropriate process it's approved
1:02:27
and you have X amount of days whether it's 365 days two years whatever may be
1:02:33
and then it becomes null and void to release that cap if if that's the
1:02:39
direction from the board supervisors to have an established cap because I can see someone just coming in and
1:02:46
grabbing so it has to be connected with the development

Tom Bride

and that could be tied into also the per you know like a permit
1:02:54
you have X time and if you don't start then you got to start the process

1:02:59
over again and that's a good idea so that somebody can't just lock it all up
1:03:04
and say oh there's nothing else available we got it you know yeah

Dan Priestledy

and that you want that
1:03:11
enumerated with along with this versus relying on the building
1:03:18
permits

Chris Zellmer Zant

that's good point I don't remember seeing that in any of the other
1:03:25
development criteria that we went through I think I crossed it on one of
1:03:30
them did you 14 think 14 of our drop that down make sure it's in there
1:03:37
yeah yeah lot of other stuff
1:03:45
but project timeline yeah the yeah that was page 83
1:03:52
who's is that who did we use or a lot of a lot of the criteria
1:04:00
that's in here yeah combination of the counties that have a policy or have a have an
1:04:09
this was an overlay District utility skill system has her policy in
1:04:18
place project timeline is 6a [Dan Priestley: yeah that's within the proposed
1:04:26
overlay language]

Jeff Hanson

and what I'm thinking is you actually set start time you don't allow
1:04:33
for the flex you don't allow them to set their time I mean it's part of their application hey we expect to have this
1:04:38
constructed within x amount of months and then if it's not then

Chris Zellmer Zant

but we can
1:04:43
hold them to that too I mean without it actually being in writing we can say okay it's part of your application you
1:04:50
have to start it on that day and I think it could be done as part of the
1:04:55
the actual over

Tom Bride

overlay that that's the condition that when they apply apply
1:05:01
that that that's overlay it's 12 months and if you haven't I don't know if I
1:05:06
would say upon approval yeah upon yeah upon approval and then you and then I
1:05:11
guess you probably have to set if it hasn't if you haven't started by this date then this goes back to AP and you
1:05:20
have to start over again you lose and [Jeff Hanson: it'll it will still say AP just the
1:05:25
overlay right] right I mean it goes back it it's it loses the overlay Y and and
1:05:30
your bit your back with done yeah so that that's pretty important
1:05:36
that something like that's put in if if that's the route that
1:05:41
that's and I I mean I think if it's project and they're going to go forward with it it's reasonable to ask that you
1:05:48

know you don't start it within this timeline then you're back and then because like
1:05:54
you said somebody otherwise could just tie up all the land and not do anything do anything
1:06:00
or have the Monopoly on it well

Dan Priestley

if you you look kind of in the 89 and the
1:06:06
operation and maintenance plans and kind of decommissioning plans you'll see
1:06:11
various checkpoints they have to have a relationship the county and have tabs
1:06:21
on

Chris Zellmer Zant

yeah you know we're reporting in verification
1:06:35
scheduling

Dan Priestley

well again I would probably uh suggest you know uh you got the three
1:06:42
options there and it's kind of it's up to you as far
1:06:47
as uh what you're thinking as far as is an overlay feasible or is it uh uh the
1:06:55
other option was to strengthen the conditional use language uh from the existing district or move it over to the
1:07:02
development plan if uh you're to do something with this overlay though I would definitely suggest that uh the
1:07:09
language be kind of focused in the way that we want with some of these added concepts but brought into the
1:07:16
development plan as part of uh justifying
1:07:22
overlay

Chris Zellmer Zant

I know before when we talked about it the overlay was appealing because it had so many sets of eyes on
1:07:29
it had so many different [Tom Bride: yeah reviewed by all three] approval yeah supervisor Board of
1:07:36
adjustment Mission [Tom Bride: and then it can be condition specific to that area right]
1:07:43

Dan Priestley

you got to be aware that um you can run into lots of redundancy too and you've
1:07:49
got to have everything be uh practical feasible and many of these jurisdictions
1:07:55
that do the overlay um the overlay becomes the allowed use inside of so the overlay is
1:08:03
Project Specific so um I I've tried to find an area where you put a conditional use
1:08:10
inside and double it up but there's it seems that the practicality and feasibility of
1:08:17
um you go to this permit criteria you go to this permit criteria and it becomes
1:08:23
very cumbersome as far as running through the process and those other jurisdictions like Linn
1:08:28
once you get through the grinder going through the zoning commission approving
1:08:34
the Board of Supervisors approving the overlay that would ultimately authorize the use so the conditional use would not
1:08:41
be a part of that so the the overlay would basically authorize that use and
1:08:47
so yes you would still have a level of public involvement but that would likely
1:08:52

remove the board of adjustment I'm just not seeing a clear pathway to do a
1:08:57
conditional use after you approve an overlay I think that that's probably way
1:09:02
too much from what I've read in some of the literature and I haven't found a jurisdiction but up because I originally
1:09:09
was thinking yeah we could probably do a real trim overlay District but then how
1:09:16
do you divide the responsibilities between the board of adjustment and from
1:09:21
the Board of Supervisors if the Board of Supervisors feel that this is good in this way and then the board of
1:09:26
adjustment we could run into a problem uh between both boards and so an overlay
1:09:32
is truly designed for the zoning commission and the board of of
1:09:38
Supervisors to kind of come to a conclusion whether that fits or not and
1:09:44
so I I think ultimately what would happen is uh you would have a public
1:09:49
hearing uh scrutiny full level at the zoning commission level and that this would be brought up to the three public
1:09:56
hearings at the Board of Supervisors level so you would you would be at the four for sure on that or we could put
1:10:03
another mechanism in there if you wanted to have a multiple zoning commission ones but uh as far as uh pulling the
1:10:11
board of adjustment in I think that they might actually be out of the equation as
1:10:16
far as the the overlay District but if you were to continue with our current
1:10:22
policy um the other proposal in here um if the community is all set on it being in
1:10:30
industrial areas and not on the AG land I think it would make sense to have the
1:10:35
Zoning commission's Board of adjustment continue to do the hitting with added features if it's specific to industrial so
1:10:44
that's that's where all of these Concepts and proposals get kind of cumbersome

Chris Zellmer Zant

yeah
1:10:52
confusing m well that takes kind of the interesting
1:10:59
part of why we like the overlay away is that it had an extra set of eyes on
1:11:06
it does that change well it's it's I mean but I
1:11:12

Tom Bride
understand what you're saying just means the overlays got to
1:11:19
make sure everything's addressed and at that point once they [Chris Zellmer Zant: it doesn't make a
1:11:25
it's a major change as far as whether you think that's an effective] what does that allow if if the over you basically
1:11:31
have your conditions with overlay um either they meet them or they don't um
1:11:39
versus the conditional use site specific where maybe this is a little bit
1:11:45
different than this other one because it's it's a different piece of property
1:11:50
so there was some conditions you had to apply here that didn't by here how do you accomplish that with the overlay or
1:11:57
you

Dan Priestley

I think it could be very similar as far as the um the application process of
1:12:03
scrutinizing the neighborhood and having the ability for the supervisors to impose conditions that are recommended
1:12:11

Tom Bride

so those recommendations could still come from the zoning board then and and be be applied to that overlay District
1:12:19
differently than maybe a different overlay District that was

Dan Priestley

yeah and if if
1:12:24
you all have a process and we'll use the conditional use for an example you find
1:12:29
a deficiency or something that could be improved or meet the requirement based
1:12:36
on a condition we usually have a condition for the purpose of bringing an application up to par to be compatible
1:12:42
with the uh area and so um the zoning commission identifies anything that they
1:12:49
find that might be needing a condition worthy of a condition and uh present
1:12:56
that in the ultimate final report to the Board of Supervisors you are all doing an investigation for the Board of
1:13:03
Supervisors and a recommendation capacity to tell them that here is the
1:13:09
determination of this commission we feel that this is suitable for this area
1:13:14
however this item needs to be addressed this item needs to be addressed and um then they can have the ability to impose
1:13:21
that

Tom Bride

the ability is still there it's just that you don't have that the board of adjustment they basically are doing
1:13:28
the work of the board of adjustment

Jeff Hanson

okay I think one we address that too in the overlay
1:13:33
proposal is to add the requirement for site plan review and approval at pnz at
1:13:38
planning level and the the Board of Supervisors So Not only would you have to meet those criteria that next level
1:13:45
not going to the conditional use permit would be through site plan review so this body could actually review a site
1:13:51
plan make the addition conditions as they see fit depending on the neighborhood the location the other
1:13:58
factors that come into play and also your public comment you're going to get public comment on each one of these that
1:14:03
are going to be differing right and so that site plan would then follow the overlay throughout the process yeah and
1:14:10
you wouldn't be dealing with the the legality of treating one different than the other because you

Dan Priestley

ultimately we
1:14:16
could have them sign off and do the building permit to and uh ultimately put it up as a board item to to really
1:14:23
assure the public and confirm that this is where the project is at this point
1:14:28
and they would they would basically approve it through a vote basically we could you know uh you have them be the
1:14:35
permitting body for that as well

Chris Zellmer Zant

so that was part of I with additional use it gives you that much more latitude and
1:14:42
flexibility with each application that's the beauty of it we don't want to lose
1:14:47

that so

Dan Priestley

but I will get back to and we're talking about this in theory but we're
1:14:52
still going to have to have that grand criteria right right what what it is
1:14:58
that will be the heart of a overlay District what threshold do they have to
1:15:05
meet

Chris Zellmer Zant

so included section 5.08 on page 55 in here and that's just ability scale
1:15:13
solar energy systems conditional use which is what the industrial

Dan Priestley

yeah let me explain page 55 and
1:15:21
forwarder um sorry show late leave early no page 55 and forward this this is an
1:15:30
amendment to keep the exact same process and the exact same area and keep the
1:15:35
zoning commission the board of adjustment permitting inside of General industrial okay that was one of the the
1:15:41
options available was that we've had concerns to uh strengthen the
1:15:48
conditional use of further criteria it allows the commission and the board of of adjustment to ensure that they do
1:15:56
things such as impose uh um decommissioning and and various road use
1:16:02
agreements various other agreements ensure that those get built in by en
1:16:08
numeration okay and so that that's the rationale behind uh the utility solar
1:16:14
scale conditional use okay so that that's separate from the overlay okay that's what that's another option for
1:16:20
your recommendation

Chris Zellmer Zant

which is 76 is the utility scale Energy System overlay districts and then it goes into kind of
1:16:27
a different format but it covers a lot of the same types of things and you had the other thing red type in here

Dan Priestley

the
1:16:35
other thing while I still have it up here is um inside of the overlay
1:16:40
District you'll see some references to Battery Systems too and that's something that should be on the radar in terms of
1:16:47
um um maybe having as part of a recommendation so whatever path you take
1:16:53
on a a solar you might want to consider that as far as facilitating the the
1:16:59
permitting of these batteries so I would strongly suggest considering a form of
1:17:04
that language as part of the recommendation because we know if you're dealing with solar you're going to to very
1:17:10
likely be dealing with batteries

Kim Alexander

please forgive me for interrupting but you know what time
1:17:16
you're going to allow public questions

Chris Zellmer Zant

when we're done just
1:17:23
discussing I guess or we can do it whenever what do you guys want to do you
1:17:28
Do?

Barb Parker

you want to go now that'd be great yeah

Chris Zellmer Zant

I've got bit wind down are we ready to wind
1:17:35
down yeah I'm fine okay do we have more questions or something that's pressing okay I just wanted to clarify that we
1:17:42
had conditional language here use language and then we had the overlay language you're not suggesting
1:17:47
conditional use first part for just the industrial area and then this part for
1:17:53

Dan Priestley

I'm I'm my my S my suggestion is that we carefully examine what the public has to
1:18:00
say about um the priorities on solar as
1:18:06
far as the development plan I think it's been very apparent throughout the course of the debate and uh I think that the
1:18:13
development plan needs to coincide with this and so I I think ultimately you
1:18:19
could have multiple recommendations possibly routes they could take
1:18:24
supervisors could take and so I think that the the input is imperative as far
1:18:30
as potential areas I I think that uh we're we're of course being monitored
1:18:35
and being watched by developers and I and I and I encourage uh folks to
1:18:41
contact staff uh to to respond to our requests for comments because uh we need
1:18:47
more information as far as uh what kind of County we want to be and so
1:18:53
uh development plan needs to be a key part of it but I also think that uh um
1:18:59
you you have the ability to um strengthen the conditional use permit ordinance the problem is is if you do go
1:19:06
for an overlay how do you handle Industrial in the future too so are you going to be left with a different set of
1:19:13
policies for the industrial and so we're going to have to find a way to marry these two items together guess that's
1:19:20
what I was asking are we having two different policies for two different yeah

Dan Priestley

so if you're doing an overlay
1:19:26
and you're doing the the other one you're going to have to have something that mirrors it but it's suitable for
1:19:32
the industrial area um if you're doing agricultural mitigation you're probably not going to worry about it so much on
1:19:38
Industrial land so we we've just got to be able to keep everything prioritized
1:19:44
and divided

Chris Zellmer Zant

so okay easy what did you say Okay you may
1:19:53
speak now great yes

Kim Alexander

my name is Kim Alexander I farm at Smithland and I
1:19:58
appreciate y'all's public service and doing this you could not pay me to do your job uh but I do appreciate what you
1:20:06
all are doing and I just want to ask a couple questions two or three questions
1:20:12
backing way up to the beginning on the fundamentals of this thing uh and and it
1:20:17
was very hard to hear I want to say that I appreciate the gentleman in the red shirt I could generally hear him but the rest of
1:20:23
you it was tough but so if I ask something that's already been answered please forgive me so uh gentleman said
1:20:32
something about a meeting with the Department of AG and the department of energy and they were
1:20:37
assessing communities and how they're coming along with their uh setting up
1:20:43
the framework for this whole uh green energy deal is that yeah um

Dan Priestley

basically as
1:20:50
you all know there's been some federal initiatives as far as this this renewable energy a lot of the literature
1:20:58
talks about the closing of the coals plant or uh plants and the replacement energy
1:21:04
and um one of the things uh that occurred at this meeting was uh they
1:21:09
wanted to um kind of understand concerns that we may have had from the local
1:21:15
level about the implementation of uh solar in the communities and this isn't
1:21:21
entirely a fresh brand new thing it's it's been out there for years but uh
1:21:27
they they want to know generally um what some of the challenges are whether it's
1:21:32
taking AG out of commission and placement Etc I understand so this is
1:21:37
this is first and foremost a topdown government intervention is that accurate
1:21:44
I I can't really directly say that as far as saying that um uh we we know that
1:21:52
there's information out there that there's a there's a compelling interest in Renewables for a future energy policy
1:21:58

Kim Alexander

especially from the government right and so the other question I so this is not
1:22:04
premarket Enterprise if I understood correctly again I apologize you're being so hard of hearing um this is not free
1:22:13
market uh Grassroots demand for this this is a another top down government
1:22:19
uh intervention in rural America rural Iowa uh and so I would submit to yall
1:22:28
The Challenge and the difficulty and again I appreciate what you all are doing you could not pay me to do your
1:22:35
job so I appreciate you all doing this uh I would submit to you that that the
1:22:40
biggest part of the challenge is trying to create something that there is no
1:22:46
grassroots demand for it is the is the problem that we can't make enough energy
1:22:52
from coal or natural gas no the problem is Big Brother government doesn't want
1:22:58
us to have that option and that ladies and gentlemen is a
1:23:04
recipe for disaster we're seeing these electric cars I read it a headline today
1:23:11
uh these electric cars in Chicago or wherever these big cities they they are frozen
1:23:17

robots premarket demand will take care of what we need not top down government
1:23:23
boond doggles paid for with non-existent tax money because they're just printing the stuff so um again I appreciate what
1:23:32
yall are trying to do but uh we do not need this there is no demand grassroots
1:23:39
demand for it it is government boondoggle and government uh to quote
1:23:44
that great western philosopher I think his name was Ringo Star he said everything government touches turns to
1:23:51
crap and that's what's going to happen folks if if you if you try to thread the
1:23:57
needle for big brother so any questions for me

Barb Parker

no thank you very much great thank
1:24:04
you all I appreciate it

Chris Zellmer Zant

thank you thank you check check do we have anyone [Barb Parker: what sorry I
1:24:13
Took] no no no you can say whatever you want whenever you want you know that
1:24:18
anyone else from the public want to comment
1:24:27

Marty Dougherty

Mary city city city plan the city city plan so we
1:24:34
and that go a little bit about this and we we just wanted to listen for a while
1:24:40
andbe make a few comments on behalf of Sioux Cityum he's the expert planer so I I I do
1:24:48
Economic and Development so but um
1:24:53
I I'll just start off Chris can had technical comments I guess but but
1:25:00
uh I do want to say thank you for the work we're doing obviously I'm impressed by how much detail depth we've gone into
1:25:06
here for for this getting some of the materials wow you guys spend a lot of time
1:25:13
studying this so know a whole lot more about it than than I be sure but um uh I
1:25:19
understand correctly the current process is in Woodbury County it's uh allowed solar these
1:25:25
large solar systems as a conditional use in industrial areas looking at AG and
1:25:33
you're looking at the whole thing so um and from the standpoint of the of
1:25:39
Sioux City Our concern is that and been brought up here a couple of times two mile area around the city is usually
1:25:45
where you have some interesting in jurisdiction in some areas Chris can explain but not in own we have some
1:25:52
things um subdivisions and so on and um we have been working very hard and
1:26:00
actually want to say um we don't necessarily U we're concerned with just
1:26:08
having it in industrial areas as well and and uh and I say that because in the
1:26:13
South we call the Southwood area which is the area south of the airport Port NE
1:26:18
um we city has actually worked for the county uh and we put a lot of infrastructure a
1:26:24
lot of investment in the area um we don't we're not growing like Des Moines or
1:26:30
something but we we have steady growth and that's an area we identified for industrial growth and uh we put a lot of
1:26:38
investment into water plants and streets uh water sewer utilities and so
1:26:44

on um and our concern is not necessarily the case but it's possible that if you
1:26:51
have thousand of Acres or hundreds of Acres going to solar um that will lose the
1:26:57
opportunity for other types of industrial growth um I don't want to say things I'm not know a a lot about but I
1:27:05
don't think there's a lot of jobs we're trying to build a you know factory or facility of some kind that employs
1:27:12
hundreds or thousands of people and and that's hard to do it doesn't happen overnight but we've been diligently
1:27:19
trying to to to have land available for them that I would also mention that the
1:27:24
C of su City Sergeant Bluff and wber County have gone in on the Interchange
1:27:29
which is taken several years to study and is now under design the cooperation with the Iowa DOT
1:27:34
of the I right in that same area which we think will lead to more industrial
1:27:40
growth um and we have some concern that a lot of that area was went to uh to
1:27:47
large solar Farms or large solar system arrays I'm not even sure the right terminology but that
1:27:54
might uh sort of impact what we think is going to be tremendous opportunity not
1:27:59
only for suity but for the Woodbury County and the whole region to see some significant growth um and so when you
1:28:07
say industrial ask you to consider different types of industrial growth um
1:28:14
energy production is one type but a lot of other kinds of of uh industrial
1:28:20
growth with kind of leading most concerned about so um and I also share
1:28:26
some concern of use of agricultural land uh Sioux City is we're larger City but
1:28:35
we're driven by Agriculture and that that's that drives our economy here Rich industrial Rich agricultural
1:28:42
land lots of livestock a lot of businesses industries that City and
1:28:47
majority I think are food production food related and so we have some concerns
1:28:52
too just in general about about taking really high quality farmland or
1:28:57
something that maybe should maybe maybe the solar and is not the highest best use of that land so so again I I'll let
1:29:04
Chris comment a little bit on something may more technical but but our I
1:29:10
appreciate your consideration of this and um take into account not just City
1:29:16
but the other cities in Woodbury County and how they how they may we would likely be
1:29:21
impacted some of the residential areas too we've had again we're not growing as fast as Waukee or Ankeny or something but
1:29:27
we do have some good residential growth occurring um around the outskirts of
1:29:33
Sioux City we like that we' like that to continue as that we think without more
1:29:38
housing you don't have the people that don't have the job creation so I think it's vital to our whole
1:29:46
region

Chris Madsen

I think our main concern would be with the utility size that within two miles of a city's jurisdiction that
1:29:53
either those would be prohibited such like the wind uh turbine um I know that
1:29:58
was noted in your right up as well there's also some comment about a five mile or at least a FAA review within
1:30:07
certain distance of the airport we're working with our airport to get what their language would be on that with
1:30:13
their proposal they didn't know the five mile was really necessary just as long the
1:30:19
FAA um one thing that we do allow wind or solar energy in city as an

1:30:26
accessory that's something that obviously we would be in favor of if that's something you guys want to continue I'm not sure how your ordinance
1:30:33
addresses that infirm is accessory use or just the utility scale principle use
1:30:38
within miles is our major concern U we do appreciate the larger notification
1:30:43
here as well the one currently is about just a little over a mile outside city so we weren't aware of that one was
1:30:51
proposed but all that increased notification would being
1:30:56
for yeah

Marty Dougherty

on the airport deal we have talked to M CL airport
1:31:01
director we have we're going to submit a letter to you is that is that okay 'll
1:31:07
probably signed by the mayor he's been interested in this asked us to look into it so um but uh do you want to make sure
1:31:15
we express the concern about the airport because um uh within a certain distance
1:31:20
of runways it can affec planes probably not big planes with
1:31:25
smaller ones pilot provide there are some rules there where we'll get those to you into what what their concerns
1:31:34
more specific it is there are some some new some approvals
1:31:39
that have over this
1:31:45
type cause issues

Chris Zellmer Zant

with I think that was uh with the mid- americ we spent a lot
1:31:51
of time evaluating that information and making sure that was accurate we did have the FAA
1:31:57
fation yeah we had their blessings yeah so we wouldn't have moved forward on it if we hadn't
1:32:04
so that's a big that's a big issue

Jeff Hanson

to answer your question Chris and Dan can
1:32:10
you clarify this does not impact any accessory use or personal use of solar
1:32:15
right so anyone that's currently or plans to or has pending applications to
1:32:21
energize their personal property with solar this is not directed towards that
1:32:27
use correct

Dan Priestley

yeah this uh just for the record this uh debate ended up split in
1:32:33
August uh we had a original proposal that went through that uh treated this
1:32:39
as a conditional use originally on AG land and uh we addressed the accessory solar
1:32:45
in fact we kind of uh U we were more restrictive than Sioux City on Accessory
1:32:50
we' had it as a conditional use permit and uh you have it as a permitted accessory and we we went back and uh we
1:32:57
amended our ordinance uh to have the same designation as Sioux City has uh we did put some language in there for uh
1:33:05
limited net metering opportunities uh because the way when when we ran it through the county attorney's office uh
1:33:12
uh we wanted to make sure that um you could not convert an accessory situation
1:33:17

into a utility uh situation so to up based on the definition and so um uh we
1:33:26
do have a permitted accessory for use if somebody put one in the house or off City at this point

Chris Madsen

I guess from our
1:33:33
stance we would be only really concerned with the utility scale within that two miles there were accessories within two
1:33:44
miles thank you thanks

Chris Zellmer zant

anyone
1:33:50
else question

David Linn

1:33:56
Eastern sh really curious why or if you guys
1:34:02
discussed just expanding the general industrial to
1:34:08
accommodate these industrial scale
1:34:13
solar arays whatever you want to call I mean if we just had more room South C
1:34:20
obviously I should obviously I'm a farmer out in the county and I really I'm not a big fan of solar I wasn't a big
1:34:27
fan of sold leing but it seems to me like the best way to accommodate all of
1:34:34
this stuff would be to keep it within an industrial zone area that would be a simple thing now I understand that
1:34:39
there's going to be people down there within that industrial zone that probably don't want to be zoned
1:34:44
industrial but the way it sounded uh even the farmers that are
1:34:51
already there there that may actually increase it value what he was talking about earlier so
1:34:58
why don't we just consider increasing to so well we already know
1:35:03
that transmission lines are there and and leave the rest of us

Chris Zellmer Zant

I think one of the things that had
1:35:10
come up in our discussions too was that because when you changed that zoning to Industrial there's a lot of other things
1:35:17
that can happen in that Industrial Area not just solar [David Linn: that's right] there's a lot of things that aren't necessarily as
1:35:24
well compatible as they might be the farther you get away from that industrial area that we have right now I
1:35:31
mean we look at it when we have growth and we see that that's e that's definitely happened but right now well
1:35:37
but are some of the examples Dan that we have that go in industrial zones that may not be a priority

Dan Priesley

construction
1:35:44
contractor yards borrow pits all sorts of

Chris Zellmer Zent

heavy petroleum storage you know oh
1:35:52
don't we have room within the county I don't know sound like there's about 10 11,000 Acres 11,000 Acres now currently
1:35:57

David Linn

now currently it's in it's all West the of the interstate is is there is there
1:36:03
more Farmland just because that's less popular we have more ground in Woodbury
1:36:11

Chris Zellmer Zent

County out of s to the South and Highway 75
1:36:17
the there's a map yeah we got our m that's
1:36:22
why I have my paper clip on it maybe I can find it before you can you turned right to it before I did there it is
1:36:29
right there which one would you like existing
1:36:34
they V for either one

Dan Priestley

this is tough to see but the green
1:36:41
area there's predominantly all the ag L this is what's General industrial right
1:36:46
now actually it's a purple that that's south of the airport there okay I see
1:36:51
good yeah and so this

David Linn

this area right here would still be available it's west of the interstate it would be delineated
1:36:58
by the interstate or what well the and it's primarily agricultural land

Dan Priestley

the plan the plan right now as historically
1:37:05
referenced that it's open space or recreational uh under the is that the
1:37:11

Chris Zellmer Zant

green stuff yeah yeah that's all it's kind of that's all BRS

Dan Priestley

yeah yeah so
1:37:18
conservation areas and all those things have been in mind for that type of zoning designation and so we're trying
1:37:25
to preserve that ground down here and keep it away from industrial it appears so
1:37:31

David Linn

yes that's that's what they're trying to I'm from right here like I said I've got Farm here down here in whatnot and I've
1:37:38
got Farm ground right within that green area that that the concentration board keeps trying to buy from okay and
1:37:44
they'll never get make sense of that designation I

Chris Zellmer Zant

1:37:49
better hide my jacket
1:37:57

David LInn

but it just seems to me that would be
1:38:04

best and just uh

Dan Priestley

again that's definitely a good development plan discussion right
1:38:10
absolutely y I'm sure we'll hear that again too

Chris Zellmer Zant

yeah yes thank
1:38:16
you anyone else

Elizabeth WIdman

well I wasn't prepare to talk
1:38:21
tonight I didn't realize people can say anything because last time we had work session it didn't allow people to say
1:38:26
things but I know there's a there's a a form in there I believe my son submitted
1:38:32
has talking about property values and it said overall if you consider the whole United States putting in silver facility
1:38:40
does affect your um value of your property but there were three um you
1:38:47
know and that was considering if you put it around urban centers on the east caostdidn't affect anything but they
1:38:53
said there were three criteria that if you had it would decrease your property values 5% and that was um and I'm not
1:39:02
looking at it right now I don't remember exactly but it was the size of the project that um was going to be put in
1:39:08
and if it was in a rural setting and there was one more and I don't remember
1:39:14
if it was just in the midwest I don't remember what the third one was but on there somewhere and it says it'll
1:39:20
decrease your and um I appreciate Mr Alexander when he
1:39:26
said this has not been pushed by anybody and says he we're not getting enough energy um she looked up something on her
1:39:33
phone you're going to save $15 a month by ruining all this ag land put in put in
1:39:40
solar it's very inefficient um and it's this has just
1:39:46
been pushed by people who have an economy who have a money incentive to do this
1:39:52
and there weren't those of us in the the AG community that said hey we want our AG taken away so we can have solar um
1:40:01
and I I just think it's really ironic that you want to take away ag
1:40:06
preservation land so the word preservation means you need to save it and and I think the the main uh one of
1:40:14
the the main Treasures of our county is the people and we don't chase away people
1:40:22
that want to live out in the in the county and people don't want to live by
1:40:27
these big sell of things and I have a vested interest because they want to put this down in my area where I've been and
1:40:35
and um I I love the country I love to see the country and I also have a
1:40:40
question you talked about well these things could have ag uses now if they sign a lease with the company and I
1:40:48
understand um I found out um you could look online on things this
1:40:54
company that um the big one they want to sign up with if you look up their
1:41:00
headquarters it's a lawyer's office in Ohio somewhere this isn't even like a
1:41:05
business you know whatever and um
1:41:11
forgot um sorry ag uses something about EG
1:41:19
uses oh yes if you have ag uses so if you're sign if you're signing an agreement with a company they're in

1:41:27
charge of what's going to go on the farmer is not going to say oh I signed this with you you know several years ago
1:41:34
I suddenly want to put make sure that it has an ag purpose well that person's
1:41:40
not in charge of it anymore my understanding is when you sign an agreement company they're the person
1:41:46
that's in charge of it so I think all this discussion about well it's going to to fit with a and the farmer wants to
1:41:53
have it a it's not the farmer that's going to decide these things it's that company that they've signed sign an
1:41:59
agreement with unless I'm misunderstand this but I don't see how the farmer has any say once you've
1:42:06
signed an agreement with the company

Chris Zellmer Zant

I don't have firsthand experience but my thought is that because of the contracts
1:42:12
that they use a lot of these issues will be addressed in those contracts but we
1:42:18
can't control those the only way we can control it with what we do with ag I mean what we do with our zoning ordinances I
1:42:25
mean that's all we can do contract these contracts or contracts there's another
1:42:31
outside of us option sign options options already been signed yeah and uh
1:42:37

Elizabeth Widman

so I have a concern about this discussion about well fits with that because we're going to do this well um
1:42:44
you know these companies don't live here they don't you know they don't have a
1:42:50
concern with how our turned out so that's my on spot two sound so
1:42:57
sorry thank you and you're Mrs Whitman yeah I'm sorry I'm Elizabeth Whitman yes

Chris Zellmer Zant

1:43:02
yes thank you anyone
1:43:08

Greg Jochum

else um Greg Jokum um just wanted to uh um the old
1:43:15
saying location location location um there's purposes for uh why they didn't
1:43:22
go to General industrial um it's the transmission lines if the infrastructure is there um
1:43:29
it's already there for them to to use transmission lines um General industrial
1:43:35
does not have any transmission lines up in that area um that would double the
1:43:41
cost it make it makes it uh um not feasible for them to be in the general
1:43:47
industrial um the comment that um one of you said that you know General
1:43:55
industrial we don't have to worry about it because it's already Zone General industrial um you can still farm the
1:44:00
general industrial um I gu I'm farming ground in the general industrial but I also have
1:44:08
ag preservation ground I would much rather have a conditional use or the overlay for that than have you know
1:44:16
ground in the you know not close to
1:44:22
the highways the interstates and all that being deemed General industrial for
1:44:27
a project you know your spot I don't I don't see where that that be very
1:44:33
detrimental because ag preservation is good because in when the leases are up

1:44:39
and they decommission it to take everything out it goes back to farming you're not out anything whereas if it
1:44:45
goes to General industrial General industrial then it's stuck there and you know a concrete PL a
1:44:53
you know Warehouse can go up and there's nothing that anybody in the can do
1:45:01
can you know I I think if uh you know looking at you know going with
1:45:07
the the utility scales the scorecard uh you know that is something
1:45:13
if you go with an overlay or something using that uh which is it's designed for
1:45:19
the preservation and incentives gives you lots of options and lots of ways for them to score how these
1:45:25
projects are cited because you know obviously when it's done it goes back to the ag
1:45:36
production and and I think Linn County use the scorecard where we got that example
1:45:45
yeah and thank you for everything you guys do like Kevin
1:45:51
said it's t

Chris Zellmer Zant

but we appreciate your participation
1:45:57
in your comments and your thoughts and your ideas because it makes us think maybe outside the box too we haven't
1:46:02
thought about it you know it hasn't come up so if you don't say something we don't know your participation is greatly
1:46:10
appreciated surely anyone else uh

Leo Jochum

can I can I speak
1:46:18
[Chris Zellmer Zant: who who is speaking okay] this is Leo Yokum 1691 250th Street at seix and I I
1:46:28
kind of want to talk about Farmland the history what we had in Woodbury County and I'm going to back up
1:46:37
to what we had in Woodbury County Farm economy of the 70s we had a county that had a robust
1:46:45
live livestock industry it was supported in every small town in the county had a co-op elevator
1:46:53
farm machinery dealers livestock equipment dealers fuel Distributors local veterinary services
1:47:00
just to name a few this all fed into Sioux Cityand that
1:47:05
area had the major livestock yards had five or six slaughter houses and it also
1:47:11
brought along with it a tremendous amount of support businesses
1:47:17
now when the farm crisis of the 80s hit very few of these livestock
1:47:23
livestock producers in the county survived I know because I lived it and
1:47:29
at that time I was president of the Woodbury County pork producers our producer and Associate
1:47:36
membership went from over 300 members to under 30 in just three years that's how
1:47:42
fast and furious people were losing money as a result of that we had we had
1:47:51
some officials in Woodbury County and Sioux City that were really on the ball and today we have to applaud our
1:47:57
County and city leaders in the 80s and right up to our present time for their Insight their proactive response to
1:48:04
recruiting and attracting new businesses to offset the loss of the Agricultural
1:48:10
Revenue I want to share um I have some facts here from the
1:48:16
food and agricultural industry economic impact study and this study is put on by the United
1:48:26

stat States Department of energy along with the food and agricultural department and these facts are
1:48:34
considered in Congress they've got them now and it's considered for the new farm bill and I'm going to just touch on just
1:48:41
a three things this stretches out over every
1:48:48
county in the United States it's also broken down by the state each
1:48:54
County and I took Iowa all 99 States but I just separated out Woodbury Plymouth
1:49:01
and Sioux mainly because Plymouth and Sioux County was brought up as being strong ag just like Woodbury the difference is
1:49:10
I want to take a look at ag jobs Woodbury has in 2023 this is
1:49:17
2023 at 348 direct ag jobs Plymouth County had
1:49:24
1572 ag jobs Sue County had 3,000 ag
1:49:29
jobs Woodbury County ranked 85 out of 99 counties in the ag jobs Department ag
1:49:37
wages Woodbury County 12,932 Plymouth County
1:49:45
7,283 Sioux County 17 I mean I'm I
1:49:51
got to back up 12,932 for Woodbury for Plymouth
1:49:58
7,283 mil Sioux County 176,50
1:50:03
195,000 compare that Sue County had 176 million to woodbury's 12 million in ag
1:50:10
wages ag output this is money coming from all of
1:50:16
the ag area that's Hogs cattle swine sheep Dairy and
1:50:23
crops Plymouth County had uh Woodbury yeah Woodbury County had
1:50:30
99,197,000 Plymouth County had 933 million
1:50:37
10 times the amount Sioux County had 1 billion 730 million
1:50:46
327,000 now to close this this impact study also showed that Woodbury County ranked real high very high in the
1:50:54
top 5% in manufacturing jobs and wholesale jobs in the
1:51:00
state that's direct correlation to the
1:51:06
leadership we had with the city officials and the county officials that saw how ag was
1:51:12
falling through no fall of its own but just through the ag economy it was tough Farmers went broke
1:51:20
Woodbury County needs industry so keep that Southbridge area for industry
1:51:26
open we also need other ways in the county in the ag economy in the ag
1:51:32
preservation area to bolster that we can bolster that with renewable energy with
1:51:40
utility solar it'll fit well we may be
1:51:45
we may be bringing agrivoltaics right into this it's it's a new one it it's it's coming on but the tax revenue coming in
1:51:54
the extra jobs that are going to be coming in from that on a normal basis after it's going after it's in operation
1:52:02
there's going to be eight very high paying jobs and there's going to be related businesses that are going to
1:52:08
have to help to maintain the grass maintain the equipment maintain the fences it's going to be a it's going to
1:52:15
be a plus for the economy it's clean it's efficient and it's very good for
1:52:20
the environment I I think the renewable energy lay overlay should be considered
1:52:27
and I think uh there's contracts out there that are very
1:52:32
solid and I I know you want to know where it's at but I know that once it's listed

1:52:41
where it's at it's a commitment you can't do anything about it once it's a
1:52:46
commitment just like somebody wanted to have a timeline on it
1:52:52
um if all of a sudden that company is in and has a contract going and they're ready to build it and all of a sudden we
1:53:00
get hit with something similar to covid then all of a sudden you got to
1:53:05
back up and you lose everything so we need yes put stuff in there that's
1:53:13
reasonable and I think we can have a very good um I think utility solar can
1:53:19
be very very good for the community uh it's safe
1:53:26
and I think it will just be good in general thank you

Chris Zellmer Zant

thank
1:53:35
you anyone
1:53:41
else no Commissioners no going once
1:53:47
going twice all right I think that is going to
1:53:54
conclude our work session got all your notes yeah okay

WORK SESSION CONCLUDES AT 6:53 PM CST

Public Comment on Matters Not on the Agenda
None

Commissioners Comment or Inquiry
None

Staff Update
Priestley pointed out that the fourth Monday of the month conflicts with holidays such as Memorial Day and recommended an alternative date should be put into stone to ensure the Commission can review applications during the month of May.

Priestley reminded everyone about the Zoning Commission public hearings on Monday, January 22 at 5:00 PM. Public hearings will be conducted regarding utility-scale solar energy systems and the Comprehensive Plan for 2040.

Adjournment
The meeting was declared adjourned by Chairperson Chris Zellmer Zant at 6:56 PM CST.

APPENDIX – INFORMATION SUBMITTED FOR THE RECORD

Daniel Priestley

From: Naomi Widman <naomitoenies@gmail.com>
Sent: Tuesday, January 16, 2024 11:05 AM
To: Daniel Priestley
Subject: Solar Farms Cause Decline in Surrounding Property Values

Dear Mr. Priestley,
Could you please pass this information on to the Woodbury County Zoning Commission so that they have it for their work session meeting tomorrow evening? Or could you please give me an email contact so that I can send it to them? I could not find any contact information for the commission. I know my husband has sent information to you in the past concerning this so I thought I would contact you first.

Thank you for your time and attention!
~Naomi Widman

Attention Zoning Commission:

Here is some information to lend insight regarding how solar farms negatively impact surrounding property values. I have included links to articles and have highlighted specific information from those articles. I hope this is helpful as you consider what the best course of action is for Woodbury County and its residents.

1. https://www.ecowatch.com/property-values-of-homes-near-solar-farms-appraised-in-new-study.html

A study of six states found that on average home prices decreased 1.5%. Most importantly, **"significant differences in property values were observed for homes near solar farm sites previously used for agriculture (average 3% decrease), rural locations (average 4.2% decrease) and solar farms with larger areas (average 3.1% decrease)."** All three of these factors are present for the land that currently has solar farm easements signed in Woodbury County. One of the areas studied was **southern Minnesota which found declines of 4% in property values. When properties were 2-4 miles away from solar farms, their values were not significantly impacted.**
Solar farms should be placed in or near industrial areas where they are less likely to negatively impact surrounding property values or placed greater than 2 miles from home owners so those property values are not impacted.

2. https://insideclimatenews.org/news/15032023/solar-property-values/#:~:text=The%20Solar%20Industry%20Reacts&text=%E2%80%9CThe%20report%2C%20which%20found%20no,country%20also%20show%20similar%20conclusions.%E2%80%9D

This article also discusses the most recent study about solar farms and their negative impact on surrounding property values.

3. https://eta-publications.lbl.gov/sites/default/files/lspvp_journal_article.pdf

This is a link to the most recent study that is referenced in the aforementioned articles.

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Naomi Widman, DNP, RN
Email: naomitoenies@gmail.com
Phone: 612-437-2603

PRELIMINARY STAFF REPORT

CONSIDERATIONS FOR THE PERMITTING OF UTILITY-SCALE SOLAR ENERGY SYSTEMS IN UNINCORPORATED WOODBURY COUNTY, IOWA

Revision
January 10, 2024

Original
November 29, 2023

STAFF
PLANNING & ZONING
Woodbury County Community & Economic Development

CONTENTS

Summary of the Debate

The question in this report is whether utility-scale solar energy systems are appropriate or not in the Agricultural Preservation (AP) Zoning District. To determine compatibility with AP, the Zoning Commission has been tasked to consider the following by the Board of Supervisors on August 8, 2023:

- A conditional use permit for AP "C" with Planning and Zoning and Board of Adjustment to be able to site-specifically take into consideration the concerns of neighbors, land/soil, and other factors when approving permit.
- A slope of no more than 5% in order to preserve the land and to account for soil erosion, compaction, and future land stewardship.
- A maximum height of no more than 20' for panel structures.
- Of all AP, no more than 49% can be in such a project. In short, 51% must be for agricultural production or no longer considered "AP."
- Utility solar can be no more than 2% of all AP "agricultural preservation," preserving 98% of AP. This equates to approximately 8,540 acres of the 427,000 acres of ag land, ag land constituting 75% of the 570,000 total acres in Woodbury County.
- Current notification for utility-scale solar shall be 1 mile for public comment instead of 500 feet.
- A requirement (or at least strong consideration) that the utility-scale solar project either be on a landowner's property or that the owner of the land be a resident of Woodbury County.

Subsequently, the Supervisors revised their direction to include the following on September 26, 2023:

- A conditional use permit for AP "C" with Planning and Zoning and the Board of Adjustment to be able to site-specifically take into consideration the concerns of neighbors, land/soil, and other factors when approving permit.
- A slope of no more than 5% ONLY for fixed arrays (most technology is now movable arrays) in order to preserve the land and to account for soil erosion, compaction, and future land stewardship.
- No more than 1% of industrial land conversion every 4 years for reclassification, roughly 5,700 acres.
- Current notification for utility-scale solar shall be 1 mile for public comment instead of 500 feet.
- A decommissioning plan from solar companies reviewed by P&Z/BOA subject to approval by the Woodbury County Board of Supervisors.

Since receipt of direction from the Board of Supervisors, the Commission has performed significant research, conducted four public hearings and one work session to work toward a recommendation. The Commission has been mindful of the consequentiality of this debate and plans to continue their deliberative work in crafting a concrete recommendation to the Board.

Report Summary

The purpose of this report is to offer a guide regarding how to address the potential permitting of utility-scale solar energy systems in the Agricultural Preservation (AP) Zoning District as the Woodbury County Zoning Commission works toward a recommendation to the Board of Supervisors. This document is designed to explore literature expanding the country on a host of issues. Included within is a breakdown of the public proceedings including meeting transcripts with public comments as well as a staff analysis.

Three potential routes are offered including: 1) focus on the comprehensive plan including the revision of the future land use map for potential renewable energy areas; 2) retain the current policy and revise the conditional use permit process for the General Industrial (GI) Zoning District; 3) establish a utility-scale solar energy systems overlay district.

It is concluded that the utility-scale solar energy debate would be best served by a direct focus on public input during the final stages of the adoption process of the Woodbury County Comprehensive Plan 2040. In particular, input should be considered concerning possible changes to the future land use map for either additional industrial areas or locations acceptable for a utility-scale solar overlay district. As part of the comprehensive plan process, the establishment of a renewable energy policy focused on either industrial expansion or the validation of an overlay district over agricultural land would be a reasonable step for a long-term stable land use policy. Without the comprehensive plan debate, it is the recommendation of staff to adopt Concept #2 which is the retention of the current policy with a revision to the conditional use permit process in the GI Zoning District. Other related issues that could be considered are policies related to the permitting of utility-scale battery systems.

Introduction

The Woodbury County Zoning Ordinance presently has provisions for conditional use permit applications for utility-scale solar energy systems in the General Industrial (GI) Zoning District. This debate is not about establishing solar provisions for the first time, it is about whether or not the Agricultural Preservation (AP) Zoning District is an appropriate zone or not for utility-scale solar. As this is an intricate discussion about the future landscape of Woodbury County with numerous variables for consideration, this consequential debate continues to be examined by extrapolating information from the public, consulting literature, and looking at methods other jurisdictions have employed.

This report attempts to serve as a repository of information collected through the course of this investigation. It has become apparent that the debate of renewable energies is consequential and can have a direct impact on the populace. This document is comprised of sections pertaining to a consultation of literature, the meeting history of the Zoning Commission, the summarization of the debate; a staff analysis, and proposed concepts.

Review of Literature

The purpose of this analysis is to consult a series of sources on topics associated with utility-scale solar systems and land use. The information presented herein is not exhaustive but attempts to shed light on this multifaceted debate.

In recent years, the federal government has placed emphasis on the goal to promote renewable energies in hopes of reducing consumption of fossil fuels to tackle concerns of global climate change. The Biden Administration has set a goal for 100% carbon pollution-free electricity by 2035 (FACT SHEET, 2021). With that federal initiative in place, developers, utility companies, and interested landowners share a common interest to bring solar power to fruition which in-turn thrusts local communities into a position to determine whether or not they are ready for these renewable energy mediums including industrial utility-solar, utility-wind, utility-batteries, etc.

Under the principle of federalism, local jurisdictions, in particular counties - for the purpose of this analysis, regulate their land use through comprehensive plans including future land use maps, zoning ordinances,

floodplain ordinances, and subdivision ordinances. In Iowa, counties are empowered to exert zoning and land use authority through Iowa Code Chapter 335. Thus, the county plays a significant role in evaluating the merits of initiatives promoted by the other governmental partners.

Utility-scale solar energy systems appears to be one of the renewable answers if coal-fired plants around the country are phased out sometime in the future. In an article prepared by Ford (2023) in Reuters, there is a federal initiative to modify and extend the clean energy tax credit for developers of areas impacted by the closure of coal mines or coal-fired plants. The author asserts that "the Energy Community Tax Credit Bonus program provides 10% extra tax credits to solar and storage projects, on top of the 30% investment tax credits (ITCs) or $26/MWh production tax credits (PTCs) available to all renewable energy projects through the inflation act" (Ford, 2023, p. 1). The author asserts that "coal plant closures have accelerated, offering significant opportunity for developers. Around 12 GW of coal plant capacity was retired in 2022 and a further 40 GW of closures are expected by 2029, according to EIA data" (Ford, 2023, p. 1). Additionally, Ford (2023) states that "coal plant sites can offer solar developers a large land area to maximise economies of scale, as well as transport and utility infrastructure" (Ford, 2023, p. 1)

As reported in the news, it is apparent with the initiatives promoting alternatives to coal, other sources of energy are sought to address the electrical needs of communities. Jaeger (2023) in an article for the World Resources Institute states that "phasing out coal power is the most important step the world can take to curb climate change" (p. 1). The author discusses ten countries that have worked toward coal reduction over an eight-year period. The leading county was Greece as they reduced coal production from 51% to 10% between 2014 to 2022 (Jaeger, 2023). The United States was in ninth place on the list which reduced its coal power capacity from 39% to 19% during the same time-frame (Jaeger, 2023). As recent as December 3, 2023, John Kerry, Special Presidential Envoy for Climate, participated in the UN Climate Change Conference COP28 where he announced that the United States is joining the Powering Past Coal Alliance. As reported by Borenstein of Fortune magazine and the Associated Press, Kerry stated "we will be working to accelerate unabated coal phase-out across the world, building stronger economies and more resilient communities" (Borenstein and Associated Press, 2023, p. 1). He also said. "the first step is to stop making the problem worse: stop building new unabated coal power plants" (Borenstein and Associated Press, 2023, p. 1).

In an article prepared by Kristian (2021) of the Grant Plains Institute, there are various challenges for solar development. It is stated that "some solar development proposals are met with concern or suspicion as a new land use, and approval processes are frequently slow. Solar developments sometimes face moratoriums while local decisions makers try to sort out conflicting claims of harm. They frequently face a more restrictive set of development regulations than other kinds of development" (Kristian, 2021, p. 3). Using figures from the Energy Industries Association (*Land Use*, 2024) suggesting that it takes "10 acres to produce one megawatt (MW) of electricity," Kristian (2021) offers a study of the "total percentage of county land used for solar electrical generation" (p. 4). The author suggests that "of all 2,870 counties in the contiguous US, only one-third have recorded principal-use solar installations of at least one MW. Of counties with solar installations, most (93.5 percent) have less than 0.5 percent of their total land area used for solar development" (Kristian, 2021, p. 5). Kristian (2021) asserts that within their analysis "solar development has not existed in conflict with cultivated agriculture land use at a large enough scale to risk county-level economic agriculture bases" (p. 7). The bottom line of this study is that "for no region does the average percentage of both existing and queued solar in a county surpass 0.6 percent of the county's total land" (Kristian, 2021, p. 8).

The vast majority of unincorporated Woodbury County is made up of land designed in the Agricultural Preservation (AP) Zoning District which includes about 476,000 acres including areas already developed. The areas that comprise the General Industrial (GI) Zoning District, predominately south of the Sioux Gateway Airport and west of Interstate 29, include about 11,000 acres (Woodbury County Assessor's Data, 2023). The inherent purpose of AP Zoning District is to "encourage the continued role of agriculture as the primary economic sector in the unincorporated areas of Woodbury County, thereby preserving its rural character. Land uses that are compatible with agriculture and farming are allowed..." (Woodbury County Zoning Ordinance, p. 24). The purpose and intent of the GI Zoning District is to enable the development of heavy commercial and industrial

activities. Thus, it was determined with the adoption of the zoning ordinance in 2008 that electrical energy generation is an industrial use, thereby restricting placement to the industrial areas for the purpose of protecting farm ground.

It is noteworthy to point out that there are numerous uses including commercial and industrial activities that are either allowed outright or allowed for consideration through the conditional use permit process in the AP Zoning District. These uses include: vehicle repair; machine and welding shops; research and development laboratories; ethanol fuel distilling; aggregate crushing and screening; borrow pits for earth materials; gravel and stone quarries; fuel and lubricant distributors; sanitary landfills; waste composting; detention facilities; halfway houses for non-penal residents; airports and heliports; rail lines; telecommunication towers; sewage treatment plants; utility substations; sewage lagoons; water tanks; and various others. However, the distinguishing factor between these uses and utility-solar may rest in the total number of acres required (Woodbury County Zoning Ordinance).

In an article by Daniels and Wagner (2022), it is stated that agricultural areas are beneficial sites for developers because the open space areas place distance between property owners for conflict minimization (p. 1). The authors (2022) offer the following as quoted from YSG Solar (2022), "'developers' generally want land located within two miles of an electrical substation and within 1,000 feet of three-phase power (alternating current)..." (Daniels and Wagner, 2022, p. 2; as quoted in YSG Solar, 2022). In terms of capacity, according to the Solar Energy Industries Association (SEIA), a "five-megawatt (MW) facility requires between 5 and 10 acres per megawatt of electricity generated" (as quoted in Daniels and Wagner, 2022, p. 2).

Gross (2020) of the Brookings Institution, suggests that "wind and solar generation require at least 10 times as much land per unit of power produced than coal- or natural gas-fired power plants including land disturbed to produce and transport the fossil fuels" (p. 1). In terms of megawatts produced in comparison, coal fire plants can be in the 500 to 1000 MW capacity range. In an article offered by the Nuclear Regulatory Commission, entitled "What is a Megawatt, "a 1,000 MW coal energy plant "may average 750 MW of production over the course of a year…" (*What is a Megawatt?,* 2012, p. 1*).*

The authors assert that these systems are growing rapidly as the costs to produce them declines, however, there are also cons to the systems. Daniels and Wagner (2022) state that "utility-scale solar plants can cover up to hundreds of acres and can interfere with scenic views. Removing agricultural land from production can hurt local farm economies and leasing land for utility-scale solar can drive up land rents and prices" (Daniels and Wagner, 2022, p. 2). Daniels and Wagner (2022) also discuss concerns for the restoration of agricultural land after decommissioning. However, they reference that some landowners have continued limited agricultural practices along with the solar panels limited to sheep, pollinator space, and the raising of vegetables (Daniels and Wagner, 2022). Lastly, Daniels and Wagner (2022) state the importance of comprehensive plans, zoning ordinances, and subdivision regulations. They make it clear that the local jurisdictions have the authority to decide whether industrial solar is appropriate or not on farmland. In their study of 125 local governments nationwide, "11 counties and three municipalities banned solar plants from farmland" (Daniels and Wagner, 2022, p. 4). Their data suggests that 30 counties use the conditional use permit process and 32 use the special exception process.

Research about the appropriateness of utility-scale solar assets on agricultural land includes concerns about the impact to land values. Gaur and Lang (2020) from the University of Rhode Island, analyze the potential effects on nearby property values. The purpose is to discover whether solar installations over one megawatt in Massachusetts and Rhode Island impact residential property values within one mile. In analyzing over 400,000 land transactions within three miles of a solar site in the two states, their results indicate that "houses within one mile depreciate 1.7% following construction of a solar array, which translates into an annual willingness to pay $279" (Gaur and Lang, 2020, p. 2). The authors further conclude that "the global benefits of solar energy in terms of abated carbon emissions are outweighed by the local disamenities" (Gaur and Lang, 2020, p. 2).

Coffey (2019), in a study prepared for the American Planning Association, discusses utility-scale solar energy facilities and their impact on land use. He suggests that while the clean energy created can be a positive, the impact of utility solar can be felt at the local level. Coffee (2019) asserts that "applicants often say that a particular project will 'only' take up some small percentage of agricultural, forestry, or other land-use category –

but the impact of these uses extends beyond simply replacing an existing (or future) land use" (p. 10). He cautions communities by stating if the permitting is not done right, "these uses can change the character of an area, altering future communities for generations" (Coffey, 2019, p. 10).

The author emphasizes that local officials need to root their decisions in the community's comprehensive plan for the purpose of carefully analyzing the ramifications of the individual project and its association with the proposed area it could impact. Coffee (2019) asserts the following: "A solar facility located by itself in a rural area, close to major transmission lines, not prominently visible from public rights-of-way or adjacent properties, and not located in growth areas, on prime farmland, or near cultural, historic, or recreational sites may be an acceptable use with a beneficial impact on the community" (Coffey, 2019, p. 10). Furthermore, Coffee states that "properly evaluating and, to the extent possible, mitigating the impacts of these facilities by carefully controlling their location, scale, size, and other site-specific impacts is key to ensuring that utility-scale solar facilities can help meet broader sustainability goals without compromising a community's vision and land-use future" (p. 11)

In a study by Al-Hamoodah, Koppa, et al (2018), an investigation is conducted examining the impact of utility solar installations on nearby property values using a geospatial analysis and a survey of assessors. The purpose is to determine whether utility-solar is an amenity or disamenity. The analysis included 956 solar projects from 2016 across the county using data from the U.S. Energy Information Administration as well as 400 surveys of local assessors. The assessors were asked about utility-solar's impact on home prices. It was discovered that there was minimal impact. Additionally, it was reported that the assessors indicated positive impacts of the solar panels that were placed in unappealing areas (Al-Hamoodah, Koppa, et al., 2018).

In an article by Elmallah et al. (2023), a study is presented analyzing the impact of large-scale solar on residential home prices in six states. Using over 1.8 million home transitions near solar assets, the authors address two questions: "(1) what effect do LSPVPs (large-scale photovoltaic projects) have on home prices and (2) does the effect of LSPVP on home prices differ based on the prior land use on which LSPVPs are located, LSPVP size, or a home's urbanicity" (Elmallah et al., 2023, p. 1)? The authors "find that homes within 0.5 mi of a LSPVP experience an average home price reduction of 1.5% compared to homes 2-4 mi away; statistically significant effects are not measurable over 1 mi from a LSPVP" (Elmallah et al., 2023, p. 1).

> Elmallah et al. (2023) state that our measures have two implications for policymakers: (1) measures that ameliorate possible negative impacts of LSPVP development, including compensation for neighbors, vegetative shading, and land use co-location are relevant especially to rural, large, or agricultural LSPVPs, and (2) place- and project-specific assessments of LSPVP development and policy practices are needed to understand the heterogeneous impacts of LSPVPs. (p. 1)

Abashidze (2022) examines the sales of agricultural land around 451 solar farms in North Carolina. The author finds "no direct negative or positive spillover effect of a solar farm construction on nearby agricultural land values" (Abashidze, 2022, p. 19). However, it is learned that solar farms "may create a positive option-value for landowners that is capitalized into land prices" (Abashidze, 2022, p. 19). In particular, the author finds that "agricultural land that is also located near transmission infrastructure could increase in value. This latter result is also of note given the difficulty in siting transmission lines" (Abashidze, 2022, p. 19).

The author suggests agricultural land near transmission lines after the installation of a nearby solar may bring positive value (Abashidze, 2022). However, the author does clarify that the results are confined to the study and many not necessarily be applied to other areas. Abashidze (2002) does point out that "concerns have been expressed that as solar displaces traditional agricultural production in a region, local supply chains could suffer and lead to a negative cycle in which more farmers exit the industry and supply chains further weaken" (p. 19). It is emphasized that this would need to happen on a large scale and they cannot "empirically evaluate these concerns" (Abashidze, 2022, p. 19).

It is without a doubt that utility-scale solar is widely growing but not entirely embraced. Uebelhor, Hintz et al. (2021) offer an analysis of community reactions to solar developments in the Great Lakes region (Indiana, Michigan, Minnesota, and Wisconsin) using a content analysis of local newspaper articles gauging public sediment. The issues discovered were ranked based on the frequency of mentions. The results suggest that utility-solar on farm ground was generally positive. Yet, there were numerous articles featuring opposition to projects.

"Residents opposed to siting, solar projects on farmland often mentioned how a significant amount of local farmland was being taken out of production, which was a concern for the local economy, the reduction in locally produced food, aesthetics, and community values" (Uebelhor, Hintz et al., 2021, p. 10). The community members also offered concerns about land and soil degradation (Uebelhor, Hintz et al., 2021). The authors discuss differences between the four states as Michigan and Indiana have local control over solar siting while Minnesota and Wisconsin retain the authority in state hands. Under both scenarios, the Uebelhor, Hintz et al., 2021 suggest that it is key to ensure active community involvement in the utility-solar siting process to mitigate concerns.

In an article in Michigan's nonpartisan, Michigan Bridge, Erin Hamilton, a mushroom grower, launched a petition to ban utility-scale solar on agricultural land. Hamilton was quoted stated that "our goal with this initiative is specifically to protect and preserve farmland for long term agricultural use" (House, 2023, p. 3). This push is for the proposed Michigan Agricultural Preservation Act which is a ballot measure to oppose the use of large tracts of land for renewable energy purposes. The objections cited in Michigan include "fears of declining property values, loss of productive farmland, and local environmental concerns over the materials used in solar panels" (House, 2023, p. 4). Hamilton pushed for this statewide ban because of actions in her local community in Livingston County's Marion Township where their solar ordinance was revised thereby "shrinking areas allowed for solar development from thousands of acres to 170 amid opposition from farmland solar opponents…" (House, 2023, p. 4). The statewide ballot measure was withdrawn due to the vagueness of the language. Hamilton signaled that she planned to visit the efforts but there has not been an updated petition since.

In an article in the Harvard Business Review, Atasu, Duran, & Van Waqssenhove (2021) present concerns about the increased speed of solar replacement which in turn generates significant amounts of waste thereby placing pressure on the limited resources of local communities for resource cleanup. The authors argue that with the vast growth and innovative changes in solar technology, there will be decisions made for early replacement thus adding solar waste to the communities at rates higher than imagined. It is pointed out that developers may find it economically viable to replace panels earlier than expected. Atasu et al (2021) assert that recycling is inadequate in numerous communities and the increased number of disposed panels can lead to problems including who is responsible for the cleanup costs (Duran and Van Wassenhove, 2021)?

Casey (2023) offers an article about agrivoltaics as a tool for a transition to renewable energies. It is stated that the "mindful cooperation between farming and energy poses a threat to the status quo fueling climate change and is facing a sure of opposition, but the emerging field of agrivoltaics could help neutralize the critics and break down barriers to solar development" (Casey, 2023, p. 2). Casey (2023) discusses the importance of rural solar as a source of income for farmers and a support mechanism for supporting the agricultural industry. Opposition to rural solar is also discussed including the formation of groups on social media sites such as Facebook. Casey (2023) asserts that "these groups are larded with false claims about climate change, including claims that climate change is a hoax, and that solar panels can leach cadmium, a carcinogen, into the environment" (p. 4). Casey (2023) acknowledges that "opponents of farm-located solar have argued that utility-scale arrays are not an appropriate use of farmland" (p. 5). The author also cites a group, "Citizens for Responsible Solar" which has the message that "industrial-scale solar is not agriculture; it is a power plant" (Casey, 2023, p. 5).

The claim is made by Casey (2023) that the institution of solar panels helps improve the soils beneath as they can "revert to a natural state, enabling the potential for a transition to regenerative farming" (p. 6.). Hence, Casey (2023) claims this is "consistent with the Conservation Reserve Program, which pays farmers for taking sensitive land out of production and planting species that restore environmental health" (p. 6). The author concludes the article by discussing advantages of agrivoltaics, regenerative agriculture, carbon sequestration, and federal support.

There are a number of policy advocates for utility-scale solar including the Iowa Environmental Council who provide materials such as model solar ordinances to local governments. Guyer and Snell offer a model to facilitate utility-scale solar installations. This covers a range of issues including the application process, general requirements, operation and maintenance, and discontinuation and decommissioning of utility-solar systems. The ordinance uses a conditional use permit application process in zoning districts other than residential.

The Center of Rural Affairs also provides materials to local governments to assist with finding a balanced approach to regulation. The Center has provided their Iowa Solar Citing Resource Guide: A Roadmap for Counties which includes information about state and local benefits, major provisions that should be contained within solar ordinances such as the approval process and application, setbacks, sitting standards, operations and maintenance planning, infrastructure and road use agreements, decommissioning, and other considerations. This guide recommends that property line setbacks should not exceed 50 feet. It also suggests that setbacks from occupied residences should be within 100 to 200 feet.

As part of the Center of Rural Affairs' literature, Kolbeck-Urlacher (2022) offers a guide for the decommissioning of utility-solar systems. The analysis presented includes information for understanding the scope of the solar project including the awareness of the end-of-life options. These options include the extension of the performance period where reuse, refurbishment, and repowering standards are considered. Information about full decommissioning with recycling and disposal options of the panels are discussed. Components of the decommissioning plan are presented including how to address the estimation of costs. Decommissioning cost examples are presented along with final assurance mechanisms. Kolbeck-Urlacher (2022) offers several recommendations including:

- Require project developers to submit a decommissioning plan that defines the obligations of the project developer to remove the solar array and restore the land when the project is retired.
- Require the project developer to notify the county of its intent to stop using the facility once it has been determined the system will be retired…
- Ensure that decommission plans include expected timelines for completion of tasks…
- Include a provision that the project owner is responsible for the costs of decommissioning ensuring the county and landowners do not bear these costs.
- Work with developers to ensure decommissioning cost estimates are made by a third-party professional who can provide a location and project specific cost estimate, and plan for these cost estimates to be reviewed every 5 to 10 years to accommodate changes.
- Encourage recycling or repurposing of solar components rather than disposal in a landfill.

(Kolbeck-Urlacher, 2022, p. 6)

Additionally, in a 2023 Center for Rural Affairs publication, Kolbeck-Urlacher offers a report to give policy makers an option for utility-solar and agriculture to co-exist. The author asserts that solar can coexist with different crop types such as "vegetables and berries, utilizing livestock grazing for managing vegetation, beekeeping, and planting native vegetation and pollinator habitat" (Kolbeck-Urlacher, 2023, p. 4). It is asserted that agrivoltaics offers economic benefits such as "new revenue streams for farmers, increased pollinators, wildlife habitat, enhanced soil health, reduced erosion, and carbon storage" (Kolbeck-Urlacher, 2023, p. 4).

The Center for Rural Affairs also authors a fact sheet advocating for the solar grazing. They present a planning process for developers to have a grazing management procedure in place that sets goals, sets the livestock species and population, determines site conditions, and establishes a rotational grazing and vegetation management plan for the site (Making the Case for Solar Grazing, p. 2).

The research suggests there are a number of ways to permit utility-scale solar energy systems. These include allowed uses through the building permit process alone, conditional use permit, special use, rezone, etc. Typically, local jurisdictions have established frameworks within their ordinances to address permitting. In the Solar@Scale: A Local Government Guidebook for Improving Large-Scale Solar Development Outcomes (2023), the concept of special-purpose districts is addressed. The purpose of these districts are to "address the unique characteristics of a specific area or to promote unified large-scale development" (Improving, 2023, p. 78).

"Local officials may map these districts to specific properties at the time of adoption, or they may hold off on mapping until they approve an owner's request for a rezoning to the special-purpose district" (Improving, 2023, p. 78). If the district is not initially mapped, it can be construed as a floating zone or an overlay district (Improving, 2023). The authors suggest that "local officials can use floating zones to ensure the highest level of scrutiny for large-scale solar development proposals" (Improving, 2023, p. 78). Furthermore, it is asserted that there are downsides of a specific mapped location. This includes changes to the developers' plans. Additionally,

there could be factors beyond the local government's control "such as the available capacity on distribution or transmission lines and the costs associated with interconnection, can impede efforts to steer solar projects to target locations" (Improving, 2023, p. 78).

The guidebook also addresses the establishment of development standards including dimensional standards, use permissions by district, site conditions, environmental performance, and decommissioning. Additionally, procedural standards are analyzed including the use of pre-application meetings, application materials, and permitting fees. As a whole, the guidebook offers a wide-scope of considerations that are imperative for local officials to appreciate.

In an article prepared for the Michigan State University Extension, Reilly (2023) asserts that "overlay zoning districts is a valid tool in some conditions. But be careful not to overuse it when more traditional zoning techniques can do the job" (p. 1). Reilly (2023) describes the overlay as an "additional zoning district that is laid over the top of two or more zoning districts – usually to introduce an additional standard(s) or regulation(s) along some feature" (p. 1). The standards could include "building setbacks, density standards, lot sizes, impervious surface reduction, vegetation requirements, and building floor height minimums (Reilly, 2023, p. 3). Reilly (2023) offers the following example:

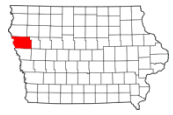
> An overlay district along the entire length of a river, that flows through several different zoning districts, may require a vegetation buffer and larger setback from the riverbank. The overlay district text in the zoning ordinance is where the larger setback and requirement for the vegetation buffer is written. The alternative would be to add those two regulations into each underlying zoning district – often making it necessary to have the same text in the zoning ordinance several times, once for each zoning district the river flows though. (Reilly, 2023, p. 1)

Reilly (2023) cautions "if a proposed overlay district is only on top of one underlying zoning district, then creating an overlay district may not be the best approach" (p. 3). Reilly suggests that the ordinance would be more standardized to just add the proposed regulations to the underlying zoning district. However, if the proposed overlay is meant to change a use, then it would be appropriate to establish the overlay (Reilly, 2023).

As Reilly (2003) points out the merits of overlay districts, in terms of utility-scale solar energy systems, there must be a unit-of-analysis or some particular standards that establish an area within a community as suitable or not suitable for the overlay. The determination of those standards can be based on a number of factors not limited to soil quality and separation distances from other land uses.

Several counties in Iowa have adopted ordinances to address utility-scale solar. It is apparent there is not a one-size-fits-all solution for the permitting of such systems. It appears that some of the counties do tend to have a some pathway for the permitting of utility-scale solar in agricultural districts. Some counties have their Board of Supervisors consider the permits while others employ the Board of Adjustment. The following table includes fifteen counties in Iowa that have some mechanism in place to address utility-solar.

County	Location	Population (2023)	Status	Permitting Body	Permit Type	Zoning District
Adair		7,439	In effect	Board of Supervisors	Board of Supervisors Permitting	No designation
Clayton		16,716	In effect	Board of Adjustment	Special Exception Use Permit	Consumer Scale referenced in R-1, C-1, & A-1 Districts
Clinton		45,662	In effect	Board of Adjustment	Special Exception Permit	A-1, AR-1, C-1, C-2, M-1, M-2

Dubuque		100,949	In effect	Board of Adjustment	Special Use Permit	A-1 (Agricultural District); Permitted in M-1 (Light Industrial) and M-2 (Heavy Industrial)
Johnson		159,445	In effect	Board of Adjustment	Conditional Use Permit	Agricultural District
Linn		236,020	In effect	Board of Supervisors	Rezone to Overlay	Renewable Energy Overlay Zoning District
Louisa		10,672	Draft Proposal	Board of Adjustment	(Ordinance Status unknown) Special Exception Permit	Special Use Exception in the A-1 (Agricultural District); B-1 (Business District); I-1 (Industrial District)
Mills		14,310	In effect	Board of Adjustment	Conditional Use Permit	AG (Agricultural Zoning District); AR (Agricultural/Residential Zoning District)
Monona		8,604	In effect	Board of Adjustment	Special Use Permit	A-1; A-2 – Agricultural Districts
Muscatine		43,382	In effect	Board of Adjustment	Special Use Permit	A-1 (Agricultural District); Permitted use in I-1 & I-2 (Light and Heavy Industrial)
Polk		510,929	In effect	Board of Adjustment	Conditional Use Permit	AG (Agricultural Zoning District); LI (Limited Industrial Zoning District); HI (Heavy Industrial Zoning District)
Ringgold		4,522	In effect	Board of Supervisors	Construction Permit	No designation
Scott		177,501	In effect	Board of Supervisors	Rezone Procedure	US-F Floating District
Tama		16,946	Under Consideration	Solar Access Regulatory Board / Board of Supervisors	Solar Access Easement	No designation; capped by 25 Megawatts (MW).
Woodbury		105,941	In effect	Board of Adjustment	Conditional Use Permit	General Industrial (G1)

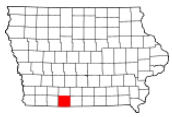
As noted, each county is distinct and has their own specific reasons for why they chose their respective mechanism to permit utility-solar project. Each county offers information that can be helpful to the consideration of a utility-solar policy in Woodbury County. In terms of setbacks or separation distances, the Center for Rural Affairs in their Iowa Solar Siting Resource Guide: A Roadmap for Counties offer the following recommendations:

- Property line setbacks should not exceed 50 feet; setbacks from occupied residences should stay within a range of 100 to 200 feet. (p. 11)
- Counties should include waiver provisions allowing for the county to waive the mandated setback distance with the consent of the participating landowner and adjacent property owner. (p. 11)
- No setbacks should be required if a property line is shared by two participating landowners. (p. 11)

The following table includes ordinance excerpts of the setbacks or separation distances used by the sample counties. It appears that many have chosen to follow the setback standards for their controlling zoning districts. However, there are some counties such as Adair, Ringgold, and Scott that have implemented setbacks of 1,000 feet from occupied residences. It is imperative to note that several metrics beyond the Center for Rural Affairs recommendation can be employed addressing: Occupied Residences; Occupied and Unoccupied Structures; Public Rights-of-Way; Public Intersections; Airports; Cemeteries; Public Conservation Areas, etc.

<table>
<tr><th>County</th><th>Location</th><th></th></tr>
<tr><td>Adair</td><td>  </td><td><table><tr><th>Protected Area</th><th>Setback Requirement</th></tr><tr><td>Occupied Residence</td><td>1,000 feet from occupied residence</td></tr><tr><td>Any non-participating parcel</td><td>250 feet from property line</td></tr><tr><td>Public road right of way</td><td>50 feet from road right of way</td></tr><tr><td>Public road intersections</td><td>Radius of 150 feet from the center of the intersection</td></tr><tr><td>Public Airports</td><td>5 miles from property line</td></tr></table></td></tr>
<tr><td>Clayton</td><td>  </td><td>a) Setback. Setbacks for all structures (including solar arrays) must adhere to the minimum principal use setback standards for the zoning district where the project is located; greater setbacks may be recommended absent a solar access agreement.</td></tr>
<tr><td>Clinton</td><td>  </td><td>Site and Structure Requirements
1. Setback. Setbacks for all structures (including solar arrays) must adhere to the minimum principal setback standards for the zoning district where the project is located; greater setbacks may be required by the Board of Adjustment.</td></tr>
<tr><td>Dubuque</td><td>  </td><td>Setbacks. Setbacks for all structures (including solar arrays) shall be the same as what is required for residences in the A-1 Agricultural District unless the Board of Adjustment finds that less is warranted. All structures shall observe listed setbacks in the M-1 and M-2 Districts. No setbacks are required where a property line is shared by two participating landowners. Mandated setback distances may be waived with the consent of participating landowners and adjacent property owners.</td></tr>
<tr><td>Johnson</td><td>  </td><td>1. Setback Standards. All structures, including solar arrays, shall adhere to the primary structure setbacks for the district where the system is located.</td></tr>
</table>

Linn		(5) *Site and structure requirements.* a. *Setback.* Setbacks for all structures (including solar arrays) must adhere to the minimum principal setback standards for the zoning district where the project is located in addition to dwelling and stream corridor setbacks 1. Solar panels, structures, and electrical equipment, excluding fences and power lines for interconnection, shall be kept a minimum of three hundred (300) feet from dwellings, unless the property owner waives the setback. Waiver must be in writing and recorded. 2. Solar panels, structures, and electrical equipment, excluding fences and power lines for interconnection, shall be kept a minimum of one hundred and twenty (120) feet from the centerline of all stream corridors and open ditches containing perennial flow throughout the majority of the growing season.
Louisa		2) *Setbacks.* a. The front yard setbacks shall be a minimum of fifty (50) feet from the edge of the right of way which form the outside perimeter of a SGES or SFES project area and one hundred (100) feet from a residence that is a part of the SGES or SFES project area. The Board of Adjustment may grant an exception to the setback requirement if the proposed or existing buffer is sufficient to screen the project from view of adjoining property or public rights-of-way, if the owners of the adjoining properties agree in writing to waive these setback requirements b. In the case of a SGES or SFES to be built on more than one parcel and parcels are abutting, a zero (0) side or rear setback shall be permitted to the property line in common with the abutting parcel(s). c. Solar panels shall be least three hundred (300) feet from a residence that is not part of the SGES or SFES project area. The Board of Adjustment may grant an exception to the setback requirement if the proposed or existing buffer is sufficient to screen the project from view of adjoining property or public rights-of-way, if the owners of the adjoining properties agree in writing to waive these setback requirements d. Solar panels shall be eighty (80) feet from the State Right of Way and sixty (60) feet from County Right of Way.
Mills		(2) Setbacks. The front yard setbacks shall be a minimum of fifty (50) feet from the edge of the right-of-way to the closest solar panel of a SESUS project and three hundred (300) feet from a residence that is not a part of the SESUS area. If a SESUS is to be built on more than one parcel and the parcels are abutting, a zero (0) foot side or rear setback shall be permitted to the property line in common with the abutting participating parcel(s).
Monona		No setbacks reported or reverts to controlling zoning district.
Muscatine		e. **Setbacks.** Setbacks for all structures (including solar arrays) shall be the same as what is required for residences in the A-1 Agricultural District unless the Board of Adjustment finds that less is warranted. All structures shall observe listed setbacks in the I-1 and I-2 Districts. No setbacks are required where a property line is shared by two participating landowners. Mandated setback distances may be waived with the consent of participating landowners and adjacent property owners.
Polk		No setbacks reported or reverts to controlling zoning district.

<table>
<tr>
<td>Ringgold</td>
<td>  </td>
<td>
1. Setbacks. All US-SES and any upgrades to existing solar energy systems shall observe the following setbacks, to be measured from the edge of the solar panels and equipment (not underground facilities such as cable or fencing):
<table>
<tr><th>Protected Area</th><th>Setback Requirement</th></tr>
<tr><td>Occupied Residence</td><td>1,000 feet from occupied residence</td></tr>
<tr><td>Any non-participating parcel</td><td>250 feet from property line</td></tr>
<tr><td>Public road right of way</td><td>75 feet from road right of way for paved roads
50 feet from road right of way for gravel roads</td></tr>
<tr><td>Public road intersections</td><td>Radius of 150 feet from the center of the intersection</td></tr>
<tr><td>Public Airports</td><td>5 miles from property line</td></tr>
</table>
<table>
<tr><td>Occupied Structure</td><td>300 feet from occupied structure</td></tr>
<tr><td>Any non-participating parcel</td><td>100 feet from property line to solar panels</td></tr>
<tr><td>Public road right of way</td><td>75 feet from road right of way for paved roads
50 feet from right of way for gravel roads</td></tr>
<tr><td>Recreational Areas</td><td>A view shed analysis needs to be completed and the setback should be consistent with said study.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Scott</td>
<td>  </td>
<td>
3. Setbacks: Setbacks for all structures (including the solar arrays themselves) must adhere to the minimum principal setback standards for the zoning district where the project is located; greater setbacks may be recommended based on the application.

a. All buildings, accessory buildings, and other infrastructure shall be located the following distances from the nearest boundary of each zoning district:

A-P: 500 feet
A-G: 500 feet
R-1: 1,000 feet
R-2: 1,000 feet
CAD-R: 1,000 feet
C-1: 100 feet
C-2: n/a
CAD-PVC: 100 feet
I: n/a
I-F: n/a
SW-F: n/a

b. All buildings, accessory buildings, and other infrastructure shall be located 1,000 feet from any residential dwelling unit not within in the land area leased or owned by the applicant.

c. When a solar array is to be built on two or more parcels that are abutting, a zero (0) side or rear setback shall be permitted to the property line in common with the abutting parcels.
</td>
</tr>
<tr>
<td>Tama</td>
<td>  </td>
<td>Draft ordinance. Data not reported.</td>
</tr>
</table>

In terms of soil quality, in Iowa, the Corn Suitability Rating 2 (CSR2) is the present standard employed to assess farm ground. In an article prepared by the Iowa State University Extension and Outreach office by Miller and Burras (2015) "Corn Suitability Rating 2 remains an index to the inherent soil productivity of each kind of soil for row crop production. The index is scaled from 100, for the most productive soils, to 5 as the least productive" (Miller and Burns, 2015, p. 1). The CSR2 can be broken down into three tiers including high, medium, and low. A high tier CSR2 is construed as very productive soils with a rating of 83 and above. A medium tier includes a rating within the range of 65-82 and is considered to have productive soils "with some properties that limit yield to remain below the excellent ones" (Mandrini, 2023, p. 1). A low tier includes a rating below 65 to 5, again with some limited properties (Mandrini, 2023). Mandrini (2023) asserts that "the CSR2 was created to classify soils based on production capacity. Since yield is one of the main variables determining a farm's economic outcomes, CSR2 is also associated with economic variables like cropland values and rents" (p. 3).

The research also suggests that comprehensive planning is an appropriate step for introducing renewable energy to the community. The American Planning Association offers a guide in their Planning Advisory Service Memo Addendum (2019). The association offers the following criteria for comprehensive plan amendments:

- Identification of major electrical facility infrastructure (i.e. transmission lines, transfer stations, generation facilities, etc.)
- Identification of growth area boundaries around each city, town, or appropriate population center.
- Additional public review and comment opportunities for land-use applications within a growth area boundary within a specific distance from an identified growth area boundary, or within a specified distance from identified population centers (e.g., city or town limits)
- Recommended parameters for utility-scale soar facilities such as:
    - maximum acreage or density (e.g., not more than two facilities within a two-mile radius) to mitigate the impacts related to the scale of these facilities
    - maximum percentage usage (i.e., "under panel" or impervious surface) of assembled property to mitigate impacts to habitat, soil erosion, and stormwater runoff
    - location adjacent or close to existing electric transmission lines.
    - location outside of growth areas or town boundary or a specified distance from an identified growth boundary
    - location of brown fields or near existing industrial uses (but not within growth boundaries)
    - avoidance of or minimization of impact to prime farmland as defined by the USDA
    - Avoidance of or minimization of impact to the viewshed of any scenic, cultural, or recreational resources (i.e., large solar facilities may not be seen from surrounding points that are in line-of-sight with a resource location)
- Identification of generation conditions to mitigate negative effects, including the following:
    - Concept plan compliance
    - Buffers and screening (e.g., berms, vegetation, etc.)
    - Third-party plan review (for erosion and sediment controls, stormwater management, grading)
    - Setbacks
    - Landscaping maintenance
    - Decommission plan and security

(Specific Planning and Zoning Recommendations for Utility-Scale Solar, 2019, p. 1)

The American Planning Association (2019) also suggests that in addition to the comprehensive plan, the zoning ordinance should also be amended to define a thorough permitting process. The recommended contents include a pre-application meeting, application requirements, public notice standards, minimum development standards, coordination of local emergency services, decommissioning, site plan, building permit, site maintenance, signage, compliance, interconnection agreement, documentation and conditions, severability, infractions, property access, etc.

Meeting History of the Woodbury County Zoning Commission

The following table summarizes the Zoning Commission's interactions as they work to form a recommendation to the Board of Supervisors for the permitting of utility-scale solar energy systems in the unincorporated areas of Woodbury County. The table includes online hyperlinks (links) to the meeting agendas with backup information including public comments up to that point. Additionally, links to the approved meeting minutes as well as audio is provided. The subsequent pages also include comments made by the public at the hearings. The information provided is not intended to be a full or perfect transcript but to provide context of the debate. Links are also provided to the audio comments from each member of the public who chose to speak.

Date	Meeting Type / Action	Meeting Information	Meeting Attendance	Public Input
September 11, 2023	Public Hearing / Zoning Commission (Moville)	**Agenda Packet:** https://www.woodburycountyiowa.gov/files/committees/meetings/2023-09-11_packet_zoning_commission_34199.pdf **Comments:** Written comments included within agenda packet. **Minutes:** https://www.woodburycountyiowa.gov/files/committees/meetings/2023-09-11_minutes_zoning_commission_2192.pdf **Audio:** https://www.youtube.com/watch?v=XZQa-5kNgcQ	31+	14 • Greg Jochum • Brad Jochum • Tom Jochum • Eric Nelson • Ron Wood • Elizabeth Widman • Bob Fritzmeyer • Leo Jochum • Kim Alexander • Will Dougherty • Ann Johnston • Wally Kuntz • Supervisor Taylor • Will Dougherty
September 25, 2023	Public Hearing / Zoning Commission	**Agenda Packet:** https://www.woodburycountyiowa.gov/files/committees/meetings/2023-09-25_packet_zoning_commission_66298.pdf **Comments:** Written comments included within agenda packet. **Minutes:** https://www.woodburycountyiowa.gov/files/committees/meetings/2023-09-25_minutes_zoning_commission_9753.pdf **Audio:** https://www.youtube.com/watch?v=LJ-k9MCD8_8	25+	12 • Matt Countryman • Deb Harpenau • Wally Wagner • Jerrod Ulery • Kevin Alons • Rebekah • Moerer • Jesus Cendejas • Elizabeth Widman • Leo Jochum • Ann Johnston • Will Dougherty • Daniel Segura

October 16, 2023	Work Session / Zoning Commission	**Agenda Packet:** https://www.woodburycountyiowa.gov/files/committees/meetings/2023-10-16_agenda_zoning_commission_2395.pdf **Comments:** Written comments included within agenda packet. **Minutes:** https://www.woodburycountyiowa.gov/files/committees/meetings/2023-10-16_minutes_zoning_commission_3421.pdf **Audio:** https://www.youtube.com/watch?v=lJAj6Xh3cSU	15+	3 • Will Dougherty • Leo Jochum • Doyle Turner
October 23, 2023	Public Hearing / Zoning Commission	**Agenda Packet:** https://www.woodburycountyiowa.gov/files/committees/meetings/2023-10-23_packet_zoning_commission_6882.pdf **Comments:** Written comments included within agenda packet. **Minutes:** https://www.woodburycountyiowa.gov/files/committees/meetings/2023-10-23_minutes_zoning_commission_5233.pdf **Audio:** https://www.youtube.com/watch?v=qNpK3atf1k0&t=3s	14+	4 • Elizabeth Segura • Ann Johnston • Elizabeth Widman • Elizabeth Cindy Haase
November 27, 2023	Public Hearing / Zoning Commission	**Agenda Packet:** https://www.woodburycountyiowa.gov/files/committees/meetings/2023-11-27_packet_zoning_commission_49249.pdf **Comments:** Written comments included within agenda packet. **Minutes:** See Draft Minutes in the appendix. **Audio:** https://www.youtube.com/watch?v=Me_SPKOFaHM&t=11s	37+	13 • Bob Fritzmeyer • Kevin Alons • Robert Wilson • Doyle Turner • Christopher Widman • Elizabeth Widman • Tom Treharne • Roger Brink • Leo Jochum • Naomi Widman • Steve Corey • Greg Jochum • Rebekah Moerer

Public Hearings and Work Session(s)

As of January 12, 2024, five public hearings and one work session (October 16, 2023) have been held to learn whether utility-scale solar energy systems are appropriate or not in the Agricultural Preservation (AP) Zoning District.

The first public hearing was conducted at the Moville Area Community Center on September 11, 2023. There were over 31 members of the public present and 14 who offered comments. Three categories emerged from the hearing including those who were favorable, those who were opposed or not supportive, and those who were indifferent or undecided about the expansion of solar into ag land. There appears to be about seven (7) who spoke favorably, four (4) who were opposed or not supportive, and one who indicated to be undecided but interested in assessment.

A second public hearing was conducted in the basement of the Woodbury County Courthouse on September 25, 2023. There were over 25 members of the public present and 12 who offered comments. Again, the same categories emerged as those who are favorable in comparison to those who oppose or not supportive of the expansion of solar-utility scale energy systems on ag land. There were six (6) who spoke favorably while six (6) spoke in opposition.

The third public hearing was conducted in the basement of the Woodbury County Courthouse on October 23, 2023. There were over 14 members of the public present and four (4) who offered public comments. There were four (4) who spoke in opposition. The fourth public hearing was held at the same location on November 27, 2023 with over 37 members of the public present and thirteen (13) who offered public comments. There were six (6) who spoke favorably and six (6) who spoke in opposition.

The themes gleaned from the meetings cover a host of issues. Those who spoke in favor of the expansion of utility-scale solar discussed co-existence within the neighborhoods. Comments included techniques that could be used to mitigate any potential adverse impacts. It was suggested to develop an ordinance that establishes specific requirements and agreements so that the expectations would be clear. Those in favor offered concerns about the Corn Suitable Rating 2 (CSR) as a requirement due to the rainfall factor. Additionally, concerns were made about out of county ownership, solar as the future as part of climate change initiatives, and the potential phasing out of the area coal power plants. Furthermore, comments were made claiming that solar will positively benefit the soils, wildlife, add value to the county, and are important for the economic future.

Those who spoke in opposition referenced the purpose of preserving agricultural land in the Agricultural Preservation (AP) Zoning District. Comments included questions/statements about whether solar is an agricultural activity? It was asserted that solar is an industrial activity and should be placed on industrial or commercial land. Concerns were made about the solar industry being subsidized and the timeframe to which the panels would no longer function, thus generating concerns of disposal as well as questioning recyclability. Weather conditions were referenced as a detriment for the panels. Those opposed discussed the stewardship of land and questioned the short-term vs. long terms benefits and questioned how a conditional use or overlay would actually work. Concerns were also brought forth about the manufacturing of solar panels in foreign countries including alleged adverse working conditions for the workers. This debate has also included references to Constitutional rights and the use of the zoning districts to classify land.

It is important to point out that the Woodbury County Zoning Ordinance presently has provisions for conditional use permit applications for utility-scale solar energy systems in the General Industrial (GI) Zoning District. This debate is not about establishing solar provisions for the first time, it is about whether or not the Agricultural Preservation (AP) Zoning District is an appropriate zone or not for utility-scale solar. As this is an intricate discussion about the future landscape of Woodbury County with numerous variables for consideration, the comments from the public have been included in the subsequent pages of the report organized by each hearing date.

Public Hearing #1 (Moville) – September 11, 2023

On **September 11, 2023**, the Commission conducted the first public hearing at the Moville Area Community Center. Fourteen members of the public addressed the Commission on a range of issues in support and opposition to utility-scale solar on AG land. Below includes links to the audio and summaries and/or direct quote adaptions of the information shared by the public. The following is not intended to be a perfect transcript but is offered to provide context of the debate. The audio can be accessed on YouTube using the following direct link: https://www.youtube.com/watch?v=XZQa-5kNgcQ

The list of Zoning Commission meetings inclusive of the agendas, packets with backup materials, minutes, and videos (Audio) may be accessed at: https://www.woodburycountyiowa.gov/committees/zoning_commission/

Greg Jochum (Salix) (47:43 to 51:28) - https://youtu.be/XZQa-5kNgcQ?feature=shared&t=2863

- Using CSR2 as a scenario, in 2013, the State of Iowa went from Iowa State University, went from CSR1 which is Corn Suitability Rating, went from one to a two. I have a few farms that the corn suitability rating was a 47 which means on a scale that means 1 is bad 100 is good. So, it's below average. After they changed to CSR2, miraculously my farm went to an 81 CSR2, it doubled the value pretty much. Same ground.
- Looking at possibly, if you would consider the CSR1 values rather than the CSR2 values because in Iowa State University's information, the major difference between the CSR1 and the CSR2 is the CSR1 included a rainfall correction factor whereas the CSR2 does not and it will without a climate adjustment, the CSR2 values will have an upward bias in counties located in northwest Iowa that comes right from Iowa State's information.
- So I have you know family-owned land that I have maps of and they all went from mid 40s upper 40s from up to 65 to 82, 83 just from the CSR1 to CSR2 and if looking at future development of land you're looking at excluding anything over 65 and a half or 75 and a half.
- The Board of Supervisors just approved a new interchange south of Sergeant Bluff and that farm that they are going to be putting it on is a 74 an half CSR2.
- The other one I want to bring up also is the 20 foot height for agrivoltaics or ag solar. If looking at running equipment underneath the solar panels the one that MidAmerican does it tilts flat and you know follows the sun so if you're limited it to 20 foot at the height of it so the panels are 10 foot that means the tilt is only at 10 foot height you know and if we were to farm underneath it whereas grass or hay or pasture or having cows pasture underneath there they want that a little bit higher than just you know the 20 feet so those are some information for you to know. **Zellmer Zant:** Do you know what that height would be? **Jochum:** I don't know what that height would be all depends I mean if they're going to they've take about like Iowa State has a farm right now that they got money for if they're putting 30 or 40 acres in right but it all depends on if they're if you growing vegetables you know if its manual labor to pick the vegetables it doesn't have to be that high but you know if they're using mechanical stuff it'll have to be higher there's a lot of studies out in Pennsylvania, New York.

Brad Jochum (Plymouth County) (51:44 to 53:22) - **https://youtu.be/XZQa-5kNgcQ?feature=shared&t=3104**

- Live in LeMars, Iowa. I grew up in Woodbury County though I moved to Plymouth County to be close to my clients. I own land in Woodbury County with my brothers and sister uh and my brother Greg that for me um if I wanted to have a solar facility owning it with them uh I think I should be able to um we have an undivided interest in the land so no one individual is designated as the owner of that uh would complicate things as far as ownership goes if I wanted to be involved with this uh solar utility solar project it would not be fair to them also a solar project on their land. I'm also an owner in that farm. Uh taking a step further if my parents had a revocable trust set up and I would become an owner of the property after their death which is already in the solar project would I have to sell my ownership because I'm not allowed to be an absentee owner of that uh this is a complicated issue? I have faith in the zoning board to sort this out uh utility solar would be a positive alternative for Woodbury County for electrical generation.

Tom Jochum (53:42 to 55:59) (Sergeant Bluff) - https://youtu.be/XZQa-5kNgcQ?feature=shared&t=3222

- I support solar. Its clean energy. Renewable energy has been a big factor for electric grades in Iowa. The average cost is lower than most of the country. It has become more reliable and efficient the last few years. Port Neal North commissioned in 1974 was a coal fire plant retired in 2016. That time they had a lot of employees and after the shutdown they lost many of their employees. They lost several contractors that continuously worked on that site for Neal South as a coal fire plant was commissioned in 79 and is currently still operating. As the movement towards clean energy in recent Iowa Supreme Court ruling there is growing pressure on MidAmerican Energy to close or convert Port Neal South. MidAmerican is a leader in renewable energy. Now is the time for solar to step in and fill that gap. Existing equipment transmission lines that are already in place solar energy will be able to save some of those high paying jobs and bring in electricity generation additionally solar energy will be a great source of income for Woodbury County. Construction process creates jobs. More importantly the land used for solar energy will pay a generating tax based on kilowatt hours. According to the county Board of Supervisors' calculations tax generated by solar will be 5.3x higher than current agricultural land tax. A tax revenue will be by the county will be increased 5.3x as needed all this additional revenue will be available for the county to use where needed. I believe Woodbury County should take this opportunity.

Eric Nelson (Moville) (56:24 to 57:44) - **https://youtu.be/XZQa-5kNgcQ?feature=shared&t=3384**

- I would like to encourage you folks to um earnestly seek out all the information you can from all sides. I found it ironic that we started off this meeting with a discussion about wanting to just build one home on um AP and it's not easy just to do that and yet we're talking about building uh commercial solar and this solar is not agricultural. It's commercial. I mean any of the electricity that can be generated on what's called agricultural can be converted into electricity used anywhere um, so I think we need you to be really careful on converting AG land. If you want to have um solar, I think it needs to be on commercial property because that's really a commercial entity um and I think that your very first activity today um and how steep of a hill it is to climb to just build a house on AP ground um I think that kind of answers the whole question for me hopefully for you too.

Ron Wood (Salix) (57:57 to 59:24) - **https://youtu.be/XZQa-5kNgcQ?feature=shared&t=3477**

- I support solar in the fact that I worry about the Siouxland area trying to grow in comparison to Omaha and Sioux Falls on a regular basis and can't seem to get the most. (In audible). I was just talking about comparing ourselves to Omaha and Sioux Falls and the need for power generation and I kind of feel like if uh the two coal fired plants that are in existence now no longer produce energy where does it come from and how do we get the growth that we want in the Siouxland area to stimulate our economy we have to bring in more power from other areas we just more relying on other areas to sustain what we're trying to accomplish here in addition to that I think a lot of this new commercial a little research of commercial solar is very low to the ground and companies are very eager to appease neighbors with barriers, tress vs. whatever so I just encourage you to consider those facts.

Elizabeth Widman (Sergeant Bluff) (59:59 to 1:04:46) - **https://youtu.be/XZQa-5kNgcQ?feature=shared&t=3599**

- Resides in rural Sergeant Bluff. Landowner.
- Children are fifth generation Woodbury County farmers.
- Never knew father-in-law who passed of Lou Gehrig disease before met husband.
- Husband always said his father taught him and his brothers and sisters to take care of the land
- Your farmland should be better when your done with it than when you started.
- Husband taught this to our children.
- What I could find there would be 1,500 solar panels per acre.
- Over 8,000 acres of solar panels have been mentioned in Woodbury County.
- I've heard by where I live, they want to put 2,600 solar farm there.
- You're looking at around four square miles of solar panels and from what I can tell on average solar panels only last about 10 years.
- They also have hail storms that can destroy solar panels.
- Once they are done, they are not recyclable. They contain toxic chemicals that can go into the ground.

- They are going to fill the landfills. Sometimes they just leave them above ground and set them in piles which is an eyesore.
- It had been mentioned at the Board of Supervisors meeting about the Constitution and property owner rights. It has been mentioned here tonight that you have a right to make money off your property. I believe in the Constitution. I believe in property rights but this county has an ag preservation designation and the purpose of that is to preserve ag land and the farmers have been free to use the land for farming and to make as much money as they can and many have done quite well on this system.
- However, the Constitution and property rights does not give permission to change the rights of a whole county by putting a conditional use on it to allow a few individuals to make a lot of money on industrial solar energy projects on farmland.
- The rest of the county will not really benefit from this change it leaves us open to having to go through a process if somebody wants to be an industrial solar system by us we're going to have to go and say hey I don't really like this.
- We shouldn't have to live on our properties being worried about being subjected to that. I believe putting a C on the land would open us landowners to having eyesores by our property. I'm sorry if you think looking at acres of solar panels is beautiful, but I live out in the county because I love to see the landscape there, I love to see the crops to see the sky to see it all. Even if you put these things down low If I look out my window, I'm going to see acres of solar panel that's not going to be ag land.
- I've also read there is possible health effects. The solar panels put off a hum. If you live out in the country its quiet. It can cause migraine headaches.
- I believe these industrial solar products belong industrial land. Not on ag land.
- The change will affect the whole county and will benefit a few and it belongs on industrial zoned land.

Bob Fritzmeyer (Sioux City) (1:04:53 to 1:07:00) - https://youtu.be/XZQa-5kNgcQ?feature=shared&t=3893

- Commend Zoning Commission for seeking a balanced view on this.
- MidAmerican Energy has put in a solar installation on their property. This installation has helped the soil actually. An installation like this does help the soil. It's not an agricultural use for some years. Grass is going to grow there. The soil loosens. The soil rejuvenates. I commend MidAmerican Energy for what they've done and bring about some transition from the fossil fuels to the renewable energies.
- Besides those positive effects, those solar installations have a 60 foot distance that has to exist between the outer fence and the first solar panels, and that area can be put into grasses and will foster pheasants and quail and help the hunting prospects in Woodbury County.
- This would be a positive step to continue with your conditional use and with the needed aspects scrutinizing the needs that each applicant would have for the solar installation.

Leo Jochum (Salix) (1:07:12 to 1:10:42) - https://youtu.be/XZQa-5kNgcQ?si=K7rB1XziF7cvPxEH&t=4032

- According to independent researchers, Iowa residents enjoy a lower residential rate than most people in the United States with an average rate here of 13.12 cents per kilowatt hour versus 15.72 cents per kilowatt hour nationally this for Iowans represents an annual monthly rate of $16.32 versus a national rate of $147.64 or a savings of amount $370 per year for every household.
- Renewable energy in Iowa is the main factor for these lower rates utility solar has advanced its technology in recent years to become the least cost provider for electricity with that some people have concerns about the landscape around such a facility I can see their concern. That's one concern I'd like to address tonight.
- When a residence is next to a solar facility, a vegetative screening is provided by using evergreen trees, shad trees, shrubs, and a diversity of plant species to preserve the aesthetics of the surroundings vegetative screening is allowed up to 20 feet in height which is about six feet higher than the solar panels each neighbor is contacted by the solar company for their input regarding where to place the screening what type of plants to use and the length of such screening that goes in front or across their acreage.
- Vegetative screening for neighbors should be included in the conditional use permit.
- Another emotional issue is using farmland for solar. The example used as 51% should be dedicated to ag use. This could be in the form of grazing livestock, raising crops that are not tall.
- A lot of research is ongoing with agrivoltaics, but more research must be done before this is an acceptable practice.

- Fencing needs to be in place for unauthorized entrance or any time of vandalism. However, fence lines or stranded acres there will be some stranded acres in the middle where there already existing easements, could be used for beekeeping for specialty crops because they would be outside of the restricted zone.
- The idea of capping acres at 2% or 8,540 acres on agricultural preservation, that's okay. That is actually more restrictive for the county than it is for utility solar. 8,540 acres has the ability to produce 1,420 megawatts of electricity when Neal North and South were in production together, they produced 1,340 megawatts which is less than the amount that 8,540 acres would produce.
- At the present time, the infrastructure is not here to accommodate 1,420 acres of solar. Utility solar is safe, quiet, and does not pollute the soil and is a great revenue source for the county. I support placing utility solar as a conditional use.

Kim Alexander (Smithland) (1:11:03 to 1:13:17) - https://youtu.be/XZQa-5kNgcQ?si=6wwYGQVw1sc4Q0cp&t=4263

- From Smithland. Farm in the area. Appreciate the Commission and the Jochum's speaking their peace.
- Seems to me this is about the money. Making money and getting money.
- Ironic to take the most efficient and least expensive solar collector in creation which is green grass, corn, and soybeans and you're going to cover it with concrete or asphalt or whatever and put up these solar panels that's the height of irony. The days of unlimited use of our land, we can use it however we want and to fooey with anybody that tells us different goes or gone when we live in a community, we have to consider what the community has to say about that use of the land and so those days are gone, and I appreciate the commission having this meeting tonight.
- Again, it's all about the money. More tax revenue baloney. The county gets enough tax revenue. I'm not going to put in something to generate more tax revenue. The question is how much money is enough and if you're not making enough on your ground that you have then get rid of half of it and do a better job with what you've got instead of putting asphalt on it and putting in solar panels. Again, there's more to life than just making money.
- As Mrs. Widman said treating a piece of land improving it so that it's better than when you got it that you leave it better than when you got it. It's not about the money it's about caring for the land, it's about caring for the land it's about planting renewable crops instead of renewal industrial solar.

Will Dougherty (Urbandale) (1:13:39 to 1:16:55) - **https://youtu.be/XZQa-5kNgcQ?si=Qgt8OF3ZIjj0gHBn&t=4421**

- From MidAmerican Energy.
- Referenced the Commission's consideration of neighbor, height, CSR ratings.
- Looking at how to carve and dice the situation for Woodbury County as a community in general.
- The CSR maps that you have in front of you right is one of many kind of layers on top of layers when you look at it from a zoning perspective similar to a lot of renewable projects that are install. The state we've done six solar projects today we have 38 wind farms across the state. Yes, the county has a large dictation as to where the solar projects can go in their own respective county there's a lot of other considerations that come into play when you're going through the development process for a solar project. Dan mentioned the FAA. There's consultation with them, the DOE, the DOJ as well for the sighting of these facilities whether or not you have anti-glare films put on the front of the solar projects or the panels themselves. There's consultation with the Iowa DNR. There's consultation with the fish and wildlife service as well. Like you said Dan, Neal solar project that we have down by Port Neal right now there was a lot of communication between ourselves and the county to kind of sort some questions. I know there's like a pipeline crossing question that came into play. We submitted for you known grading permits, secondary roads and everything like that and so these are all questions that I think the county just needs to take into consideration when drafting the ordinance or any zoning regulations around potentially solar for ag use.
- You know a lot of questions that have come up tonight have been you know regarding about the land usage and returning it back better than you found it a lot of counties throughout the state, they do have mechanisms in place such as decommissioning agreements with the county in which a developer has to enter into. There a lot of other mechanisms that you can look like they help protect the agricultural use and the long-term viability of that land uses as well as so there's a lot of different things you can kind of tweak and play with to see how it fits your community's use and see how you want the solar project to transition you know beyond the 30, 40 year years of life back to ag or potentially into a secondary solar project or something else entirely so you would mention a lot of the resources that have been sent over from some of the other entities in the state that advocate for balance policy outcomes.

- I'm familiar with a lot of those resources. If you have any questions, please feel free to reach out and as always, I've done this at a Board of Supervisors meeting but if anybody and this means anybody wants to come to our Neal solar project, please let me know. I'll leave my information with the board and they can put it in the packet material but the Neal project is down by Port Neal and would love to show everybody around.

Ann Johnston (Salix) (1:17:38 to 1:18:26) - https://youtu.be/XZQa-5kNgcQ?si=BzSVyF0F0dImCUje&t=4657

- I would consider these solar panels an eyesore. And I like Elizabeth like to see the corn and beans. We have two Fox dens that are across the road from us. Every summer, the mother sits back and lets the two babies come over and eat mulberries from our trees. Where are they going to live with these solar panels here over there?
- I like the farm. This belongs in an industrial setting. Not out in the country where people live for peace and quiet.

Wally Kuntz (Moville) (1:18:48 to 1:21:05) - https://youtu.be/XZQa-5kNgcQ?si=P0CRduozXpG_ajrQ&t=4728

- Not for or against the project. Was here for another reason. The question I have is about the taxes to the county when the solar goes up. Obviously, MidAmerican is a commercial entity. Do we get to reap the benefits of square foot commercial taxes on that then or how's that work. I guess that the assessor. I don't know how that works to be honest with you does anybody else?

- **Supervisor Jeremy Taylor (1:19:20 to 1:21:05) -** https://youtu.be/XZQa-5kNgcQ?si=cZSv6H8-M1XSsEF5&t=4760
    - One of the questions that we asked our assessor was if zoning matters materially to the county based on the zoning designation in regards to taxation. The answer is no whether the solar project was in ag preservation or whether it was an industrial. It's taxed on a generation usage so it's immaterial whether the zoning designation ultimately is.
    - So one of the things we asked July Conoly, our assessor to do is to run 2,500 acres in ag and just to do it on a general survey of ag land an re-yield about $94,000 on 100 megawatt project that's approximately 2,500 acres, it would yield about $504,000 that is not a way of saying this is for or against so I don't want that to be implied these are just dollars that we asked her to run on a comparison basis and if I could just add one more thing from a County Board of Supervisors perspective, my goal here tonight isn't to push one way or another but just to have the ratio of I have two ears and one mouth and try to use them in that proportion and to sit and listen and then take back the information that I'm hearing tonight and take that back to our Board of Supervisors so just want to commend planning and zoning and the director in terms of holding this public hearing.

Commissioner Bride (1:21:27) - https://youtu.be/XZQa-5kNgcQ?si=cZSv6H8-M1XSsEF5&t=4887

- Question for Will Dougherty regarding the footprint of the largest solar site currently in the State of Iowa.

- **Will Dougherty**
    - Are you referring to our Holiday Creek project?

Bride: What's the acres involved in that?

- Dougherty: the largest one we have is the Holiday Creek project. That's kind of northwest of Fort Dodge I believe encumbered by the solar project itself it's roughly a little under right around 800 acres that's for a 100 megawatt project and that kind of goes with the rule of thumb approximately and a lot of topography can play into it along with you know setbacks set forth by the county zoning as well as for how you can kind of optimize use of land but the general rule of thumb about 8 acres per megawatt per solar project. Bride: Another quick question before you sit down. To date, has there ever been a request to the Iowa Utilities Board to grant eminent domain for any commercial energy project?
- Dougherty: For a commercial energy project? So, I'm not 100% familiar with. Bride: What about solar then?
- Dougherty: Solar I'm not familiar. I mean we have had to go in for like sites certificates basically there's certain thresholds that for generation basis you have to go into the IUB but it's not for an eminent domain case, it's basically

just site certificate basically authorizing you as a public utility to utilize that area. It's somewhat similar to kid of the process the county holds their public hearings. There are interveners involved and stuff like that for a lot of our smaller scale. So, if it's not going to the transmission grit, it's going to the distribution system that did not go through the IUB process but to your original question of have any of them been put in place through eminent domain and have we taken landform someone in order to facilitate project answers no.

Kevin Alexander (Smithland) (1:23:45 to 1:27:30)

- Sir before you sit down can I ask a question?
- Since the big problem with photovoltaic and generation is storage of the power. What you do, so say you got this megawatt photovoltaic solar utility. Where's that power going or and with the wind generators, I noticed a lot of times, when I head to Schleswig and Smithland a lot of times though things are shut down. I assume they have more power than they need so what about the whole storage thing on this generation, I guess.
- Dougherty: I don't know if we're addressing storage along with the solar but I mean it's so basically it's as you alluded to it's not an on-demand energy source and so the wind turbine and solar panels similar you know they run when that resource is available so the way that it's kind of operated and it kind of depends largely upon whether it's a distribution scale solar system a transmission scale solar system but you know kind of under the same lines from the physics perspective that energy goes to where it's first basically it gets put onto the grid distribution or transmission goes where it's need first whether that be the next house down the line or 20 miles down the line doesn't matter and then basically jumps off to that nearest load center that's on that system there so from the energy storage perspective I guess I'm not sure what the question really was. Alexander: Well, the point of the question is the functionality and the utility of these solar farms that you want to put in if they're going to sit idle half the time like those big electric fans over by Schleswig are whenever I drive over to Denison then what's the point? Same way with these photovoltaic panels, if they're going to, do they switch them off when they have all the power they need or do they just keep shifting it around?
- Dougherty: So, I think it's important to kind of take a step back and look at it from the perspective of an above all approach. Obviously here in Woodbury County we have Port Neal down south of Sioux City. That's an on demand coal fire facility and we have five of those throughout the State of Iowa and we have one natural gas facility in the Des Moines area. And so we've transitioned to a point here where renewables have started to act more as like a base load generation traditionally that was more like your fossil assets or your nuclear assets so yes they are you know vulnerable to when the sun is shining or when the wind is blow but that doesn't mean there's not value in them it's above all approach there's a lot of discussion earlier about the rates that within the State of Iowa are lower than the national average that's largely a portion at least for MidAmerican our rates are fifth lowest in the nation for investor own utilities and we have the second and third lowest as well in South Dakota and Illinois but that's largely contributed to the zero cost resource of actually running these facilities from a fuel standpoint as opposed to the fossil generation standpoints. I'm not saying that fossil is bad but we still run those facilities they're needed every single day for that times when the sun isn't shining wind is blowing but they are additive in nature and they're complimentary in nature and so even though they might be not working one day or curtailed one day or there might not be enough winter sun one day doesn't mean they're invaluable resources. They're just different resource types guess this is kind of getting off track discussion but hopefully that helps a little bit guess.

Public Hearing #2 (Woodbury County Courthouse) – September 25, 2023

On **September 25, 2023**, the Commission conducted a second public hearing at the Courthouse. There were 25 members of the public at the meeting including one on the phone. Twelve addressed the Commission and provided the subsequent information. Below includes links to the audio and summaries and/or direct quote adaptions of the information shared by the public. The following is not intended to be a perfect transcript but is offered to provide context of the debate. The audio can be accessed on YouTube using the following direct link: https://www.youtube.com/watch?v=LJ-k9MCD8_8

The list of Zoning Commission meetings inclusive of the agendas, packets with backup materials, minutes, and videos (Audio) may be accessed at: https://www.woodburycountyiowa.gov/committees/zoning_commission/

Matt Countryman (23:22 to 23:51) - https://youtu.be/LJ-k9MCD8_8?si=AOMcmUF7nK4buE1W&t=1401

- Renewable Energy Equity Partners
- Mitigation plans and agricultural restoration plans set a good pathway forward when applicants are seeking a conditional use permit with an overlay district, something that can be incorporated into a development application regarding utility scale solar energy parks.

Deb Harpenau (Salix) (23:13 to 25:27) – https://youtu.be/LJ-k9MCD8_8?si=UY7uYtXUwe2Uytgv&t=1453

- Throughout our daily lives, we see change. Usually, it's gradual and it's not even noticeable, so it's just accepted or even expected.
- For the last decade or more people started addressing climate change and as a result started researching alternative energy source one of which is solar and again this change in fact is a sudden change. I understand for some this can be scary, but we find solutions we should listen to the facts such as native grasses will be planted under the panels this land used to be all native grasses before it was broken up for agriculture.
- These native grasses will be home to many species of wildlife while the grasses rejuvenate the soil through its roots and water absorption and retention. There has been rumors that Neal 3 and 4 will scale back or possible shut down in the future. If that would happen, I think utility solar would be a clean nontoxic and economical source of electrical generation.

Wally Wagner (Salix) (23:43 to 28:54) - https://youtu.be/LJ-k9MCD8_8?si=UKjnw3mKn5lgCPdY&t=1543

- Back 87 years ago, my grandfather bought a farm on the river which is located just north of Neal South and then later on another parcel to the east now my folks bought a parcel that actually adjoins Neil South to the east and you know we were there before Neil South was so Deb just talked about progress or change. I don't think there's anybody in this room that saw more change in their neck of the woods than we did.
- I was a teenager when that all started happening besides the fact that the Corp of Engineers completely rerouted the reiver we had landed to join the river and then after that our hunting and fishing ground was you know changed completely so anyway, we're talking about change we're really talking about progress.
- So, I have parcels east of Salix. I have parcels west of Salix. Grew up out there and I have a parcel south of the airport in the General Industrial zone and we have had at least 8 probably 10 different companies contact us for options on these parcels all over okay in all three of the areas so with the present interest in renewable energy it's my conclusion that it's coming to our area okay and the Salix area is primed for solar electrical generation due to the proximity to the Neal complex and the electrical grid that is there okay. So, to me it's like we're either going to accommodate it or we could put our heads down and but at it but it's probably not going to work okay as my mom would say we could be bullheaded about it okay, so the conclusion is like it was 50 years ago electrical generation is important okay. We're talking about millions of people being served with electricity now at present it's with renewable energy so to me lower production land which I have some that okay would be an appropriate consideration for you all and also the lower residential density. Okay so now going back to the CSR1, CSR2s, you guys heard about that last session the CSR2s are not accurate for what I refer to as gumbo. Okay poorly drained high clay density soils okay and so it's like they went two to one, so I don't know that is a really accurate consideration for you guys to think about in the future okay.

Jerrod Ulery (Ulery Energy) (29:21 to 30:01) - https://youtu.be/LJ-k9MCD8_8?si=zKyflbma0P1pphSB&t=1761

- I am the owner of UR Energy. I was present here I think about three months ago submitting a special use permit for a data center, so my company builds data centers all over Iowa. We have about 250 megawatts in our pipeline currently and one of our five megawatt projects is in the vicinity of these solar projects and wind projects that are going on so we support it. I'm here to support it. I'm not a local resident. I'm in LaGrande, Iowa but we have many sites in this area and we plan on developing those sites as well so I plan on seeing you guys many more times so thanks for having me.

Kevin Alons (Salix) (30:14 to 32:55) - https://youtu.be/LJ-k9MCD8_8?si=jIDZGUvtNarMvE7D&t=1814

- I've heard the talk about progress and a lot about renewable energies. I'd just like to first just challenge the assertion that the use of solar on agricultural land in Iowa meets the definition of agricultural preservation right. It's not an agricultural use and I think that's it's kind of a stretch. It is quite a stretch to call it an accommodation that this is something that's compatible with agriculture. It's obviously going to supply agriculture and you can argue whether it can be put back at a later time but that's really a secondary issue.
- Obviously solar is being considered along with some of the other renewable energies because they are being heavily subsidized as I think everybody here recognizes. We would not be having this discussion if there wasn't a significant federal subsidy for this process. I'm not sure that first off, I think everybody also recognizes that those subsidies are being paid for with debt. Not with revenue and they certainly aren't going to pay for themselves so the energy being produced is not a sustainable process even though that's the way we tend to describe it. I know that there is consideration and this may be outside of the purview specifically for this discussion about how much revenue might be increased for either the individuals who the landowner but more specifically for the county but I really wonder what the net effect will be for the county for how much revenue comes into the local area how much revenue is generated and how much is lost because of the changes how money is spent in the county because I'm sure most of these entities. I would assume that the entities that are going to bring this into the county are not local so their considerations really for any of those things is about chasing short-term profit coming from federal subsidy so I probably will run out of time but I mean just as a fundamental, solar is a very inefficient way of producing power and it's hard to imagine that it could ever produce anywhere close to the amount of money that is being promised again through subsidies so I feel like that is a short-term bet, something that is certainly not assured long term and I really question how long into a 40-year contract that apparently they're discussion they could actually be relied upon. So, I live down in Salix at least I live in the area and I'm not sure they would but we're talking about large projects that could have a very large impact on property values so just some things that I would like to see considered.

Rebecca Moerer (Sioux City) (33:17 to 35:06) - https://youtu.be/LJ-k9MCD8_8?si=ASj3wSjW2Qjm1drS&t=1997

- I live in Sioux City. First of all, I feel that people should think about this a little bit more. I believe solar farms are misnomer totally because energy is not an ag product. The definition of farm is an area of land and buildings used for growing crops and raising animals at the last meeting the proponents of these solar zones talked about planting grasses and trees to increase the land value and protect wildlife but they were presented as ideas and not requirements. So, I guess that would be one of my main concerns also are their fees if these solar panels break down who pays for those who checks on them to see the maintenance is maintained and what happened to those and whose cost is it after they don't function anymore. We still have unsightly satellite dishes around the county to. They talked also about taxes generated would they be staying in Woodbury County from these solar areas? I do feel that there's plenty of unused commercial properties where these could be implemented to benefit a larger number of people or the units could be directly connected to use to produce energy that they claim there's so much of directly to an item that needs that energy instead of taking up crop land or animal land and I do feel that these do disrupt wildlife areas so I am against this.

Jesus Cendejas (Salix) (35:17 to 38:32) - https://youtu.be/LJ-k9MCD8_8?si=35eSEuc4uS08hIlF&t=2117

- Thank you for this opportunity and we believe God has appointed all of you guys in this position and we pray that you make good decisions and everything that you're involved in apart from our United States Constitution which I am grateful for the Bible is the first to call the right of owning and being able to use private property. The latter informed the authors of our Constitution and is evidence in the language they're in two of the Ten Commandments say thou shall not steal and thou shall not covet these implying and tell the right to work hard and the right to owner possess including the right of private property part of the issue with the situation is not simply the thought or idea that a person should be able to deal with their property as they please but rather is it is that in this liberty and reality one is still responsible for the stewardship of the land that God ultimately owns and the neighbor that lives beyond one's boundary as an example Exodus 21, 20-29 says if an ox gores a man or woman to death then the ox shall surely be stoned and its flesh shall not be eaten but the owner of the ox shall be acquitted but if the ox tended to thrust with his horn in times past and has been made known to his owner and he has not kept it confined so that it has killed a man or a woman, the ox shall be stoned and its owner also shall be put to death as you may see God's law informs us that the way we manage our private property matters in more than just our personal benefit it also matters as how it

affects others quite weighty and this is just one example there are many angles we can take and should consider you guys ourselves here are a few subsidies, all this money is given for this where does it come from and who's going to pay for it and maybe even who actually owns this land depletion we don't have more farmland than what we possess now there's containment effects jobs and economy outside entities are paid for this project and other non-Iowa residents hired will benefit most apart from maybe only a few local hired individuals in the long run this is historically the case neighbors, those who have invested in living in the area have the right to expect present zoning to be honored so that their own investments are not diminished due to change. In closing Dr. Gordon Wilson, Senior Fellow of National History of the New St. Andrews College in response to this complex issue set states its true once operational wind energy cuts emissions by running on 100 renewable resource but it is that the whole story? Wind turbines and solar panels along with the batteries required to store the energy have a high monetary environmental production cost. These upfront costs may balance out over time with low operating costs but for now the power that the wind and solar farms provide is more expensive than the traditional power this costs demands government subsidies that are likely to greater than the reduced energy cost of the wind and solar farms. Additionally, wind and solar farms require vast areas of land that can change the natural aesthetics and landscape and interfere with wildlife habitats, bats and bird are often killed by the rotating blades or the concentrated beams of light and the termite vibrations produce sound pollution with complex environmental topics such as alternative energy we must carefully consider the impact on our neighbors and God's creation as we make his dominion decisions.

Elizabeth Widman (Sergeant Bluff) (38:58 to 42:23) - **https://youtu.be/LJ-k9MCD8_8?feature=shared&t=2338**

- I'm a landowner in Woodbury County and my sons are fifth generation Woodbury County farms and um but I would just like to address there seems to be a misconception about constitutional rights and property rights and that you cannot restrict a property owner from doing anything they want to on their property and if the situation was reversed and incorporated city land had a C put on it to allow ag activities in the city um so that someone could put a hog building on their property in tow if they had enough property to do it and someone else maybe want a couple cows and a flock of chickens in there um you know and say will the neighbors just have to put up with the flies and the noise and the smell uh no one would be in favor of that so I don't think it's right to come out to ag protected properties and say um you know we're going to put a C on here and you just have to put up with when they put up these solar facilities is not ag land and it is not um it is not the life out in the country that people want out there um it can if you put these up it can lower property values you have noise from these solar panels there's glare, there's lots of beautiful viewage um there's harm to wildlife and birds um there's um 12,860,000 solar panels that will be not good in 10 years or less if you have hail storms. We're going to have to do something with those they're going to be in our county and um we could possibly have a change in administration here with elections coming up and there might not these solar panels might not be so subsidized um I read somewhere environmentalists are actually asking in some areas to quit putting up so many solar panels because it kills the birds um the extreme heat from the reflective material can instantly incinerate them it changes the migratory patterns especially down by Salix you know you have birds come through on my property I have a pond we have um the geese come through and um the biggest treasure in Woodbury County is our people that live out in the county. My children have been involved with 4-H we go to the fair you know if you put these solar facilities in their people are not going to view this as the beautiful ag land that they've lived in these are industrial. They're not they're not solar. Is that my time and uh so thank you for listening your consideration and I just ask you to you know preserve this for the people that love the land and want to live out in the country.

Leo Jochum (Salix) (42:34 to 45:15) - **https://youtu.be/LJ-k9MCD8_8?feature=shared&t=2554**

- Good afternoon, thanks for all the work you people have done, Leo Jochum, Salix, Iowa. About 10 days ago, my wife and I took off and went to Indiana to see relatives at the quad cities, we go off the interstate, took the back roads through Illinois, those county roads are all blacktop but they're very narrow as we were enjoying the landscape, we came upon a utility solar facility actually when we saw that we were only about a quarter of a mile away that's when we noticed it, we went along it for about a mile and then we pull over and stopped as we got out of the car pheasants flew out of the pollinator area out of those grasses that were inside the perimeter fence, we took some time just looking around and listening there wasn't any electrical hum like you hear in electrical lines. There was no sound of motors but what we did hear was crickets. We could hear the crickets chirping the grasses under the panels were very green. They were probably mowed within the last couple of weeks. The pollinators between the panels and the fences. They were green and flowering as we drove away, we noticed some acreages a few across the road use the

vegetative covers that's always supplied free of charge by the solar companies. There are a couple of acreages on the same side of the facility that had a windbreak that was probably in place before the solar facility was built. We were impressed with how professional everything looked. There wasn't any machinery parked outside. We did not see any trash. We didn't see any piles of used panels anywhere actually I wasn't surprise to see how neat everything looked. The other facilities that I have been at looked just as good. If utility solar is allowed in Woodbury County I would employ the same practice today that I used in the mid-1970s. In 1974, we built a house, a new house on our farm. In 1978, I expanded my hog operation by building a confinement facility. The concerns of the neighbors were satisfied when I built it approximately 400 feet from my house. If utility solar becomes a reality, I would allow panels 360 degrees around my house. If the pipeline easement allows it.

Ann Johnston (Salix) (46:33 to 47:17) - **https://youtu.be/LJ-k9MCD8_8?feature=shared&t=2793**

- I live in Salix out in the country. I thought the only mortal sin anymore was not recycling. Leaving a bigger footprint. I understand these solar panels are not recyclable so what are we leaving for our kinds and our grandkids? My second point is parts of these solar panels are made by the Uyghurs, slave labor in communist China. The women and the children are physically and sexually abused. I don't want any part of that.

Will Dougherty (MidAmerican Energy) (47:34 to 50:56) - **https://youtu.be/LJ-k9MCD8_8?feature=shared&t=2854**

- If I may um sorry, I was going to wait to chime in, but this is Will Dougherty with MidAmerican Energy. Is it okay if I give a quick comment. Zellmer-Zant: Yes.
- Okay, yeah, so I guess there's a lot of good comments. I think overall from the meeting um a lot to kind of unpack but I'll just kind of keep it short and simple um you know our position on it from the zoning perspective is um you know there's a lot of good ways that um a lot of these concerns can potentially be mitigated and I think through a permit process and a public hearing process any constituents that you know live an adjacent proposed project would be able to have their case heard and the conditional use can directly reflect any of those concerns for mitigation side of things but kind of in line with what we're discussing last week that the land use for ag lands and potential for solar to be placed on them I think having a thorough decommissioning plan in place um that's something that's required throughout a lot of counties throughout the state something that gets reviewed and approved by both the counties and the proposed solar developers so that's a mechanism that the county can try to utilize to mitigate any future impacts to the ag land and restore the property back to its original use after the decommissioning of the project. Additionally, um you can look at things such as visual screening or shielding from projects a lot of times these projects if they are located in ag properties they're surrounded by adjacent ag parcels as well um having buffers you know whether that be a setback from road right of ways or from fence lines allows for those visual screenings to take place once the vegetation is established so having a plan on the front end of a project that a developer or a project owner must enter into a county is a good way to try to mitigate that as well establishes vegetative growth plans seeding mixes stuff like that kind of lays out on the front and the expectations from the county side of things um for the maintenance of it and the growth of it long term for the project overall I think for the general comments we've received on solar it is an above all approach for MidAmerican's point of view. I think someone pointed out earlier you know. Neal is located down in Salix area. Someone else had pointed out that you know they didn't believe that solar was a viable option um as we look toward transitioning uh from a more carbon intensive resource to more diverse resources it is an all of the above approach there is no one-size fits all. Ther is no silver bullet um it can't all be wind; it can't all be solar. So having the resource available to help hedge and mitigate any potential fluctuations and market prices whether it be from natural gas or coal um or material costs from winter solar having all those resources available is in best interest of not only the utility customers but also the state in general having more balance portfolio and really starting to um kind of hedge your resources so that you don't become too heavy or too reliant on one so that being said um I'm always open for questions or comments um we can always try to get a tour for anybody down at Neal solar as well.

Daniel Segura (Sioux City) (1:38:44 to 1:41:43) - **https://youtu.be/LJ-k9MCD8_8?feature=shared&t=5904**

- Hy my name is Daniel Segura. I live in Sioux City uh I have family and have friends that have uh have property in sort of the subject areas um in this county um I just wanted to uh make a comment about this discussion about uh overlay and uh pairing that with the conditional use permit or maybe a variance or something of that nature I don't see how this necessarily addresses the concerns of those that are as we would say against the motion to institute uh promoting these solar panels um one thing I'm seeing is uh we already have um just by virtue of the statures and

ordinances in this Country uh a method to do something like that and that's the regular conditional use permit uh a way of applying and getting a variance that sort of thing what it seems like is uh this overlay might just be more of a sort of like a soft approval of these uh category of solar panels uh solar energy uh what have you and then it kind of sort of boosts it into being approved once it gets kicked down to the next so I don't see it as an extra protection for you know to uh basically give those that are uh opposed to this motion uh sort of like oh this is going to help the process like an extra check it doesn't seem to be that way one thing that I want to mention just about the conditional use permits those we can't take those away those are always permitted you know that will someone can't always apply for a conditional use permit or a variance and uh it seems uh that those would be a good way to if someone had a specific um and sort of a unique need for solar panels on their property or solar energy one clear example would be something like a medical clinic that's kind of out in the country and they need backup power and um you know I don't think anyone would uh be opposed to considering okay this is a special um this is a special example a special scenario where a conditional use permit or a variance it would seem reasonable that these people have a particular need for something that's unusual but the concerns that most people are having those that are wanting to retain the farming jurisdiction and the zoning of farming is that uh the if we open the door to everyone getting something then people will continue to get it um it we wouldn't say that we could allow variances and conditional use permits for every person for example like we've heard that wanted to farm in the city we would say well only if you had a specific need for that if there was something out of the ordinary um so that's would I would l just add to the comments to some of this talk of overlay and conditional use permits.

Work Session (Woodbury County Courthouse) – October 16, 2023

On **October 16, 2023**, the Commission conducted a work session at the Courthouse to consider utility-scale solar energy systems. There were fourteen members of the public at the meeting. Below includes links to the audio and summaries, paraphrases and/or direct quote adaptions of the meeting content. The following is not intended to be a transcript but to provide context of the debate. The audio can be accessed on YouTube using the following direct link: https://www.youtube.com/watch?v=lJAj6Xh3cSU

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Work Session for Proposed Utility-Scale Solar Energy Systems Zoning Ordinance Amendment(s).

Prior to this meeting, the Zoning Commission has held two public hearings to collect comments from the public (Moville – 9/11/23 & Courthouse – 9/25/23). Subsequently, a follow up public hearing will be held on Monday, October 23 at the regular meeting of the Commission that begins at 5:00 PM.

Priestley offered an overview of the evening's proceedings including five considerations for a potential utility-scale solar energy systems ordinance that could be considered by the Zoning Commission in preparation for a recommendation to the Board of Supervisors.

Consideration 1

Consider updating the General Development Plan and/or Future Land Use Map to facilitate the potential expansion of the General Industrial (GI) and Limited Industrial (LI) Zoning Districts and consider adding additional requirements to the conditional use permitting process to make expectations clear for the applicants, area landowners, and the general public.

Consideration 2

Consider retaining the current permitting procedures in the Woodbury County Zoning Ordinance but add additional requirements to the conditional use permitting process to make expectations clear for the applicants, area landowners, and the general public. Consider retaining the General Industrial (GI) Zoning District as the only allowed location for the consideration of a conditional use.

Consideration 3

Consider establishing a utility-scale solar energy systems overlay zoning district that requires a rezone application to be reviewed by the Zoning Commission and considered for approval by the Board of Supervisors that must meet specific criteria for the appropriateness of whether a particular area in the Agricultural Preservation (AP) Zoning District is suitable for utility-scale solar

energy systems. Consider adding additional requirements to the conditional use permitting process to make expectations clear for the applicants, area landowners, and the general public.

Consideration 4

Consider establishing an agrisolar utility-scale solar energy systems overlay zoning district for the specific purpose to coincide with an existing farming operation where each parcel of land shall include over 51% of its usage for farming purposes.

Consideration 5

Consider retaining the current policy for utility-scale solar energy systems (No changes).

The Commission discussed the current process for the permitting of utility-scale solar on agricultural land including the issue of spot zoning and its relationship with the comprehensive plan's future land use map. Priestley referenced the future land use map as a tool for justifying future industrial areas that could facilitate the permitting of utility-solar. He indicated that industrial areas could be expanded on the map for future consideration of solar. However, it would take going through the comprehensive map approval process of amending the map to reflect additional industrial areas that could later justify additional areas.

Priestley discussed the concept of overlay districts as used by both Scott County and Linn County. Scott County relies on a CSR2 average of 60 or higher to authorize the rezone while Linn County uses a score card or rubric which identifies a number of issues not limited to CSR2, grading, vegetation, and good neighbor payments in order to obtain a permissible score.

Priestley indicated that the rezone to an overlay is similar to a conditional use, however, it adds the Board of Supervisors to the process of determining whether or not an area of the county is appropriate for solar. Therefore, the Zoning Commission and Board of Supervisors would be involved in the overlay district rezone process. Additionally, the Zoning Commission and Board of Adjustment would be involved with the conditional use permit process. The Board of Supervisors would be involved with authorizing each individual agreement such as decommissioning, road use, agricultural mitigation, etc.

Zellmer Zant indicated that she likes the involvement of the Zoning Commission, Board of Adjustment, and Board of Supervisors as it gives the public more opportunities to participate in the process. She also questioned whether the overlay district is permanent or temporary.

Priestley indicated that depends on how the overlay district is designed. The goal of the district is to allow a new use but retain the base use. The policy for a decommissioning plan will be a determining factor as to whether the specific use of the overlay can continue or conclude.

Bride inquired as to whether there would be any issues if separate overlay districts associated with other projects were treated differently than others.

Priestley indicated that there must be clear consistent expectations in the requirements for establishing the district, however there can be some room for conditions if information is identified that should be addressed.

Priestley stated there must be a balance, but various options must be exhausted as applicants/developers must know what they are getting into from the start.

Priestley discussed other considerations such as separation distances, setbacks, setback waivers, and the floodplain.

Priestley discussed a potential application process and expectations of staff, associated county departments, the commission, and boards. He discussed the concept of the solar-ordinance conditional use as being portable for either the industrial or overlay district. If the overlay district is not used, then an added feature conditional use permit process can be used for the general industrial areas. If the overlay district is used, there would need to be a set of parameters for determining how the overlay gets approved.

Bride shared a concern that if the Commission recommends no changes that the Supervisors might consider going with a stand-alone ordinance which does not involve zoning.

Priestley indicated that a stand-alone ordinance does not include the zoning districts.

Priestley stated that the Zoning Commission has the right to offer any reasonable recommendation to the Board of Supervisors. He indicated that everyone is mindful of the harvest season, and we will continue to offer multiple opportunities for input.

O'Tool inquired about the downside of using the overlay district.

Priestley explained the debate of exclusively relying on CSR which could offer limitations for landowners.

Meister mentioned in a previous public hearing questions about the reliability of CSR. He indicated that he likes Linn County's rubric as including CSR and other items. He also inquired who would be monitoring or policing the rubric for items such as grass species.

Priestley responded that additional regulations create the need for more bureaucracy or more resources.

Meister inquired about how the Board of Supervisors arrived at 2% use of agricultural land. Is that enough or too much? He would like to see more information on how this equal to an existing power plant.

Bride indicated that 2% is around 8,400 acres and stated that the Supervisors may be looking for a cap.

Will Dougherty of MidAmerican discussed the acres on some existing projects in other counties.

Meister offered concerns about the 2%.

O'Tool inquired with Will Doughtery about the comparison of solar and wind in terms of megawatt capacity.

Bride inquired about the setbacks and if any of the allowed uses expand outside of the property lines.

Priestley indicated the existing zoning ordinance does not include separation distances beyond the lot lines. Setbacks are determined by the zoning district dimensional standards in the zoning ordinance.

Bride offered concerns about the impact of setbacks on other property owners.

Priestley indicated that setback waivers could be used, and he cautioned about the law of unintended consequences.

O'Tool referenced the 5% slope proposed requirement.

Bride inquired as to where the Supervisors arrived at that number.

Priestley said it has been offered as part of the consideration for the Commission to research as a possibility.

Zellmer Zant referenced the importance of comparing practices with other counties and not necessarily reinventing the wheel.

Zellmer Zant also referenced the needs of the cities including community solar.

Bride used Moville as an example using an overlay to facilitate solar. He also referenced the use of the percentage as an issue.

Priestley indicated that the 51/49% solar ratio is meant to ensure agriculture remains a primary function on ag land.

Meister inquired about the proposed one mile notification area.

Priestley responded that the purpose is to increase public awareness.

Zellmer Zant inquired with Will Dougherty as to whether these contracts are 10 years and questioned the rapid change of technology.

Dougherty discussed maximizing efficiencies as a driving factor of change. He referenced ISU's study pertaining to the coexistence of agriculture and solar with aspects such as grazing.

Bride inquired about damage to panels as a result of grazing.

Dougherty referenced sheep as an option over others.

Bride inquired about how the land can be put back the way it was through decommissioning and referenced concrete left in the ground as result of wind turbines.

Doughtery indicated that solar concrete footings are not being used.

Zellmer Zant asked about the Port Neal solar field's footings. O'Tool asked Dougherty about buried power lines and if they can be buried in the floodplain.

Priestley indicted that electrical assets must be elevated above the BFE.

Bride and Zant indicated there are locations where lines are likely buried in the floodplain.

Zellmer Zant asked Dougherty about how much power gets lost from arrays through distribution. Bride asked Dougherty about the driving factor for locating solar parks.

Zellmer Zant inquired with the Commission about what they like/don't like in the packet considerations.

Parker referenced the Supervisors' discussion point of Light Industrial. Priestley indicated that the limited industrial use can be associated with Consideration #1 which would entail revising the development plan.

O'Tool referenced having a list of bullet points to follow to determine where an area is appropriate or not.

Zellmer-Zant stated that she prefers to not go with the map change as referenced in Consideration #1 because there are other systems in place. She indicated that she likes the conditional use and overlay district format as it includes multiple entities.

Bride questioned the ability to accurately be able to paint/assign the industrial areas through mapping.

O'Tool indicated that the overlay could be used in AP areas. Bride discussed the flexibility of the overlay district and the permitting routes.

Priestley discussed the creation of the overlay district on a project by project basis. He indicated that an acre cap could be instituted in the ordinance. Zellmer Zent stated that one of the counties she researched had a cap of 400 acres.

Zellmer Zant indicated that the Commission appears to be leaning toward Consideration #3.

Priestley indicated that Consideration #4 is not field tested and was only brought into the discussion to discuss the relationship or co-existence of solar and agriculture. Agrisolar could be a part of Consideration #3.

Priestley also discussed how battery systems should also be brought into the debate with the growing technology. He made reference to its inclusion in Linn County's ordinance.

Will Dougherty discussed batteries in Iowa.

Zellmer Zant inquired if Consideration 5 is off the table. Bride indicated that not doing anything is not what the Supervisors are looking for.

Priestley indicated the Commission has the latitude to make a recommendation as you see fit as long as it has an explanation and rationale behind it.

Zellmer Zant referenced the overlap between Considerations 2 and 3. Priestley discussed the overlay district and the overlay rezoning process.

Parker inquired if the county currently has an overlay district. Priestley stated that there is a conservation overlay district that could be petitioned for.

Zellmer Zant questioned the reference to the 10,000 acre limitation, dimensional standards, etc. between Consideration #3 and #4. She referenced the relationship between the 51% agricultural use and the CSR2 rating.

O'Tool questioned whether the CSR2 should be prohibited or not. Meister questioned the inconsistency and reliability of the CSR2.

Doyle Turner offered comments about the accuracy of CSR2. Leo Jochum referenced the difference in rainfall between CSR1 & CSR2.

Zellmer Zant indicated that CSR's may be over 65 in industrial areas.

Priestley suggested the comprehensive plan and map allows for industrial areas to include areas of high CSR if the county plans for those areas to be industrial.

Meiser is concerned with CSR being the sole factor. Priestley indicated that CSR has traditionally been a part of this county's determination of land use.

O'Tool indicated that it would be appropriate the spell out that a lower CSR would be preferable. Bride indicated that CSR is presently considered in the rezone decision process.

Zellmer Zant inquired about 5% slope for fixed arrays and whether there should be a range. Bride offered concerns about the fixed percentage and discussed erosion. Doyle Turner commented about farming practices across the state and discussed soil erosion including highly erodible land (HEL).

Zellmer Zant inquired about the policy toward the special flood hazard area (floodplain). O'Tool suggested that the standard floodplain regulations could be followed.

Zellmer Zant referenced the conditional use language as being included along with the overlay. Priestley replied that it would need to be discussed and debated.

Zellmer Zant inquired about the definitions and the remaining concerns in the conditional use and overlay section.

Priestley suggested that the concepts must continue to be vetted through the County Attorney's office. It will be shared with both parties.

Priestley recommended that future work sessions be held following next week's public hearing.

Leo Jochum offered concerns about the comparison between Scott County and Woodbury County and the use of CSR2. Jochum made reference to other counties such as Louisa Couty, Mills County, Johnson County, and Linn County. He referenced the scorecard as used by Linn County and the role of using seed mixes.

Doyle Turner suggested that elected people should have a say on the locations of the solar parks. Turner offered concerns that parameters set could limit the amount of land available for these projects. He recommends giving the Supervisors more than one recommendation which could include the industrial areas. As part of the conditional use, he offered questions about the hurdle of being necessary and desirable.

Public Hearing #3 (Woodbury County Courthouse) – October 23, 2023

On **October 23, 2023**, the Commission conducted a third public hearing at the Courthouse. There were fourteen members at the meeting including one on the phone. Four addressed the Commission and provided the subsequent information. Below includes links to the audio and summaries and/or direct quote adaptions of the information shared by the public. The following is not intended to be a perfect transcript but is offered to provide context of the debate. The audio can be accessed on YouTube using the following direct link: https://www.youtube.com/watch?v=qNpK3atf1k0&t=3s

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Emily Segura (Sioux City) (14:45 to 18:24) - https://youtu.be/qNpK3atf1k0?si=CGm38fZqAo5uwVj2&t=885

I'm from Sioux City. I'm a native of Woodbury County here and I love our county. I think we have so much to offer um new people coming here and just the farmland um I grew up on the farm and I definitely love the land. It's very important to me that we take care of it so that's why I'm here today to just bring forth a few concerns that I might have about this that I think maybe aren't being considered at this time. So, like I said, I'm from this county I have been coming for the past serval weeks just listening to what's been going on um, and I think something that's maybe kind of failed um to be recognized is that these maybe are not as green friendly as we'd like to think. An article that I'm going to reference I'm only going to talk about one here um there's many more that I could bring forward if needed but the one we're going to talk about is from the Harvard Business Review. It's titled the "Dark Side of Solar Power" um in this article it is talking about how prior to putting up a solar farm you'd need a correct way to get rid of when these solar panels go bad so in the article it's talking about the waste that is coming from these solar farms because they go in our minds we think okay they're going to last us like 30 years or something well that's not actually what happens generally if we have like a hail storm that comes through it's going to take it out or um something of that nature or also another factor that it talks about is um that there is more efficient solar panels

coming up so the ones that we have now in 10 years we're going to have more efficient solar panels so when we're going to we're going to just change it so what are we going to do with the solar panels that are already in place they're going to get they're going to go to the dump because it is cheaper to send them just to the dump we don't have another way to do it that's what's going to happen and when they go to the dump which our dumps like this is going to be full of solar panels when they go there they also would emit toxic waste which there are metals that are in these and also glass products so we don't have a place to go with these solar panels once they go back so um in conclusion I would recommend that you check out the "Dark Side of Solar Power" from the Harvard Business Review. It's just a good insight into another viewpoint that possibly we're not thinking about that these things are not really helping us out in the long term because we're making our children take care of the mistakes that we did. – Referenced Article: "The Dark Side of Solar Power" by Atalay Atasu, Serasu Duran, and Luk N. Van Wassenhove. Harvard Business Review. - https://hbr.org/2021/06/the-dark-side-of-solar-power

Ann Johnston (Salix) (18:50 to 20:28) - **https://youtu.be/qNpK3atf1k0?si=CKeu0LvAPe5KTSfF&t=1130**

I have some additional information about the Uyghurs, the slave labor group in communist China that makes parts of the solar panels not only do they make parts for the solar panels, they make the whole solar panels and yes there's still a slave labor group the women and children are physically and sexually abused and that's who makes 97% of the solar panels that come to the United States. My second point is I've heard a lot about Linn County and Scott County but I haven't heard anything about any counties over here on the western side of the state so I made several phone calls and Sioux County has a big moratorium on any of this energy stuff that's going on the other counties um are not going with solar or wind power um in fact um they know very little about it so if it is so desired here in Woodbury County um it's not desired in surrounding counties.

Elizabeth Widman (Sergeant Bluff) (21:00 to 24:22) - **https://youtu.be/qNpK3atf1k0?si=OQ4pZ36Ye01GgmNK&t=1260**

I live in rural Sergeant Bluff and I'm a landowner and my sons again are fifth generation Woodbury County farmers. I've going to all the solar meetings two of the Board of Supervisors voted against putting solar on ag protected land so this is not a mandate from the board to ensure solar encroaches on ag land. Putting utility solar on ag protected land fundamentally changes the ag protected area and should only be put in industrial zones. MidAmerica's largest Iowa project is 800 acres but they stated they did not have immediate plans to locate solar in Woodbury County. The photo of Europe of farming between solar panels is experimental and not done in America. MidAmerica stated that cattle grazing underneath solar would not work because they would rub against the solar panels and knock them down. Grass planted underneath would not help wildlife because it was stated that fences need to be around these solar areas to protect the public at the last meeting Dan Priestley said that when utility solar is allowed in a preservation land companies would have to be forthright in their application however at these public meetings it has not been mentioned that the pro solar speakers have already signed contracts with an outside company and we should be told who this company is if you add up the acres of land in the plat book owned by these individuals in my area it comes to roughly 2,600 acres or around four square miles to get an idea of that magnitude um think of this the area of the city of Sergeant Bluff is only 2.11 square miles all of the rest of the cities in Woodbury County are less than one square mile four square miles is about the size of 1,936 football fields. MidAmerica said that their solar contracts are for 30 years if these signed solar contracts are the same. I'll be 97 years old before these is a possibility of decommissioning them back to ag if it ever is done. Utility solar is not agriculture in 30 years my grandchild recently born will have completed all of their schooling, their college degree and worked several years in their first job all without seeing this land in agriculture another solar project also unmentioned at these meetings is contracted near Rock Brach for around 3,000 acres My mom's um cousin owns 80 acres out there that he's turned into a nature preserve and I just uh recently inherited some land right next to that the solar would be out by there so utility solar is not agriculture the reason it's called agriculture preservation is to preserve it. These solar utility um facilities belong on industrial land.

Elizabeth Cindy Haase (Salix) (24:46 to 24:22) - **https://youtu.be/qNpK3atf1k0?si=fFZv8N6kDOvv8g__&t=1486**

I do have some concerns with the solar farming and one of them is uh the radiation that could be caused by it um cause I read some things about um the electromagnetic hypersensitivity to it that could give you um headaches and dizziness and nausea um and there are some who believe that there is increased risk of cancer for those who live next to them um and some of this makes sense because they're those who do live um near them have said that they have had headaches from them and so I think those are good reasons to um to think about.

Public Hearing #4 (Woodbury County Courthouse) – November 27, 2023

On **November 27, 2023**, the Commission conducted the fourth public hearing at the Woodbury County Courthouse. Thirteen members of the public addressed the Commission on a range of issues in support and opposition to utility-scale solar on AG land. Below includes links to the audio and summaries and/or direct quote adaptions of the information shared by the public. The following is not intended to be a perfect transcript but is offered to provide context of the debate. The audio can be accessed on YouTube using the following direct link: https://www.youtube.com/watch?v=Me_SPKOFaHM&t=11s

The list of Zoning Commission meetings inclusive of the agendas, packets with backup materials, minutes, and videos (Audio) may be accessed at: https://www.woodburycountyiowa.gov/committees/zoning_commission/

Bob Fritzmeyer (Sioux City) (8:32 to 11:15) - https://youtu.be/Me_SPKOFaHM?si=xmjwED2uRr_egZar&t=512

Yeah good afternoon um I'm Bob Fritzmeyer and I'm I live at 2933 Leech here in Sioux City and I think that the overlay district for the solar would be really good for Woodbury County the solar panels they create a good pollinator environment or habitat which really according to the USDA is very important for uh ensuring that that we have food and we often hear you know Iowa helps to feed the world and this would be part of the mix really scientists estimate that about 75% of the world's flowering plants like alfalfa like soybeans that we have in plentifully here in Iowa are depending on the pollinators to flourish I think that the solar uh scorecard is all right on Target in helping to address the native grasses and there are three the three season flowering plants that do increase the survival of the pollinators that are needed. These will have a really positive effect on the food production. Solar is also as a form of renewable energy will improve our environment and the air that we breathe here in Woodbury County and I wonder um may I submit two documents these are from the United States Department of Agriculture and it's the National Institute of Food and Agriculture this one and the other one is from the United States Department of Energy it just basically these reinforce the facts I've been presenting here um would you be willing to accept these? --- Thank you.

Kevin Alons (Salix) (11:37 to 14:53) - https://youtu.be/Me_SPKOFaHM?si=3FxQmw16BOlX64K5&t=697

I'm going to speak again just in recommendation against an overlay for agriculture for solar and uh I just want to point out that again that uh solar and agriculture simply aren't compatible so using pulling solar on top of agriculture land especially land that's in production or productive land in the county which most of the land I think even that's been proposed to date or at least been considered is very productive land and uh the two really just aren't compatible a 30-year time period is a very long period of time and I'll talk about that later when it comes to decommissioning or other considerations but I would just urge that to be strongly considered uh talking about productivity is solar as I've researched and continue to look at it I mean it's something that is known to degrade over time so solar I've heard uh people talk about even in the first year or two there's like several different ways that solar degrades but sounds like even in the first couple years you might already see the production drop by well even a third and it will continue to drop year over year and that's established like a one to one and a half percent drop now that obviously doesn't directly impact the county when it comes to you know obviously how much but it does indirectly uh affect how much power is generated which therefore generate affects how much income is generated and that also affects how much taxes are generated so I I think that the science on these are while they have certainly been improved and I think they become less expensive they're still very high expense to put in place and when you look at how long they're going to operate especially in some of the conditions we have here in Iowa I think that uh it's it's kind of a stretch to say that we're we can count on these things even operating with any reasonable amount of performance for 30 years obviously the production of solar is uh quite low and it's temporary so it's it's not a baseline prod production model it's something that would be additive and in the end we we keep hearing discussions of how there's pressure to turn down our baseline or coal natural gas and other types of power production sadly that think these are being used as justification for that and I I I just think in the end that this is a it's it's a it's a false it's kind of a red hearing argument because it's going to leave us with without a Baseline and these can't reproduce that the only reason we're pursuing these things at all given the costs and given their inefficiencies is um Federal subsidies well it'd be one thing if we were doing these subsidies while we had a surplus of money but I think everybody knows we don't have a surplus of money at the federal government they're spending over a trillion dollars in deficit every year and our debt is growing rapidly so anything that this thing would generate is driving inflation which is going to really jeopardize whatever positives these things are touted to produce so just all of the all of the um fundamentals to these things are are questionable at best um the I just looked at the map and saw where I live from Salix I live by Salix just south of there and most of the land that's being proposed for this is right up abutting the the town of

Salix um I'm really curious to know what the town of Salix opinion is with that because it could affect how much they can grow it certainly will affect their land values and that type of thing so anyway those would be my primary reasons today to to resist a overlay or otherwise consideration for solar thank you thank you.

Robert Wilson (Rangeland Energy Management) (15:00 to 17:48) - https://youtu.be/Me_SPKOFaHM?si=bwEobOuCezpGpdJ6&t=900

This is Robert Wilson with Rangeland Energy Management um I just wanted to speak to you know solar development I'm a renewable energy developer um things have have really changed and can continue to change as uh more and more projects are permitted um some of the new things that a lot of projects are doing uh fits under the definition of agrivoltaics um in the sense that there are portions of these projects that can still be utilized to harvest um different types of agriculture while not necessarily real crops um other types like uh barley uh bean peppers that sort of thing um in addition we often utilize sheep herding as a form of vegetation control so that's in a sense um another form of agrivoltaics and finally when the project's operating it's essentially the land being laid fallow the same way that you would see uh a CRP parcel um so there's no massive grading uh or laying of gravel or anything outside of our perimeter roads um so it would essentially be CRP lands with solar modules on top of them in the racking system in addition I wanted to touch on decommissioning requirements um our site control agreements all have decommissioning and remediation requirements that we're bound to in addition to us our financing partners are also bound to those commitments as well um also in a lot of CUP processes uh municipalities often request bond requirements so we'll put aside funds to uh finance the decommissioning in the event that uh the project trades hands there's money that's been set aside prior to permitting the project that will finance the decommissioning of the project um so at the end of the lifetime there are there are monies in county hands to provide for decommissioning of the project um in addition there's no concrete that's used with the pylon so it's a relatively easy decommissioning process and the um the salvage value of the project itself will often finance the decommissioning of the project or exceed the value of the decommissioning costs um finally these projects provide for replacement generation for retiring thermal thermal generators uh there's a thermal generator that's nearby that's actually half retired and it's under lawsuit with the Sierra Club to be retired it's one of MidAmericans dirtiest in their coal fleet so these projects provide for New Generation that keeps power prices low for the public um as thermal generators are retired and that's it for me thank you.

Doyle Turner (Moville) (18:36 to 21:32) - https://youtu.be/Me_SPKOFaHM?si=o7Zwkdc9ej80rqla&t=1116

Doyle Turner 2738 200th Street Moville um one of the main things that I think we really need to be cognitive is that we have a development plan that is really close to being done and and I have talked to some of the Supervisors and I I do know that some of them are thinking that it would be wise to wait until that development plan is done due to just the total number a of the acres that are involved in something like this it's not like a conditional use where you're looking at one property and how one property affects the neighborhood we're we're looking at changing the outlook of a significant portion of our county and I think that considering the laws that whenever you get into litigation or anything like that you always go back to that development plan and I I think it really be would be wise to not not necessarily delay this but to not get the cart ahead of the horse and to get this done after the development plan is done the other thing that I'd like to bring up is is people talk about the income derived off of this from tax revenue um it's not an apples to apples to compare this to property tax revenue because it doesn't create revenue from property tax it creates revenue from the electricity that is produced um there the MidAmerican has requested from the IUB to look into um nuclear those those small nuclear uh power plants um so what we have is the main asset that these companies are looking at are the transmission lines you know they're worth more than the land is I mean you're looking at probably a 5 billion transmission line and that's what they're after and we have to also be cognitive that this is only going to really utilize 20 to 25% uh of capacity in the fact that these don't produce electricity all the time and we don't want to get in a position where we short change ourselves um an opportunity to produce electricity 95 to 100% of the time compared to 20 to 25% of the time so when you are comparing when you are looking at a possible revenue stream you have to compare apples to apples and you have to compare that this is not fully funding our transmission lines so I you know I I think the overlay is is something that is worth looking at but not until after the comprehensive map has been developed thank you.

Christopher Widman (Bronson) (21:55 to 24:43) - https://youtu.be/Me_SPKOFaHM?si=0xv00StpVTDfdF8L&t=1315

Christopher Whitman my address is 1866 220th Street Bronson Iowa um I'm a fifth generation farmer um I love the county and it's a roots and I hope to pass my farm someday on to my kids um I'm not opposed to industrial solar in the county by any means but I don't think it has a place um on ag preservation land that these big and solar industrial solar complexes that I

mean they need to stay on the industrial land we have a planning zoning department and committee that basically they're here to tell us hey you know if I went there and I wanted to build on my land they would be like no there's an industrial park go by land there and build there not how about let's rezone your ag land to build on it so I think the county is doing its 20-year development plan and as they do that like they need to take into consideration we can increase these big so like if we want solar in the county how about let's increase our industrial parks and expand them a little not cherry pick out in the middle of the county for a few land owners that have come in front of you that say hey we need to expand this um I think it just doesn't like it doesn't seem consistent to you know have all of these land owners come that already have signed contracts with you guys like the county is supposed to develop their plan based on a land development plan that is not part that it's supposed to be with the best the general welfare of the county not a few so like if we start making these changes based on what these individuals have came here and asked for and they're trying to change things so these individuals that have signed contracts get their land to go in it then I think the county has a big legal issue because we're going to be going after them saying you capitulated to these people with their own interest and that was not in the general warfare of the county so I would say let's wait till the 20-year plan is done I don't think that there's a place for overlay on ag land let's expand the industrial parks and tell the land owners go buy the industrial land don't try to use your ag to make industrial profits the last thing I would like to enter into the record are a few questions for you guys that if you could answer them by the next meeting or whatnot um and then there's an article in here and a listing of everybody that has uh land easement signed in the county thank you.

Elizabeth Widman (Bronson) (25:23 to 27:05) - https://youtu.be/Me_SPKOFaHM?si=XJxydJdjOKbmAZyZ&t=1523

My name's Elizabeth Widman again 1665 220th Street Sergeant Bluff um I'm a landowner and um I would just like to urge you like some other people to delay your decision until the new Woodbury County Comprehensive Plan is finished um I understand that they're working on it right now and have been working on it and um the reason for this is because um as residents of Woodbury County um that is protection for us it gives guidelines as to what the county is going to do moving forward um what's expected instead of just having uh oh surprise somebody came and now we're going to have this this uh solar utility farm next to a place that you've been developing and you like the the view etc and um um I appreciate the job you're all doing appreciate the jobs the supervisors are doing but this is a comprehensive plan that lasts for 20 years and boards come and go people come and go but that's what's in place that gives guidance uh to the county and um so again I I believe that utility solar belongs an industrial ground it is not um Agricultural and I believe that the comprehensive plan is called an agricultural preservation district uh for a reason that's to pre preserve agricultural land and I just um like I said would like to urge you to delay this until the their development plan is finished thank you.

Tom Treharne (NextEra Energy) (27:21 to 31:47) https://youtu.be/Me_SPKOFaHM?si=XZBiGC-bMALZdLHY&t=1641

This is Tom with Nextera can you hear me. Zellmer Zant: Yes please go ahead. Thank you sorry um I just wanted to to ask if is there a recommended um proposal or a recommendation coming out of staff or which which way to proceed or are all of them up for just for discussion at this point? Priestley: there's three concepts that are out there for discussion um that are fluid uh one is the conditional use for the general industrial, the second is the overlay uh district scenario that's been discussed, and the third is the uh comprehensive plan as part of a background to uh look at that because we're uh toward the end of that or in that process as well so those three things but there is uh language in the backup material that has the conditional use and the overlay District language in there that's fluid and being discussed but there's no concrete direct uh one pointed at at this point. Treharne: okay thank you I've read through all the options and um you know just from a a development perspective um certainly appreciate the time that's spent and you know as a as a developer of a project you know we we respect and and really appreciate the time that you guys are looking at and would would work towards being able to build a project we would just ask is the development language is is put together um you know some of the setbacks the thousand foot setback from residential dwellings it's that's that makes really makes for some serious challenges on a project as well as some of the grading language specifically limiting it to 5% and so um you know just depending on how uh you know the the ordinance moves forward and what proposal we're looking at those are some those are two considerations that um um would would be difficult for for us and we like to see something changed I I know there's a lot of conversation as well as it relates to industrial ground and the development of solar in the industrial properties um solar solar development is is is while some may consider the used to be industrial in nature the the fact that you would be developing solar on large pieces of property that are being geared for uh industrial development would would not be the greatest ideal greatest situation considering you know you build industrial ground you're You're building streets and roads and sewer and water and a whole host of of public utilities and public infrastructure to serve industrial tax base and industrial facilities that employ people at a large scale and and are adding value in a very urban on area the the value that that comes from from a solar development is the taxes um to the county and and there's not a lot of uh investment in in public utilities or infrastructure to support that so pointing all of your solar

development to industrial uh property um creates a whole host of of of problems that that I would see in the future anyway I I do think the overlay district is a is a great way to go uh solar uh can be uh very um similar and like to to an ag use I know some folks don't like the way it looks um but I think that traditionally that's how the regulations have been been cast in the past I know for you know Linn County is moving forward with that and appreciate the work that's been done to take a look at that and the scorecard for Woodbury as well so um just I wanted to just address those those couple items and and um you know I'd be just looking forward to how the board or the commission um reviews what's being proposed and and and takes action in the future so thank you for your time.

Roger Brink (Onawa) (31:54 to 32:33) - https://youtu.be/Me_SPKOFaHM?si=Tm_sUTI8AAqeioii&t=1914

My name is Roger Brink from Onawa Iowa I've been hearing a lot of comments about needs to stay into the agricultural ground but yet the government is paying CRP ground to lay it aside and people's got trees growing up 6 feet 7 feet tall and then they go in there and spray them it looks a lot worse than what the solar panels will -- we got three solar panels project in the county already that they don't seem to bother too many people thank you.

Leo Jochum (Salix) (33:14 to 37:50) - https://youtu.be/Me_SPKOFaHM?si=iOue6GQZ1CSIIPQZ&t=1994

Leo Jochum 1691 250th Street at Salix I think option two would be the best of these three options that we've discussed I think it is important that the overlay designation keeps farmland in the AP zone so that when the solar release expires the farmland will be returned to agricultural production I do have a concern with the qualifying CSR2 of 65 or less the majority of the farmland east of 75 has a CSR1 rating between 45 and 55 which increased between 20 and 34 points in 2014 when the precipitation factor was removed I'm in favor of removing that as a qualifying factor during the Iowa Utility Board's application process the soil conservation service NRCS and the DNR will be involved with grass and plant selection to ensure the soil quality will be preserved which will make the transition back to agriculture production possible in the ordinance under rough draft under H ground cover and buffer areas this references some of the practices that are listed in the Solar SC scorecard prior to construction soil sampling will be done to create a baseline for fertility but in addition to that soil probing will also be used to determine the type and the characteristics of the soil this is used to determine the size and the gauge of the tubing and the proper depth to place the steel tubing that supports those brackets there isn't any concrete put in the ground for this no concrete to support the tubes and no blacktop under the panels the method of installation allows for a very efficient and minimal soil disturbance for the removal of the solar array at the expiration of the solar contract which will allow for a smooth transition back into the agricultural production now I would like to address just a little bit about setback proposals and I I hope that the separation distance will be compatible with placement of the panels uh the occupied residence setbacks that I have seen are usually in the 150 to 300 foot setback from a residence in addition there's usually a landscaping or screening plan put in place that I also see in the proposed ordinance the city also has a jurisdiction of two miles and I don't know if this little issue on the bottom is contemplating having a county ordinance of two miles towards the city so I don't know if that would interfere and does the county have current setbacks from like a road right away and is that what we should be using like if it's 50 or 60 feet from the road white right away um want to make a comment on uh the 2005 planning um 3.4 is protecting Prime Farmland is determined by a corn suitable rating over 65 CSR if we use that CSR one which they are using right here that's going to put most of these lands that they'll have to be under an 85 to qualify so that's why this csr2 is important that was time okay thank you thank you I do have um some information I'm this is just kind of review of what you had before but it's going to reinforce what I said tonight okay.

Naomi Widman (Bronson) (37:59 to 41:18) - https://youtu.be/Me_SPKOFaHM?si=DmHOG7irVIwDpMzj&t=2279

I'm Naomi Whitman um 1866 220th Street um I just want to thank you guys I don't envy your position at all so thank you for the work and time that you guys are putting into this I know it's a lot um I do I do want to make one comment um as we consider people's um thoughts and opinions um I think we need to consider the motivations as well um when we are looking at what they're saying information that they're giving us um and just what their motivation behind it might be um I am not opposed to solar energy at all I think it has its right place um I I am concerned about granting an overlay for select areas that are not even close to industrial areas um in ag preservation land I think that like it's been mentioned multiple times that there's a 20-year plan that's nearly complete that we've been working on um I definitely think we should delay until that's completed before we consider anything um as far as granting overlay I it's important that we have the best interest of the Gen like general community and the county in mind versus catering to particular individuals who have honestly a very significant financial interest in receiving an overlay so it it data has shown that land values surrounding solar complexes decrease um particularly residences and so when we are looking at that I I feel like people should have freedom to decide what happens on

their land to a certain extent um when that starts negatively impacting surrounding land owners um um that's where our governing bodies are obligated to step in and make regulations and um that's that's just how life works really so I think when we when we are making decisions we need to think about the um general welfare what is um in the best interest of them I don't think it's any secret there's easements that have been signed there are very small select individuals um that will profit from that I think if we just grant overlays not thinking about what's in the best interest of everyone in this surrounding area um it seems to show a lot more favoritism versus okay what as Woodbury County we're developing what do we want to do what what is best for the county as we move forward um and everyone who resides in this county um so I I would think if we want to expand solar which I'm not opposed to it all I think that we can we can look at that we can we can um consider that but I don't think cherry picking little parcels in the middle of ag preservation land is probably the best way to go about go about that so I would just um encourage the Zoning Commission the Board of Supervisors um just to consider their role in making decisions for the best interest of the county um and not particular individuals thank you.

Steve Corey (Salix) (41:25 to 43:13) - https://youtu.be/Me_SPKOFaHM?si=jZ2fQJ6KtL_5gcAe&t=2485

Steve Corey 1757 290th Street Salix. Um my concern is in speaking to some of the uh the city leaders of the town of Salix um they're pretty much in the dark right now on this whole project um looking at the map and the land that is being proposed for this uh the community is kind of penned in uh from the south southwest corner the whole east side running up you know going north towards Sergeant Bluff um I never imagined living here in Northwest Iowa that I was going to have to be dealing with carbon sequestration, wind farms, and now solar in the middle of the county to boot um I I I never thought I'd have to to deal with that as a resident of the state and the county and the community um it's it's a real Challenge and they all all three of these particular uh proposals are coming you know want to come through this County as most of you are aware not only that but none of them work without the taxpayer being involved in this that bothers me um if you have to subsidize it to make it work does that make sense on the backs of the American taxpayer considering what we're all dealing with today regarding inflation and what's happening to all of our to all of us when it comes to uh how we put bread on the table so um there's a lot of of things that need to be considered here not only that but the the agriculture land itself and where in the county and the future and what is our County going to look like um because once we open this Pandora's Box um you know how that goes right anyway thank you for your time.

Greg Jochum (Salix) (43:53 to 47:24) - https://youtu.be/Me_SPKOFaHM?si=On6BgTy_bmAhPcdA&t=2633

Greg Yokum uh 1629 270th Street um I feel very fortunate to be part of production agriculture a lot of consolidation took place in the 1980s during the farm crisis which gave way to producers selling their livestock and continuing to farm and taking a job in town to some extent we have that today as a growing number of farms become more automated using artificial intelligence and other smart technologies to boost performance energy production could be the next step to enhancing land use I am confident that in the future of our family operation could consist of pork production corn production soybean production and energy production the corn and soybeans that I raise on my farm right now the corn goes to ethanol plants with which is energy the soybeans go to AGP which in turn the soybean oil gets turned to biodiesel another form of energy with solar on the farms that I have will produce energy that can also be used locally I'm in favor of using the overlay district in the AP zone for utility solar the infrastructure is already there with two 345 KV lines and two 161 KV lines uh these go through my Farms that I've been farming around since I came back in 2000 my dad's been farming around them when he bought his first Farm in the 60s I'm also in favor of using so the solar scorecard versus the CSR rating the meeting in Moville I discussed to you about the difference between CSR2 and CSR1 the scorecard will also encourage a more desirable diverse native grass flowering plants and pollinators the soil conservation service is also involved in determining the best seed mix for preserving and improving the soil the scorecard will also encourage dialogue between the solar developer and the non-participating neighbors and land owners the supervisors on September 26th recommended that no more than 1% of farmland every four years be allowed for utility solar I agree with that as it is it will give the county officials time to analyze and make adjustments where they see needed when my dad retired I took over the family farm with me I'm a fifth generation farmer and this spring my nephew graduated college he came to work for me this summer he's showing interest in the farm and I also have a 12-year-old son that I hope will be the sixth generation taking over our farm was that my time that was your time gr all right thank you thank you.

Rebekah Moerer (Sioux City) (48:48 to 50:14) - https://youtu.be/Me_SPKOFaHM?si=DrcbehX89hnfWLXp&t=2928

My name is Rebecca Moerer I live at 3437 Nebraska Street here in town um I have a couple questions as a county taxpayer I'm wondering what the benefit of these solar farms are to people who live in town or if it's a benefit just to the people who

own the land um my other question is what are the exact costs that um would be assessed to taxpayers uh they talked about decommissioning these and it it wouldn't take much but it sounded like there would be an expense who pays for that um I feel solar farms are an industry and should be subject to the way um industrial land use restrictions are already set up um when I purchased my house I checked into solar and I was told I'd have to cut a tree down um I would have to get a second mortgage the cost would be over $20,000 and I would only save about 25% of my energy bill I also looked up um the largest solar farms in Iowa and three to four of those are only on buildings none of those are on eggs and the the largest one is in Washington, Iowa so I thought that was very interesting um so that's just my take on it thank you.

Staff Analysis

Woodbury County currently allows for the consideration of utility-scale solar energy systems in the General Industrial (GI) Zoning District with the use of the conditional use permit application process through the Zoning Commission for review and the Board of Adjustment for approval. The current debate is about whether to expand the opportunity for utility-scale solar on land in the Agricultural Preservation (AP) Zoning District.

Under the current regulations, if a property owner desires to install a utility-scale solar system on his or her property, they would check with the county and the respective zoning district would be identified. If the property were within the AP Zoning District, the proposal would not be allowed as it is designated as a “prohibited use” in the “Land Use Summary Table” (Section 3.03.4, p. 32) of the Woodbury County Zoning Ordinance. However, the landowner does have the right under the ordinance to request for their district to rezoned to a designation that could facilitate utility-scale solar such as the GI Zoning Distrist. Typically, there are instances that can hinder the rezone process including incompatibility with the comprehensive plan, it’s future land use map and the concept of spot zoning which could fall under compatibility with adjacent land uses, etc.

The Zoning Ordinance Map Amendment (Rezone) process within the zoning ordinance includes the following evaluation criteria as part of the review and decision-making by the Zoning Commission and Board of Supervisors. As per Section 2.02.4 D (p. 12), the Commission shall base their recommendation and the Board of Supervisors shall base their decision of the following criteria:

- Conformance with the goals and objectives set forth in the approval General Development Plan for Woodbury County including the Future Land Use Map;
- Compatibility and conformance with the policies and plans of other agencies with respect to the subject property;
- Consideration of the Corn Suitability Rating (CSR) of the property;
- Compatibility with adjacent land uses;
- Compatibility with other physical and economic factors affecting or affected by the proposed rezoning; and
- Any other relevant factors.

These criteria place emphasis on the comprehensive plan and its future land use map as a mechanism for determining whether or not a particular area of land is acceptable for a different set of land uses or zoning district. With this criteria, it could be challenging for a landowner in the middle of AP Zoned ground to switch the land to industrial through the rezone process if the requested area for a rezone is designated as agricultural on the future land use map. It could be difficult to meet the corn suitability rating and the compatibility with adjacent land uses. Hence, spot zoning could come into play which is defined in the zoning ordinance as:

> An arbitrary zoning or rezoning of a small parcel of land, usually surrounded by other uses or zoning categories that are of a markedly or substantially different intensity, that is not consistent with the comprehensive land use plan, and that primarily promotes the private interest of the owner rather than the general welfare. This term is not used within these regulations, but is included here because it is commonly used to describe proposed rezonings, which may or not actually be spot zoning. (Woodbury County Zoning Ordinance, p. 92)

It is essential to point out that Woodbury County's comprehensive plan entitled, *Planning for 2025, A General Development Plan for Woodbury County*, includes policies not limited to the following that speak directly to the present debate:

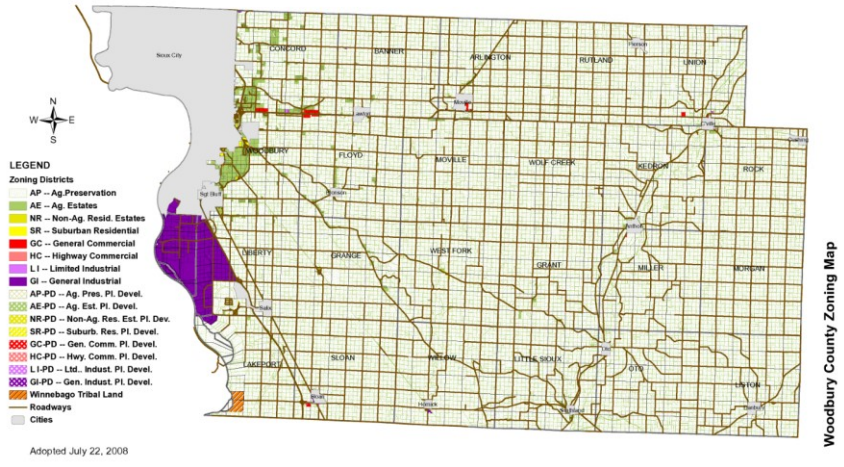
- **Economy and Economic Development Policy 2.5:** Fully explore alternative renewable energy sources, particularly wind generation facilities both as a contribution to the total energy needs of the country and as a new source of income for property owners.
- **Agricultural Policy 3.4**: Protect prime farmland as determined by high corn suitability ratings (i.e., over 65 CSR) from conversion to other land uses. Discourage non-agricultural uses in prime farmland areas and other agricultural districts by providing residential lot size requirements and proper separation distances between residential and agricultural uses.
- **Conservation and Environmental Policy #7.2:** Establish grading standards that create stable development sites, minimize erosion and sedimentation and water runoff. These standards may encourage conservation of less developable sites, particularly in the steeper slopes of the Loess Hills.
- **Conservation and Environmental Policy 7.3:** Establish standards and practices to encourage preservation of environmentally sensitive areas such as wetlands, wooded areas, waterways (streams, ponds, lakes, rivers, etc.), and other amenities."

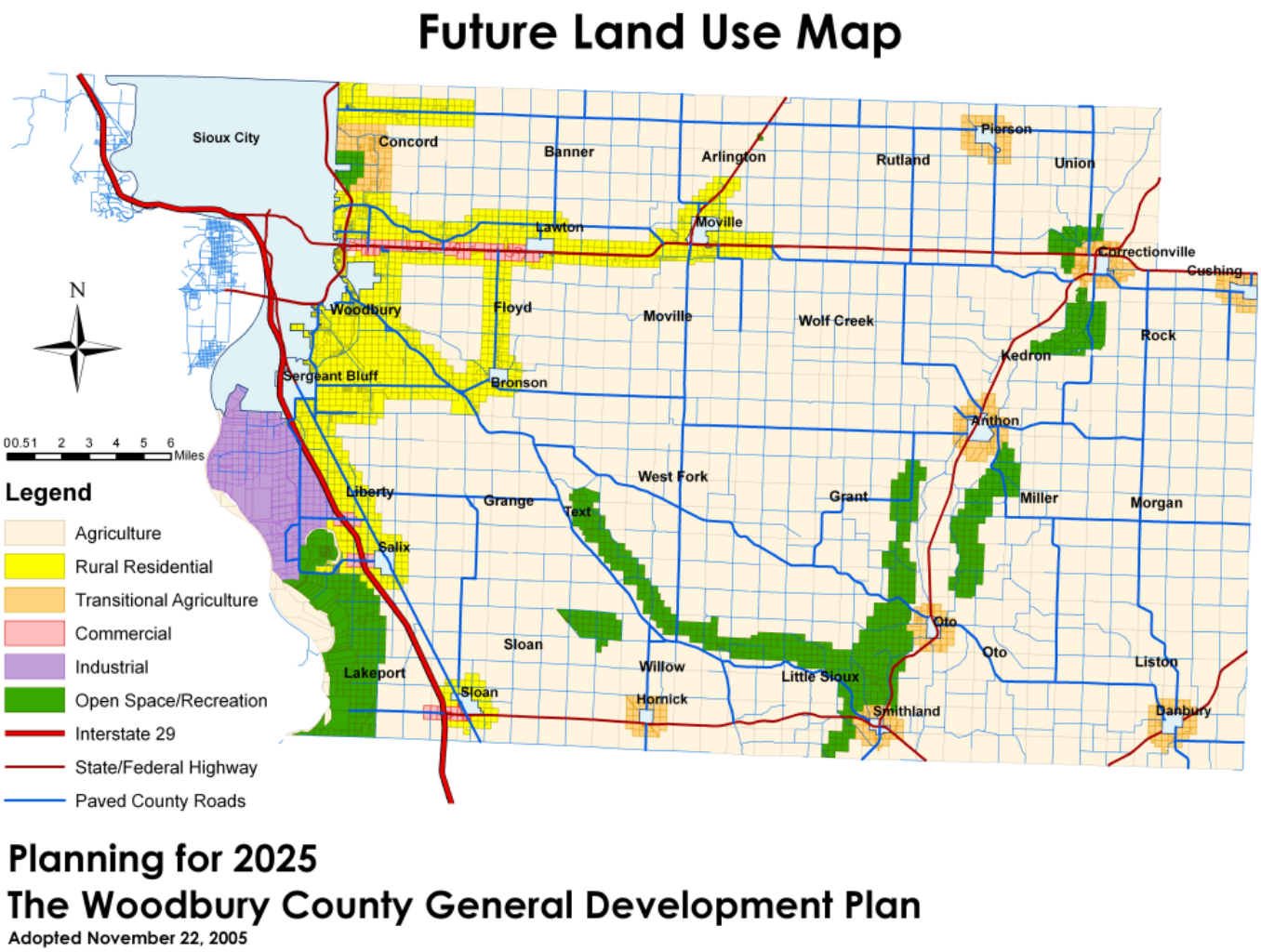
The Zoning Map and the Future Land Use Map of Woodbury County, as established in 2005, includes an abundant number of areas prioritized for agriculture. According to GIS data on file with Woodbury County and compiled by the Woodbury County Secondary Roads Department, the Zoning Districts are divided into the following acreage allotments:

Zoning District	Acres
Agricultural Preservation (AP)	476,513
Agricultural Estates (AE)	7,556
General Industrial (GI)	11,221
Limited Industrial (LI)	101
General Commercial (GC)	2,032
Suburban Residential (SR)	623

*Data compiled by Woodbury County Secondary Roads on 9/11/23 from Woodbury County Assessor's data.

Zoning Map of Woodbury County, Iowa





As referenced in the October 23, 2023, backup materials for the Zoning Commission, if the comprehensive plan and/or its associated future land use map does not support a rezoning change, it is typically not recommended to proceed with the change to the zoning district. If there is desire to consider such a rezone, as required by ordinance, the development plan and map should be considered as part of the review process. With this being said, the regulations on the books signal that back in 2005, the residents of Woodbury County made it a priority to have a process in place that put full scrutiny as to whether agricultural should or should not be used for other land uses and converted to different districts.

Under the current comp plan there is support for both renewable energy and agricultural land uses. The future land use map and the districts established in the zoning ordinance have placed requirements for where both can co-exist. In fact, Section 1.02.2 J of the zoning ordinance does reference "promoting conservation of energy resources and reasonable access to solar energy." Consequently, Woodbury County decided in 2008 to allow for electrical energy generation (not including wind) to be placed only as a conditional use permit opportunity in the General Industrial (GI) Zoning District. Additionally, this use was designated as prohibited in every other zoning district. This designation can be construed as the county's consensus at the time to place utility-scale solar assets in industrial areas over agricultural.

It is apparent that Woodbury County, based on the current comp plan, future land use map, and the parameters of existing ordinances are equipped to facilitate both agriculture and solar. As noted, there are opportunities for solar to be considered in GI. There are also opportunities for agriculture to be continued long-term in AP. However, due to the large majority of the unincorporated area being under the AP designation, it is

inevitable that there would be a desire to uses some AG land areas for utility-scale solar purposes. This is where the debate begins as to which areas within agricultural zoned land are appropriate or not for utility-scale solar energy systems.

As noted previously, the Board of Supervisors revised their direction to the Zoning Commission on September 26, 2023 to include the following concepts in mind as part of a future recommendation:

- A conditional use permit for AP "C" with Planning and Zoning and the Board of Adjustment to be able to site-specifically take into consideration the concerns of neighbors, land/soil, and other factors when approving permit.
- A slope of no more than 5% ONLY for fixed arrays (most technology is now movable arrays) in order to preserve the land and to account for soil erosion, compaction, and future land stewardship.
- No more than 1% of industrial land conversion every 4 years for reclassification, roughly 5,700 acres.
- Current notification for utility-scale solar shall be 1 mile for public comment instead of 500 feet.
- A decommissioning plan from solar companies reviewed by P&Z/BOA subject to approval by the Woodbury County Board of Supervisors.

Each of the criteria presented by the Board of Supervisors are feasible with the possible concepts subsequently presented in this report. It is important to note that the proposals presented are rough drafts and are subject to changes due to the inevitability of learning more information. The draft proposals do provide for the concerns of the neighbors, land/soil, and other factors as part of the permit approval. Under the concepts presented then landowners within one (1) mile would be notified about the proceedings which could include public hearings about the Zoning Commission, Board of Adjustment and Board of Supervisors level depending if it is for the overlay district or the conditional use. The consideration of slope is included by the institution of a requirement for a geotechnical report submitted by a professionally licensed engineer qualified in the field of geotechnical engineering to assess the potential risk of slope instability or landslide for the proposed development in its existing and post developed state. Additionally, the Commission may consider to recommend a specific cap on acres allowed to be converted to the overlay district with a time frame.

Gleanings From Literature, Public Testimony, and the Realities of the Issue

The scope of the utility-scale solar energy systems debate is wide and cumbersome. On topic after topic, it becomes inevitable to be trapped into the weeds of issue identification and formulation. The fallacy or the missing portion of this debate is specifics. The known is that utility-scale solar systems are allowed in industrial areas. The unknown is if the industrial areas are not the desired location for potential developers and landowners, thus - where are the proposed areas?

Throughout this debate over the last six plus months, the public has been in the position of wondering where potential renewable energy projects might go? In the board sense, the proposal to develop utility-scale solar in the AP Zoning District could be construed to suggest that somewhere within the 476,000 plus areas of AP land.

For land use public policy to be clear, it is inherently essential to debate land use with the most rational set of facts as possible. In a world of limited rationality, the comprehensive plan and the development of the future land use map is a platform for entire communities to work toward consensus on the type of communities they want to be in the future. The comprehensive plan adoption process is the most appropriate junction for setting land use goals for the next 20 to 40 years. It is imperative that the principals of transparency be injected into this debate with proposed areas where utility-scale solar energy systems may or may not be appropriate. Based on the current comprehensive plan, industrial areas are appropriate for utility-solar and agricultural areas are not.

Both the public and energy developers have been monitoring the utility-scale solar energy debate in unincorporated Woodbury County. All groups have been requested to comment on the matters. Supporters of expanded utility-solar have offered information to assist county officials with the siting of these projects through best practice documentation and sample ordinances. However, up to this point, there has not been a specific

request to elaborate on why a specific or particular area is desirable for these systems. Without this missing piece, the county appears to be on a large-scale debating whether it is a “yes” or a “no” on 476,000 acres of agricultural land, without zooming into the local areas of the county where utility-solar might indeed be appropriate.

Based on the literature it appears there are areas where developers prefer to place systems whether it is in proximity to transmission lines or other essential assets. As for the discussion of overlay districts, these concepts are helpful and can be appropriate for addressing unique land uses that may not necessarily fit with the underlaying zoning districts use. They allow for innovation to address the growing development needs of a community in terms of land use. Thus, it would be helpful for this debate to advance forward if areas the areas of interest were debated publicly through the comprehensive plan future land use map adoption process.

The enumeration of areas that may be appropriate for utility-solar offer the public and developers the transparency and clarity desired. Chasing a policy without knowing the affected locations is counterintuitive to the long effectiveness of the policy. The utility-scale solar energy debate would be best served by a direct focus on public input during the final stages of the adoption process of the Woodbury County Comprehensive Plan 2040. In particular, input should be considered concerning possible changes to the future land use map for either additional industrial areas or locations acceptable for an overlay district.

As part of the comprehensive plan process, the establishment of a renewable energy policy focused on either industrial expansion or the validation of an overlay district over agricultural land would be a reasonable step for a long-term stable land use policy. Thus, the focus on Concept #1 could offer justification for Concept #3 if the public offers broad support for utility-solar and the overlay district. Without the comprehensive plan debate, it is the recommendation of staff to adopt Concept #2 which is the retention of the current policy with a revision to the conditional use permit process in the GI Zoning District. The Zoning Commission and the Board of Supervisors may also consider adoption a variant of Concept #3. The three concepts are as follows:

1. **Comprehensive Plan Debate.** Use the opportunity for the new comprehensive plan to consider the public’s receptiveness to the renewable energy initiatives. This debate is an opportunity for developers, landowners, and the general public to make a determination of the type of county, Woodbury County wants to be over the next 20 plus years. This debate can be used to map out the areas where utility-solar could be expanded outside of industrial areas. Comprehensive planning is laying out the expectations for land use in the long term which can add stability and clarity for all stakeholders.

2. **Retain the current policy and revise the conditional use permit process.** Woodbury County does not prohibit utility-scale solar energy systems. Like many local jurisdictions, the county placed priority by creating a designated area, General Industrial (GI) that is ready and waiting for developers to jump at the opportunity to site their projects on this land. Revise the conditional use permit requirements to include additional standards related to agreements with the county for decommissioning and other issues.

3. **Establish a Utility-Scale Solar Energy Systems Overlay District.** Create a utility-scale solar energy systems overlay district which includes a protocol with maximum stakeholder involvement. Include both the Woodbury County Zoning Commission and the Board of Supervisors (BoS) in the rezone consideration process where the Commission makes a recommendation to the BoS who determine whether the area is appropriate or not. Establish a set number of acres (cap) from the AP Zoning District that the overlay can serve. Set the criteria to include CSR2 and/or an evaluation scorecard. Another issue that could be addressed at some point is the consideration of utility-scale solar battery systems. Possibly language is included in this report for informational purposes. Battery systems could be separated into a different debate or included within the current discussions.

Summary Of Concept 1. Comprehensive Plan Debate

Woodbury County is currently in the process of organizing a new comprehensive plan ("plan"). Since early 2021, the plan has been in development but has been placed on hold. At this time, the County is at a convenient juncture to evaluate whether renewable energy sources continue to be a development priority for the county over the next decade and beyond. The current debate considering the appropriateness of utility-solar systems being placed in areas of the county other than industrial naturally fits into the comprehensive plan adoption process.

The current plan that has been in place since 2005, acknowledges renewable energy sources in its Economy and Economic Development Policy 2.5 which states "fully explore alternative renewable energy sources, particularly wind generation facilities both as a contribution to the total energy needs of the county and as a new source of income for property owners" (p. 19). However, the plan also includes the initiative to protect prime farmland. In particular, Agricultural Policy 3.5 states "protect prime farmland as determined by high corn suitability ratings (i.e., over 65 CSR) from conversion to other land uses. Discourage non-agricultural uses in prime farmland acres and other agricultural districts by providing residential lot size requirements and proper separation distances between residential and agricultural uses" (p. 20).

The priorities of a community are embodied in a comprehensive plan to serve as a guide or a rationale for basing land use decisions. Iowa Code 335.1-3 states the following as it pertains to comprehensive plans:

1. The regulations shall be made in accordance with a comprehensive plan and designed to preserve the availability of agricultural land; to consider the protection of soil from wind and water erosion; to encourage efficient urban development patterns; to lessen congestion in the street or highway; to secure safety from fire, flood, panic, and other dangers; to protect health and the general welfare; to provide adequate light and air; to prevent the overcrowding of land; to avoid undue concentration of population; to promote the conservation of energy resources; to promote reasonable access to solar energy; and to facilitate the adequate provision of transportation, water, sewerage, schools, parks, and other public requirements. However, provisions of this section relating to the objectives of energy conservation and access to solar energy shall not be construed as voiding any zoning regulation existing on July 1, 1981, or to require zoning in a county that did not have zoning prior to July 1, 1981.
2. The regulations shall be made with reasonable consideration, among other things, as to the character of the area of the district and the peculiar suitability of such area for particular uses, and with a view to conserving the value of buildings and encouraging the most appropriate use of land throughout such county.
3. The regulations and comprehensive plan shall be made with consideration of the smart planning principles under section 18B.1 and may include the information specified in section 18B.2, subsection 2.

Following the adoption of the General Development Plan: Planning for 2025 on November 22, 2005, the county established a revised Zoning Ordinance and Subdivision Ordinance that were adopted on July 22, 2008. Subsequent to adoption, the Zoning Ordinance has been amended numerous times as it takes an amendment to the Zoning Ordinance to change any zoning district from one designation to another. The most recent amendment occurred with the approval of Ordinance No. 75 which was a Zoning Ordinance Map Amendment (rezone) from the Agricultural Preservation (AP) Zoning District to the Agricultural Estates (AE) Zoning District.

The process of amending the ordinance, as was the case with Ordinance No. 75, requires a look at the priorities within the comprehensive plan. Is it appropriate or not to introduce a particular use onto property designated as agriculture? The current plan tells the community that Woodbury County has a priority to explore renewable energy sources. It also has an initiative to protect prime farmland by use of the Corn Suitability Rating. In 2005, when then this plan was developed, it also included a "Future Land Use Map" that illustrates the areas within the county that the public expects particular uses to be allowed or not allowed. Portions of the county were designated as agricultural, rural residential, transitional agriculture, commercial, industrial, and open space/recreation.

In 2008, a land use summary table was adopted within the Zoning Ordinance that directly enumerates the priorities of land use in the county. The public, appointed officials, and elected officials at that time, decided that electrical energy generation (not including wind) is a prohibited use in all zoning districts except for the General Industrial (GI) Zoning District. To be clear, this decision reflects the comprehensive plan. It shows the public is

open to renewable energy, however, it demonstrates that the public chose the industrial areas as the most suitable locations to be considered through the conditional use process.

With a future comprehensive plan in the works and ready for debate before the Zoning Commission and Board of Supervisors, staff offers this concept as a pathway for considering the renewable energy priorities of the county. Within the comprehensive plan debate, the public can request expansion of the industrial areas or renewable energy overlay areas for the placement of renewable energy assets. Therefore, it is feasible to explore expanding areas on the future land use map which in turn could facilitate the rationale for an ordinance amendment to rezone additional areas for uses such as utility-scale energy.

Summary of Concept 2. Retain the current policy and revise the conditional use permit process

- **Summary:** Retain the current permitting procedures in the Woodbury County Zoning Ordinance but add additional requirements to the conditional use permitting process to make expectations clear for the applicants, area landowners, and the general public.
    - **Zoning District:** General Industrial (GI)
    - **Permitting Mechanism:** Conditional Use Permit
    - **Review Board:** Zoning Commission
    - **Approval Board:** Board of Adjustment
    - **Notification Area:** One (1) mile from Project Area
    - **Development Plan Justification:**
        - Compatible with Economy and Economic Development Policy 2.5:
            - "Fully explore alternative renewable energy sources, particularly wind generation facilities both as a contribution to the total energy needs of the country and as a new source of income for property owners."
        - Compatible with Agricultural Policy 3.4:
            - "Protect prime farmland as determined by high corn suitability ratings (i.e., over 65 CSR) from conversion to other land uses. Discourage non-agricultural uses in prime farmland areas and other agricultural districts by providing residential lot size requirements and proper separation distances between residential and agricultural uses."
        - Compatible with Conservation and Environmental Policy 7.3:
            - "Establish standards and practices to encourage preservation of environmentally sensitive areas such as wetlands, wooded areas, waterways (streams, ponds, lakes, rivers, etc.), and other amenities."
        - Compatible with Conservation and Environmental Policy #7.2:
            - "Establish grading standards that create stable development sites, minimize erosion and sedimentation and water runoff. These standards may encourage conservation of less developable sites, particularly in the steeper slopes of the Loess Hills."

Brief Background:

- The Woodbury County Zoning Ordinance facilitates the permitting for utility-scale solar energy systems as a conditional use in the GI Zoning District. Presently, the Zoning Commission reviews the application and then makes a recommendation to the Board of Adjustment. Under this policy, utility-scale energy systems are construed as an industrial activity and have been placed into the industrial area of the county to ensure that productive farm ground can remain in production. The Zoning Ordinance facilities the opportunity to rezone to the GI Zoning District in order for a conditional use permit to be considered. However, the rezone process requires consideration of the following criteria:
    - Conformance with the goals and objectives set forth in the approved General Development Plan for Woodbury County including the Future Land Use Map;

- Compatibility and conformance with the policies and plans of other agencies with respect to the subject property;
- Consideration of the Corn Suitability Rating (CSR) of the property;
- Compatibility with adjacent land uses;
- Compatibility with other physical and economic factors affecting or affected by the proposed rezoning; and
- Any other relevant factors

- **Spot Zoning** is defined in the Zoning Ordinance as "An arbitrary zoning or rezoning of a small parcel of land, usually surrounded by other uses or zoning categories that are of a markedly or substantially different intensity, that is not consistent with the comprehensive land use plan, and that primarily promotes the private interest of the owner rather than the general welfare. This term is not used within these regulations, but is included here because it is commonly used to describe proposed rezonings, which may or not actually be spot zoning.

- If the development plan and/or its associated future land use map does not support a rezoning change, it is not recommended to proceed with the change in zoning district. If there is a desire to consider such a rezone, the development plan should be revisited, debated, and be considered for amendment(s) to the text of the plan or future land use map.

- It is imperative to note that multi-acre utility-solar sites can reduce the amount of available land in the General Industrial (GI) areas for other developmental purposes. Acres taken out for utility-solar could impact the benefits of services ran to industrial areas such as sewer and water.

Summary of Concept 3. Establish a Utility-Scale Solar Energy Systems Overlay District

- **Summary:** Establish a utility-scale solar energy systems overlay zoning district that requires a rezone application to be reviewed by the Zoning Commission and considered for approval by the Board of Supervisors that must meet specific criteria for the appropriateness of the agricultural area to facilitate utility-scale solar systems. Another issue that could be addressed at some point is the consideration of utility-scale solar battery systems. Possibly language is included in this draft for informational purposes. Battery systems could be separated into a different debate or included within the current discussions.
  - **Proposed Zoning Districts:** Establishment of a "Utility-Scale Solar Overlay Zoning District" to be used only over the "Agricultural Preservation (AP) Zoning District.
  - **Permitting Mechanism:** Rezone to Overlay
  - **Review Board:** Zoning Commission
  - **Approval Board:** Board of Supervisors
  - **Notification Area:** One (1) mile from Project Area
  - **Development Plan Justification:**
    - Compatible with Economy and Economic Development Policy 2.5:
      - "Fully explore alternative renewable energy sources, particularly wind generation facilities both as a contribution to the total energy needs of the country and as a new source of income for property owners."
    - **As per Concept #1**: Use the opportunity for the new comprehensive plan to consider the public's receptiveness to the renewable energy initiatives. This debate is an opportunity for developers, landowners, and the general public to make a determination of the type of county, Woodbury County wants to be over the next 20 plus years. This debate can be used to map out the areas where utility-solar could be expanded outside of industrial areas. Comprehensive planning is laying out the expectations for land use in the long term which

can add stability and clarity for all stakeholders.

- **Possible Criteria:**
  - **Rezone to "Utility-Scale Solar Overlay Zoning District"**
    - Zoning Commission makes a recommendation to the Board of Supervisors as to whether the rezone to the overlay district is appropriate or not.
      - Establish a criteria to qualify an area as acceptable or not for the overlay district: CSR2?; Slope; Acre Cap; Density/Setbacks, No floodplain, agricultural use, etc.
    - Board of Supervisors approves the rezone process including approval of specific agreements with the county such as decommissioning, road use, etc.

- **Background:**
  - Both Linn County and Scott County use an overlay district to facilitate the permitting of utility-solar in agricultural areas. Linn's overlay district is known as the "Renewal Energy Overlay District" while Scott's is a "Utility Solar-Floating District." They use the rezone process to switch the footprint of a solar project area to the overlay district. The effect is creating an area for solar but retaining primary uses of the base zoning district.
  - Specifically, Linn County's ordinance states that "the renewable energy overlay district shall be geographically located in those areas currently zoned AG (Agricultural) or CNR (Critical Natural Resources)." The intention of Scott County's floating district is to find a balance that keeps in mind the characteristics of the abutting properties and area, and other matters such as habitat, natural resources, agricultural preservation, safety, health, and general welfare. Scott County's ordinance makes it clear it is not their intention to allow for utility solar on prime agricultural land.
  - This concept of an overlay district could be an option for a balanced policy in Woodbury County. For example, the county could establish a "Utility-Scale Solar Overlay Zoning District," and enumerate standards that must be met in order to rezone the property to the overlay district while retaining all the existing uses of the base zone.
  - On page 28 (33 of the PDF) of the Zoning Ordinance, Woodbury County does have an example of the "CD -- Conservation Development Overlay Zoning District". A "CD" can be instituted as an overlay over other districts such as AP, AE, NR, and SR. Also, see page 17 (22 of the PDF) which uses the rezone process.
  - Based on what Linn County and Scott County have done, this could be a feasible option to have the debate at the Board of Supervisors level as to whether a particular area of ag land would be suitable or not for utility solar.
  - The overlay district is designed to not be a spot zone but a way to look at the unique nature of an area for a special use without changing the base zone or the controlling zoning district's land use requirements. Thus, if a solar farm is removed, it would revert back to the base use of the controlling zoning district or be considered for future conditional use permitting if a new solar system were to be proposed.

Concept 1 - Comprehensive Plan Adoption Process

As noted in the summary above, the current comprehensive plan (comp plan) on the books offers support for renewable energy, however, the policies including the zoning ordinance that came out of that process established industrial areas as the appropriate locations for electrical energy generation while protecting agricultural land with the Corn Suitability Rating (CSR). Woodbury County is currently at a convenient juncture to transfer this utility-scale solar debate into the final stages of the comp plan adoption process that will be going before the Zoning Commission and the Board of Supervisors in 2024.

It is essential to note that the institution of a comp plan is a countywide discussion to determine what the development priorities are for Woodbury County over the next 20 years. It is a time to ask what type of county do we want to be? What are the goals for agriculture? Land Use? Economic Development? Commercial? Industrial? Residential? Parks? Recreation? Conservation? Environment? Public Safety? Transportation? Facilities? Operations? This debate about utility-scale solar is consequential and fits in with the public's long-range decisions about the type of county that we want to be. The discussion gives those who are in support or those who are opposed to the expansion of solar, in agricultural areas, a voice in the setting of countywide policy. Depending on how solar policy is ultimately crafted, this debate could potentially include access to over 475,000 acres of agricultural land.

If through the planning process, renewable energy is shown as a top priority by the public, the opportunity is ahead for the public to offer input about what "areas of land" are suitable for industrial expansion through the comp plan's future land use map. Below is a copy of the current future land use map. The areas shaded in light green are planned for agriculture. Through the consideration process, the public could offer input or make specific requests on which areas may or may not be suitable for utility-solar. Additionally, through the debate, the public could request the expansion of residential, commercial, and industrial areas to facilitate future needs.

Current Land Use

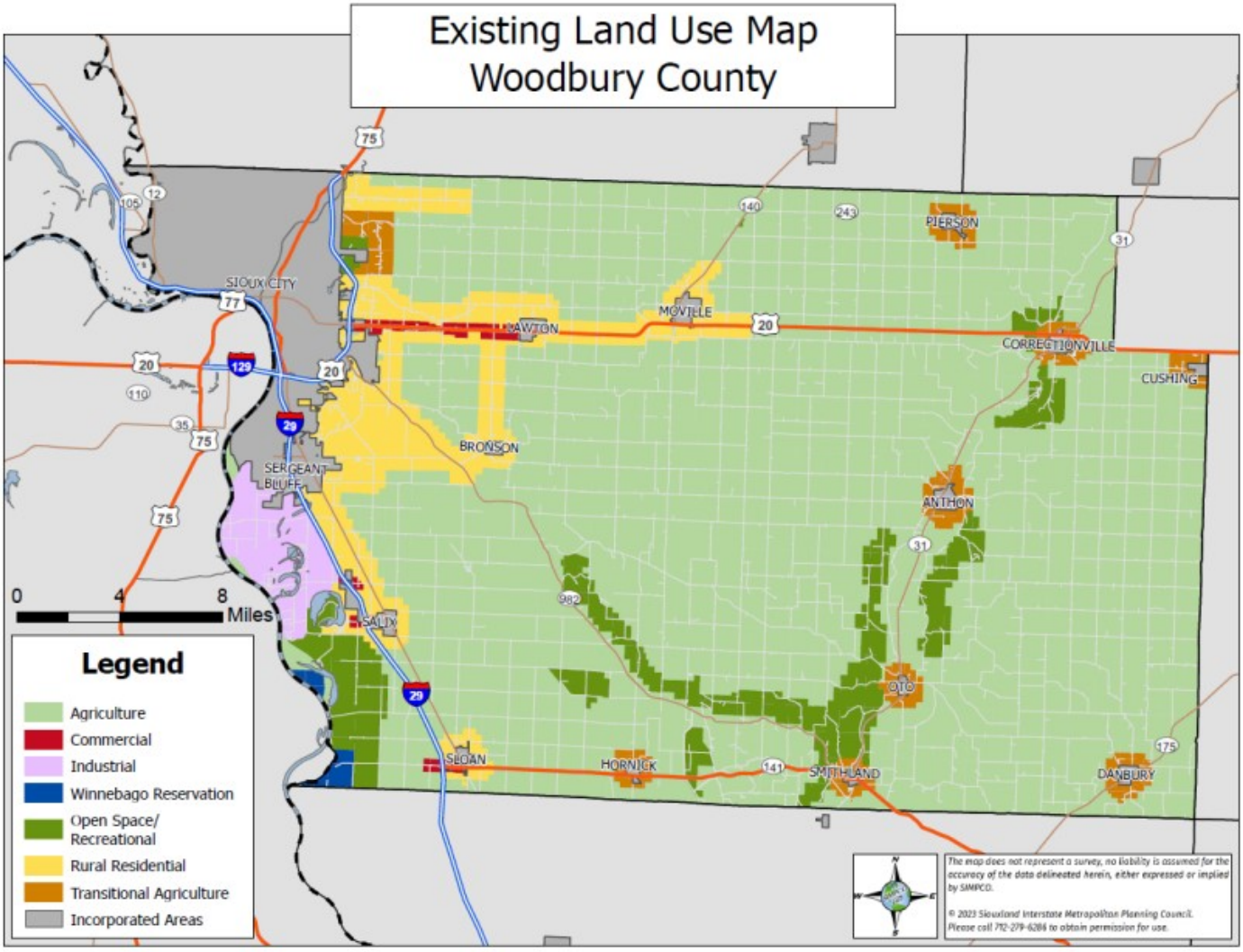


Figure 7.2. Existing Land Use Map, 2023.

Source: Current Land Use. *Draft Woodbury County Comprehensive Plan 2040.* https://simpco.org/wp-content/uploads/2023/05/Draft_Woodbury-County-Comprehensive-Plan_5.2.23.pdf

At this time, it is absolutely essential to note that the draft comp plan has been in development over the past three (3) years and through the public engagement process in that timeframe, there has <u>not</u> been large-scale public support for renewable energy development. As of this date, the future land use map that has been presented to the public has not substantially changed from the current map. If specific requests have been made for a particular area to be expanded, those requests would have been considered and would likely have been included in the future map. The draft future land use map is included below:

Future Land Use

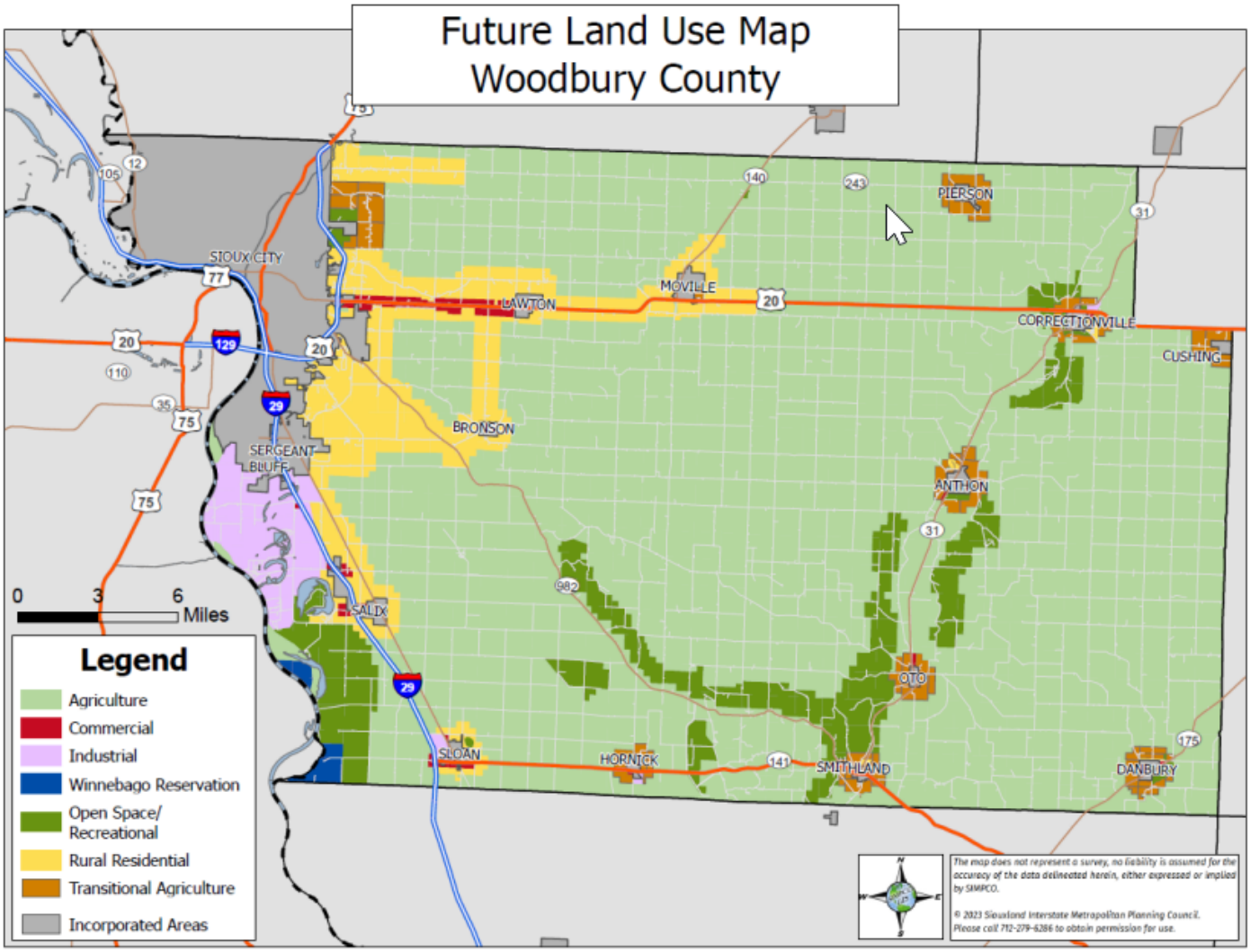


Figure 7.4 Future land use map

Source: Future Land Use. *Draft Woodbury County Comprehensive Plan 2040.* https://simpco.org/wp-content/uploads/2023/05/Draft_Woodbury-County-Comprehensive-Plan_5.2.23.pdf

Below is an excerpt from page 70 of the **draft** *Woodbury County Comprehensive Plan 2040*:

Renewable Energy

There are currently no wind facilities located in Woodbury County, and many residents have been vocally opposed to these developments due to the impact wind facilities would have on the county's rural landscape.

At the same time, there is a great deal of federal support for shifting the energy source of the electric grid away from carbon-based fuels in favor of renewable options such as wind and solar. Due to a variety of federal and state financing programs, tax incentives, and funding opportunities, the network of wind turbines is growing throughout the country, state, and region. Tax credits are also incentivizing the installation of solar voltaic energy systems on private property. With these considerations, it is likely that the county could see demand from landowners for renewable energy developments in the future, as these facilities could present an economic opportunity for farmers and other landowners.

While wind turbines are largely unpopular in Woodbury County, renewable energy technologies are changing rapidly. The method of energy production and aesthetic form of wind and solar technologies are likely to continue developing over the next 20 years. With further development such technologies could become more appealing and less intrusive to residents. Supporting the development of diverse energy sources and planning ahead for regulations around these facilities will put the county in a position to embrace those that are appealing to residents and beneficial to the economy.

Access Link: https://simpco.org/wp-content/uploads/2023/05/Draft_Woodbury-County-Comprehensive-Plan_5.2.23.pdf

The above language is not in stone and the public retains the ability to offer comments during the debate process. If during the discussions, there is support for utility-solar solar energy systems for the future in Woodbury County, it would contribute to the justification for future policy changes.

If the public desires to create additional industrial areas on the comprehensive plan's future land use map, an overlay district would not be necessary as the existing rezone process could likely facilitate the application process to rezone from AP to GI.

Concept 2 - Retain The Current Policy And Revise The Conditional Use Permit Process

Retaining the current policy and revising the conditional use permit process would entail adding a new section to the ordinance to address the permitting expectations. The following outlines shows concepts that could be integrated into a utility-scale solar energy systems conditional use permit for the General Industrial (GI) Zoning District. This same language could also be adapted to coincide with Concept 2.

Zoning Ordinance Text Amendment Outline – Add the following:

Section 5.08: Utility-Scale Solar Energy Systems (US-SES) Conditional Use

1. Statement of Intent
2. Jurisdiction
3. Definitions

A. Agrisolar or Agrivoltaics
B. Applicant
C. Community Solar
D. Conditional Use Permit (CUP)
E. Concentrating Solar Power Systems
F. Corn Suitability Rating 2 (CSR2)
G. Critical Slope Angle
H. Developed Project Areas
I. Easement
J. Feeder Circuits/Lines
K. Glare/Glint
L. Ground-Mounted System
M. Interconnection
N. Module
O. Mounting
P. Non-Participating Landowner
Q. Occupied Structure
R. Operator
S. Owner
T. Participating Landowner
U. Photovoltaic (PV) Cells
V. Professional Engineer
W. Project Area
X. Property Line
Y. Residence
Z. Setback
AA. Slope
BB. Solar Array
CC. Solar Collector
DD. Solar Easement
EE. Solar Energy
FF. Solar Energy Systems, Private
GG. Solar Energy Systems, Utility Scale (US-SES)
HH. Solar Panel
II. Solar Storage Battery
JJ. Solar Storage Unit
KK. Solar Thermal Energy System (STES)
LL. Structure
MM. Structure-Mounted Energy System
NN. Substation
OO. System Height
PP. Transmission Lines

4. Applicability
5. Conditional Use Permit (CUP)
6. Application Materials
    A. Identification Information
    B. Legal Control Documentation
    C. Certified Abstractors Listing
    D. Plat of Survey
    E. Legal Descriptions
    F. Development Plan
        (1) Project Timeline
        (2) Site Plan
        (3) North Scale
        (4) Property Lines

(5) Setback Locations
(6) Right-of-Way Locations
(7) Parking, etc.
(8) Easements
(9) Total Number of Arrays
(10) Locations / Dimensions
(11) Electric Lines
(12) Field Tile
(13) Well
(14) Sanitary Infrastructure
(15) Topography
(16) Flood Zone
(17) Other Info
(18) Structure Plans
(19) Separation Distances
(20) Setback Analysis
(21) Grading Plan
(22) Geotechnical Report
(23) Floodplain Data
(24) Utility Plan
(25) Landscaping/Screening Plan
(26) Road Impact Analysis
(27) Interconnection Agreement
(28) Operation and Maintenance Plan
(29) Decommissioning Plan
(30) Agricultural Impact Mitigation Plan
(31) Vegetative Management Plan
(32) Wildlife/Biological Habitat Assessment & Mitigation Plan
(33) Setback analysis
(34) Emergency Response Plan
(35) FAA / Other Permits
(36) Other Information

7. Site and Structure Requirements
    A. Setbacks
        (1) Protected Areas
            1. Adjacent Property Lines
            2. Occupied Residence
            3. Unoccupied Non-Residential Building
            4. Public Road Right-of-Way
            5. Public Drainage District Right-of-Way
            6. Public Conservation Area
            7. Cemetery
            8. Airports
                (1) Setback Waivers
    B. Height
    C. Screening
    D. Utility Connections
    E. Grading Plan
    F. Glare Minimization
    G. Compliance with local, state and federal regulations.
    H. Appurtenant Structures
    I. Floodplain Considerations
    J. Fencing/Security
    K. Panel Height
8. Permitting Process

   A. Meeting
   B. Department Coordination
   C. Board of Supervisors Approval of Agreements
   D. Conditional Use Permit Application
   E. Outlined Uses
9. US-SES Building Permit Requirement
10. Woodbury County Road Use and Repair Agreement
11. Woodbury County Public Drainage System Protection Agreement
12. Operation and Maintenance Plan
13. Decommissioning, Abandonment, Escrow Account, and Site Restoration Plan
14. Soil erosion and Sediment Control Plan
15. Emergency Response Plan
16. Future Operators
17. Severability
18. Penalty
19. Effective Date

The following pages include the draft ordinance as outlined above.

Section 5.08: Utility-Scale Solar Energy Systems (US-SES) Conditional Use

1. **Statement of Intent.** The purpose of this Section is to facilitate the construction, installation, and operation of Utility-Scale Solar Energy Systems (US-SES) in Woodbury County, in a manner that promotes economic development, protects property values, and ensures the protection of health, safety, and welfare while also avoiding adverse impacts to important areas such as agricultural lands, conservation lands, and other sensitive lands.

   If this Section conflicts with any other provision of the Woodbury County Zoning Ordinance, this Section shall control.

2. **Jurisdiction.** This Ordinance is adopted by the Woodbury County Board of Supervisors and governs all lands within the unincorporated areas of Woodbury County, Iowa. This Ordinance and its provisions shall not apply to those properties or projects occurring within the incorporated cities of Woodbury County.

3. **Definitions.** For use in this Ordinance, certain terms or words used herein shall be interpreted or defined as follows:

   A. **Agrisolar or Agrivoltaics.** A utility-scale solar system co-located on the same parcel of land primarily adapted, by reason of nature and area, for use for agricultural production, including crop production, grazing, apiaries, or other agricultural products or services. Fifty-one percent (51%) of the use of the land is for agricultural purposes.

   B. **Applicant.** The person or entity submitting the application under this Ordinance, which is normally expected to be the owner or operator of a US-SES, or the owner of the US-SES development.

   C. **Community Solar.** A utility-scale solar energy system developed by a municipality, utility, or other third party that typically allows community members to subscribe to the project.

   D. **Conditional Use Permit (CUP).** A use that is allowed in conformance with the regulations of the zoning district in which it is located, if and only if, approved by the Board of Adjustment as provided in subsection 2.02-9. A CUP issued by the Woodbury County Board of Adjustment is required before associated building permit(s) can be issued in unincorporated Woodbury County.

   E. **Concentrating Solar Power Systems.** A system that generates solar power by using mirrors, lenses, or similar reflecting surfaces to concentrate sunlight collected over large areas onto smaller focal areas. Concentrating solar power systems are prohibited.

F. **Corn Suitability Rating 2 (CSR2).** An index to the inherent soil productivity of each kind of soil for row crop production. The index is scaled from 100, for the most productive soils, to 5 as the least productive.

G. **Critical Slope Angle.** The maximum slope incline which the soil and rock materials underlying the slope can support, without failure, under existing climate, vegetation, and land use.

H. **Developed Project Areas.** The total project area that is subject to an agreement between the Owner/Operator and the Participating Landowner and is actually developed and utilized for placement of a US-SES.

I. **Easement.** A legal agreement for the use of property for a specified purpose.

J. **Feeder Circuits/Lines.** A power line or network of lines used as a collection system that carries energy produced by a solar energy system to an interconnection point like a substation. Feeder circuits are most often placed underground.

K. **Glare/Glint.** Light reflected off of a surface.

L. **Ground-Mounted System**. A system where a rack(s) of panels is mounted on concrete posts or poles anchored in the ground and are wired or plumbed to an adjacent home or structure.

M. **Interconnection.** Link between a generator of electricity and the electric grid. Interconnection typically requires connection via infrastructure such as power lines and a substation, as well as a legal agreement for the project to be connected to the grid.

N. **Module.** An individual unit comprised of multiple photovoltaic (PV) cells, with multiple modules used in a solar energy system.

O. **Mounting.** The method of anchoring solar energy system modules to the ground or a building.

P. **Non-Participating Landowner**. A landowner who has not signed a binding agreement with the Applicant/Developer/Owner of the US-SES project.

Q. **Occupied Structure.** For the purpose of this ordinance, shall include any existing occupied house, apartment, barn, or machine shed regularly used by the property owner, or parties in possession of the property at the time of the permit application.

R. **Operator.** The entity or individual that operates a solar energy system.

S. **Owner.** The entity or entities with an equity interest in the US-SES, including their respective successors and assigns. Owner does not mean the landowner from whom a lease, easement, or other property right is acquired for locating the US-SES unless the landowner has an equity interest in the US-SES, or any person holding a security interest in the US-SES solely to secure an extension of credit, or a person foreclosing on such security interest provided that after foreclosure, such person seeks to sell the US-SES at the earliest practical date.

T. **Participating Landowner**. A landowner under lease, easement or other binding property agreement with the applicant, developer, or owner of the US-SES.

U. **Photovoltaic (PV) Cells.** Semiconductors which generate electricity whenever light strikes them; generally grouped on panels.

V. **Professional Engineer.** A qualified individual who is licensed in the State of Iowa as a professional engineer.

W. **Project Area.** The geographic area encompassing all components of a US-SES project, including border fencing.

X. **Property Line.** The legal boundary between separately owned real estate parcels, and between privately owned parcels and public owned land or public right of way.

Y. **Residence.** A house, apartment or other shelter that is the abode of a person, family, or household and regularly occupied.

Z. **Setback.** The minimum distance from a certain object, structure or point to the edge of any part or component of the US-SES.

AA. **Slope.** The inclination of the land surface from the horizontal, with the steeper and longer having the most erosion potential.

BB. **Solar Array.** Equipment used for private or utility scale solar energy systems. Can be mounted on primary or accessory structures, on a racking system affixed to the ground, or integrated as a mechanical or structural component of a structure.

CC. **Solar Collector.** A device, structure or part of a device or structure for which the primary purpose is to transform solar radiant energy into thermal, mechanical, chemical, or electrical energy.

DD. **Solar Easement.** An easement created to protect a solar project from encroachment by adjacent properties which would shade panels. See Iowa Code 564A.

EE. **Solar Energy**. Radiant energy received from the sun that can be collected in the form of heat or light by a solar collector.

FF. **Solar Energy Systems, Private.** An energy system that converts solar energy to usable thermal, mechanical, chemical, or electrical energy primarily for immediate onsite use that already has an existing principal use on the same parcel. Solar Energy Systems, Private shall be allowed only as a non-utility scale accessory use to a permitted principal use. Surplus energy sold back to a utility must comply with all applicable laws including but not limited to Section 199, Chapter 15.11(5) of Iowa Administrative Code, and all requirements of the Iowa Utilities Board. Systems can be mounted on primary or accessory structures, on a racking system affixed to the ground, or integrated as a mechanical or structural component of a structure.

GG. **Solar Energy Systems, Utility Scale (US-SES).** An energy system, commonly referred to as a "solar farm", which converts solar energy to useable thermal, mechanical, chemical, or electrical energy primarily for transmission through the electrical grid for offsite use or wholesale and/or retail sale. Systems can be mounted on primary or accessory structures, on a racking system affixed to the ground, or integrated as a mechanical or structural component of a structure. Utility scale solar energy systems do not include concentrating solar power (CSP) systems.

HH. **Solar Panel.** 1) A grouping of photovoltaic cells used to generate electricity directly from sunlight. A grouping of these panels is called an array. 2) A panel circulating water or other liquid through tubes to collect, transfer and store the sun's heat for domestic hot water and building heat.

II. **Solar Storage Battery.** A device that stores energy from the sun and makes it available in an electrical form.

JJ. **Solar Storage Unit.** A component of a solar energy deice that is used to store solar-generated electricity or heat for later use.

KK. **Solar Thermal Energy System (STES).** A system that directly heats water or other liquids using sunlight. The heated liquid is used for such purposes as space heating and cooling, domestic hot water, and heating pool water.

LL. **Structure.** Anything constructed or erected on the ground or attached to the ground, including but not limited to, antenna(s), buildings, sheds, cabins, residences, signs, storage tanks, towers, wind turbines and other similar objects.

MM. **Structure-Mounted Energy System.** A system where photovoltaic panels or solar thermal panels are mounted on racks attached to the roof or side-walls of a building. Panels can be flush-mounted or angled for optimal sun exposure.

NN. **Substation.** A facility that converts electricity produced by a generator like a solar energy system to a higher voltage, allowing for interconnection to high-voltage transmission lines.

OO. **System Height.** The height of a solar energy system, usually referring to ground mounted systems. Total system height is the measurement from the ground to the top of the mounting or modules associated with a system.

PP. **Transmission lines.** Power lines used to carry electricity from collection systems or substations over long distances.

4. **Applicability.** It shall be unlawful to construct, erect, install, alter or locate any US-SES within unincorporated Woodbury County, without first obtaining a Conditional Use Permit from the Woodbury County Board of Adjustment and the associated agreements from the Woodbury County Board of Supervisors as outlined in this Ordinance.

    A. No application for a US-SES Conditional Use Permit shall be granted without first submitting all required information and documentation, and paying all associated fees to the County.

5. **Conditional Use Permit (CUP).** US-SES shall require a Conditional Use Permit within the General Industrial (GI) Zoning District. This use is prohibited in all other Zoning Districts in Woodbury County. This use shall be subject to the procedures and standards included in the Woodbury County Zoning Ordinance unless otherwise stated in this Section. Concentrating solar power systems are prohibited.

6. **Application Materials.** In addition to all submittal requirements of a conditional use application in Section 2.02.9, the application for a US-SES installation shall include the following information on the site plan or in narrative form, supplied by the utility scale installation owner, operator or contractor installing the structures:

    A. The name and address of the applicant, as well as the proposed owners or operators of the project, including the contact information (name, address, telephone and email) of their authorized representatives. The application shall designate the entity who would be the permit holder of the conditional use permit and building permit.

    B. Documentation of the applicant's legal control over the private property necessary for the project, signed by the property owner. Such legal control must vest in the permit holder of the Conditional Use Permit at the time of its issuance.

    C. A certified abstractor listing of the names and mailing addresses of all owners of real property lying within one (1) mile from the subject property shall be provided with the application.

    D. A plat of survey showing the parcels on which the utility-scale solar structures and associated assets will be included in the project area.

E. Legal descriptions of all properties, leased and/or owned, identified to be part of the project area.

F. A Development Plan including:

(1) Project timeline. Project timeline showing how the site will be developed from beginning to end.

(2) Site plan. A professionally prepared site plan drawn to scale shall showing the location and spacing of every solar panel/array, all other facilities to be constructed and associated with the project, and all existing assets located in the project area. Specifically, the site shall include:

(3) North arrow and scale.

(4) Property lines and physical dimensions of the project area.

(5) Setback locations from the property line locations clearly marked for the applicable Zoning District.

(6) Location of the right-of-way.

(7) Location and layout of vehicle parking, loading and queuing areas, street accesses, and driveways.

(8) Easements present on the property including those for utilities.

(9) Total number, location and spacing with dimensions (length, width, & height) of solar panels/arrays and all other supporting structures including the distances from the property lines and other structures.

(10) Location with dimensions (length, width, & height) of existing structures and distances from the property lines and other structures.

(11) Location of underground and/or overhead electric lines.

(12) Location of field tile.

(13) Location of well.

(14) Location of the sanitary infrastructure (e.g. – Septic tank and system).

(15) Location of topography lines (2 foot contours).

(16) Flood hazard area designations.

(17) Such other information as the Zoning Director may require to determine compliance with the provisions of this and other Woodbury County Ordinances.

(18) Structure Plans. Architectural and/or engineer plans and specifications prepared pursuant to the acceptable professional standards.

(19) A map showing the separation distances of the project area from adjacent property lines; occupied residences; unoccupied non-residential buildings; public rights-of-way; public drainage districts; public conservation areas; cemeteries; city limits; airports (public and private); lakes; and permanent water courses.

(20) Setback analysis showing the minimum setback requirements, or any agreed on greater setback provisions, are met by the project.

(21) Grading plan. This plan shall include all proposed changes to the landscape of the site (e.g., clearing, grading, topographic changes, tree removal, etc.). The plan shall include soil erosion and sediment control considerations and storm water management practices as referenced in this Ordinance. A storm water pollution prevention plan (SWPPP) and permits from the Iowa Department of Natural Resources and other applicable government bodies must be submitted.

(22) Geotechnical report. A site-specific geotechnical report shall be submitted by a professional licensed engineer qualified in the field of geotechnical engineering, registered in the State of Iowa, and prepared in accordance with generally accepted geotechnical and environmental engineering practices to assess the potential risk of slope instability or landslide for the proposed development in its existing and post developed state.

(23) Floodplain data. Development within the Special Flood Hazard Area (SFHA) shall comply with federal, state, and local regulations. Proposals for the US-SESOD shall include base flood elevation data for the footprint of the project area. Proposals shall also include the elevation of the proposed development site (natural ground).

(24) Utility plan. Planned location of all utilities, including underground or overhead electric lines.

(25) Landscaping/Screening plan. Planned location of all plants and screening.

(26) Road Impact Analysis. An inventory of the existing road network to be utilized for construction and maintenance of the facility and details on how the project will impact those roads over the life of the project, including during installation and decommissioning.

(27) Interconnection agreement. Provide the interconnection agreement with the utility company.

(28) Operation and Maintenance Plan.

(29) Decommissioning plan.

(30) Agricultural Impact Mitigation Plan.

(31) Vegetative Management Plan.

(32) Wildlife/Biological Habitat Assessment & Mitigation Plan.

(33) Setback analysis showing the minimum setback requirements, or any agreed on greater setback provisions, are met by the project.

(34) Emergency Response Plan.

(35) Any Federal Aviation Administration (FAA), or other federal, state, or local permits or approvals that are necessary for the project. Applicant shall submit a copy of the actual permit, or proof that the permit has been filed with the appropriate agency.

(36) Such additional information as the County may request due to the unique circumstances with the project. Applicants are encouraged to have on-going discussions with the county zoning staff, county engineer, and other associated county departments during the preparation of the application.

7. **Site and Structure Requirements.**

A. **Setbacks.** All US-SES and any upgrades to existing solar energy systems shall observe the following setbacks, to be measured from the edge of the solar panels and equipment (not underground facilities such as cable or fencing):

Protected Area TBD	**Setback Requirement TBD**
Adjacent Property Lines	50 feet* ?TBD
Occupied Residence	1000 feet ?TBD
Unoccupied Non-Residential Building	100 feet ?TBD
Public Road Right-of-Way	50 feet ?TBD
Public Drainage District Right-of-Way	100 feet ?TBD

Public Conservation Area	1 mile ?TBD
Cemetery	600 feet ?TBD
Airports (public and private)	FAA consultation and determination required. ?TBD

* US-SES to be built on more than one parcel and parcels are abutting, a zero (0) side or rear setback shall be permitted to the property line in common with the abutting parcel(s).

(1) Setback Waivers. Property owners and municipalities may require a waiver from the setbacks as established in this Section, except for the following protected areas: airports, cemeteries, public conservation areas, and public road rights-of-way

PROVIDED, a waiver shall not alter any other non-waived setback requirement.

To effectuate such a waiver, the applicant must provide the Zoning Director with a recordable instrument signed by all owner(s)(or the controlling governmental entity) of the affected protected area that specifically identifies the nature and extent of the waiver. All waivers must be reviewed by the Board of Supervisors for compliance with this Section; and if deemed compliant, it shall be recorded in the office of the Woodbury County Recorded by the applicant. No waiver shall be granted for setbacks less than the required minimums for the Zoning District.

B. **Height.** A solar panel shall be no less than two (2) feet (Twenty-Four inches) off the ground. A solar panel shall not exceed twenty (20) feet in height above grade at maximum tilt of the solar panel(s).

C. **Screening.** Project shall provide vegetative screening for all dwellings within 1,000 feet of the project boundaries.

(1) Applicant shall submit a screening plan for each dwelling within 1,000 feet of the project boundaries.

(2) Screening may be waived by the owner of a dwelling. Waiver must be in writing and recorded.

(3) Screening may be waived by the Board of Adjustment upon submission of a viewshed study from the applicant demonstrating that the project is not within the viewshed of the dwelling due to topography, existing vegetation, or other factors. The point of reference used in the viewshed study shall be as close to the dwelling as possible.

(4) Any vegetative screening within the project boundaries shall be maintained throughout the life of the project by the project owner. Any

screening on the dwelling property shall be maintained by the project owner for no less than twelve months.

(5) Deciduous trees shall have a minimum caliper of 1.5" when planted, shall be at least six (6) feet tall within three (3) years of installation, and shall have a minimum mature height of twelve (12) feet.

(6) Screening plans shall use no less than two varieties of tree.

D. **Utility connections.** Reasonable efforts shall be made to place all utility connections from the solar installation underground, depending on appropriate soil conditions, shape and topography of the site, distance to the connection, or other conditions or requirements.

E. **Grading plan.** A grading plan shall be submitted and shall include all proposed changes to the landscape of the site (e.g., clearing, grading, topographic changes, tree removal, etc.).

F. **Glare minimization.** All solar panels must be constructed to minimize glare or reflection onto adjacent properties and adjacent roadways and must not interfere with traffic, including air traffic, or create a safety hazard.

G. **Compliance with local, state and federal regulations. Utility** scale solar installations shall comply with applicable local, state and federal regulations.

H. **Appurtenant structures.** All appurtenant structures shall be subject to bulk and height regulations of structures in the underlying zoning district.

I. **Floodplain considerations.** Utility scale solar installations are considered to be maximum damage potential structures and facilities for purposes of the floodplain district regulations.

J. **Fencing/security.** A security fence must be installed along all exterior sides of the utility scale solar installation and be equipped with a minimum of one gate and locking mechanism on the primary access side. Security fences, gates and warning signs must be maintained in good condition until the utility scale solar installation is dismantled and removed from the site.

K. **Panel Height.** To encourage the establishment of a diverse native seed mix, panels shall be installed a minimum of 24" from the lower edge of the panel at maximum tilt to the ground.

8. **Permitting Process.** The applicant shall go through the following process prior to, during, and after the conditional use permit consideration process.

A. Applicant shall meet with the Zoning Director and submit all required documents.

B. Zoning Director will submit all documents to the Woodbury County Department Approval Committee. Committee shall consist of the Woodbury County Board of Supervisors and the Zoning Director along with the department head or the designated employee from the following departments: Woodbury County Conservation, Woodbury County Engineer/Secondary Roads, Woodbury County Emergency Management, Woodbury County Emergency Services. All identified departments must approve with signature that all requirements pertaining to that department are met prior to moving on in the process.

C. The Woodbury County Board of Supervisors shall review and consider for approval or denial the following agreements and plans prior to final approval by the Board of Adjustment:

(1) Woodbury County Road Use and Repair Agreement

(2) Woodbury County Public Drainage System Protection Agreement

(3) Operation and Maintenance Plan

(4) Decommissioning, Abandonment, Escrow Account, and Site Restoration Plan

(5) Soil Erosion and Sediment Control Plan

(6) Setback analysis showing the minimum setback requirements, or any agreed on greater setback provisions, are met by the project

(7) Emergency Response Plan

Final approval of the US-SES Conditional Use Permit shall not proceed until the Board of Supervisors has approved these agreements and plans and the Chairman and the applicant have executed these agreements.

D. Conditional Use Permit Application will be presented to the Woodbury County Zoning Commission for review and the Woodbury County Board of Adjustment for a public hearing and decision on the Conditional Use Permit as per the requirements in this Ordinance and Section.

E. The use(s) outlined in the application shall be established in accordance with the draft plans considered by the Board of Adjustment within five (5) years of approval. “Commencing Construction” is determined by disturbance of soil at project site, that is not part of a primary farming operation. Any portion of the development plan not completed within five (5) years of approval by the Board of Adjustment shall not be installed until the development has been reauthorized by the Board of Adjustment. Reauthorization shall be subject to the regulations in effect at the time reauthorization is requested.

9. **US-SES Building Permit Requirement.** In addition to the requirements of the Conditional Use Permit, each US-SES project must obtain an approved US-SES Building Permit by the Board of Supervisors prior to the start of any construction. An approved US-SES Building Permit shall be valid for 24 months from the date of its issuance. The Zoning Department will supply a US-SES Building Permit application form to be used by any person or entity seeking to construct a US-SES project. The application shall contain:

    A. The name and address of the application, as well as the proposed owners or operators of the project, including the contact information (name, address, telephone and email) of their authorized representatives. The application shall designate the entity who will be the permit holder of the US-SES Building Permit.

    B. A Final Development Plan for the project, which shall contain aerial images of the entire proposed project area, showing the approximate proposed location of the solar arrays, private access roads, feeder lines, substations and all other components of the project. The Plan shall show property lines and setback distances, as well as all public roads and public drainage district facilities (i.e. – ditches and underground tiles) in the project area. The Plan shall also identify any wind turbines, communication antennae, and airports (including private airstrips) located within five (5) miles of the project area; and all lakes, permanent water courses and Public Conservation Areas within three (3) miles of the project area boundaries. In providing the above information, the Plan shall use a GPS coordinate system that is compatible with the County's geographical information and data systems. The Plan shall also include a mailing address for the owner of each communication antenna identified.

    C. Project details, including the name of the project, the final number of arrays, generating capacity, and all the requirement of the Conditional Use Permit application as included in this Section.

10. **Woodbury County Road Use and Repair Agreement**

    A. **Roads.** Applicants shall adhere to the Woodbury County Road Use and Repair Agreement, and in doing so, shall identify all roads to be used for the purpose of transporting solar components, substation parts, cement, and/or equipment for construction, operation or maintenance of the solar installation and obtain applicable weight and size permits from the impacted road authority prior to construction.

    B. **Existing Road Conditions.** Applicants shall conduct a pre-construction survey, in coordination with the impacted local road authorities to determine existing conditions of roads identified pursuant to Section 5.08.10(B). The survey shall include photographs or video and written documentation of the condition of the identified road facilities. The applicant is responsible for on-going road maintenance and dust control measures identified by the County Engineer during all phases of construction.

11. **Woodbury County Public Drainage System Protection Agreement**

    A. Applicants shall adhere to the Woodbury County Public Drainage System Protection Agreement, and in doing so, shall be responsible for immediate repair of damage to public drainage systems stemming from construction, operation or maintenance of WECS (where required).

12. **Operation and Maintenance Plan.** The applicant shall submit a plan for the operation and maintenance of the solar installation including all necessary services, frequency of service, preventative maintenance measures, and monitoring. The operation and maintenance plan should include at a minimum:

    A. Preventative maintenance practices and schedules for all on-site equipment including but not limited to: inverters, panels, equipment pads, tracking systems, transformers, access entrances, internal roads, gates, fencing, security systems, stormwater management installations.

    B. Annual reporting and verification to county on the status or changes to ongoing service schedule.

    C. Schedule of all other monthly, annual, or semiannual reporting requirements for other submittals including: agricultural impact mitigation plan, decommissioning plan, and vegetation management plan.

    D. Noise. No operating solar energy equipment shall produce noise exceeding any of the following limitations, with the exception of initial construction and routine maintenance. Adequate setbacks and effective noise mitigating equipment shall be used to comply with these limitations:

        (1) An hourly average noise level of fifty-five (55) dBA during the day (between sunrise and sunset), and an hourly average noise level of fifty (50) dBA at night (between sunset and sunrise), as measured at the occupied dwelling of any adjacent property containing an existing residential structure. If the ambient sound pressure level exceeds 55 dBA during the day or 50 dBA at night, the standard shall be the ambient Leq (equivalent continuous sound pressure level) plus 5 dBA.

        (2) A baseline noise evaluation shall be completed by a board certified professional by the Institute of Noise Control Engineering (INCE), or an appropriately licensed Professional Engineer (PE) prior to construction of the proposed solar site.

        (3) A post-construction noise evaluation shall be performed by a third-party board certified professional by the Institute of Noise Control Engineering (INCE), or an appropriately licensed Professional Engineer (PE) following commencement of commercial operation of the project to verify

compliance with the County's standards.

(4) The owner(s) of an adjacent property may voluntarily agree, by written and recorded waiver, to a higher noise level.

E. Issue resolution protocols. Contact information for responsible party to address issues that may arise (damaged equipment causing excessive noise, etc.).

F. Disposal/recycling plan for damaged or obsolete facility equipment or hazardous waste. No storage of inoperable or obsolete equipment shall be allowed to remain on-site. Site operator shall be responsible for the cleanup of debris related to storm damage.

G. Cleaning chemicals and solvents. During operation of the proposed installation, all chemicals or solvents used to clean photovoltaic panels should be low in volatile organic compounds and the operator should use recyclable or biodegradable products to the extent possible. Any on-site storage of chemicals or solvents shall be referenced.

H. Maintenance, repair, or replacement of facility. Maintenance shall include, but not be limited to, painting, structural repairs, and integrity of security measures. Site access shall be maintained to a level acceptable to emergency response officials. Any retrofit, replacement or refurbishment of equipment shall adhere to all applicable local, state and federal requirements.

I. Repowering. Proposals to replace more than twenty five percent (25%) of the panels in a facility within a twelve (12) month period will be required to submit a new conditional use permit application based on the requirements in this ordinance for review and approval. A repowering event does not include replacement of panels in previously approved locations due to weather damage, equipment failure, or a force majeure event.

(1) The plan shall include updated information for some or all or the reports and plans required by this section, as determined necessary by the Zoning Director.

(2) The Board of Adjustment shall review and approve, conditionally approve, or deny the repowering plan as per the requirements of Section 2.02.9 and 5.08.

13. **Decommissioning, Abandonment, Escrow Account, and Site Restoration Plan.**

A. The application must include a decommissioning plan that describes the following:

(1) The anticipated life of the utility scale solar installation.

(2) The anticipated manner in which the project will be decommissioned, including plans to recycle components and dispose of any hazardous materials.

(3) The anticipated site restoration activities.

(4) The estimated decommissioning costs in current dollars.

(5) The method for ensuring that funds will be available for decommissioning and restoration of the site.

B. Decommissioning cost considerations. The applicant shall provide the estimated cost of decommissioning, excluding the salvage value, should be presented from both the solar developer and from an independent third-party engineer, at the recommendation of the Woodbury County Engineer, at the expense of the developer.

(1) Removal of any hazardous materials at the facility, as determined by a Toxic Characteristic Leaching Procedure (TCLP) or other similar test approved by Woodbury County and as described in the facility's Operations and Maintenance Plan. TCLP testing shall be performed prior to any ground disturbance at the project site.

(2) Salvage value shall not be included in the cost estimate.

(3) The estimated decommissioning cost must be updated every 5 years of the project using the same process as the initial decommissioning cost process.

C. Site restoration activities. Restoration activities shall include, but not be limited to, the following:

(1) Removal of all components and equipment.

(2) Soil in project area shall be decompacted and seeded with a cover crop, unless otherwise specified in the approved vegetation plan and/or agricultural impact mitigation plan.

(3) For any part of the energy project on leased property, the plan may incorporate agreements with the landowner regarding leaving access roads, fences, gates or repurposed buildings in place or regarding restoration of agricultural crops or forest resource land. Any use of remaining structures must be in conformance with the regulations in effect at that time.

D. Performance agreement and proof of financial surety. At the time of permitting, the applicant, facility owner, or site operator shall provide a Performance Agreement and accompanying financial surety instrument to cover the cost of decom-

missioning in accordance with the following:

(1) A bond shall be required for 125% of the most recent estimated decommissioning total cost paid for by the project owner/developer. The bond shall remain in place until one (1) year after the last day of decommissioning.

(2) Decommissioning funds shall be maintained in the form of a performance bond, surety bond, bank letter of credit, stable parent company guarantee, or other form of financial assurance as approved by the Woodbury County Board of Supervisors. Any financial document evidencing the maintenance of the decommissioning funds shall include provisions for releasing the funds to the County in the event decommissioning is not completed in a timely manner.

(3) Prior to any ground disturbance, grading or construction activity on the site, twenty-five percent (25%) of total estimated decommissioning costs shall be provided by any of the means listed above. An additional twenty five percent (25%) shall be provided within five (5) years and ten (10) years of the date of initial approval, and the remaining twenty five percent (25%) of the total re-estimated decommissioning costs shall be provided within fifteen (15) years of the date of initial approval. From that point forward, 100% of the total estimated decommissioning costs as determined by the most recent re-estimation shall be maintained in the decommissioning fund until the end of the functional life of the project.

(4) Financial surety shall be maintained for the life of the project.

(5) Proof of recertification of the financial surety instrument must be submitted to the County annually.

(6) Every five (5) years, the facility owner or operator shall retain an independent Licensed Iowa Engineer approved by the County to re-estimate the total cost of decommissioning and attest that the value of the financial surety instrument is appropriate. This report shall be filed with the County and shall incorporate any new industry information learned since the last cost determination.

(7) The required amount of the decommissioning fund shall match the re-estimated cost of decommissioning. Within ninety (90) days of filing the re-estimation report with the County, the facility owner or operator shall cause the fund balance of the financial surety instrument to be adjusted to ensure that it matches the re-estimated decommissioning cost.

E. Escrow Account. At the time of permitting, the applicant, facility owner, or site operator shall provide at least $100,000 per megawatt of project in an escrow account in addition to the total decommissioning funds that shall remain in the ac-

count up until one year after the last day of the decommissioning upon successful completion will be returned to the application/owner/operator. Any interest earned in the account shall belong to the County.

F. Commencement of site decommissioning. Decommissioning of the site shall commence at the time identified in the project decommissioning plan or performance agreement, or when the facility is determined to have been abandoned.

(1) Decommissioning shall be completed in accordance with the approved decommissioning plan.

(2) The landowner or tenant shall notify the Zoning Director both when the project is discontinued and when decommissioning is complete.

(3) Third-party verification, as well as County verification of completed decommissioning will be required before the financial surety may be released.

(4) The facility will be considered abandoned or out of commission in the following circumstances:

1. Upon termination or expiration of the solar farm leases/easements or

2. After one year without production, storage of energy, or use as a backup facility.

3. Exceptions could be made for:

a. A force majeure event that has occurred or is occurring, which will prevent the facility from resuming operation within 12 months.

b. If the facility is in the process of being repowered.

c. The project is pending completion of construction of the facility due to a backlog of cases or service requests in the MISO queue.

d. A situation in which the project owner can provide evidence to the Woodbury County Board of Supervisors, that the facility's period of continuous inactivity is due to circumstances beyond the project owners control and that the facility has not been abandoned.

e. Appeal of the notice of abandonment from the county within a set time of the project owner's receipt of the notice in which the project owner explains the reasons for operation-

al difficulty and provides a timeframe for corrective action that the county deems reasonable.

14. **Soil Erosion and Sediment Control Plan.** A grading plan shall be submitted and shall include all proposed changes to the landscape of the site (e.g., clearing, grading, topographic changes, tree removal, etc.). The plan shall be accompanied with the following documentation:

    A. Erosion and Sediment Control

        (1) The applicant agrees to conduct all roadwork and other site development work in compliance with a national pollutant discharge elimination system (NPDES) permit as required by the state department of natural resources and comply with requirements as detailed by local jurisdictional authorities during the plan submittal. If subject to NPDES requirements, the applicant must submit the permit for review and comment, and an erosion and sediment control plan before beginning construction. The plan must include both general 'best management practices' for temporary erosion and sediment control both during and after construction and permanent drainage and erosion control measures to prevent damage to local roads or adjacent areas and to prevent sediment-laden run-off into waterways.

    B. Stormwater Management Plan

        (1) For the purposes of pollutant removal, stormwater rate and runoff management, flood reduction and associated impacts, the applicant shall provide a detailed analysis of pre- and post-development stormwater runoff rates for review by local jurisdictional authorities.

15. **Emergency Response Plan**

    A. The applicant shall submit an emergency response plan prior to any ground disturbance at the project site detailing the planned response actions that will be taken by the solar facility operator, including any battery energy storage systems in the event of an emergency situation. These actions are intended to minimize health risks to personnel and people in the surrounding community, as well as minimize adverse impacts to the environment.

        (1) The plan shall include, but is not limited to, a detailed narrative of response procedures and the facility representatives responsible for management of the following plausible contingencies that could occur at the facility: natural disaster/severe weather, fire, security incident, capacity/transmission, environmental, chemical, pipeline (if applicable), and medical. It shall include procedures for a site evacuation, designated egress routes and emergency staging areas.

(2) The plan shall include a stand-alone section detailing the emergency response protocols specific to battery energy storage areas (if applicable).

(3) The plan shall be developed in coordination with local first responders, Woodbury County Emergency Management & Woodbury County Public Health personnel.

16. **Future Operators.** Future operators, successors, assignees, or heirs shall agree in writing to accept and to conform to all conditions of approval in the staff report. Prior notice to the County of the intent to sell or transfer ownership shall be done in a timely manner. Such agreement shall be filed with and accepted by the County before the transfer to a new operator, successor, assignees, or heirs shall be effective.

17. **Severability**

A. Should any section or provisions of this Ordinance be declared by the courts to be invalid or unconstitutional, such decision shall not affect the validity of the Ordinance as a whole, or any part thereof other than the part so declared to be invalid or unconstitutional.

18. **Penalty**

A. Any person, persons, firms, partnerships or corporations, whether acting alone or in concert with any other, who violates this Ordinance shall be guilty of a simple misdemeanor as authorized by Iowa Code Section 331.302.

19. **Effective Date**

A. This Ordinance shall be in effect after its final passage, approval, and publication as provided by law.

Concept 3 - Establish A Utility-Scale Solar Energy Systems Overlay District

Create a utility-scale solar energy systems overlay district which includes a protocol with maximum stakeholder involvement. Include both the Woodbury County Zoning Commission and the Board of Supervisors (BoS) in the rezone consideration process where the Commission makes a recommendation to the BoS who determine whether the area is appropriate or not. Establish a set number of acres (cap) from the AP Zoning District that the overlay can serve. Set the criteria to include CSR2 and/or an evaluation scorecard. Another issue that could be addressed at some point is the consideration of utility-scale solar battery systems. Possibly language is included in this draft for informational purposes. Battery systems could be separated into a different debate or included within the current discussions.

Zoning Ordinance Text Amendment Outline – Add the following:

Section 5.09: Utility-Scale Solar Energy Systems Overlay District (US-SESOD)

1. Utility-Scale Solar Energy Systems Overlay District (US-SESOD)
    - A. Purpose and Intent
    - B. Jurisdiction
    - C. Applicability
    - D. Zoning Ordinance Map Amendment (Rezone) Required
    - E. Geographic Location and Area Limitations
    - F. Allowed Uses
    - G. Dimensional Standards
    - H. Supplemental Regulations
    - I. Major Site Plan Required
    - J. Notification Requirements
    - K. Review and Decision-Making Process
    - L. Application Materials
    - M. Site and Structure Requirements
        - (1) Setbacks
            1. Protected Areas
                - (1) Adjacent Property Lines
                - (2) Occupied Residence
                - (3) Unoccupied Non-Residential Building
                - (4) Public Road Right-of-Way
                - (5) Public Drainage District Right-of-Way
                - (6) Public Conservation Area
                - (7) Cemetery
                - (8) City Limits
                - (9) Airports
        - (2) Screening
        - (3) Utility Connections
        - (4) Grading Plan
        - (5) Glare Minimization
        - (6) Compliance with other governments
        - (7) Appurtenant Structures
        - (8) Floodplain Considerations
        - (9) Fencing/Security
        - (10) Panel Height
    - N. Avoidance and Mitigation of Damages to Public Infrastructure
        - (1) Roads
        - (2) Existing Road Conditions
        - (3) Drainage System
    - O. Operation and Maintenance Plan

P. Decommissioning, Abandonment, and Site Restoration Plan
Q. Agricultural Impact Mitigation Plan (AIMP)
R. Vegetation Management Plan
S. Wildlife and Habitat Assessment and Mitigation Plan
T. Emergency Response Plan
U. Future Operators

2. Utility-Scale Battery Energy Storage Systems Overlay District (US-BESSOD)
   A. Purpose and Intent
   B. Jurisdiction
   C. Applicability
   D. Zoning Ordinance Map Amendment (Rezone) Required
   E. Geographic Location and Area Limitations
   F. Allowed Uses
   G. Dimensional Standards
   H. Supplemental Regulations
   I. Notification Requirements
   J. Review and Decision-Making Process
   K. Application Materials
      (1) Major Site Plan
      (2) Additional Information
      (3) Site and Structure Requirements
      (4) Avoidance and Mitigation of Damages to Public Infrastructure
      (5) Operation and Maintenance Plan
      (6) Tile Investigation Report
      (7) Emergency Response Plan
      (8) Decommissioning and Site Restoration Plan
      (9) Future Operators
      (10) Compliance with Local, State, and Federal Regulations

The following pages include the draft ordinance as outlined above.

Section 5.09: Utility-Scale Energy Systems Overlay Districts

1. **Utility-Scale Solar Energy Systems Overlay District (US-SESOD)**

A. **Purpose and Intent.** The Utility-Scale Solar Energy Systems Overlay District (US-SESOD) is intended to be mapped as an overlay of the Agricultural Preservation (AP) Zoning District. The US-SESOD zone is intended to allow for the orderly development of utility-scale energy projects including utility-scale solar energy systems, community solar systems, and agrisolar or agrivoltaic systems. This section establishes an overlay district that serves the following purposes:

(1) To provide a reasonable and thoughtful balance to limited development and use of utility-scale energy systems in the AP Zoning District.

(2) To encourage the continued role of agriculture as the primary economic sector in the unincorporated areas of Woodbury County and the continued preservation of its rural character.

(3) To encourage development that conforms to the vision, goals, and policies in the Woodbury County Development Plan.

(4) To encourage sustainable and energy efficient development and reasonable access to renewable energy not limited to solar.

(5) To maintain or enhance soil heath for future agricultural use after project decommissioning.

B. **Jurisdiction.** This Ordinance is adopted by the Woodbury County Board of Supervisors and governs all lands within the unincorporated areas of Woodbury County, Iowa. This Ordinance and its provisions shall not apply to those properties or projects occurring within the incorporated cities of Woodbury County.

C. **Applicability.** It shall be unlawful to construct, erect, install, alter or locate any US-SES within unincorporated Woodbury County, without first obtaining a Conditional Use Permit from the Woodbury County Board of Adjustment and the associated agreements from the Woodbury County Board of Supervisors or obtaining rezoning to the US-SESOD as outlined in this Ordinance.

(1) No application for a US-SESOD shall be granted without first submitting all required information and documentation, and paying all associated fees to the County.

D. **Zoning Ordinance Map Amendment (Rezone) Required.** In addition to all submittal requirements of Section 2.02.4 of this Ordinance for a Zoning Ordinance Map Amendment, this Section sets the requirements specific to the US-SESOD.

E. **Geographic Location and Area Limitations.** The US-SESOD shall be geographically located in those areas currently zoned Agricultural Preservation (AP). The US-SESOD shall be capped to 9,500 acres over the Agricultural Preservation (AP) Zoning District. No more than 9,500 acres shall be established as the overlay of the Agricultural Preservation (AP) Zoning District. Each granted Zoning Ordinance Map Amendment (rezone) shall reduce the cap by the number of acres approved in each rezone until the original cap is reduced to 0.

F. **Allowed Uses.** The specific land uses allowed as principal allowed, conditional and accessory in the AP Zoning District are allowed in the US-SESOD in addition to the following use(s) which are hereby established as allowed uses:

(1) Utility-Scale Solar Energy Systems (US-SES)

(2) Community Solar Systems

(3) Utility Agrisolar Systems

Concentrating solar power systems are prohibited.

G. **Dimensional Standards.** Section 3.04 includes a table of comparative dimensional standards for all zones. The dimensional standards of the AP Zoning District shall apply to the US-SESOD unless otherwise stated in this Ordinance.

H. **Supplemental regulations.** All pertinent provisions of Article 5, Supplemental Regulations, shall apply to uses and development in the US-SESOD.

I. **Major Site Plan Required.** A major site plan shall be submitted and reviewed prior to the approval of a utility-scale solar installation. The area to be used for the utility scale solar installation shall require rezoning to the US-SESOD.

J. **Notification Requirements.** To assist in providing adequate notice to interested parties, the application for a Zoning Ordinance Map Amendment (Rezone) to the US-SESOD shall:

(1) Within 14 days of filing the rezoning application with the Woodbury County Community and Economic Development Department, mail a notice via first class mail to property owners and tenants within one (1) mile of the subject site explaining the request and identifying the subject property.

(2) Prior to the application being heard at the Planning and Zoning Commission meeting, the applicant shall host a public informational meeting held at a location reasonably accessible to all identified property owners.

(3) Applicants must mail a notice of the public informational meeting via first class mail to property owners and tenants within one (1) mile of the subject site.

(4) Applicants must submit a certified abstractor listing of the names and mailing addresses of all owners of real property lying within one (1) mile from the subject property with their application materials as required in this Ordinance.

K. **Review and Decision-Making Process**

(1) **Evaluation Criteria.** The Planning and Zoning Commission shall base their recommendation and the Board of Supervisors shall base their decision on the requested zoning ordinance map amendment to the US-ESO on the following criteria:

(a) The proposed US-SESOD will be in harmony with the general purpose and intent of this Ordinance and the goals, objectives and standards of the general plan.

(b) The proposed US-SESOD will not have a substantial or undue adverse effect upon adjacent property, the character of the neighborhood, traffic conditions, parking, utility facilities, and other factors affecting public health, safety and general welfare.

(c) The proposed US-SESOD will be located, designed, constructed and operated in such a manner that it will be compatible with the immediate neighborhood and will not interfere with the orderly use, development and improvement of surrounding property.

(d) Essential public facilities and services will adequately serve the proposed US-SESOD.

(e) The proposed US-SESOD will not result in unnecessary adverse effects upon any significant natural, scenic or historic features of the subject property or adjacent properties.

(f) The proposed use or development, at the particular location is necessary or desirable to provide a service or facility that is in the public interest or will contribute to the general welfare of the

neighborhood or community.

(g) All possible efforts, including building and site design, landscaping and screening have been undertaken to minimize any adverse effects of the proposed use or development.

(h) Compatibility and conformance with the policies and plans of other agencies with respect to the subject property;

(i) Consideration of the Corn Suitability Rating 2 (CSR2) of the property;

(j) Consideration of a slope no greater than 10%;

(k) Compatibility with other physical and economic factors affecting or affected by the proposed US-SESOD;

(l) Conformance with Woodbury County Utility Scale Solar Scorecard. All projects shall meet the minimum passing threshold of 100 Points in the Woodbury County Utility Scale Solar Scorecard, as enumerated below:

(i) Planned percent of native species of the entire site's vegetative cover:

1. 25-35%, +12 points
2. 36-50%, +20 points
3. 51-65%, +28 points
4. 66-80%, +36 points
5. >80%, + 40 points
6. <25%, + 0 points

(ii) Planned number of species in entire site's vegetative cover:

1. 5-9 species, +8 points
2. 10-15 species, +12 points
3. 16-19 species, +16 points
4. >20 species, +20 points

(iii)Site Planning and Management

1. Site has approved vegetation management plan, +20 points
2. Site has approved agricultural impact mitigation plan, +20 points

(iv)Percent of site in a medium (65-82) CSR2 area

1. 10-15%, -2 points
2. 26-50%, -3 points

3. 51-75%, -4 points
4. >75%, -5 points

(v) Percent of site in a low (<65) CSR2 area
1. 10-15%, +6 points
2. 26-50%, +8 points
3. 51-75%, +10 points
4. >75%, +12 points

(vi)Number of agrivoltaics practices on site
1. 1 practice, +5 points
2. 2 practices, +10 points
3. >2 practices, + 15 points
4. No practices, 0 points

(vii) Planned percentage of the entire site's vegetative cover than includes flowering plants
1. 10-25%, +4 points
2. 26-50%, +8 points
3. 51-75%, +12 points
4. >75%, +16 points
5. No flowering plants, -15 points

(viii) Planned seasons with at least three blooming species present
1. Spring (April – May), +5 points
2. Summer (June – August), +5 points
3. Fall (September – October), +5 points

(ix)Percentage of site that is graded
1. 0-10%, +20 points
2. 10-30%, +10 points
3. 30-50%, 0 points
4. >50%, -10 points

(x) Increased Setbacks
1. No non-participating dwellings within 300' of project boundaries, 0 Points
2. No non-participating dwellings within 500' of project boundaries, +30 points
3. No non-participating dwellings within 750' of project boundaries, +35 points
4. No non-participating dwellings within 1000' of project boundaries, +40 points

5. No non-participating dwellings within 1250' of project boundaries, +45 points

(xi) Average Solar Height
1. >24", +5 points
2. >26", +10 points
3. >28", +15 points
4. >30", +20 points
5. >32", +25 points

(xii) Exceptional Good Neighbor Practices
1. Good neighbor payments for adjacent non-participating landowners, +10 points
2. Good neighbor payments for tenant farmers displaced by the project, +10 points
3. Agreement to source labor locally, +15 points.

(m) Any other relevant factors.

(2) Planning and Zoning Commission Recommendation. The Planning and Zoning Commission shall review and make a recommendation on the proposed US-SESOD to the zoning district map as follows:

(a) Hearing required. The Planning and Zoning Commission shall conduct a public hearing on the proposed US-SESOD in accordance with this Ordinance.

(b) Notification. Public notification of the Planning and Zoning Commission hearing on the proposed US-SESOD of the official zoning map shall be as required by subsection 2.02-1. B(1). Such notices shall provide information on the time, date, and location of the hearing and a brief description of the proposed change to the US-SESOD.

(c) Time Limit for Recommendation. A recommendation to the Board of Supervisors for approval, approval with conditions or disapproval on the proposal, shall be made within 35 days of the conclusion of the public hearing unless the petitioner consents to an extension of time. If no recommendation is made within 35 days from the conclusion of the public hearing, the issue will be forwarded to the Board of Supervisors with no recommendation.

(3) Board of Supervisors Action. Following receipt of the recommendation of the Planning and Zoning Commission, the Board of Supervisors shall consider and act upon a proposed amendment to the zoning district map

as follows:

(a) Hearing Required. The Board of Supervisors shall conduct a public hearing on the proposed US-SESOD in accordance with the procedures outlined in this Ordinance.

(b) Notification. Public notification of the Board of Supervisors hearing on the proposal shall be as required in this Ordinance.

(c) Decision. Following the public hearing, the Board of Supervisors may:

(i) Defer consideration of the proposal; or

(ii) Reject the proposal; or

(iii) Proceed subject to subsections (iv) and (v) below, to adopt an ordinance approving the amendment to the zoning district map.

(iv) Super majority required. A 60 percent majority of the Board of Supervisors shall be required to adopt the proposed amendment of the US-SESOD if the owners of more than 20 percent of either (a) the area of the subject property or (b) the area or real property lying within 500 feet of the subject property file a written objection prior to the conclusion of the public hearing.

(v) The Board of Supervisors may impose restrictive conditions upon approval of an amendment to the US-SESOD if, before the conclusion of the public hearing, the owner agrees to the conditions in writing.

L. **Application Materials.** In addition to all submittal requirements of a major site plan, the Zoning Ordinance Map Amendment (Rezone) application, and the US-SESOD, the application for a utility scale solar installation shall include the following information on the site plan or in narrative form, supplied by the utility scale solar installation owner, operator or contractor installing the structures:

(1) The name and address of the applicant, as well as the proposed owners or operators of the project, including the contact information (name, address, telephone and email) of their authorized representatives. The application shall designate the entity who would be the permit holder of the conditional use permit and building permit.

(2) Documentation of the applicant's legal control over the private property necessary for the project, signed by the property owner. Such legal control must vest in the permit holder of the Conditional Use Permit at the time of its issuance.

(3) A certified abstractor listing of the names and mailing addresses of all owners of real property lying within one (1) mile from the subject property shall be provided with the application.

(4) A plat of survey showing the parcels on which the utility-scale solar structures and associated assets will be included in the project area.

(5) Legal descriptions of all properties, leased and/or owned, identified to be part of the project area.

(6) A Development Plan including:

(a) Project timeline. Project timeline showing how the site will be developed from beginning to end.

(b) Site plan. A professionally prepared site plan drawn to scale shall showing the location and spacing of every solar panel/array, all other facilities to be constructed and associated with the project, and all existing assets located in the project area. Specifically, the site shall include:

(i) North arrow and scale.

(ii) Property lines and physical dimensions of the project area.

(iii) Setback locations from the property line locations clearly marked for the applicable Zoning District.

(iv) Location of the right-of-way.

(v) Location and layout of vehicle parking, loading and queuing areas, street accesses, and driveways.

(vi) Easements present on the property including those for utilities.

(vii) Total number, location and spacing with dimensions (length, width, & height) of solar panels/arrays and all other supporting structures including the distances from the property lines and other structures.

(viii) Location with dimensions (length, width, & height) of existing structures and distances from the property lines and other structures.

(ix) Location of underground and/or overhead electric lines.

(x) Location of field tile.

(xi) Location of well.

(xii) Location of the sanitary infrastructure (e.g. – Septic tank and system).

(xiii) Location of topography lines (2 foot contours).

(xiv) Flood hazard area designations.

(xv) Such other information as the Zoning Director may require to determine compliance with the provisions of this and other Woodbury County Ordinances.

(c) Structure Plans. Architectural and/or engineer plans and specifications prepared pursuant to the acceptable professional standards.

(d) A map showing the separation distances of the project area from adjacent property lines; occupied residences; unoccupied non-residential buildings; public rights-of-way; public drainage districts; public conservation areas; cemeteries; city limits; airports (public and private); lakes; and permanent water courses.

(e) Setback analysis showing the minimum setback requirements, or any agreed on greater setback provisions, are met by the project.

(f) Grading plan. This plan shall include all proposed changes to the landscape of the site (e.g., clearing, grading, topographic changes, tree removal, etc.). The plan shall include soil erosion and sediment control considerations and storm water management practices as referenced in this Ordinance. A storm water pollution prevention plan (SWPPP) and permits from the Iowa Department of Natural Resources and other applicable government bodies must be submitted.

(g) Geotechnical report. A site-specific geotechnical report shall be submitted by a professional licensed engineer qualified in the field of geotechnical engineering, registered in the State of Iowa, and

prepared in accordance with generally accepted geotechnical and environmental engineering practices to assess the potential risk of slope instability or landslide for the proposed development in its existing and post developed state.

(h) Floodplain data. Development within the Special Flood Hazard Area (SFHA) shall comply with federal, state, and local regulations. Proposals for the US-SESOD shall include base flood elevation data for the footprint of the project area. Proposals shall also include the elevation of the proposed development site (natural ground).

(i) Utility plan. Planned location of all utilities, including underground or overhead electric lines.

(j) Landscaping/Screening plan. Planned location of all plants and screening.

(k) Road Impact Analysis. An inventory of the existing road network to be utilized for construction and maintenance of the facility and details on how the project will impact those roads over the life of the project, including during installation and decommissioning.

(l) Interconnection agreement. Provide the interconnection agreement with the utility company.

(m) Operation and Maintenance Plan.

(n) Decommissioning plan.

(o) Agricultural Impact Mitigation Plan.

(p) Vegetative Management Plan.

(q) Wildlife/Biological Habitat Assessment & Mitigation Plan.

(r) Setback analysis showing the minimum setback requirements, or any agreed on greater setback provisions, are met by the project.

(s) Emergency Response Plan.

(t) Any Federal Aviation Administration (FAA), or other federal, state, or local permits or approvals that are necessary for the project. Applicant shall submit a copy of the actual permit, or proof that the permit has been filed with the appropriate agency.

(u) Such additional information as the County may request due to the unique circumstances with the project.

(v) Any other information necessary to describe the intended development plan. Applicants are encouraged to have on-going discussions with the county zoning staff, county engineer, and other associated county departments during the preparation of the application.

M. **Site and Structure Requirements.**

(1) Setbacks. Setbacks for all structures (including solar arrays) must adhere to the minimum principal setback standards for the zoning district where the project is located in addition to dwelling and stream corridor setbacks unless otherwise specified in this Ordinance.

Separation Distances (Setbacks). All US-SES, accessory structures and any upgrades to existing solar energy systems shall observe the following setbacks, to be measured from the edge of the solar panels and equipment (not underground facilities such as cable or fencing):

Protected Area TBD	**Setback Requirement TBD**
Adjacent Property Lines	50 feet* **TBD?**
Occupied Residence	1000 feet **TBD?**
Unoccupied Non-Residential Building	100 feet **TBD?**
Public Road Right-of-Way	100 feet **TBD?**
Public Drainage District Right-of-Way	100 feet **TBD?**
Public Conservation Area	1 mile **TBD?**
Cemetery	600 feet **TBD?**
City Limits	2 miles **TBD?**
Airports (public and private)	FAA consultation and determination required. **TBD?**

* US-SES to be built on more than one parcel and parcels are abutting, a zero (0) side or rear setback shall be permitted to the property line in common with the abutting parcel(s).

Setback Waivers. Property owners and municipalities may require a waiver from the setbacks as established in this Section, except for the following protected areas: airports, cemeteries, public conservation areas, and public road rights-of-way.

PROVIDED, a waiver shall not alter any other non-waived setback requirement.

To effectuate such a waiver, the applicant must provide the Zoning Director with a recordable instrument signed by all owner(s)(or the controlling governmental entity) of the affected protected area that specifically identifies the nature and extent of the waiver. All waivers must be reviewed by the Board of Supervisors for compliance with this Section; and if deemed compliant, it shall be recorded in the office of the Woodbury County Recorder by the applicant. No waiver shall be granted for setbacks less than the required minimums for the Zoning District.

(a) Solar panels, structures, and electrical equipment, excluding fences and power lines for interconnection, shall be kept a minimum of one thousand (1000) feet from dwellings, unless the property owner waives the setback. Waiver must be in writing and recorded.

(b) Solar panels, structures, and electrical equipment, excluding fences and power lines for interconnection, shall be kept a minimum of one hundred and twenty (120) feet from the centerline of all stream corridors and open ditches containing perennial flow throughout the majority of the growing season.

(2) Screening. Project shall provide vegetative screening for all dwellings within 1,000 feet of the project boundaries.

(a) Applicant shall submit a screening plan for each dwelling within 1,000 feet of the project boundaries.

(b) Screening may be waived by the owner of a dwelling. Waiver must be in writing and recorded.

(c) Screening may be waived by the Zoning Administrator upon submission of a viewshed study from the applicant demonstrating that the project is not within the viewshed of the dwelling due to topography, existing vegetation, or other factors. The point of reference used in the viewshed study shall be as close to the dwelling as possible.

(d) Any vegetative screening within the project boundaries shall be maintained throughout the life of the project by the project owner. Any screening on the dwelling property shall be maintained by the project owner for no less than twelve months.

(e) Deciduous trees shall have a minimum caliper of 1.5” when planted, shall be at least six (6) feet tall within three (3) years of installation, and shall have a minimum mature height of twelve

(12) feet.

(f) Screening plans shall use no less than two varieties of tree.

(3) Utility connections. Reasonable efforts shall be made to place all utility connections from the solar installation underground, depending on appropriate soil conditions, shape and topography of the site, distance to the connection, or other conditions or requirements.

(4) Grading plan. A grading plan shall be submitted and shall include all proposed changes to the landscape of the site (e.g., clearing, grading, topographic changes, tree removal, etc.).

(5) Glare minimization. All solar panels must be constructed to minimize glare or reflection onto adjacent properties and adjacent roadways and must not interfere with traffic, including air traffic, or create a safety hazard.

(6) Compliance with local, state and federal regulations. Utility scale solar installations shall comply with applicable local, state and federal regulations.

(7) Appurtenant structures. All appurtenant structures shall be subject to bulk and height regulations of structures in the underlying zoning district.

(8) Floodplain considerations. Utility scale solar installations are considered to be maximum damage potential structures and facilities for purposes of the floodplain district regulations.

(9) Fencing/security. A security fence must be installed along all exterior sides of the utility scale solar installation and be equipped with a minimum of one gate and locking mechanism on the primary access side. Security fences, gates and warning signs must be maintained in good condition until the utility scale solar installation is dismantled and removed from the site.

(10) Panel Height. To encourage the establishment of a diverse native seed mix, panels shall be installed a minimum of 24” from the lower edge of the panel at maximum tilt to the ground.

N. Avoidance and mitigation of damages to public infrastructure.

(1) Roads. Applicants shall adhere to the Woodbury County Road Use and Repair Agreement, and in doing so, shall identify all roads to be used for the purpose of transporting batteries, parts, cement, and/or equipment for

construction, operation or maintenance of the US-BESSOD and obtain applicable weight and size permits from the impacted road authorities prior to construction.

(2) Existing road conditions. Applicant shall conduct a pre-construction survey, in coordination with the impacted local road authorities to determined existing conditions of roads identified pursuant to Section 5.09.1 L(1). The survey shall include photographs or video and written documentation of the condition of the identified road facilities. The applicant is responsible for on-going road maintenance and dust control measures identified by the Woodbury County Engineer during all phase of construction.

(3) Drainage system. The applicant shall be responsible repair of damage to public drainage systems stemming from construction, operation or maintenance of the solar installation. Applicant shall acknowledge any damage to public drainage systems and the responsibility for repair in a timely manner within 72 hours of damage discovery.

O. **Operation and maintenance plan.** The applicant shall submit a plan for the operation and maintenance of the solar installation including all necessary services, frequency of service, preventative maintenance measures, and monitoring. The operation and maintenance plan should include at a minimum:

(1) Preventative maintenance practices and schedules for all on-site equipment including but not limited to: inverters, panels, equipment pads, tracking systems, transformers, access entrances, internal roads, gates, fencing, security systems, stormwater management installations.

(2) Annual reporting and verification to county on the status or changes to ongoing service schedule.

(3) Schedule of all other monthly, annual, or semiannual reporting requirements for other submittals including: agricultural impact mitigation plan, decommissioning plan, and vegetation management plan.

(4) Noise. No operating solar energy equipment shall produce noise exceeding any of the following limitations, with the exception of initial construction and routine maintenance. Adequate setbacks and effective noise mitigating equipment shall be used to comply with these limitations:

(a) An hourly average noise level of fifty-five (55) dBA during the day (between sunrise and sunset), and an hourly average noise level of fifty (50) dBA at night (between sunset and sunrise), as measured

at the occupied dwelling of any adjacent property containing an existing residential structure. If the ambient sound pressure level exceeds 55 dBA during the day or 50 dBA at night, the standard shall be the ambient Leq (equivalent continuous sound pressure level) plus 5 dBA.

(b) A baseline noise evaluation shall be completed by a board certified professional by the Institute of Noise Control Engineering (INCE), or an appropriately licensed Professional Engineer (PE) prior to construction of the proposed solar site.

(c) A post-construction noise evaluation shall be performed by a third-party board certified professional by the Institute of Noise Control Engineering (INCE), or an appropriately licensed Professional Engineer (PE) following commencement of commercial operation of the project to verify compliance with the County's standards.

(d) The owner(s) of an adjacent property may voluntarily agree, by written and recorded waiver, to a higher noise level.

(5) Issue resolution protocols. Contact information for responsible party to address issues that may arise (damaged equipment causing excessive noise, etc.).

(6) Disposal/recycling plan for damaged or obsolete facility equipment or hazardous waste. No storage of inoperable or obsolete equipment shall be allowed to remain on-site. Site operator shall be responsible for the cleanup of debris related to storm damage.

(7) Cleaning chemicals and solvents. During operation of the proposed installation, all chemicals or solvents used to clean photovoltaic panels should be low in volatile organic compounds and the operator should use recyclable or biodegradable products to the extent possible. Any on-site storage of chemicals or solvents shall be referenced.

(8) Maintenance, repair, or replacement of facility. Maintenance shall include, but not be limited to, painting, structural repairs, and integrity of security measures. Site access shall be maintained to a level acceptable to emergency response officials. Any retrofit, replacement or refurbishment of equipment shall adhere to all applicable local, state and federal requirements.

(9) Repowering. At the discretion of the zoning administrator, proposals to replace more than twenty five percent (25%) of the panels in a facility within a twelve (12) month period may be required to submit a plan for review and approval. A repowering event does not include replacement

of panels in previously approved locations due to weather damage, equipment failure, or a force majeure event.

(a) The plan shall include updated information for some or all or the reports and plans required by this section, as determined necessary by the zoning administrator.

(b) The zoning director shall review and approve, conditionally approve, or deny the repowering plan.

P. Decommissioning, abandonment, and site restoration plan.

(1) The application must include a decommissioning plan that describes the following:

(a) The anticipated life of the utility scale solar installation.

(b) The anticipated manner in which the project will be decommissioned, including plans to recycle components and dispose of any hazardous materials.

(c) The anticipated site restoration activities.

(d) The estimated decommissioning costs in current dollars.

(e) The method for ensuring that funds will be available for decommissioning and restoration of the site.

(2) Decommissioning cost considerations. The applicant shall provide the basis for estimates of net costs for decommissioning the site. Site restoration activities as described later in this section.

(a) Removal of any hazardous materials at the facility, as determined by a Toxic Characteristic Leaching Procedure (TCLP) or other similar test approved by Woodbury County and as described in the facility's Operations and Maintenance Plan. TCLP testing shall be performed prior to any ground disturbance at the project site.

(b) Salvage value shall not be included in the cost estimate.

(c) The cost basis shall include a mechanism for calculating adjusted costs over the life of the project.

(3) Site restoration activities. Restoration activities shall include, but not be limited to, the following:

(a) Removal of all components and equipment.

(b) Soil in project area shall be decompacted and seeded with a cover crop, unless otherwise specified in the approved vegetation plan and/or agricultural impact mitigation plan.

(c) For any part of the energy project on leased property, the plan may incorporate agreements with the landowner regarding leaving access roads, fences, gates or repurposed buildings in place or regarding restoration of agricultural crops or forest resource land. Any use of remaining structures must be in conformance with the regulations in effect at that time.

(d) Performance agreement and proof of financial surety. At the time of permitting, the applicant, facility owner, or site operator shall provide a Performance Agreement and accompanying financial surety instrument to cover the cost of decommissioning in accordance with the following:

(i) Decommissioning funds shall be an amount equal to the total costs for decommissioning the site, plus a ten percent (10%) contingency.

(ii) Decommissioning funds shall be maintained in the form of a performance bond, surety bond, bank letter of credit, stable parent company guarantee, or other form of financial assurance as approved by the County. Any financial document evidencing the maintenance of the decommissioning funds shall include provisions for releasing the funds to the County in the event decommissioning is not completed in a timely manner.

(iii)Prior to any ground disturbance, grading or construction activity on the site, twenty-five percent (25%) of total estimated decommissioning costs shall be provided by any of the means listed above. An additional twenty five percent (25%) shall be provided within five (5) years and ten (10) years of the date of initial approval, and the remaining twenty five percent (25%) of the total reestimated decommissioning costs shall be provided within fifteen (15) years of the date of initial approval. From that point forward, 100% of the total estimated decommissioning costs as determined by the most recent reestimation shall be maintained in the decommissioning fund until the end of the functional life of the project.

(iv) Financial surety shall be maintained for the life of the project.

(v) Proof of recertification of the financial surety instrument must be submitted to the County annually.

(vi) Every five (5) years, the facility owner or operator shall retain an independent Licensed Iowa Engineer approved by the County to re-estimate the total cost of decommissioning and attest that the value of the financial surety instrument is appropriate. This report shall be filed with the County and shall incorporate any new industry information learned since the last cost determination.

(vii) The required amount of the decommissioning fund shall match the re-estimated cost of decommissioning. Within ninety (90) days of filing the reestimation report with the County, the facility owner or operator shall cause the fund balance of the financial surety instrument to be adjusted to ensure that it matches the re-estimated decommissioning cost.

(e) Escrow Account. At the time of permitting, the applicant, facility owner, or site operator shall provide at least $100,000 per megawatt of project in an escrow account in addition to the total decommissioning funds that shall remain in the account up until one year after the last day of the decommissioning upon successful completion will be returned to the application/owner/operator. Any interest earned in the account shall belong to the County.

(f) Commencement of site decommissioning. Decommissioning of the site shall commence at the time identified in the project decommissioning plan or performance agreement, or when the facility is determined to have been abandoned.

(i) Decommissioning shall be completed in accordance with the approved decommissioning plan.

(ii) The landowner or tenant shall notify the Zoning Administrator both when the project is discontinued and when decommissioning is complete.

(iii) Third-party verification, as well as County verification of completed decommissioning will be required before the financial surety may be released.

(iv) The facility will be considered abandoned in the following circumstances:

1. Upon termination or expiration of the solar farm leases/easements or

2. After one year without production, storage of energy, or use as a backup facility.

3. Exceptions could be made for:

   (a) A force majeure event that has occurred or is occurring, which will prevent the facility from resuming operation within 12 months.

   (b) If the facility is in the process of being repowered.

   (c) The project is pending completion of construction of the facility due to a backlog of cases or service requests in the MISO queue.

   (d) A situation in which the project owner can provide evidence to the county board of supervisors, that the facility's period of continuous inactivity is due to circumstances beyond the project owner's control and that the facility has not been abandoned.

   (e) Appeal of the notice of abandonment from the county within a set time of the project owner's receipt of the notice in which the project owner explains the reasons for operational difficulty and provides a timeframe for corrective action that the county deems reasonable.

Q. Agricultural Impact Mitigation Plan (AIMP)

(1) The applicant shall submit an AIMP detailing strategies to avoid or mitigate detrimental impact to agricultural land resulting from the construction, operation, maintenance and/or decommissioning of the solar project. The primary goal of the AIMP is long-term protection of soil health to ensure the project area can be used for productive agricultural use both during, and at the end of the functional life of the

project.

(2) The AIMP shall include, but not be limited to, the following information:

(a) Project overview. Provide general background, list of project components, and construction timeline.

(b) Environmental/Agricultural Monitoring

(i) On-site monitoring to be conducted by third party environmental/agricultural professional during construction.

(ii) Report of findings to be submitted to county every 30 days during construction.

(iii)Responsible for verification and monitoring during and post construction of:

1. Soil segregation, stockpiling, backfilling, respreading methods
2. Trenching, & foundation installation
3. Compaction avoidance and decompaction practices
4. Grading Plan adherence
5. Wet weather conditions planning
6. Drain tile system
7. Erosion and sediment control measures
8. Installation and effectiveness of stormwater management structures
9. Invasive species prevention and mitigation

(c) Best Management Practices During Construction and Operation

(i) Best Management Practices (BMPs) shall be included that demonstrate Low Impact Development (LID) measures the applicant will take during construction to minimize

negative impact to long-term soil health and future agricultural viability. BMPs should preserve topsoil, reduce or eliminate compacted soils, test and design the project with regard for protection of existing soil profile below 12 inches, include robust long-term soil health monitoring protocols, invasive species prevention, and establish and maintain native, deep-rooted vegetative ground cover.

(d) Subsurface Drain Tile Survey, Avoidance & Mitigation Plan

(i) Documentation and mapping of existing drain tile systems within the entire project area including elevation, location, and size of tile inlet and outlets

(ii) Plan for relocation, removal or restoration of tile damaged during construction

(iii) Description of long-term maintenance and plan for ongoing review of existing and newly constructed tile systems (if applicable).

(e) Pre-construction Soil Health Analysis and Long-Term Soil Monitoring Plan

(i) Prior to construction, a soil analysis shall be conducted and assessed by a third-party professional to establish baseline soil health.

(ii) Required sampling protocol:

1. Pre-Construction and Post- Construction Baseline Surveys

(a) One sampling location per zone shall be created based on random sample method or soil type, with each zone not to exceed 20 acres.

(b) Two samples shall be collected from each sampling location (for example, the plow layer from 0 to 8 inches and subsoil from 8 to 16 inches).

(c) Each sample shall consist of a minimum of 10 subsamples collected from disparate

locations surrounding the sample location in each zone Samples shall be analyzed for soil health and soil chemical parameters during the same seasonal period and at the same sampling locations once prior to construction and once postconstruction to establish a baseline.

(d) In-field assessment resource evaluations shall be performed in conjunction with soil health testing for the purpose of tracking compaction, soil organic matter and aggregate stability indicators.

(e) Soil sample analyses shall utilize a laboratory testing program that includes standard chemical analysis for Phosphorous, Potassium, Calcium, Sulfur, pH, Cation Exchange Capacity (CEC), base saturation, and organic matter, and soil health analyses for soil respiration, wet aggregate stability, and active (permanganate oxidizable) carbon.

2. Year 5 through end of project life

(a) Same sampling protocol as above except frequency shall occur once every five years.

(b) Third-party evaluation and report on soil condition changes against baseline data throughout the lease period. Frequency of reporting shall match sampling protocol.

(f) Soil Protection and Compaction Avoidance

(i) Plan should include, at a minimum, a narrative or plan for LID construction practices and methods to be used during each stage of construction for protecting and preserving topsoil. Practices and methods should address, at a minimum, topsoil removal, segregation, stockpiling, replacement during backfill, and respreading, grading minimization, compaction prevention, wet weather conditions, and postconstruction decompaction.

1. All project areas in agricultural production at the time of permit issuance, shall be seeded with temporary cover within three months of commencement of pre-construction/civil activities (mobilization) if disturbance is not intended to occur within two months.

(g) Erosion and Sediment Control

(i) The applicant agrees to conduct all roadwork and other site development work in compliance with a national pollutant discharge elimination system (NPDES) permit as required by the state department of natural resources and comply with requirements as detailed by jurisdictional authorities during the plan submittal. If subject to NPDES requirements, the applicant must submit the permit for review and comment, and an erosion and sediment control plan before beginning construction. The plan must include both general "best management practices" for temporary erosion and sediment control both during and after construction and permanent drainage and erosion control measures to prevent damage to local roads or adjacent areas and to prevent sediment-laden run-off into waterways.

(h) Stormwater Management Plan

(i) For the purposes of pollutant removal, stormwater rate and runoff management, flood reduction and associated impacts, the applicant shall provide a detailed analysis of pre- and post-development stormwater runoff rates for review by local jurisdictional authorities. Such review may incorporate infiltration components consistent with practices as detailed in the state stormwater management manual.

R. **Vegetation Management Plan.** The application must include a vegetation management plan with the primary function of promoting long term soil health, through plant stand persistence, plant diversity, and use of deep-rooted perennials by utilizing recognized establishment and maintenance practices for native vegetation. The Vegetation Management Plan shall include:

(1) A description of the site characteristics including project location, size of the project in terms of acres, existing vegetation, current land uses, soils on and adjacent to the site using, topography with and adjacent to project site using 2' contours, and a description of the general hydrologic conditions of the site and adjoining areas noting any significant features

(public waters, water bodies, drainage ways, wetlands, farmed wetlands, restorable wetlands, sinks, hydric soils, etc.).

(2) A description of the management areas with maps including but not limited to the following: areas under the arrays, perimeter plantings, and any other designated management areas within or adjacent to the site.

(3) A description of the management objectives for each management area including:

(a) Short-term management objectives for each area (seed establishment 0-5 years). The emphasis will be on management strategies used during the vegetation establishment phase such as: cover crop and soil stabilization, weed and non-native species management, targeted re-seeding, etc.

(b) Long term management objectives for each area (5 years after establishment to end of permit) such as: target goals such as the percentage of the site covered by native species, development of a monitoring plan, and management strategies such as supplemental seeding.

(4) Establishment and management practices including:

(a) Site preparation (schedules/sequence of planned construction, planting, and management activities).

(b) Eliminating soil compaction prior to seeding.

(c) Seedbed preparation.

(d) Invasive species prevention.

(e) Cover crop planting and temporary covers.

(f) Establishment methods in years 0-5.

(g) Management methods in year 6 and beyond.

(h) Grazing practices (if applicable).

(5) Seeding and planting practices including:

(a) Seed mixes (names, ounces/acre in Pure Live Seed), seeds per sq ft., % of mix based on seeds per sq ft). A complete list of seeds shall be provided as well as a map denoting the seed mix areas.

Prior to seed procurement, seed origin shall be added to the list of seeds.

(i) At a minimum, ground under and around the solar array shall be planted with a perennial vegetated ground cover that includes a mix of perennial grasses and wildflowers that will preferably result in short stature prairie with a diversity of forbs and flowering plants that bloom throughout the growing seasons. Perennial vegetation (grasses and forbs) used shall be native on a regional basis (preferably to Iowa) but where appropriate to the ground cover plan goals, may also include other naturalized and non-invasive species which limit noxious and invasive species encroachment, provide habitat for pollinators and wildlife, build soil health, and/or provide other ecosystem services (i.e. clovers). Non-native species shall be limited to the following: legumes, not exceed 20 seeds per square foot and grasses, not to exceed 15 seeds per square foot.

(ii) Wherever native vegetation is discussed, including in the Woodbury County Utility Scale Solar Scorecard, native vegetation shall be defined as seed mix plan that meet criteria as described within the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Iowa 327 Conservation Cover Standard and supporting reference documents developed through the use of the Iowa NRCS Native Seed Calculator, or any other similar standard as approved.

(iii) Cover Crop and other short-term seeding methods shall be utilized for the purpose of site stabilization for all areas in agricultural production within three months of commencement of pre-construction/civil activities (mobilization) if planned disturbance is not intended to occur within 2 months of the time of permit issuance, preventing growth of noxious and invasive species, and aide in long term vegetative establishment. In addition to seed criteria specified above cover crop choice(s) shall meet or exceed 80% by volume of Pure Live Seed at time of use, be seeding date and zone appropriate for the selected species and be based on minimum thresholds as described within the USDA - NRCS Iowa 340 Cover Crop Standard, or other similar standard as approved.

(b) If visual screening is part of the project, provide a complete list of plantings as well as the size of the plantings.

(c) Summarize steps taken to ensure that any pesticides used at or near the site will not drift and impact native vegetation.

(d) Describe how planting will be conducted in each area (array, perimeter, detention area, etc.) including the sequence of planting, time of planting, and planting method.

(6) Vegetation monitoring and adaptive management practices to be used on site including:

(a) Construction monitoring. For compliance with the Agricultural Impact Mitigation Plan, a third-party qualified site monitor shall be required to be present on site during construction to ensure soil health is maintained.

(b) Vegetation establishment and monitoring plan. A qualified third-party independent monitor shall complete vegetation monitoring activities and provide reports to Woodbury County staff. Reports shall be submitted annually during the establishment phase (first 5 years) and every three years afterwards. Reports shall include: summary of site conditions and management activities, description of adaptive management actions implemented, description of any management challenges, an evaluation on whether the project is meeting stated management objectives.

(c) Adaptive management practices. Adaptive management approach shall use the results of the annual report and other site visits to determine measures necessary to achieve the stated management objectives.

S. Wildlife and Habitat Assessment and Mitigation Plan

(1) The applicant shall submit a Wildlife and Habitat Assessment and Mitigation Plan detailing strategies to avoid, or mitigate for, detrimental impact to existing habitat and wildlife resulting from the construction, operation, maintenance and/or decommissioning of the solar project. Consideration of established migration patterns, emphasis on habitat fragmentation avoidance, and allowance for limited wildlife movement into and through the array zones via wildlife friendly fencing design shall be considered.

(2) Fenced array areas are limited to 160 acres before establishment of a wildlife corridor shall be required.

(3) Solar panels, structures, electrical equipment, and fencing, excluding power lines for interconnection, through established drainageways. Drainageways shall be defined as stream corridors and open ditches containing perennial flow throughout the majority of the growing season.

T. Emergency Response Plan.

(1) The applicant shall submit an emergency response plan prior to any ground disturbance at the project site detailing the planned response actions that will be taken by the solar facility operator, including any battery energy storage systems in the event of an emergency situation. These actions are intended to minimize health risks to personnel and people in the surrounding community, as well as minimize adverse impacts to the environment.

(a) The plan shall include, but is not limited to, a detailed narrative of response procedures and the facility representatives responsible for management of the following plausible contingencies that could occur at the facility: natural disaster/severe weather, fire, security incident, capacity/transmission, environmental, chemical, pipeline (if applicable), and medical. It shall include procedures for a site evacuation, designated egress routes and emergency staging areas.

(b) The plan shall include a stand-alone section detailing the emergency response protocols specific to battery energy storage areas (if applicable).

(c) The plan shall be developed in coordination with local first responders, Woodbury County Emergency Management & Woodbury County Public Health personnel.

U. **Future Operators.** Future operators, successors, assignees, or heirs shall agree in writing to accept and to conform to all conditions of approval in the staff report. Prior notice to the County of the intent to sell or transfer ownership shall be done in a timely manner. Such agreement shall be filed with and accepted by the County before the transfer to a new operator, successor, assignees, or heirs shall be effective.

2. Utility-Scale Battery Energy Storage Systems Overlay District (US-BESSOD)

A. **Purpose and Intent.** The Utility-Scale Battery Energy Storage Systems Overlay District (US-BESSOD) is intended to be mapped as an overlay of the Agricultural

Preservation (AP) Zoning District. The US-BESSOD zone is intended to allow for the orderly development of utility-scale battery energy storage projects. This section establishes an overlay district that serves the following purposes:

(1) To provide a reasonable and thoughtful balance to limited development and use of utility-scale battery energy storage systems in the AP Zoning District.

(2) To encourage the continued role of agriculture as the primary economic sector in the unincorporated areas of Woodbury County and the continued preservation of its rural character.

(3) To encourage development that conforms to the vision, goals, and policies in the Woodbury County Development plan.

(4) To encourage sustainable and energy efficient development and reasonable access to renewable energy.

B. **Jurisdiction.** This Ordinance is adopted by the Woodbury County Board of Supervisors and governs all lands within the unincorporated areas of Woodbury County, Iowa. This Ordinance and its provisions shall not apply to those properties or projects occurring within the incorporated cities of Woodbury County.

C. **Applicability.** It shall be unlawful to construct, erect, install, alter or locate any US-SESOD within unincorporated Woodbury County, without first obtaining a Conditional Use Permit from the Woodbury County Board of Adjustment and the associated agreements from the Woodbury County Board of Supervisors or obtaining a Zoning Ordinance Map Amendment (Rezone) to the US-SESOD as outlined in this Ordinance.

(1) No application for a US-SESOD shall be granted without first submitting all required information and documentation, and paying all associated fees to the County.

D. **Zoning Ordinance Map Amendment (Rezone) Required.** In addition to all submittal requirements of Section 2.02.4 of this Ordinance for a Zoning Ordinance Map Amendment, this Section sets the requirements specific to the US-BESSOD.

E. **Geographic Location and Area Limitations.** The US-BESSOD shall be geographically located in those areas currently zoned Agricultural Preservation (AP). The US-BESSOD shall be capped to 9,500 acres over the Agricultural Preservation (AP) Zoning District. No more than 9,500 acres shall be established as the overlay of the Agricultural Preservation (AP) Zoning District. Each granted Zoning Ordinance Map Amendment (rezone) shall reduce the cap by the

number of acres approved in each rezone until the original cap is reduced to 0.

F. **Allowed Uses.** The specific land uses allowed as principal allowed, conditional and accessory in the AP Zoning District are allowed in the US-BESSOD in addition to the following use(s) which are hereby established as allowed uses:

(1) Utility-Scale Battery Energy Storage Systems Overlay District (US-BESSOD)

G. **Dimensional Standards.** Section 3.04 includes a table of comparative dimensional standards for all zones. The dimensional standards of the AP Zoning District shall apply to the US-BESSOD unless otherwise stated in this Ordinance.

H. **Supplemental regulations.** All pertinent provisions of Article 5, Supplemental Regulations, shall apply to uses and development in the US-BESSOD.

I. **Notification Requirements.** To assist in providing adequate notice to interested parties, the application for a Zoning Ordinance Map Amendment (Rezone) to the US-BESSOD shall:

(1) Within 14 days of filing the rezoning application with the Woodbury County Community and Economic Development Department, mail a notice via first class mail to property owners and tenants within one (1) mile of the subject site explaining the request and identifying the subject property.

(2) Prior to the application being heard at the Planning and Zoning Commission meeting, the applicant shall host a public informational meeting held at a location reasonably accessible to all identified property owners.

(3) Applicants must mail a notice of the public informational meeting via first class mail to property owners and tenants within one (1) mile of the subject site.

(4) Applicants must submit a certified abstractor listing of the names and mailing addresses of all owners of real property lying within one (1) mile from the subject property with their application materials as required in this Ordinance.

J. **Review and Decision-Making Process**

(1) **Evaluation Criteria.** The Planning and Zoning Commission shall base their recommendation and the Board of Supervisors shall base their decision on the requested zoning ordinance map amendment to the US-

ESO on the following criteria:

(a) The proposed US-BESSOD will be in harmony with the general purpose and intent of this Ordinance and the goals, objectives and standards of the general plan.

(b) The proposed US-BESSOD will not have a substantial or undue adverse effect upon adjacent property, the character of the neighborhood, traffic conditions, parking, utility facilities, and other factors affecting public health, safety and general welfare.

(c) The proposed US-BESSOD will be located, designed, constructed and operated in such a manner that it will be compatible with the immediate neighborhood and will not interfere with the orderly use, development and improvement of surrounding property.

(d) Essential public facilities and services will adequately serve the proposed US-BESSOD.

(e) The proposed US-BESSOD will not result in unnecessary adverse effects upon any significant natural, scenic or historic features of the subject property or adjacent properties.

(f) The proposed use or development, at the particular location is necessary or desirable to provide a service or facility that is in the public interest or will contribute to the general welfare of the neighborhood or community.

(g) All possible efforts, including building and site design, landscaping and screening have been undertaken to minimize any adverse effects of the proposed use or development.

(h) Compatibility and conformance with the policies and plans of other agencies with respect to the subject property;

(i) Consideration of the Corn Suitability Rating 2 (CSR2) of the property;

(j) Consideration of a slope no greater than 10%;

(k) Compatibility with other physical and economic factors affecting or affected by the proposed US-BESSOD;

(l) Conformance with Woodbury County Utility Scale Solar Scorecard. All projects shall meet the minimum passing threshold

of 100 Points in the Woodbury County Utility Scale Solar Scorecard, as enumerated below:

(i) Planned percent of native species of the entire site's vegetative cover:
1. 25-35%, +12 points
2. 36-50%, +20 points
3. 51-65%, +28 points
4. 66-80%, +36 points
5. >80%, + 40 points
6. <25%, + 0 points

(ii) Planned number of species in entire site's vegetative cover:
1. 5-9 species, +8 points
2. 10-15 species, +12 points
3. 16-19 species, +16 points
4. >20 species, +20 points

(iii)Site Planning and Management
1. Site has approved vegetation management plan, +20 points
2. Site has approved agricultural impact mitigation plan, +20 points

(iv)Percent of site in a medium (65-82) CSR2 area
1. 10-15%, -2 points
2. 26-50%, -3 points
3. 51-75%, -4 points
4. >75%, -5 points

(v) Percent of site in a low (<65) CSR2 area
1. 10-15%, +6 points
2. 26-50%, +8 points
3. 51-75%, +10 points
4. >75%, +12 points

(vi)Number of agrivoltaics practices on site
1. 1 practice, +5 points
2. 2 practices, +10 points
3. >2 practices, + 15 points
4. No practices, 0 points

(vii) Planned percentage of the entire site's vegetative cover than includes flowering plants
1. 10-25%, +4 points
2. 26-50%, +8 points

3. 51-75%, +12 points
4. >75%, +16 points
5. No flowering plants, -15 points

(viii) Planned seasons with at least three blooming species present
1. Spring (April – May), +5 points
2. Summer (June – August), +5 points
3. Fall (September – October), +5 points

(ix) Percentage of site that is graded
1. 0-10%, +20 points
2. 10-30%, +10 points
3. 30-50%, 0 points
4. >50%, -10 points

(x) Increased Setbacks
1. No non-participating dwellings within 300' of project boundaries, 0 Points
2. No non-participating dwellings within 500' of project boundaries, +30 points
3. No non-participating dwellings within 750' of project boundaries, +35 points
4. No non-participating dwellings within 1000' of project boundaries, +40 points
5. No non-participating dwellings within 1250' of project boundaries, +45 points

(xi) Average Solar Height
1. >24", +5 points
2. >26", +10 points
3. >28", +15 points
4. >30", +20 points
5. >32", +25 points

(xii) Exceptional Good Neighbor Practices
1. Good neighbor payments for adjacent non-participating landowners, +10 points
2. Good neighbor payments for tenant farmers displaced by the project, +10 points
3. Agreement to source labor locally, +15 points.

(m) Any other relevant factors.

(2) Planning and Zoning Commission Recommendation. The Planning and Zoning Commission shall review and make a recommendation on the

proposed US-BESSOD to the zoning district map as follows:

(a) Hearing required. The Planning and Zoning Commission shall conduct a public hearing on the proposed US-BESSOD in accordance with this Ordinance.

(b) Notification. Public notification of the Planning and Zoning Commission hearing on the proposed US-BESSOD of the official zoning map shall be as required by subsection 2.02-1. B(1). Such notices shall provide information on the time, date, and location of the hearing and a brief description of the proposed change to the US-BESSOD.

(c) Time Limit for Recommendation. A recommendation to the Board of Supervisors for approval, approval with conditions or disapproval on the proposal, shall be made within 35 days of the conclusion of the public hearing unless the petitioner consents to an extension of time. If no recommendation is made within 35 days from the conclusion of the public hearing, the issue will be forwarded to the Board of Supervisors with no recommendation.

(3) Board of Supervisors Action. Following receipt of the recommendation of the Planning and Zoning Commission, the Board of Supervisors shall consider and act upon a proposed amendment to the zoning district map as follows:

(a) Hearing Required. The Board of Supervisors shall conduct a public hearing on the proposed US-BESSOD in accordance with the procedures outlined in this Ordinance.

(b) Notification. Public notification of the Board of Supervisors hearing on the proposal shall be as required in this Ordinance.

(c) Decision. Following the public hearing, the Board of Supervisors may:

(i) Defer consideration of the proposal; or

(ii) Reject the proposal; or

(iii) Proceed subject to subsections (iv) and (v) below, to adopt an ordinance approving the amendment to the zoning district map.

(iv) Super majority required. A 60 percent majority of the Board of Supervisors shall be required to adopt the

proposed amendment of the US-BESSOD if the owners of more than 20 percent of either (a) the area of the subject property or (b) the area or real property lying within 500 feet of the subject property file a written objection prior to the conclusion of the public hearing.

(v) The Board of Supervisors may impose restrictive conditions upon approval of an amendment to the US-BESSOD if, before the conclusion of the public hearing, the owner agrees to the conditions in writing.

K. **Application Materials.** Utility scale battery energy storage systems that are meant to store and/or supply energy for the primary purpose of wholesale or retail sales of generated electricity, and that are proposed either as part of a utility scale solar project or wind farm or as a standalone project requires rezoning to the US-BESSOD. A complete application shall include the following:

(1) Major site plan required. A major site plan shall be submitted and reviewed prior to the approval of a utility scale battery energy storage system. This site plan shall also include the following in addition to other requirements in this Ordinance:

(a) Power and communications lines.

(b) A preliminary equipment specification sheet that documents the proposed battery energy storage system components, inverters and associated electrical equipment that are to be installed. A final equipment specification sheet shall be submitted prior to the issuance of building permit.

(2) Additional information. In addition to all submittal requirements of a major site plan and rezoning application, the application for the battery energy storage system shall include the following:

(a) Property legal descriptions. Legal descriptions shall be submitted for the subject property (leased and/or owned) on which the battery energy storage system will be located.

(b) Pre-construction survey of nearby roads that may be impacted by construction of the facility.

(c) Interconnection agreement.

(d) Operation and maintenance plan.

(e) Tile investigation report.

(f) Emergency response plan.

(g) Decommissioning plan.

(h) Setback analysis showing the minimum setback requirements, or any agreed on greater setback provisions, are met by the project.

(3) Site and structure requirements.

(a) Setbacks.

(i) All components of the battery energy storage system shall be setback at least two hundred (200) feet from a property line or right-of-way.

(ii) All components, except the interconnection point, installed as part of the battery energy storage system shall be setback at least five (500) hundred feet from the nearest property line including an occupied structure not located on the subject property. However, if the developer of the facility can obtain and record with the County Recorder a written, signed, and notarized statement from the owner of the property containing said structure waiving this setback, the minimum setback from may be reduced to two hundred (200) feet.

(iii) If the battery energy storage system is to be installed in conjunction to a new utility-scale solar facility, the battery energy storage system shall be sited so as to be located within the interior of said facility, with the banks of solar panels lying between the battery energy storage system and the edges of the facility.

(iv) All components of the battery energy storage systems shall be setback a minimum of one hundred and twenty (120) feet from the centerline of all stream corridors and open ditches containing perennial flow throughout the majority of the growing season.

(b) Height. Battery energy storage system shall not exceed the maximum height for the zoning district in which it is located.

(c) Fencing Requirements. The battery energy storage system including all mechanical equipment, shall be enclosed in fencing,

with a self-locking gate, and shall be a primarily woven wire or agricultural style fencing. The fence shall contain appropriate warning signage that is posted such that is clearly visible on the site. The warning signage shall include the type of technology associated with the battery energy storage system, any special hazards associated, the type of suppression system installed in the area of the battery energy storage system, and 24-hour emergency contact information, including reach-back phone number. Security fences, gates and warning signs must be maintained in good condition until the installation is dismantled and removed from the site.

(d) Landscape buffer and screening. In an effort to mitigate any potential negative effects and reduce the visual impact of the facility, the perimeter of the facility shall be landscaped to create a visual screen from neighboring properties. Landscaping shall be installed within a planting area around the facility, in accordance with the following standards:

(i) The landscaping buffer shall preferably use trees, shrubs, grasses and forbs that are native to Iowa, or where appropriate may include naturalized and noninvasive species.

(ii) The landscaping buffer shall use a combination of trees and plants to provide a vegetative screen. Trees shall be at least six (6) feet tall within three (3) years of installation and shall have a minimum mature height of twelve (12) feet or the height of any fencing, whichever is taller.

(iii) The planting area shall be located immediately adjacent to and outside the use area and shall extend no further than fifty (50) feet beyond the outside of the use area, which includes the security fence, required parking areas, required stormwater infrastructure, or other structures or infrastructure required or proposed with the development.

(iv) At the discretion of the approving authority, the minimum mature height of vegetative screening may be modified where the applicant can show good cause or practical difficulty.

(v) If the battery energy storage system is being constructed within the interior of a utility-scale solar facility, Planning and Zoning staff may waive or modify the requirements in

this subsection specific to battery energy storage systems.

(e) Floodplain considerations. Utility scale battery energy storage systems are considered to be maximum damage potential structures and facilities for purposes of the floodplain district regulations.

(4) Avoidance and Mitigation of Damages to Public Infrastructure.

(a) Roads. Applicants shall adhere to the Woodbury County Road Use and Repair Agreement, and in doing so, shall identify all roads to be used for the purpose of transporting batteries, parts, cement, and/or equipment for construction, operation or maintenance of the US-BESSOD and obtain applicable weight and size permits from the impacted road authorities prior to construction.

(b) Existing road conditions. Applicant shall conduct a pre-construction survey, in coordination with the impacted local road authorities to determined existing conditions of roads identified pursuant to Section 5.09.2 A(4)(b). The survey shall include photographs or video and written documentation of the condition of the identified road facilities. The applicant is responsible for on-going road maintenance and dust control measures identified by the Woodbury County Engineer during all phase of construction.

(c) Drainage system. The applicant shall be responsible for repair of damage to public drainage systems stemming from construction, operation or maintenance of the installation.

(5) Operation and maintenance plan. The applicant shall submit a plan for the operation and maintenance of the battery energy storage system, including all necessary services, frequency of service, preventative maintenance measures, and monitoring. The operation and maintenance plan should include at a minimum:

(a) Preventative maintenance practices and schedules for all on-site equipment.

(b) Annual reporting and verification to county on the status or changes to ongoing service schedule.

(c) Noise. The one (1) hour average noise generated by from the battery energy storage system, components, and associated ancillary equipment shall not exceed a noise level of fifty-five (55) dBA as measured from the occupied dwelling of any adjacent property containing an existing residential structure. Applicants may submit equipment and component manufacturer noise ratings

at the time of application to demonstrate compliance. If the ambient sound pressure level exceeds 55 dBA, the standard shall be the ambient Leq (equivalent continuous sound pressure level) plus 5 dBA.

(i) At the discretion of the approving authority, the applicant may be required to provide a baseline noise evaluation study completed by a board certified professional by the Institute of Noise Control Engineering (INCE), or an appropriately licensed Professional Engineer (PE) prior to construction of the proposed solar site.

(ii) To document decibel level if there is a complaint on an operational system, at the discretion of the Zoning Administrator, the owner shall commission a report providing Operating Sound Pressure Level measurements from a reasonable number of sampled locations at the property line of any adjacent property containing an existing residential structure or any property zoned residential to demonstrate compliance with this standard. Report shall be completed by a board certified professional by the Institute of Noise Control Engineering (INCE), or an appropriately licensed Professional Engineer (PE).

(iii)The owner(s) of an adjacent property may voluntarily agree, by written waiver, to a higher noise level.

(d) Issue resolution protocols. Contact information for responsible party to address issues that may arise (damaged equipment causing excessive noise, etc.).

(e) Disposal/recycling plan for damaged or obsolete facility equipment or hazardous waste. No storage of inoperable or obsolete equipment shall be allowed to remain on-site. Site operator shall be responsible for the cleanup of debris related to storm damage.

(f) Fire safety compliance. The applicant shall document and describe how the fire safety system and its associated controls will function and be maintained in proper working order.

(g) Storm water management considerations.

(i) A run-off catch basin or other similar facility may be required to prevent contaminants from leaving the project area. If required, the applicant shall describe how the basin

will be maintained for the life of the project.

(ii) Applicant shall contact the Iowa Department of Resources and Woodbury Soil and Water Conservation District to request recommendations for stormwater management practices to be used on the site. These recommendations may be considered by the Planning & Zoning Commission and the Board.

(6) Tile Investigation Report. The applicant must submit a tile investigation report for the entire project area, identifying all drain tiles located therein. The applicant shall maintain and protect all drain tiles located within the project area and shall repair or replace any drain tiles damaged as a consequence of the installation or removal of the battery energy storage system and/or associated components.

(7) Emergency Response Plan. A copy of the approved emergency response plan shall be given to the system owner, the local fire department, and local fire code official. A permanent copy shall also be placed in an approved location to be accessible to facility personnel, fire code officials, and emergency responders. The emergency operations plan shall include the following information:

(a) Procedures for safe shutdown, de-energizing, or isolation of equipment and systems under emergency conditions to reduce the risk of fire, electric shock, and personal injuries, and for safe start-up following cessation of emergency conditions.

(b) Procedures for inspection and testing of associated alarms, interlocks, and controls.

(c) Procedures to be followed in response to notifications from the battery energy storage system, when provided, that could signify potentially dangerous conditions, including shutting down equipment, summoning service and repair personnel, and providing agreed upon notification to fire department personnel for potentially hazardous conditions in the event of a system failure.

(d) Emergency procedures to be followed in case of fire, explosion, release of liquids or vapors, damage to critical moving parts, or other potentially dangerous conditions. Procedures can include sounding the alarm, notifying the fire department and Woodbury County Emergency Management, de-energizing equipment, and controlling and extinguishing the fire.

(e) Procedures for dealing with battery energy storage system equipment damaged in a fire or other emergency event, including maintaining contact information for personnel qualified to safely remove damaged battery energy storage system equipment from the facility.

(f) Other procedures as determined necessary by the County to provide for the safety of occupants, neighboring properties, and emergency responders.

(g) Procedures and schedules for conducting drills of these procedures and for training local first responders on the contents of the plan and appropriate response procedures.

(8) Decommissioning and site restoration plan. The decommissioning and site restoration plan shall address and/or ensure the following standards:

(a) Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations.

(b) The anticipated life of the battery energy storage system.

(c) The estimated decommissioning costs and method of ensuring funds will be available. Estimates for the total cost for decommissioning the site shall be determined by a Licensed Engineer. Salvage value shall not be included in the cost estimate. Cost estimate shall include a mechanism for calculating adjusted costs over the life of the project.

(d) The manner in which the site will be restored, including a description of how any changes to the surrounding areas and other systems adjacent to the battery energy storage system, such as, but not limited to, structural elements, building penetrations, means of egress, and required fire detection suppression systems, will be protected during decommissioning and confirmed as being acceptable after the system is removed.

(e) A listing of any contingencies for removing an intact operational energy storage system from service, and for removing an energy storage system from service that has been damaged by a fire or other event.

(f) Following a continuous one-year period in which no energy is stored, or if substantial action on construction or repairs to the project is discontinued for a period of one year, the permit holder will have one year to complete decommissioning of the battery energy storage system. At the discretion of the zoning

administrator, the continuous one-year period that triggers decommissioning may be extended if the applicant demonstrates ongoing commitment to the project through activities such as but not limited to making lease payments or documentation of ongoing maintenance or repairs.

(i) Decommissioning shall be completed in accordance with the approved decommissioning plan.

(ii) The landowner or tenant shall notify the Zoning Director both when the project is discontinued and when decommissioning is complete.

(g) At the discretion of the approving authority, financial surety may also be required.

(9) Future Operators. Future operators, successors, assignees, or heirs shall agree in writing to accept and to conform to all conditions of approval in the staff report. Prior notice to the County of the intent to sell or transfer ownership shall be done in a timely manner. Such agreement shall be filed with and accepted by the County before the transfer to a new operator, successor, assignees, or heirs shall be effective.

(10) Compliance with local, state and federal regulations. Utility scale battery energy storage systems shall comply with applicable local, state and federal regulations.

Summary And Conclusions

This report delivers information about the current status of the utility-scale solar energy debate in Woodbury County. This discussion is not about establishing solar provisions for the first time, it is about whether or not the Agricultural Preservation (AP) Zoning District is an appropriate zone or not for utility-scale solar. As this is an intricate discussion about the future landscape of Woodbury County with numerous variables for consideration, this consequential debate continues to be examined by extrapolating information from the public, consulting literature, and looking at methods other jurisdictions have employed. The report attempts to serve as a repository of information collected through the course of this investigation. It has become apparent that the debate of renewable energies is consequential and can have a direct impact on the populace.

Three potential routes are offered including: 1) focus on the comprehensive plan including the revision of the future land use map for potential renewable energy areas; 2) retain the current policy and revise the conditional use permit process for the General Industrial (GI) Zoning District; 3) establish a utility-scale solar energy systems overlay district.

It is concluded that the utility-scale solar energy debate would be best served by a direct focus on public input during the final stages of the adoption process of the Woodbury County Comprehensive Plan 2040. In particular, input should be considered concerning possible changes to the future land use map for either additional industrial areas or locations acceptable for an overlay district. As part of the comprehensive plan process, the establishment of a renewable energy policy focused on either industrial expansion or the validation of an overlay district over agricultural land would be a reasonable step for a long-term stable land use policy. Without the comprehensive plan debate, it is the recommendation of staff to adopt Concept #2 which is the retention of the current policy with a revision to the conditional use permit process in the GI Zoning District. Other related issues that could be considered are policies related to the permitting of utility-scale battery systems.

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Appendix

Direction from the Board Of Supervisors – August 8, 2023

WOODBURY COUNTY BOARD OF SUPERVISORS AGENDA ITEM(S) REQUEST FORM

Date: 8/2/2023 Weekly Agenda Date: 8/8/2023

ELECTED OFFICIAL / DEPARTMENT HEAD / CITIZEN: Supervisor J.Taylor/M. Nelson

WORDING FOR AGENDA ITEM:

Upon Striking Agricultural Preservation as relates to Amendment 2 (Utility-Scale Solar), a Motion to Give Direction for a New Proposed Ordinance in Regards to Utility-Scale Solar

ACTION REQUIRED:

Approve Ordinance ☐	Approve Resolution ☐	Approve Motion ☑
Public Hearing ☐	Other: Informational ☐	Attachments ☐

EXECUTIVE SUMMARY:

The Board of Supervisors unanimously has voiced support for adding solar energy systems (private use) as accessory use in each zoning district and affirming support of solar energy systems (utility scale) in the GI Zoning District. However, given that AP constitutes roughly 75% of Woodbury County's 875 sq. mi and inherent to Agricultural Preservation is the preservation of agriculture, we have an interest in doing what is inherent in the name: preserving agriculture. Toward that end, we are not against solar but think that the following strikes a very reasonable and thoughtful balance, something that can feel rushed in the readings and end up making solar development projects so loose as to not know the desired saturation, legal implications (at least 2 other counties are in lawsuits based on the conditions set after the fact), and how we want to grow the next 25, 50, and 100 years.

Iowa Farm Bureau states regarding energy policy: "Iowa should maintain a balanced electrical energy generation portfolio to ensure energy reliability and resilience at an affordable cost" (2023) and "Iowa's electrical energy policy should not promote new wind and solar energy generation on viable and productive agricultural ground. Existing structures and nonproductive ground should be utilized to expand our energy production" (2023).

BACKGROUND:

Iowa Cattlemen land use policy states: "Whereas the issue of land use in Iowa becomes increasingly important as Iowa population grows and the use of land becomes more intensified, and whereas the cattlemen of Iowa have distinctive problems and interests in the use of land for production of beef cattle; and whereas the complexities of the many issues and interests involved are substantial, not the least of which are the preservation of private property rights and the location of control over land-use decisions. Therefore, be it resolved, land suitable for the grazing of livestock should be deemed agricultural land worthy of preservation and that grazing and be given over recreational and/or urban uses. Be it further resolved, public lands should be subject to the same rules and regulations as privately owned lands."

As the two supervisors representing the most rural areas, we deeply desire the preservation of agriculture while at the same time understanding the need for balance: private property rights, economic development, clean energy, and freedom. Therefore, if the county was to engage in utility-scale solar, at minimum, the county should consider this only if the following is met:

+ A conditional use permit for AP "C" with Planning and Zoning and the Board of Adjustment to be able to site-specifically take into consideration the concerns of neighbors, land/soil, and other factors when approving permit.

+ A slope of no more than 5% in order to preserve the land and to account for soil erosion, compaction, and future land stewardship.

+ A maximum height of no more than 20' for panel structures.

+ Of all AP, no more than 49% can be in such a project. In short, 51% must be for agricultural production or no longer considered "AP."

+ Utility solar can be no more than 2% of all AP "agricultural preservation," preserving 98% of AP. This equates to approximately 8,540 acres of the 427,000 acres of ag land, ag land constituting 75% of the 570,000 total acres in Woodbury County.

FINANCIAL IMPACT:

(cont...)

+ Current notification for utility-scale solar shall be 1 mile for public comment instead of 500 feet.

+ A requirement (or at least strong consideration) that the utility-scale solar project either be on a landowner's property or that the owner of the land be a resident of Woodbury County.

IF THERE IS A CONTRACT INVOLVED IN THE AGENDA ITEM, HAS THE CONTRACT BEEN SUBMITTED AT LEAST ONE WEEK PRIOR AND ANSWERED WITH A REVIEW BY THE COUNTY ATTORNEY'S OFFICE?

Yes ☐ **No** ☐

RECOMMENDATION:

Upon Striking Agricultural Preservation as relates to Amendment 2 (Utility-Scale Solar), a Motion to Give Direction for a New Proposed Ordinance in Regards to Utility-Scale Solar

ACTION REQUIRED / PROPOSED MOTION:

Upon Striking Agricultural Preservation as relates to Amendment 2 (Utility-Scale Solar), a Motion to Give Direction for a New Proposed Ordinance in Regards to Utility-Scale Solar

Approved by Board of Supervisors April 5, 2016.

Direction From the Board of Supervisors – September 26, 2023

WOODBURY COUNTY BOARD OF SUPERVISORS AGENDA ITEM(S) REQUEST FORM

Date: 9/21/2023 Weekly Agenda Date: 9/26/2023

ELECTED OFFICIAL / DEPARTMENT HEAD / CITIZEN: Supervisor J. Taylor/M. Nelson

WORDING FOR AGENDA ITEM:

Give Direction to Planning and Zoning/BOA for Further Considerations During Public Hearings Regarding Utility-Scale Zoning

ACTION REQUIRED:

Approve Ordinance ☐	Approve Resolution ☐	Approve Motion ☑
Public Hearing ☐	Other: Informational ☐	Attachments ☐

EXECUTIVE SUMMARY:

The Board of Supervisors unanimously has voiced support for adding solar energy systems (private use) as accessory use in each zoning district and affirming support of solar energy systems (utility scale) in the GI Zoning District. However, given that AP constitutes roughly 75% of Woodbury County's 875 sq. mi and inherent to Agricultural Preservation is the preservation of agriculture, we have an interest in doing what is inherent in the name: preserving agriculture. Toward that end, we are not against solar but think that the following strikes a very reasonable and thoughtful balance.

During the last item, we asked that consideration of adding utility-scale solar be considered in AP with limitations such as slope (<5%, no more than 2% of all AP be for solar, a "C" for conditional use, notification from 500 ft to 1 mi, at least 51% maintained in agricultural production.)

Upon public hearing comments and further reflection, we offer an alternative to be considered that might be preferable, namely the expansion of "Light Industrial." We would ask that landowners who desire such utility-scale solar be rezoned to this presently constituting only 101 acres of Woodbury County's 570,000 acres. Landowners could continue to farm the land but open up an avenue that would be far preferable than Agricultural Preservation and much more appropriate.

BACKGROUND:

+ A conditional use permit for AP "C" with Planning and Zoning and the Board of Adjustment to be able to site-specifically take into consideration the concerns of neighbors, land/soil, and other factors when approving permit.

+ A slope of no more than 5% ONLY for fixed arrays (most technology is now movable arrays) in order to preserve the land and to account for soil erosion, compaction, and future land stewardship.

+ No more than 1% of industrial land conversion every 4 years for reclassification, roughly 5,700 acres.

+ Current notification for utility-scale solar shall be 1 mile for public comment instead of 500 feet.

+ A decommissioning plan from solar companies reviewed by P&Z/BOA subject to approval by the Woodbury County Board of Supervisors.

FINANCIAL IMPACT:

None

IF THERE IS A CONTRACT INVOLVED IN THE AGENDA ITEM, HAS THE CONTRACT BEEN SUBMITTED AT LEAST ONE WEEK PRIOR AND ANSWERED WITH A REVIEW BY THE COUNTY ATTORNEY'S OFFICE?

Yes ☐ **No** ☐

RECOMMENDATION:

Move to give direction for a new proposed ordinance in regards to utility-scale solar

ACTION REQUIRED / PROPOSED MOTION:

Move to give direction for a new proposed ordinance in regards to utility-scale solar

Approved by Board of Supervisors April 5, 2016.

Zoning Commission Minutes

Minutes - Woodbury County Zoning Commission Special Meeting – September 11, 2023

The Zoning Commission (ZC) special meeting convened on the 11th of September at 5:00 PM at the Moville Community Center in Moville, Iowa. The meeting was also made available via teleconference.

ZC Members Present:	Chris Zellmer Zant, Corey Meister, Jeff O'Tool, Tom Bride
County Staff Present:	Dan Priestley, Dawn Norton
Public Present:	Angie Heck, Tony Heck, Kim Luze, Rich Luze, Vicki Atwell, Steve Mrla, Leo Jochum, Bev Jochum, Janet Yanak, Tony Yanak, Dennis Ragan, JoAnn Sadler, Zach Hummel, Wally Wagner, John Johnston, Jeremy Taylor, Kevin Heck, Kyle Gates, Eric Nelson, Elizabeth Widman, Rebekah Moerer, Genise Hallowell, Kalyn Heetland, Josh Heetland, Elisabeth Cendejas, Jesus Cendejas, Robert Knaack, Greg Jochum, Brad Jochum, Tom Jochum, Bob Fritzmeier

Call to Order
Chair Chris Zant formally called the meeting to order at 5:00 PM. Four Commissioners were present. Commissioner Parker was absent.

Public Comment on Matters Not on the Agenda
None

Approval of Previous Meeting Minutes – July 24, 2023
O'Tool motioned to approve the minutes from July 24, 2023. Second: Bride. Motion carried: 4-0.

Formal approval of Zoning Commission Rules of Procedure
At the July 24, 2023 meeting of the Zoning Commission, the rules of procedure were approved and sent to the Board of Supervisors who voted to approve the rules on August 8, 2023. Motion to formally adopt the rules and authorize the chair to sign the Rules of Procedure by Meister. Second: O'Tool. Motion carried: 4-0.

Public Hearing: Proposed Janet Heck Subdivision (Parcel #874724300005)
Priestley read the preliminary report and staff recommendation into the record. Kevin Heck, executor for Janet K. Heck has filed for a one (1) lot minor subdivision on the property identified as Parcel #8747243000005. This subdivision is being completed to separate the house location from the farm ground. This agricultural subdivision proposal has been properly noticed tin the Sioux City Journal legals section on August 29, 2023. The neighbors within 1000 FT have been duly notified via an August 23, 2023 letter about the September 11, 2023 Zoning Commission public hearing. Appropriate stakeholders including government agencies, utilities, and organizations have been notified and have been requested to comment. The Woodbury County Engineer found the proposal in compliance with Iowa Code closure requirements and found that the lot(s) have adequate access. This property is located in the Agricultural Preservation (AP) Zoning District and is located in the Special Flood Hazard Area (SFHA) – Zone A. The City of Salix waived their extraterritorial review authority with the approval of Resolution No. 2023-20. The area of the subdivision is less than 5 acres and the Base Flood Elevation (BFE) data is not required. Based on the information received and the requirements set forth in the Zoning and Subdivision Ordinance, the proposal meets the appropriate criteria for approval. Motion to close public hearing: O'Tool. Second: Bride. Carried: 4-0. Motion to recommend the approval to the Board of Supervisors as proposed: O'Tool. Second: Meister. Motion carried: 4-0.

Public Haring: Proposed Zoning Ordinance Map Amendment (Rezone) (Parcel #884506200006)
Priestley read into record the preliminary report and staff recommendation. Richard and Kimberly Luze (Applicants/ Owners) have filed a Zoning ordinance Map Amendment application with Woodbury County to request their property (Parcel #884506200006) be rezoned from Agricultural Preservation (AP) Zoning District to the Agricultural Estates (AE) Zoning District. The applicants are making this request to pursue an eventual split of their parcel to facilitate the ability to add a neighboring single-family dwelling in the future as there are presently two houses located within the existing quarter-quarter section. The split will likely consist of approximately three acres from the existing 18+ acres. This will be initiated at a future date. The neighbors within 1000 FT have been notified via an August 23, 2023 letter about the September 11, 2023 Zoning Commission public hearing. Appropriate stakeholders including government agencies, utilities, and organizations have been notified and have been requested to comment. This property is located in the Agricultural Preservation (AP) Zoning District and is not located in the floodplain. This requested zoning change is compliant with the future land use map of Woodbury County's development plan as this area is designated within the rural residential area. Based on the information received and the requirements set forth in the Zoning and Subdivision Ordinance, the proposal meets the appropriate criteria for approval. Staff recommends approval. Priestley has received some phone inquiries regarding future land uses. A Neighboring landowner spoke with concerns of possible subdivisions and increasing density. Priestley stated with Hwy 20 abutting the land, the state

would likely not allow more driveways off Hwy 20. If additional land splits were requested through a subdivision application, there would be public conversations and meetings. Ms. Atwell expressed concerns if a subdivision would go in and how it could affect her cattle farming. Bride stated it would have no impact on what she is currently doing and stated communication between landowners is important. Steve Mrla stated DOT could build a frontage road which would allow more access. Bride discussed how eliminant domain should not be used for private use. Bride motioned to close public hearing. Second: Meister. Carried: 4-0. Motion to recommend the approval to the Board of Supervisors as proposed: Meister. Second: Bride. Motion carried: 4-0.

Public Hearing: Utility-Scale Solar Systems – Consideration of Solar Ordinances for Recommendation(s) to the Board of Supervisors

Priestley read into the record the direction by the Woodbury County Board of Supervisors that occurred on August 8, 2023 for Planning and Zoning and the Zoning Commission to establish/examine a new ordinance as it relates to utility-scale solar systems. The purpose of this public hearing is to receive comments from the public about solar energy systems not limited to utility-scale solar systems, agrisolar or agrivoltaics, and community solar systems as the Commission works toward preparing a recommendation for a proposed ordinance or amendments to the Woodbury County Zoning ordinance to address the permitting process for such systems in industrial and/or agricultural areas. The Board of Supervisors have indicated that "if the county was to engage in utility-scale solar, at minimum, the county should consider this only if the following is met":

- A conditional use permit for AP "C" with Planning and Zoning and Board of Adjustment to be able to site-specifically take into consideration the concerns of neighbors, land/soil, and other factors when approving permit.
- A slope of no more than 5% in order to preserve the land and to account for soil erosion, compaction, and future land stewardship.
- A maximum height of no more than 20' for panel structures.
- Of all AP, no more than 49% can be in such a project. In short, 51% must be for agricultural production or no longer considered "AP."
- Utility solar can be no more than 2% of all AP "agricultural preservation," preserving 98% of AP. This equates to approximately 8,540 acres of the 427,000 acres of ag land, ag land constituting 75% of the 570,000 total acres in Woodbury County.
- Current notification for utility-scale solar shall be 1 mile for public comment instead of 500 feet.
- A requirement (or at least strong consideration) that the utility-scale solar project either be on a landowner's property or that the owner of the land be a resident of Woodbury County.

Priestley identified additional comments/resources that were received after the printing of the Zoning Commission agenda packet with backup materials. In particular, resources were received from the Center of Rural Affairs, the Northwest Iowa Power Cooperative (NIPCO), the Woodbury County Rural Electric Cooperative, and the Iowa Land & Liberty Coalition. Additionally, Priestley provided a copy of a map illustrating soil content with less than 5% slopes in comparison with soils with CSR2 ratings greater than 65 and 75. Priestley then offered a summary of potential approaches that could be taken to craft an ordinance including which entity would be in charge of the permitting. Looking at other counties, there is a mix of permitting utility-scale solar based on a conditional use permit via the Zoning Commission and Board of Adjustment in comparison with a standalone home rule ordinance where the Board of Supervisors are the permitting body. Priestley indicated that the following concepts would be up for discussion as an ordinance is considered: Certified Abstractor's Listing – Public Notification Area; Site Plan; Setbacks; Height; Protected Areas; Slope; Landscaping/Buffer/Screening; Fencing/Security; Signage; Lighting; Noise; Outdoor Storage; Utility Plan / Utility Connections / Agreements; Floodplain; Habitat and Natural Resource Considerations; Solar Glare Minimization; Weed Control; Grading Plan; Compliance with applicable laws (local, state, federal); Access; Road Use; Aviation Protection; Maintenance, Repair, or Replacement / Repowering; Waste; Soil Erosion / Sediment Control; Stormwater Management; Administration / Enforcement / Violations; Emergency Management; Timeline; Safety; Abandonment / Cessation of Operations; Decommissioning and Reclamation; Fees; Agrivoltaics / Agrisolar; Community Solar Systems; Concentrating Solar Power; Solar definitions; Etc.

The following paraphrased public comments were offered:

Greg Jochum (Salix) addressed the Commission regarding the differences between CSR1 and CSR2 as well as height.

Brad Jochum (Plymouth County) addressed the Commission regarding out of county ownership.

Tom Jochum (Sgt. Bluff) addressed the Commission regarding the advantages of solar.

Eric Nelson (Moville) addressed the Commission regarding solar as a commercial/industrial entity.

Ron Wood (Salix) addressed the Commission regarding the need for solar power generation for growth.

Elizabeth Widman (Sgt. Bluff) addressed the Commission regarding the stewardship and protection of agricultural land from solar development.

Bob Fritzmeyer (Sioux City) addressed the Commission regarding how solar installations help soil to rejuvenate and help the wildlife population.

Leo Jochum (Salix) addressed the Commission regarding renewable energy rates, vegetation for screening, capping AP land at 2%, and soil rejuvenation.

Kim Alexander (Smithland) addressed the Commission regarding money as a principal purpose for solar.

Will Dougherty (Urbandale) addressed the Commission on how MidAmerican works with various stakeholders as they pursue solar projects and offered an opportunity to tour the Port Neal solar site.

Ann Johnston (Salix) addressed the Commission with concerns on the impact of the farm ground and keeping the land the way it is.

Wally Kuntz (Moville) addressed the Commission inquiring about the tax income.

Supervisor Jeremy Taylor (Sioux City) addressed the Commission and responded to Mr. Kuntz's inquiry about generation usage tax.

Bride asked Will Dougherty from MidAmerican where the largest project was in Iowa, Dougherty stated Holiday Creek, north of Fort Dodge has an 800-acre, 100 M/Watt project. 8 acres generally produces 1 M/Watt.

Bride asked if there have been any requests to the Iowa Utilities Board for eminent domain for a commercial solar project.

Eric Nelson asked Dougherty about storage of excess power. Dougherty stated it is not an on-demand system. The grid goes where needed first, then to next load center. Port Neal is an on-demand system. Dougherty stated coal system is used as a back up to solar.

Motion to close public hearing: Meister. Second: O'Tool. Carried: 4-0.

Priestley thanked the attendees for their comments and questions. The information gathered will be taken into consideration as a proposal is prepared and possibly recommended by the Zoning Commission that would eventually go to the Board of Supervisors for up to three hearings. The next meeting of the Zoning Commission will be held on Monday, September 25 at 5:00 PM in the basement meeting room of the Woodbury County Courthouse where the Board of Supervisors meet.

Public Comment on Matters Not on the Agenda
None.

Commissioner Comment or Inquiry
None.

Staff Update
Priestley stated that the minor subdivision and rezone that were recommended this evening will be sent to the Board of Supervisors for consideration at future meeting(s).

Adjourn
Motion by Bride to adjourn; Second by O'Tool. Carried: 4-0. Adjourned: 6:34 p.m.

Minutes - Woodbury County Zoning Commission – September 25, 2023

The Zoning Commission (ZC) meeting convened on Monday, September 25 at 5:00 PM in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, IA. The meeting was also made available via teleconference.

ZC Members Present:	Chris Zellmer Zant, Corey Meister, Jeff O'Tool, Tom Bride, Barb Parker
County Staff Present:	Dan Priestley, Dawn Norton
Public Present:	Greg Jochum, Gwen Brunk, Roger Brunk, Russell Petersen, Tom Jochum, Brian Jochum, Leo Jochum, Blair Ulery, Jarrod Ulery, Bill Jochum, Tony Ashley, Dan Bittinger, Alan Fagan, Rebekah Moerer, Elizabeth Widman, Deb Harpenau, Kevin Alons, Jenny Barber, Rex Barber, Jesus Cendejas, Peter Widman, Sophia Widman, Emily Segura, Ann Johnston
Telephone:	Will Dougherty

Call to Order
Chair Chris Zant formally called the meeting to order at 5:04 PM. All five (5) Commissioners were present.

Public Comment on Matters Not on the Agenda
None

Approval of Previous Meeting Minutes – September 11, 2023
Meister motioned. Second: O'Tool. Motion carried: 5-0.

Public Hearing: Townley Addition, Minor Subdivision Proposal on Parcel #894607100007
Priestley read the preliminary report into the record. Donald J Townley, in his capacity as Trustee of the Derrill J. Townley Revocable Trust has filed for a one (1) lot minor subdivision on the property identified as Parcel #894607100007. This subdivision is being completed to separate the house location from the abutting ground. This proposal has been properly noticed in the Sioux City Journal legals section on September 14, 2023. The neighbors within 1000 FT have been duly notified via a September 11, 2023 letter about the September 25, 2023 Zoning Commission public hearing. Appropriate stakeholders including government agencies, utilities, and organizations have been notified and have been requested to comment. The Woodbury County Engineer found the proposal in compliance with Iowa Code closure requirements and found that the lot(s) have adequate access. This property is located in the Agricultural Preservation (AP) Zoning District and is located in the Special Flood Hazard Area (SFHA) – Zone A. The City of Sioux City conducted extraterritorial review with the acceptance and approval of the final plat with the approval of Resolution No. 2023-0696. The area of the subdivision is less than 5 acres and Base Flood Elevation (BFE) data is not required. Based on the information received and the requirements set forth in the Zoning and Subdivision Ordinance, the proposal meets the appropriate criteria for approval. The Woodbury County Engineer recommended an easement which was prepared. Motion to close public hearing: Bride. Second: O'Tool. Carried: 5-0. Motion to recommend approval to the Board of Supervisors as proposed: O'Tool. Second: Bride. Motion carried: 5-0.

Review of Conditional Use Permit Application: Proposed Telecommunication Tower 120 FT Monopole on Parcel #874316300005
Priestley read the preliminary report into the record. AGM Technology Investment Group DBA Nextlink have filed a conditional use permit application to request to install a 120-monopole communication tower to supply high speed internet to surrounding areas on the property designated as Parcel #874316300005. The proposed location is around 2.5 miles south of Anthon and about 4.2 miles northeast of Oto. This proposal has been noticed in the Sioux City Journals legal section on September 14, 2023. The neighbors within one (1) mile were duly notified via a September 13, 2023 letter about the October 2, 2023 Board of Adjustment public hearing. Appropriate stakeholders including government agencies, utilities, and organizations have been requested to comment. This property is located in the Agricultural Preservation (AP) Zoning District. Based on the information received and the requirements set forth in the Zoning Ordinance, the proposal meets the appropriate criteria for approval of the conditional use request. It is the recommendation of staff to approve the proposal. Motion to recommend the proposal to Board of Adjustment: O'Tool. Second: Parker. Motion carried 5-0.

Public Hearing: Solar Energy – Utility-Scale Solar Systems – Consideration of Solar Ordinances for Recommendations(s) to the Board of Supervisors
Priestley summarized the utility-scale solar energy system process including eight topics to be discussed at this meeting. The Woodbury County Zoning Commission has been directed by the Board of Supervisors on August 8, 2023 to establish/examine a new ordinance as it relates to utility-scale solar systems. The purpose of this public hearing is to receive comments from the public about a potential ordinance that could facilitate the permitting of utility solar in the Agricultural Preservation (AP) Zoning District in addition to the General Industrial Zoning District. The Zoning Commission held their first public hearing at the Moville Area Community Center on September 11, 2023. The Board of Supervisors have indicated, through their direction on August 8, that "if the county was to engage in utility-scale solar, at a minimum, the county should consider this only if the following is met":

- A conditional use permit for AP “C” with Planning and Zoning and Board of Adjustment to be able to site-specifically take into consideration the concerns of neighbors, land/soil, and other factors when approving permit.
- A slope of no more than 5% in order to preserve the land and to account for soil erosion, compaction, and future land stewardship.
- A maximum height of no more than 20’ for panel structures.
- Of all AP, no more than 49% can be in such a project. In short, 51% must be for agricultural production or no longer considered “AP”.
- Utility solar can be no more than 2% of all AP “agricultural preservation,” preserving 98% of AP. This equates to approximately 8,540 acres of the 427,000 acres of ag land, ag land constituting 75% of the 570,000 total acres in Woodbury County.
- Current notification for utility-scale solar shall be 1 mile for public comment instead of 500 feet.
- A requirement(or at least strong consideration) that the utility-scale solar project either be on a landowner’s property or that the owner of the land be a resident of Woodbury County.

Priestley also informed the Commission and the public that the Board of Supervisors have an agenda item for their September 26, 2023 meeting that may update the previous direction. The potential new direction would include the following:

- A conditional use permit for AP “C” with Planning and Zoning and the Board of Adjustment to be able to site-specifically take into consideration the concerns of neighbors, land/soil, and other factors when approving permit.
- A slope of no more than 5% ONLY for fixed arrays (most technology is now movable arrays) in order to preserve the land and to account for soil erosion, compaction, and future land stewardship.
- No more than 1% of industrial land conversion every 4 years for reclassification, roughly 5,700 acres.
- Current notification for utility-scale solar shall be 1 mile for public comment instead of 500 feet.
- A decommissioning plan from solar companies reviewed by P&Z/BOA subject to approval by the Woodbury County Board of Supervisors.

Matt Countryman (Renewable Energy Equity Partners) addressed the Commission regarding the importance of mitigation and ag restoration of land, and support of an overlay district.

Deb Harpenau (Salix) addressed the Commission supporting utility solar as a clean source of electrical generation.

Wally Wagner (Salix) addressed the Commission about progress, and change he has seen regarding his land, and types of land that would not be good for solar.

Jerrod Ulery (Ulery Energy) addressed the Commission supporting solar energy.

Kevin Alons (Salix) addressed the Commission regarding the use of solar on agricultural land as not an ag use, heavily subsidized, and questioned revenue for county.

Rebecca Moerer (Sioux City) addressed the Commission about not supporting solar in agriculture areas as it disturbs wildlife, and questions whether revenue would go.

Jesus Cendejas (Salix) addressed the Commission expressing concern for landowner stewardship, land depreciation, and impact of solar on neighbors.

Elizabeth Widman (Sergeant Bluff) addressed the Commission offering environmental concerns, impact on neighbors, glare, and noise issues.

Leo Jochum (Salix) addressed the Commission in favor of utility solar indicating that solar can co-exist with reasonable setbacks.

Ann Johnston (Salix) addressed the Commission opposing utility solar and questioning its recyclability

Will Dougherty (MidAmerican Energy) addressed the Commission indicating that there is not a one size fits all approach, plans could be put in place for decommissioning, buffers, and screening.

Leo Jochum submitted information sheet to Commissioners. Motion to accept: O’Tool. Second: Parker. Carried: 5-0. See received content beginning on Page 4 of the minutes.

Priestley presented photo of the utility solar system abutting Port Neal Road. He also should example photos of agrisolar or agrivoltaics.

Priestley provided a range of topics as an overview for a potential ordinance including: appropriate locations; ordinance type(s); process type(s); information collection; permitting requirements; and definitions. Priestley also discussed the concept of an “overlay district” which could be used in conjunction with the existing underlying zoning district. In particular, an overlay district is not intended to be a free-standing zoning district. It is applied to the

project area or footprint via the Zoning Ordinance Map Amendment (rezone) process. Specific standards or requirements can be directly tied to the overlay district. Thus, it is possible to create a series of requirements in which a proposed location would have to be met in order to be considered for the rezone to the overlay district. Therefore, as a hypothetical, the Zoning Commission and Board of Supervisors could consider a Zoning Ordinance Map Amendment (rezone) application to the Utility-Scale Solar Energy Systems Overlay District following the procedures set out in the Ordinance. This overlay could be applied over Agricultural Preservation (AP) zoned land while retaining its base uses. Once, the overlay district has been applied, conditional use permit application could be considered for the footprint of that area by going though a review by the Zoning Commission and consideration of the permit by the Board of Adjustment.

Priestley suggested that the Commission schedule a work study public meeting where the public and commissioners can discuss issues and form a preliminary ordinance or amendments to present to the Board of Supervisors as a recommendation.

Daniel Segura (Sioux City) addressed the Commission questioning the effectiveness of the overlay district as an added step.

Priestley indicated that specific requirements or conditions can be added to the rezone consideration process.

Bride motioned to close public hearing. Second: Parker. Carried: 5-0.

Zellmer Zant stated different applications are considered through different processes. Priestley explained that the overlay district would use the rezone process which requires a public hearing before the Zoning Commission and up to three public hearings before the Board of Supervisors. The Zoning Commission would offer a recommendation to the Board of Supervisors who ultimately would decide the appropriateness of the location. The Conditional Use Permit process would require review by the Zoning Commission and approval by the Board of Adjustment. The Board of Supervisors would be involved with special agreements such as road use and decommissioning. In terms of preparing an ordinance, both the rezone and conditional use processes will need to be defined including the approval/disapproval requirements for both.

Public Comment on Matters not on the Agenda
None

Staff Update
There will be a Board of Adjustment meeting on October 2, 2023 in the basement meeting room of the courthouse. The topic of solar will be shared with the Board only as an information item. The Board of Adjustment does not have a role as to the creation of new ordinances. The Zoning Commission formulates recommendations that are considered by the Board of Supervisors.

Adjourn
Motion by O'Tool to adjourn; Second by Meister. Carried: 5-0. Adjourned: 7:50 p.m.

RECEIVED FROM LEO JOCHUM (SALIX) – 6 PAGES

The first sheet is three farms
located north of CF industries
in the GI zone. Notice the CSR1 is
58 to 60, CSR 2 is around 10 to
12 points higher. This will be consistent
throughout the higher quality soil in this area.

The left side of the next sheet shows where the Mid-America solar project is located
with a CSR 1&2 of 61.9 and 71.1
respectively

The right side of the page
shows over 600 acres
between hiway 75 and
Interstate 29 with very high CSR1 and CSR2.
The farms on these two sheets are within a large area
which spans about six miles from east to west
and are very consistent in quality.
The land being discussed for solar is East of this
area which has heavier soils and lower elevation.

The last three sheets represent farms
located North and East of Salix that have CSR 1
ratings in the mid 40s with the exception of one.
However the CSR2 increases by 30 plus points.
The CSR1 rating is more relevant for land
quality in that area because CSR2 has removed
the rainfall factor.
For this reason I don't think CSR should be
considered for conditional use.

State: **Iowa**
County: **Woodbury**
Location: **12-87N-48W**
Township: **Liberty**
Acres: **72.02**
Date: **9/18/2023**

Jochum Farms Sioux, Iowa

Maps Provided By: surety® CUSTOMIZED ONLINE MAPPING
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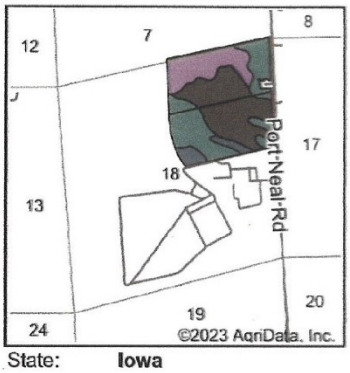
Non-Irr Class	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
IIw	IIw	77	63	
IIIw	IIIw	72	57	
IIs	IIs	72	65	
IIIw	IIIw	45	51	
IIIIw		58	51	
IIIs		46	44	
1.44	***-**	**70.7**	**60**	



State: **Iowa**
County: **Woodbury**
Location: **18-87N-47W**
Township: **Liberty**
Acres: **150.28**
Date: **9/18/2023**

Jochum Farms Sioux, Iowa

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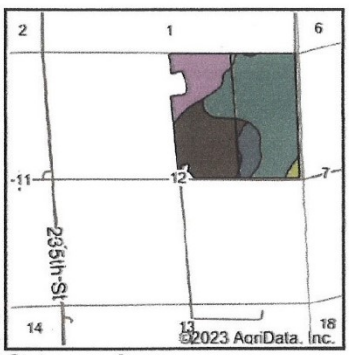
Non-Irr Class	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
IIw	IIw	77	63	
IIs	IIs	72	65	
IIIs		49	33	
IIw		89	74	
1.42	***-**	**70.2**	**58.1**	



State: **Iowa**
County: **Woodbury**
Location: **12-87N-48W**
Township: **Liberty**
Acres: **150.89**
Date: **9/18/2023**

Jochum Farms Sioux, Iowa

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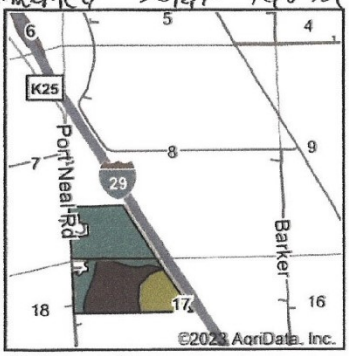
Non-Irr Class	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
Is	Is	72	65	80
IIw	IIw	77	63	58
IIIs		49	33	37
IIw	IIw	91	70	74
IVw		5	37	2
1.36	***-**	**70.1**	**59.2**	***n 65.7**

Mid America Solar Farm



State: **Iowa**
County: **Woodbury**
Location: **18-87N-47W**
Township: **Liberty**
Acres: **123.17**
Date: **9/18/2023**

Jochum Farms Sales, Iowa

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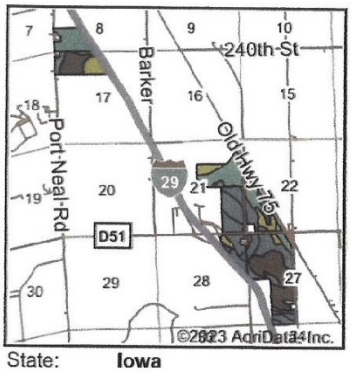
N W E S

end	Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
	Is	Is	72	65	80
	Iw	Iw	77	63	58
	IIIw		58	51	49
age	1.35	*-	71.1	61.9	*n 67.7



State: **Iowa**
County: **Woodbury**
Location: **21-87N-47W**
Township: **Liberty**
Acres: **646.76**
Date: **9/18/2023**

Jochum Farms Sales, Iowa

Maps Provided By: surety® CUSTOMIZED ONLINE MAPPING
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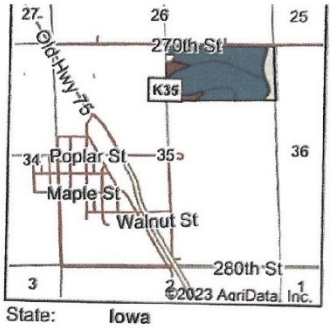
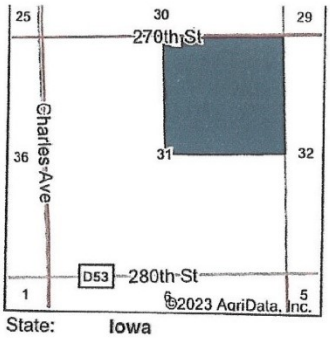
N W E S

Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
Iw	Iw	77	63	58
Is	Is	72	65	80
Iw	Iw	94	79	83
IIw		86	65	60
IIIw		58	51	49
IIIw		81	47	52
Iw		89	84	75
IIw	IIw	72	57	50
IIw	IIw	74	65	61
Iw	Iw	91	70	74
		5	5	
Iw		89	74	71
*-	*-	77.8	64.5	*n 66



State: Iowa
County: Woodbury
Location: 36-87N-47W
Township: Liberty
Acres: 75.03
Date: 5/22/2023



State: Iowa
County: Woodbury
Location: 31-87N-46W
Township: Grange
Acres: 153.97
Date: 4/27/2023

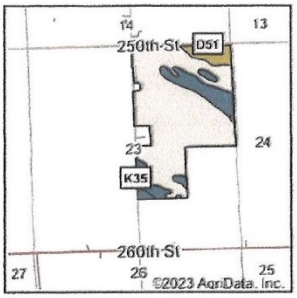
Maps Provided By: surety CUSTOMIZED ONLINE MAPPING ©AgriData, Inc. 2023 www.AgriDataInc.com

	Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
	IIw		86	65	60
	IIIw		81	47	52
	IIIw	IIIw	67	42	51
	Iw	Iw	77	63	58
	Iw	Iw	94	79	83
erage	2.27	*-	82.5	57.9	*n 58

gend	Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
	IIIw		81	47	52
	IIIw	IIIw	67	42	51
rage	3.00	*-	81	47	*n 52

Similar to the original CSR, the CSR2 assumes a SMU is adequately managed, artificially drained where required, and there is no land leveling or terracing. A major difference between the CSR and the CSR2 is the CSR included a rainfall correction factor where the CSR2 does not.

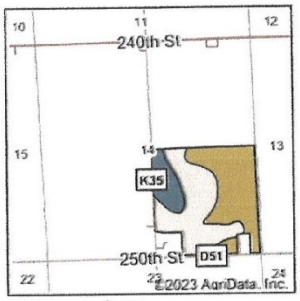
One of the key differences between CSR and CSR2 will be the climate factor. CSR2 will not have a climate factor in it calculations. In the original CSR values, soil scientists made an adjustment based on the geographic region of a soil map unit (SMU). For example, SMUs in Northwest Iowa were adjusted downward more than SMUs in Southeast Iowa. Without a climate adjustment, CSR2 values will have an upward bias in counties located in Northwest Iowa.



State: Iowa
County: Woodbury
Location: 23-87N-47W
Township: Liberty
Acres: 187.71
Date: 4/26/2023

Maps Provided By: surety CUSTOMIZED ONLINE MAPPING ©AgriData, Inc. 2023 www.AgriDataInc.com

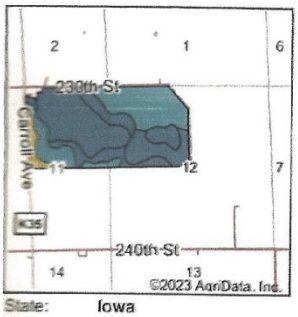
	Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
	IIIw	IIIw	67	42	51
	Iw	Iw	91	70	74
	IIIw		58	51	49
	IIIw		81	47	52
	Iw	Iw	77	63	58
ıge	2.75	*-	69.9	46.2	*n 53.8



State: Iowa
County: Woodbury
Location: 14-87N-47W
Township: Liberty
Acres: 140.07
Date: 4/26/2023

Maps Provided By: surety CUSTOMIZED ONLINE MAPPING ©AgriData, Inc. 2023 www.AgriDataInc.com

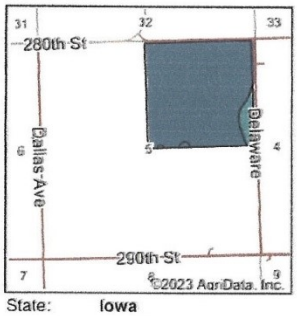
SR2 egend	Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
	IIIw		58	51	49
	IIIw	IIIw	67	42	51
	IIw		84	63	55
ıd Average	2.87	*-	65.2	48.7	*n 50.6



State: Iowa
County: Woodbury
Location: 12-87N-47W
Township: Liberty
Acres: 306.46
Date: 4/26/2023

Maps Provided By: surety CUSTOMIZED ONLINE MAPPING www.AgriDataInc.com © AgriData, Inc. 2023

Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
	IIIw	74	51	52
	Iw	Iw	94	79	83
	IIw		84	63	55
	Iw		89	74	71
	IIIw		59	37	49
	1.95	*-	83.2	64.2	*n 64.9



State: Iowa
County: Woodbury
Location: 5-86N-46W
Township: Sloan
Acres: 153.5
Date: 4/26/2023

Maps Provided By: surety CUSTOMIZED ONLINE MAPPING www.AgriDataInc.com © AgriData, Inc. 2023

ld	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
2%		IIIw	81	47	52
2%		IIIw	74	51	52
5%		Iw	89	74	71
	Weighted Average		2.99	80.7	47.4	*n 52.1

Minutes - Woodbury County Zoning Commission Special Work Session – October 16, 2023

The Zoning Commission (ZC) meeting convened on Monday, the 16th of September, at 5:00 PM in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, IA. The meeting was also made available via teleconference.

Meeting Audio:
For specific content of this meeting, refer to the recorded audio on the Woodbury County Zoning Commission "Committee Page" on the Woodbury County website:

- County Website Link:
  - https://www.woodburycountyiowa.gov/committees/zoning_commission/
- YouTube Direct Link:
  - https://www.youtube.com/watch?v=lJAj6Xh3cSU

ZC Members Present:	Chris Zellmer Zant, Corey Meister, Jeff O'Tool, Tom Bride, Barb Parker
County Staff Present:	Dan Priestley, Dawn Norton
Public Present:	Elizabeth Widman, Bill Jochum, Ann Johnston, Leo Jochum, Bev Jochum, Deb Harpenau, Jenny Barber, Emily Segura, Rebekah Moerer, Doyle Turner, Tom Jochum, Paula Wright, Jesus Cendejas Family, Daniel Segura, Will Dougherty

Call to Order
Chair Chris Zellmer Zant formally called the meeting to order at 5:03 PM. All Commissioners were present.

Public Comment on Matters Not on the Agenda
None

Work Session for Proposed Utility-Scale Solar Energy Systems Zoning Ordinance Amendment(s).
Prior to this meeting, the Zoning Commission has held two public hearings to collect comments from the public (Moville – 9/11/23 & Courthouse – 9/25/23). Subsequently, a follow up public hearing will be held on Monday, October 23 at the regular meeting of the Commission that begins at 5:00 PM.

Priestley offered an overview of the evening's proceedings including five considerations for a potential utility-scale solar energy systems ordinance that could be considered by the Zoning Commission in preparation for a recommendation to the Board of Supervisors.

Consideration 1
Consider updating the General Development Plan and/or Future Land Use Map to facilitate the potential expansion of the General Industrial (GI) and Limited Industrial (LI) Zoning Districts and consider adding additional requirements to the conditional use permitting process to make expectations clear for the applicants, area landowners, and the general public.

Consideration 2
Consider retaining the current permitting procedures in the Woodbury County Zoning Ordinance but add additional requirements to the conditional use permitting process to make expectations clear for the applicants, area landowners, and the general public. Consider retaining the General Industrial (GI) Zoning District as the only allowed location for the consideration of a conditional use.

Consideration 3
Consider establishing a utility-scale solar energy systems overlay zoning district that requires a rezone application to be reviewed by the Zoning Commission and considered for approval by the Board of Supervisors that must meet specific criteria for the appropriateness of whether a particular area in the Agricultural Preservation (AP) Zoning District is suitable for utility-scale solar energy systems. Consider adding additional requirements to the conditional use permitting process to make expectations clear for the applicants, area landowners, and the general public.

Consideration 4
Consider establishing an agrisolar utility-scale solar energy systems overlay zoning district for the specific purpose to coincide with an existing farming operation where each parcel of land shall include over 51% of its usage for farming purposes.

Consideration 5
Consider retaining the current policy for utility-scale solar energy systems (No changes).

The Commission discussed the current process for the permitting of utility-scale solar on agricultural land including the issue of spot zoning and its relationship with the comprehensive plan's future land use map. Priestley referenced the future land use map as a tool for justifying future industrial areas that could facilitate the permitting of utility-solar. He indicated that industrial

areas could be expanded on the map for future consideration of solar. However, it would take going through the comprehensive map approval process of amending the map to reflect additional industrial areas that could later justify additional areas.

Priestley discussed the concept of overlay districts as used by both Scott County and Linn County. Scott County relies on a CSR2 average of 60 or higher to authorize the rezone while Linn County uses a score card or rubric which identifies a number of issues not limited to CSR2, grading, vegetation, and good neighbor payments in order to obtain a permissible score. Priestley indicated that the rezone to an overlay is similar to a conditional use, however, it adds the Board of Supervisors to the process of determining whether or not an area of the county is appropriate for solar. Therefore, the Zoning Commission and Board of Supervisors would be involved in the overlay district rezone process. Additionally, the Zoning Commission and Board of Adjustment would be involved with the conditional use permit process. The Board of Supervisors would be involved with authorizing each individual agreement such as decommissioning, road use, agricultural mitigation, etc.

Zellmer Zant indicated that she likes the involvement of the Zoning Commission, Board of Adjustment, and Board of Supervisors as it gives the public more opportunities to participate in the process. She also questioned whether the overlay district is permanent or temporary. Priestley indicated that depends on how the overlay district is designed. The goal of the district is to allow a new use but retain the base use. The policy for a decommissioning plan will be a determining factor as to whether the specific use of the overlay can continue or conclude.

Bride inquired as to whether there would be any issues if separate overlay districts associated with other projects were treated differently than others. Priestley indicated that there must be clear consistent expectations in the requirements for establishing the district, however there can be some room for conditions if information is identified that should be addressed. Priestley stated there must be a balance, but various options must be exhausted as applicants/developers must know what they are getting into from the start. Priestley discussed other considerations such as separation distances, setbacks, setback waivers, and the floodplain.

Priestley discussed a potential application process and expectations of staff, associated county departments, the commission, and boards. He discussed the concept of the solar-ordinance conditional use as being portable for either the industrial or overlay district. If the overlay district is not used, then an added feature conditional use permit process can be used for the general industrial areas. If the overlay district is used, there would need to be a set of parameters for determining how the overlay gets approved.

Bride shared a concern that if the Commission recommends no changes that the Supervisors might consider going with a stand-alone ordinance which does not involve zoning. Priestley indicated that a stand-alone ordinance does not include the zoning districts. Priestley stated that the Zoning Commission has the right to offer any reasonable recommendation to the Board of Supervisors. He indicated that everyone is mindful of the harvest season, and we will continue to offer multiple opportunities for input.

O'Tool inquired about the downside of using the overlay district. Priestley explained the debate of exclusively relying on CSR which could offer limitations for landowners. Meister mentioned in a previous public hearing questions about the reliability of CSR. He indicated that he likes Linn County's rubric as including CSR and other items. He also inquired who would be monitoring or policing the rubric for items such as grass species. Priestley responded that additional regulations create the need for more bureaucracy or more resources.

Mesiter inquired about how the Board of Supervisors arrived at 2% use of agricultural land. Is that enough or too much? He would like to see more information on how this equals to an existing power plant. Bride indicated that 2% is around 8,400 acres and stated that the Supervisors may be looking for a cap. Will Dougherty of MidAmerican discussed the acres on some existing projects in other counties. Meister offered concerns about the 2%. O'Tool inquired with Will Doughtery about the comparison of solar and wind in terms of megawatt capacity.

Bride inquired about the setbacks and if any of the allowed uses expand outside of the property lines. Priestley indicated the existing zoning ordinance does not include separation distances beyond the lot lines. Setbacks are determined by the zoning district dimensional standards in the zoning ordinance. Bride offered concerns about the impact of setbacks on other property owners. Priestley indicated that setback waivers could be used, and he cautioned about the law of unintended consequences.

O'Tool referenced the 5% slope proposed requirement. Bride inquired as to where the Supervisors arrived at that number. Priestley said it has been offered as part of the consideration for the Commission to research as a possibility. Zellmer Zant referenced the importance of comparing practices with other counties and not necessarily reinventing the wheel. Zellmer Zant also referenced the needs of the cities including community solar. Bride used Moville as an example using an overlay to facilitate solar. He also referenced the use of the percentage as an issue. Priestley indicated that the 51/49% solar ratio is meant to ensure agriculture remains a primary function on ag land.

Mesiter inquired about the proposed one mile notification area. Priestley responded that the purpose is to increase public awareness.

Zellmer Zant inquired with Will Dougherty as to whether these contracts are 10 years and questioned the rapid change of technology. Dougherty discussed maximizing efficiencies as a driving factor of change. He referenced ISU's study pertaining to the coexistence of agriculture and solar with aspects such as grazing. Bride inquired about damage to panels as a result of grazing. Dougherty referenced sheep as an option over others.

Bride inquired about how the land can be put back the way it was through decommissioning and referenced concrete left in the ground as result of wind turbines. Doughtery indicated that solar concrete footings are not being used. Zellmer Zant asked about the Port Neal solar field's footings. O'Tool asked Dougherty about buried power lines and if they can be buried in the floodplain. Priestley indicted that electrical assets must be elevated above the BFE. Bride and Zant indicated there are locations where lines are likely buried in the floodplain.

Zellmer Zant asked Dougherty about how much power gets lost from arrays through distribution. Bride asked Dougherty about the driving factor for locating solar parks.

Zellmer Zant inquired with the Commission about what they like/don't link in the packet considerations.

Parker referenced the Supervisors' discussion point of Light Industrial. Priestley indicated that the limited industrial use can be associated with Consideration #1 which would entail revising the development plan.

O'Tool referenced having a list of bullet points to follow to determine where an area is appropriate or not.

Zellmer-Zant stated that she prefers to not go with the map change as referenced in Consideration #1 because there are other systems in place. She indicated that she likes the conditional use and overlay district format as it includes multiple entities. Bride questioned the ability to accurately be able to paint/assign the industrial areas through mapping.

O'Tool indicated that the overlay could be used in AP areas. Bride discussed the flexibility of the overlay district and the permitting routes. Priestley discussed the creation of the overlay district on a project by project basis. He indicated that an acre cap could be instituted in the ordinance. Zellmer Zent stated that one of the counties she researched had a cap of 400 acres.

Zellmer Zant indicated that the Commission appears to be leaning toward Consideration #3. Priestley indicated that Consideration #4 is not field tested and was only brought into the discussion to discuss the relationship or co-existence of solar and agriculture. Agrisolar could be a part of Consideration #3. Priestley also discussed how battery systems should also be brought into the debate with the growing technology. He made reference to its inclusion in Linn County's ordinance. Will Dougherty discussed batteries in Iowa.

Zellmer Zant inquired if Consideration 5 is off the table. Bride indicated that not doing anything is not what the Supervisors are looking for. Priestley indicated the Commission has the latitude to make a recommendation as you see fit as long as it has an explanation and rationale behind it.

Zellmer Zant referenced the overlap between Considerations 2 and 3. Priestley discussed the overlay district and the overlay rezoning process.

Parker inquired if the county currently has an overlay district. Priestley stated that there is a conservation overlay district that could be petitioned for.

Zellmer Zant questioned the reference to the 10,000 acre limitation, dimensional standards, etc. between Consideration #3 and #4. She referenced the relationship between the 51% agricultural use and the CSR2 rating.

O'Tool questioned whether the CSR2 should be prohibited or not. Meister questioned the inconsistency and reliability of the CSR2.

Doyle Turner offered comments about the accuracy of CSR2. Leo Jochum referenced the difference in rainfall between CSR1 & CSR2.

Zellmer Zant indicated that CSR's may be over 65 in industrial areas. Priestley suggested the comprehensive plan and map allows for industrial areas to include areas of high CSR if the county plans for those areas to be industrial. Meiser is concerned with CSR being the sole factor. Priestley indicated that CSR has traditionally been a part of this county's determination of land use.

O'Tool indicated that it would be appropriate the spell out that a lower CSR would be preferable. Bride indicated that CSR is presently considered in the rezone decision process.

Zellmer Zant inquired about 5% slope for fixed arrays and whether there should be a range. Bride offered concerns about the fixed percentage and discussed erosion. Doyle Turner commented about farming practices across the state and discussed soil erosion including highly erodible land (HEL).

Zellmer Zant inquired about the policy toward the special flood hazard area (floodplain). O'Tool suggested that the standard floodplain regulations could be followed.

Zellmer Zant referenced the conditional use language as being included along with the overlay. Priestley replied that it would need to be discussed and debated.

Zellmer Zant inquired about the definitions and the remaining concerns in the conditional use and overlay section. Priestley suggested that the concepts must continue to be vetted through the County Attorney's office. It will be shared with both parties. Priestley recommended that future work sessions be held following next week's public hearing.

Leo Jochum offered concerns about the comparison between Scott County and Woodbury County and the use of CSR2. Jochum made reference to other counties such as Louisa Couty, Mills County, Johnson County, and Linn County. He referenced the scorecard as used by Linn County and the role of using seed mixes.

Doyle Turner suggested that elected people should have a say on the locations of the solar parks. Turner offered concerns that parameters set could limit the amount of land available for these projects. He recommends giving the Supervisors more than one recommendation which could include the industrial areas. As part of the conditional use, he offered questions about the hurdle of being necessary and desirable.

Public Comment on Matters Not on the Agenda
None

Staff Update
Priestley announced the statewide County Zoning Officials conference in 2024 will be hosted by Woodbury County May 22 – 24 at the Hilton Garden Inn in Sioux City. May 23, Woodbury County has the opportunity to showcase our area, suggestions are welcome, commissioners are encouraged to attend.

Adjourn
Meeting adjourned at 7:30 p.m.

Minutes - Woodbury County Zoning Commission Meeting – October 23, 2023

The Zoning Commission (ZC) meeting convened on Monday, 23rd of September, at 5:00 PM in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, IA. The meeting was also made available via teleconference.

ZC Members Present:	Chris Zellmer Zant, Corey Meister, Jeff O'Tool, Barb Parker
County Staff Present:	Dan Priestley, Dawn Norton
Public Present:	Leo Jochum, Bev Jochum, Dan Bittinger, Ann Johnston, Daniel Segura, Elizabeth Widman, Emily Segura, Bob Fritzmeier, Roger & Gwen Burnett, Elizabeth Cindy Haase, Russell Petersen, Hope Lynam
Telephone:	Chad Swanger

For specific content of this meeting, refer to the recorded video on the Woodbury County Zoning Commission YouTube channel: **https://www.youtube.com/watch?v=qNpK3atf1k0**

Call to Order
Chair Chris Zant formally called the meeting to order at 5:08 PM. Tom Bride was absent.

Public Comment on Matters Not on the Agenda
None

Approval of Previous Meeting Minutes – September 25, 2023 and October 16, 2023
O'Tool motioned. Second: Meister. Motion carried: 4-0.

Public Hearing: Back Acre Estates, Second Filing, Minor Subdivision Proposal on Parcel #884702200009
Priestley read the preliminary report and staff recommendation into the record. Chad Swanger, Trustee Terry V. Swanger Trust has filed for a one (1) lot minor subdivision on the property identified as Parcel #884702200009. This subdivision is being completed to separate the house location from the abutting ground. This proposal has been properly noticed in the Sioux City Journal legals section on October 10, 2023. The neighbors within 1000 FT have been duly notified via an October 6, 2023 letter about the October 23, 2023 Zoning Commission public hearing. Appropriate stakeholders including government agencies, utilities, and organizations have been notified and have been requested to comment. The Woodbury County Engineer found the proposal in compliance with Iowa Code closure requirements and found that the lot(s) have adequate access. This property is located in the Agricultural Preservation (AP) Zoning District and is NOT located in the Special Flood Hazard Area (SFHA). The City of Sioux City have accepted and approved the file plat with the approval of Sioux City council resolution No. 2023-0962. Staff recommends that a pavement agreement be signed with Woodbury County as a condition of approval of this final plat. Based on the information received and requirements set forth in the Zoning and Subdivision Ordinance, the proposal meets the appropriate criteria for approval. Owner has signed a pavement agreement which will be recorded with the final plat. O'Tool motioned to close public hearing. Second: Meister. Motion carried: 4-0. Motion to recommend acceptance and approval to Board of Supervisors by Meister. Second: Parker. Carried: 4-0. Item will be presented to the Board of Supervisors on October 31, 2023.

Public Hearing: Grays First Addition, Minor Subdivision Proposal on Parcel #884209200009
Priestley read the preliminary report and staff recommendation into the record. Marlis A. Gray, has filed for a one (1) lot minor subdivision on the property identified as Parcel #884209200009. This subdivision is being completed to separate the house location from the abutting ground. This proposal has been properly noticed in the Sioux City Journal legals section on October 10, 2023. The neighbors within 1000 FT have been duly notified via a October 6, 2023 letter about the October 23, 2023 Zoning Commission public hearing. Appropriate stakeholders including government agencies, utilities, and organizations have been notified and have been requested to comment The Woodbury County Engineer found the proposal in compliance with Iowa Code closure requirements and found that the lot(s) have adequate access. However, there is a rounding error on the plat that must be corrected prior to recording. Priestley confirmed that the rounding error has been corrected and shared with the County Engineer who concurred. This property is located in the Agricultural Preservation (AP) Zoning District and is NOT located in the special Flood Hazard Area (SFHA). Exterritorial review is not required by a city as the property is further than two (2) miles from the closet incorporated jurisdiction. Based on the information received and the requirements set forth in the Zoning and Subdivision Ordinance, the proposal meets the appropriate criteria for approval. Motion to close public hearing: Meister. Second: O'Tool. Carried: 4-0. Parker inquired about a pavement agreement. Priestley indicated that pavement agreements are required when referenced/requested by the County Engineer. Zant asked about the well and septic location and Priestley indicated that the well and septic were on the lot. Motion to recommend acceptance and approval to the Board of Supervisors by Meister. Second: Parker. Carried: 4-0.

Public Hearing: Solar Energy – Utility-Scale Solar Systems – Consideration of Solar Ordinances for Recommendations(s) to the Board of Supervisors
Priestley summarized the purpose of the public hearing. The Woodbury County Zoning Commission has been directed by the Board of Supervisors on August 8, 2023 to establish/examine a new ordinance as it relates to utility-scale solar systems. The purpose of the public hearing is to receive comments and put together a proposal as a possible ordinance or amendments for

solar energy systems not limited to utility-scale systems, agrisolar or agrivoltaics, and community solar systems, together with the Commission addressing the permitting process for such systems in industrial and/or agricultural areas. The Zoning Commission held their first public hearing at the Moville Area Community Center on September 11, 2023. The second was held in the basement of the Woodbury County Courthouse on September 25, 2023. Both public hearings included constituents who offered comments both in support and opposition to the expansion of utility-scall solar in the Agricultural Preservation (AP) Zoning District. Audio of meetings may be accessed for review by visiting the Woodbury County Zoning Commission "Committee" page on the Woodbury County website at: www.woodburycountyiowa.gov. The Zoning Commission conducted a work session on October 16, 2023 to discuss the considerations for an ordinance. The audio for this meeting may be obtained by using the following link: https://www.youtube.com/watch?v=1JAj6Xh3cSU or https://tinyourl.com/Zoning101623

Emily Segura (Sioux City) addressed the ZC about the impact of utility-scale solar on area farmland. She discussed the importance of taking care of the land and questioned the disposal and the economics of sending the panels to the dump. Segura recommended for the ZC to read the article "The Dark Side of Solar Power" by Atalay Atasu, Serasu Duran, and Luk N. Van Wassenhove from the Harvard Business Review which discusses a number of topics including the high cost of solar trash and disposal. She offered concerns about the emittance of toxic waste from the decommissioned panels.

Ann Johnston (Salix) addressed the ZC with concerns about slave labor groups in foreign counties such as the Uyghurs in China who are part of the supply chains that make up 95% of the solar panels worldwide. She referenced that much emphasis has been placed on Scott and Linn Counties but not enough on the western counties in Iowa. Johnston indicated that Sioux County is under a moratorium from solar renewables.

Elizabeth Widman (Sergeant Bluff) addressed the ZC indicating that two of the Board of Supervisors voted against putting solar on ag protected land. She asserted this is not a mandate from the board to ensure solar encroaches on ag land. Putting solar on ag land fundamentally changes the ag protected areas and should only be put in industrial zones. MidAmerican's largest Iowa project is 800 acres but they stated they do not have immediate plans to locate solar in Woodbury County. Widman indicated that the farming between solar panels is experimental and not done in America. MidAmerica stated that cattle grazing underneath solar panels would not work because they would rub against the panels and knock them down. Grass planted underneath would not help wildlife because fences need to be around these areas to protect the public. Widman questioned Daniel Priestley's comment at the previous work session that if applicants were to apply to the county to establish utility-solar they would have to be forthright in the application. However, at the public meetings it has not been mentioned that the pro-solar speakers have already signed contracts with an outside company, and we should be told who the company is. If you add up the acres in the plat book owned by these individuals in my area, it comes out to 2,600 acres or 4 square miles in comparison to the City of Sergeant Bluff which is only 2.11 square miles. All the remaining cities in Woodbury are less than one square mile. Four square miles is about the size of 1,936 football fields. Widman indicated that contracts are for 30 years. If these are the same, she will be 97 years old before the possibility of decommissioning them back to solar and her family will grow up to not see agriculture land. Widman asserted that utility-solar is not agriculture. Widman referenced a 3,000 acre solar project near Rock Branch that will be near her ground. She stated that agricultural preservation is meant to preserve agriculture. Widman asserted these utility-scale solar facilities belong on industrial land.

Elizabeth Cindy Haase (Salix) addressed the ZC offering concerns about the radiation caused by solar panels. She indicated that the electronic magnetic sensitivity causing, headaches, dizziness, nausea, cancer risk has been reported by people who reside close to solar systems.

Motion to close public hearing: Parker. Second: O'Tool. Carried: 4-0.

Zant commented there have been great comments from both sides, wants verification on some facts, Commission will work on collecting and reviewing more information. O'Tool appreciates feedback, good to hear all sides.

No Public Comment on Matters Not on the Agenda

Commissioner Comment of Inquiry
Due to harvest, O'Tool suggested waiting until regular November 27th meeting instead of scheduling a work session, all present commissioners agreed.

Staff Update
Priestley noted subdivisions recommended tonight will be presented to the Board of Supervisors on Oct 31, 2023. Woodbury County Community and Economic Development will be hosting the COZO conference in May of 2024.

Adjourn
Motion to adjourn: Meister. Second: O'Tool. Carried: 4-0.

Minutes - Woodbury County Zoning Commission Meeting – November 27, 2023

The Zoning Commission (ZC) meeting convened on Monday, November 27, 2023, at 5:00 PM in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, IA. The meeting was also made available via teleconference.

Meeting Audio:
For specific content of this meeting, refer to the recorded video on the Woodbury County Zoning Commission "Committee Page" on the Woodbury County website:

- County Website Link:
  - https://www.woodburycountyiowa.gov/committees/zoning_commission/
- YouTube Direct Link:
  - https://www.youtube.com/watch?v=Me_SPKOFaHM

ZC Members Present:	Chris Zellmer Zant, Corey Meister, Jeff O'Tool, Barb Parker
County Staff Present:	Dan Priestley, Dawn Norton
Public Present:	Roger Brink, Gwen Brink, Russ Petersen, Bob Fritzmeier, Christopher Widman, Leo Jochum, Bev Jochum, Naomi Widman, William Widman, Ezra Widman, Eliyanah Widman, Aliza Widman, Steve Corey, Denise Knaack, Robert Knaack, Bill Jochum, Tony Ashley, Doyle Turner, Greg Jochum, Tom Jochum, Mike Wright, Jeanette Williams, Mark Wetmore, Bethany Widman, Kalyn Heetland, Josh Heetland, Deb Harpenau, Kevin Alons, Rebekah Moerer, Ann Johnston, Emily Segura, Daniel Segura, Elizabeth Widman, Jenny Barber, Genise Hallowell
Telephone:	Tom Treharne, Robert Wilson

Call to Order
Chair Chris Zellmer Zant formally called the meeting to order at 5:02 p.m. Tom Bride was absent.

Public Comment on Matters Not on the Agenda
None

Approval of Previous Meeting Minutes – October 23, 2023
Motion to approve the minutes: Parker. Second: Meister. Motion carried: 4-0.

Public Hearing: Solar Energy – Utility-Scale Solar Systems – Consideration of Solar Ordinances for Recommendations(s) to the Board of Supervisors
Priestley offered background about the utility-scale solar energy system proposals. Staff and the Commission have been mindful these past several weeks aboutthe harvest season and have used the available meeting opportunities to collect resources and input from the public. During this timeframe, three potential concepts for consideration have been established including: 1) Consideration of a new utility-scale solar energy conditional use process for the General Industrial (GI) Zoning District only; 2) Establishment of an overlay district to facilitate utility-scale solar within the Agricultural Preservation (AP) Zoning District; 3) Adoption of the first concept and then transfer the utility-scale solar debate on agricultural land to the "Comprehensive Plan" adoption process that will likely occur in early 2024.

Priestley stated that he received materials Alex Delworth from the Center for Rural Affairs and asked that they be received into the record. Motion to receive O'Tool. Second by Parker, Approved 4-0. Copy available for review in the appendix.

Bob Fritzmeier (Sioux City) addressed the Commission offering support for a utility-solar overlay district and the evaluation scorecard by referencing positive benefits to the environment. Fritzmeier indicated that 75% of flowering plants are dependent on pollinators, native grasses and plants would provide good habitat, pollination, improve environment, and air quality. He requested that information from USDA, National Institute of Food and US Department of Energy be received and placed into record. Motion by Meister to receive. Second by O'Tool. Carried 4-0. Copy available for review in the appendix.

Kevin Alons (Salix) addressed the Commission offing his opposition to the utility-solar overlay district over agricultural land. He indicated that utility-solar is not compatible with agriculture. He referenced the fall of or degrading of production of solar as systems degrade and he questioned how long they operate. Alons referenced concerns with federal subsidies and indicated that most of the proposed solar options abut the City of Salix.

Robert Wilson (Rangeland Energy Management) addressed the Commission in support of solar projects by discussing the changing nature of projects and compatibility with agriculture with agrivoltaics. He referenced practices such as sheep herding for vegetation control and made reference to CRP land and decommissioning and bond requirements. Wilson addressed solar as replacement when coal plants are retired.

Doyle Turner (Moville) addressed the Commission in support of completing the comprehensive plan for 2040. He indicated that solar doesn't create revenue from property tax, it creates revenue from the electricity that is produced. Turner said that the overlay is something that is worth looking at but not until after the comprehensive map has been developed.

Christopher Widman (Bronson) addressed the Commission indicating that solar does not have a place on agricultural preservation land. He indicated that utility-solar should stay on industrial. Widman referenced the comprehensive plan and said it could be taken into consideration to increase industrial parks and not cherry pick out in the middle of the county. He indicated that contracts signed by landowners in areas are not compatible with the comprehensive plan and should be for the general welfare of the county and not a few. Widman encouraged waiting until the comprehensive plan is complete. Widman made a request that materials including questions be received and placed into record. Motion by O'Tool to receive. Second by Parker. Carried 4-0. Copy available for review in the appendix.

Elizabeth Widman (Sergeant Bluff) addressed the Commission urging them to delay the decision until the comprehensive plan is completed. She indicated that the comprehensive plan is a guide for the next 20 years and that board members and others come and go. Widman asserted that utility-solar belongs on industrial land and the agricultural preservation district is meant to protect ag.

Tom Treharne (NextEra Energy) addressed the Commission inquiring about the consideration of a specific proposal. He requested that in the development of a proposal that it consider issues that would pose challenges such as the 1000 ft. setbacks from dwellings, grading limitations, and the restriction to industrial ground only. Treharne indicated that the restriction to industrial land would create a host of challenges to industrial areas. He indicated that the overlay district is a good way to go and used Linn County as an example.

Roger Brink (Onawa) addressed the Commission indicating that government is paying farms to set aside CRP land and suggested that spraying field is worse than solar panels would be. Brink stated that the solar farms in Monona County don't seem to bother anyone.

Leo Jochum (Salix) addressed the Commission in support of Option #2 to allow for the overlay district. He offered concerns about the discrepancies with CSR1 vs. CSR2 because of the rainfall factor. Jochum discussed compatibility with grass and plant selection to ensure soil quality will be preserved. He stated that no concrete and blacktop is used which allows for transition back to agriculture. Jochum discussed setbacks of 150 to 300 ft from residences and questioned the two mile setback from the cities and the distances from the county right-of-way. He requested for material be received and placed into record by the Commission. Motion to receive Parker. Second by O'Tool. Carried 4-0. Copy available for review in the appendix.

Naomi Widman (Bronson) addressed the Commission and suggested that the motivations of people for ag solar need to be looked at, individuals will profit, not the county as a whole. Widman indicated that she is not opposed to solar, just not on ag land or an overlay district. She stated that the solar debate should be delayed until the comprehensive plan is completed. She indicated that it is important to the best interest of the entire community versus particular individuals who have a very significant financial interest. Widman stated that cherry picking parcels in the middle of ag land is not the best route.

Steve Corey (Salix) addressed the Commission indicating that Salix is in the dark in this debate. He offered concerns with what the county has to deal with as far as carbon sequestration, wind farms, and solar. Corey indicated that he is concerned about subsides and the weight on the taxpayers and the pandora's box this creates.

Greg Jochum (Salix) addressed the Commission offering support for the overlay on the Agricultural Preservation (AP) Zone. He indicated that the infrastructure is already in place with area transmission lines. Jochum is in favor of the overlay scorecard in place of the CSR2 rating that he explained at the Moville meeting. He suggested that the scorecard encourages more desirable native grass, plans, and pollinators. The NRCS would be involved in the selection of the best seed.

Rebekah Moerer (Sioux City) addressed the Commission asking about the benefit to those who live in the cities and to the people who own the land. She offered information about her experience of potentially equipping her property with solar and offered concerns about the expense. Moerer offered concerns about the costs to taxpayers with decommission fees. She suggested that utility-solar should be subject to land restrictions.

Motion to close public hearing by Parker. Second by O'Tool. Carried 4-0.

Priestley discussed the three utility-solar options and suggested for a work session in preparation of a recommendation to the Board of Supervisors.

Parker expressed interest in having a work session to prioritize the concepts before the Commission. She suggested streamlining this with the development plan process. Meister concurred. O'Tool indicated that it would be important to look into whether you expand industrial areas which would be part of the development plan versus an overlay district. He also stated it would be important to get more valid information about land values near solar. O'Tool indicated he would support another work session and expressed the importance of getting this right the first time. Zellmer Zant facilitated a scheduling discussion that resulted in January 17, 2023 at 5:00 PM for the work session. The regular meeting will be held on January 22, 2023 at 5:00 PM.

Public Comment on Matters Not on the Agenda
None

Commissioners Comment or Inquiry
None

Staff Update
None

Adjournment
Motion to adjourn Meister. Second by O'Tool. Carried 4-0. Meeting conclude 6:12 p.m.

APPENDIX

Daniel Priestley Received from Alex Delworth, 11-27-23 - Woodbury County Zoning Commission Meeting

From: Alex Delworth <alexd@cfra.org>
Sent: Monday, November 27, 2023 10:58 AM
To: Daniel Priestley
Subject: Utility - Scale Solar Zoning
Attachments: Policy Approaches for Dual-use and AgriSolar Practices.pdf; making-the-case-for-solar-grazing-web.pdf; Environmental Impacts of Renewable Energy.pdf; Woodbury Zoning Comment.docx.pdf

Good Morning Daniel,

I am reaching out to provide a comment on behalf of the Center regarding the zoning meeting on utility-scale solar. Attached is our comment and a few resources that we shared earlier but may still be useful.

Feel free to reach out if you have any questions.

Thank you,

--
Alex Delworth | Clean Energy Policy Associate
Center for Rural Affairs
1400 Fawcett Pkwy, Suite D2 | Nevada IA 50201
(402) 687-2100 x 1016
alexd@cfra.org | cfra.org

CENTER *for* RURAL AFFAIRS

11/27/23

Daniel Priestley
620 Douglas Street, 6th Floor
Sioux City, IA 51101

Re: Utility-Scale Solar Ordinance

The Center for Rural Affairs is a private non-profit organization that advocates for policies that strengthen rural communities to create a more vibrant future. Renewable energy projects have demonstrated significant potential to bring in new tax revenue, provide additional income for landowners, and create new jobs in rural areas. Given these benefits, we think ordinances regarding wind and solar should be fair and balanced. We commend the zoning board for their time and invitation for public input in this process for the two main proposals.

The first proposal being considered for the Utility-Scale Solar Energy Systems (US-SES) includes prudent requirements around the native vegetation and decommissioning sections. Planting native or perennial vegetation under the panels can increase soil health and provide pollinator habitat over the lifespan of the US-SES. Decommissioning plans ensure that the county won't bear any of the costs when projects are deconstructed and allowing the financial surety to be paid in intervals allows project owners to absorb the expense as an operating cost.

The second proposal for the US-SES Overlay District includes a few items that the commission may want to consider. The setback of 1,000 feet away from occupied dwellings is far greater than the distances we have seen most often, which are between 50-300 feet. However, the inclusion of a waiver will allow impacted landowners the flexibility to make decisions that affect their land.

Finally, the inclusion of a restriction on development on lands with a CSR2 of 65 or more for the US-SES Overlay District will severely limit the potential for solar development in Woodbury County. Using CSR2 designation restricts private property rights for landowners with higher-quality land. Renewable energy facilities can help keep the family farm financially sustainable by providing supplemental income to the operation. Additionally, restricting development on lands with a CSR2 of 65 or more would automatically eliminate almost 50% of land in Woodbury County for potential development.

Solar projects generally have minimal impact on land quality, and land can be returned to farming at the end of the project's life cycle if desired. Practices such as planting native or perennial vegetation under the panels can increase soil health and provide pollinator habitat. Site vegetation can also be managed through grazing, offering local farmers additional income opportunities and providing an avenue for the land to stay in agricultural use at the same time. Additional dual-use practices such as beekeeping and crop production under the panels offer additional opportunities to combine solar and agriculture, demonstrating that clean energy and agriculture do not require an either/or approach.

CENTER *for* RURAL AFFAIRS

This letter includes a few of our solar energy siting resources we hope you will find useful during discussions. One of our recent reports, *Policy Approaches to Dual-Use and Agrisolar Practices*. might be especially helpful given the central discussion around CSR and preserving agricultural lands. Additionally, our full clean energy siting library can be viewed at cfra.org/cleanenergysiting.

Sincerely,

Alex Delworth
Policy Associate
402.687.2100 EXT. 1016
alexd@cfra.org

Resources:
Policy Approaches for Dual-Use and Agrisolar Practices
Amplifying Clean Energy with Conservation
Native Vegetation and Solar Projects in Iowa

1400 FAWCETT PKWY SUITE D2 | NEVADA, IA 50201 | 402.687.2100 EXT. 1016 | CFRA.ORG

Policy Approaches for Dual-Use and Agrisolar Practices

By Heidi Kolbeck-Urlacher, Center for Rural Affairs
April 2023

CENTER for RURAL AFFAIRS

CONTENTS

INTRODUCTION

As demand for clean energy increases, solar deployment is expected to rise. Because utility-scale solar requires considerable land use, many state and local governments are prudently discussing the impact future solar development will have on agricultural lands. The practice of dual-use solar, which refers to allowing two uses to be accomplished in the same space, can address concerns about solar on agricultural land.[1]

Agrisolar, also called agrivoltaics, is the co-location of agriculture and solar within the landscape. It includes solar co-located with crops, grazing, beekeeping, pollinator habitat, aquaculture, and farm or dairy processing. In addition to photovoltaics, it also includes concentrated solar installations.[2] The practice of combining agriculture and solar energy systems can provide numerous economic and environmental benefits. This includes improving economic viability for landowners and agricultural entities, providing beneficial ecological services, and expanding siting opportunities for solar deployment.[3]

The purpose of this report is to provide decision makers and others an overview of policy approaches to combining solar with agriculture and offer considerations on how regulations can facilitate dual-use.

First, we will look at land use and solar, examining the impact expected by the rapid increase of solar development in the near future, and the varying level of responses occurring around clean energy siting regulations and guidance. Next, we will explore the types of dual-use applications and the benefits associated with them, and then move into an overview of policy mechanisms at the federal, state, and local levels that facilitate dual-use. Lastly, we will take a closer look at how local governments have the most impact on solar development, and offer considerations for decision-makers who are interested in creating ordinances or incentives around dual-use.

1 Marieb, Dugan. "Dual-use Solar in the Pacific Northwest: A Way Forward." Renewable Northwest, 2019. Accessed March 2023.
2 Personal communication, Stacie Peterson, Energy Program Director, National Center for Appropriate Technology. March 2023.

LAND USE AND SOLAR

How Much Land Will Be Needed?

As the U.S. moves toward setting ambitious decarbonization goals, solar energy is forecasted to grow considerably. Based on solar deployment scenarios by the U.S. Department of Energy (DOE), ground-based solar technologies may require a land area equivalent to 0.5% of the contiguous U.S. However, it is estimated that this requirement could be met using less than 10% of already disturbed or contaminated lands.[4]

By county, it does not appear that current or planned solar projects would require significant land allocation as a proportion of local area. In an analysis of all counties in the contiguous U.S., the Great Plains Institute found that existing solar development comprises on average 0.04% of land per county and that if all proposed solar projects were built, development would average 0.22% of land per county. As of 2021, no county in the U.S. had more than 4% of total county area in solar development. In contrast, cultivated lands comprise up to 75% of the total county area in much of the central Midwest.[5]

Some state and local governments have created restrictions around using farmland for solar development. However, clean energy development does not appear to pose an immediate threat to the availability of farmland. As of 2022, Iowa had 30.6 million acres of farmland, about 17.5 million of which meets the U.S. Department of Agriculture's (USDA) definition of "prime."[6,7] If all of the 2,290 MW of proposed solar projects in Iowa were sited on prime farmland, it would use only 0.11% of prime farmland in the state.[8]
According to Minnesota Solar Pathways, powering 70% of Minnesota's electrical load by 2050 would require adding 22 gigawatts of solar,

3 Macknick, Jordan, et al. "The 5 Co of Agrivoltaic Success Factors in the United States: Lessons From the InSPIRE Research Study." National Renewable Energy Laboratory. 2022. Accessed March 2023.
4 "Solar Futures Study Fact Sheet." U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy, September 2021. Accessed March 2023.
5 Wyatt, Jessi, and Maggie Kristian. "The True Land Footprint of Solar Energy." Great Plains Institute for Sustainable Development, Sept. 14, 2021. Accessed March 2023.
6 "Prime Farmland Definition." Natural Resources Conservation Service, March 2015. Accessed March 2023.
7 "Iowa Solar and Agriculture Fact Sheet." Clean Grid Alliance. Accessed March 2023.
8 Ibid.

1-866-723-8677 | AGRISOLAR@NCAT.ORG | AGRISOLARCLEARINGHOUSE.ORG

which would use 220,000 acres of land. Even if all of this solar were to be sited exclusively on prime farmland, it would still only use 1.32% of prime farmland in the state.[9]

Alternatives to Land-use Restrictions

Even though the land needed for solar development is proportionally low, many state and local governments have enacted or are considering enacting restrictions on clean energy development on farmland. In Iowa, some counties have considered using Corn Suitability Ratings (CSR) to restrict development,[10 11] and state legislators have introduced bills prohibiting solar development on farmland.[12 13 14]

In Minnesota, the Public Utilities Commission's administrative rules restrict large electric generation plants from being located on prime farmland.[15] In Midwest states where a large percentage of the land qualifies as farmland, blanket restrictions such as these can severely impact opportunities for clean energy development.

However, some organizations concerned about the land use impacts of clean energy development have developed siting guidance that mitigates impacts to sensitive areas. For example, the American Farmland Trust, an organization dedicated to the preservation of farmland, has created a series of Smart Solar principles, which they believe meet three goals: accelerate solar energy development, strengthen farm viability, and safeguard land well-suited for farming and ranching.[16]

These principles include:[17]

Prioritize solar siting on buildings and land not well suited for farming
Including buildings, irrigation ditches, brownfields or other marginal lands.

Safeguard the ability for land to be used for agriculture
If developed on farm or ranch land, policies and practices should protect soil health, especially during construction and decommissioning.

Grow agrivoltaics for agricultural production and solar energy
Agrivoltaics sustain agricultural production under/between the solar panels.

Promote equity and farm viability
Farmers and underserved communities should benefit from solar development and should be included in stakeholder engagement processes.

9 "Minnesota Solar and Agriculture," Clean Grid Alliance. Accessed March 2023.
10 Whiskeyman, Danny, "Scott County Board of Supervisors approves new solar ordinance," KWQC, Sept. 20, 2022. Accessed March 2023.
11 Klotzbach, John, "County Considering Wind Turbine Ordinance Changes," Independence Bulletin Journal, Sept. 6, 2022. Accessed March 2023.
12 "Senate Study Bill 1077," Iowa Legislature, Jan. 24, 2023. Accessed March 2023.
13 "Senate File 2127," Iowa Legislature, Jan. 26, 2022. Accessed March 2023.
14 "Senate File 2321," Iowa Legislature, Feb. 17, 2022. Accessed March 2023.
15 "Minnesota Administrative Rules," Minnesota Legislature, Sept. 18, 2009. Accessed March 2023.
16 Sallet, Lori, "Growing Renewable Energy While Strengthening Farm Viability and Safeguarding Healthy Soil," American Farmland Trust, Sept. 22, 2022. Accessed March 2023.
17 Ibid.

This type of siting guidance offers a more nuanced approach to clean energy development. By taking a wider array of factors into consideration, including economic impacts and dual usage, this approach demonstrates that clean energy siting does not require an either/or mindset.

Through thoughtful planning, local decision makers can craft policies that respect the property rights of local landowners and allow them to take advantage of opportunities to diversify their income, while at the same time encouraging dual-use practices that preserve the agricultural values of the local community.

TYPES OF DUAL-USE

There are several types of dual-use practices that can be combined with solar energy sites including cultivating different types of crops such as vegetables and berries, utilizing livestock grazing for managing vegetation, beekeeping, and planting native vegetation and pollinator habitat. These practices can create environmental and economic benefits such as new revenue streams for local farmers, increased pollinators, wildlife habitat, enhanced soil health, reduced erosion, and carbon storage. These projects are not mutually exclusive, however, and multiple activities can occur simultaneously, or at different times of the year.[18]

Crops

A variety of agricultural crops can be grown in co-location with solar installations, including fruit, vegetables, and berries. Any crops that are successful in a region are likely to be suitable for co-location with solar projects. Crops can be grown under the panels, between rows, or outside the perimeter of the installation. Panel height, spacing, water access, equipment needs, and whether the system is fixed or tracking, all will play a role in the success of integrating specific types of crop production into a solar installation. Research is ongoing to better understand the performance and feasibility of co-locating crops with solar energy systems.[19 20]

Iowa State University recently announced it will kick off a $1.8 million, four-year research project on dual-use and food crop production.[21] Similar food crop-focused research is ongoing through the Sustainably Colocating Agricultural and Photovoltaic Electricity Systems (SCAPES) projects at University of Illinois Urbana-Champaign, University of Arizona, Colorado State University, Auburn University, and

18 Macknick, Jordan, et al. "The 5 Cs of Agrivoltaic Success Factors in the United States: Lessons from the InSPIRE Research Study," National Renewable Energy Laboratory, 2022. Accessed March 2023.
19 "Suitable Agricultural Activities for Low-Impact Solar Development," InSPIRE, Aug. 11, 2022. Accessed March 2023.
20 Macknick, Jordan, et al. "The 5 Cs of Agrivoltaic Success Factors in the United States: Lessons From the InSPIRE Research Study," National Renewable Energy Laboratory, 2022. Accessed March 2023.
21 "ISU researchers to study growing crops in solar farm's footprint," Iowa State University, Feb. 15, 2023. Accessed March 2023.

University of Chicago. [22]

Outside of food crops, researchers are also looking into whether more traditional row crops can be co-located with solar installations. For example, Purdue University is conducting field trials combining traditional crops like corn and soy with raised solar panels.[23]

Grazing

Solar grazing is the utilization of livestock, usually sheep, to manage vegetation at solar sites. It takes the place of traditional mowing and offers both environmental and financial benefits. For project developers, contracting with local farmers to use solar grazing as a management tool can reduce operations and maintenance costs. Solar grazing can offer local livestock owners additional pasture opportunities and the opportunity to be paid for a valuable service, increasing income to their business and adding to the economy of the rural communities where these projects are usually located.[24]

22 Harwood, Lori. "UArizona Partners on $10M USDA Grant to Expand Research on Growing Crops Under Solar Panels." University of Arizona, Oct. 6, 2021. Accessed March 2023.
23 Bowman, Sarah, et al. "Can solar panels and row crops coexist on farmland across the skeptical Corn Belt?" Indy Star, Sept. 13, 2022. Accessed March 2023.
24 "Fact Sheet: Making the Case for Solar Grazing." Center for Rural Affairs, Dec. 20, 2021. Accessed March 2023.

Beekeeping

Solar beekeeping is the practice of placing beehives on or near solar sites that have been planted in native vegetation or other pollinator habitats. Solar beekeeping can offer new revenue streams for local beekeepers, as well as the opportunity to gain resiliency from a diverse source of pollen for honey production.

Additionally, the landowner sees a positive impact from improved soil health, and nearby farmers profit from pollination services.[25] Pollinators are critical to crop production, with the USDA estimating that wild and managed bees together add $15 billion in crop value each year.[26] An Argonne National Laboratory case study found that the value of pollinator habitat on U.S. lands designated as proposed or potential solar sites is between $1.5 billion and $3.2 billion.[27]

Native Vegetation and Pollinator-Friendly Solar

Sites with native or naturalized, non-invasive, flowering vegetation are commonly referred to as "pollinator-friendly solar sites." Pollinator-friendly solar project sites offer habitat for honey bees, native bees, and other species of pollinators, all of which can positively benefit local agricultural production. Using native or pollinator-friendly vegetation provides numerous benefits, including reduced erosion, improved water quality and soil health, and increased habitat for wildlife. It can also reduce long-term operation and maintenance costs for project developers and site managers.[28]

25 "Fact Sheet: Making the Case for Solar Beekeeping." Center for Rural Affairs, Dec. 22, 2022. Accessed March 2023.
26 Marieb, Dugan. "Dual-use Solar in the Pacific Northwest: A Way Forward." Renewable Northwest, 2019. Accessed March 2023.
27 "Case Study: Economics of Pollinator Habitats at Solar Facilities." Argonne National Laboratory. Accessed March 2023.

Determining the appropriate types of dual-use projects most likely to be successful at a specific site can be daunting. However, research is ongoing to understand the components needed for successful deployment and operation of agrisolar projects. From 2015 to 2021, the Innovative Solar Practices Integrated with Rural Economies and Ecosystems (InSPIRE) project studied field research sites and identified five key elements that enable success. These elements were explored in the report *"The 5 C's of Agrivoltaic Success Factors in the United States: Lessons from the InSPIRE Research Study."* They include:[29]

Climate, soil, and environmental conditions
The ambient conditions and factors of the specific location that are beyond the control of the solar owners, solar operators, agrivoltaic practitioners, and researchers.

Configurations, solar technologies, and designs
The choice of solar technology, the site layout, and other infrastructure that can affect light availability and solar generation.

Crop selection and cultivation methods, seed and vegetation designs, and management approaches
The methods, vegetation, and agricultural approaches used for agrivoltaic activities and research.

Compatibility and flexibility
The compatibility of the solar technology design and configuration with the competing needs of the solar owners, solar operators, agricultural practitioners, and researchers.

Collaboration and partnerships
Understandings and agreements made across stakeholders and sectors to support agrivoltaic installations and research, including community engagement, permitting, and legal agreements.

POLICY APPROACHES TO DUAL-USE

Policies at the federal, state, and local levels of government can influence the implementation of dual-use solar. These policies interact, but overall, local land-use policies have been shown to be the most significant catalyst or inhibitor of agrisolar development.[30]

We will be looking at a variety of policy approaches at each level of government, including tax incentives, land use laws, renewable portfolio standards, and others.

28 Smith, Cody. "Amplifying Clean Energy with Conservation, Part One: Pollinator-Friendly Solar." Center for Rural Affairs, October 2020. Accessed March 2023.
29 Macknick, Jordan, et al. "The 5 Cs of Agrivoltaic Success Factors in the United States: Lessons From the InSPIRE Research Study." National Renewable Energy Laboratory, 2022. Accessed March 2023.
30 Pascaris, Alexis S. "Examining existing policy to inform a comprehensive legal framework for agrivoltaics in the U.S." Energy Policy, December 2021. Accessed March 2023.

Federal

Because land use decisions are typically made at the local level, the role of federal policy in encouraging or discouraging dual-use applications is limited. However, two primary incentives exist for solar development—the Business Energy Investment Tax Credit (ITC) and USDA's Rural Energy for America Program (REAP). Additionally, federal investments in dual-use can help bolster the practice.

Tax incentives

The ITC is the sole corporate tax credit available for solar. The tax credit does not include any restrictions that would disallow solar on specific locations, making it acceptable for combination with dual-use.[31]

Land-use laws

Authority over land use in the U.S. is held by state and local governments.[32]

Portfolio standards

Renewable portfolio standards are policies that require electricity suppliers to provide customers with a stated amount of electricity from renewable sources. Although the idea of a federal renewable portfolio standard has been proposed, no such policy currently exists.[33]

Other

REAP grants and loan guarantees offer financial assistance to agricultural producers and small businesses for energy improvements or investments. This can include construction of solar energy systems and does not present conflicts with dual-use integration.[34]

In 2022, DOE announced an $8 million investment in agrivoltaic research projects. The

Foundational Agrivoltaic Research for Megawatt Scale-funding program is aimed at developing best practices, seeking replicable models, providing new economic opportunities, and reducing land-use conflicts.[35] In 2022, USDA's Partnerships for Climate Smart Commodities awarded the University of Arizona $4.7 million[36] and the University of Texas Rio Grande Valley $2.2 million[37] for agrivoltaic research projects.

State

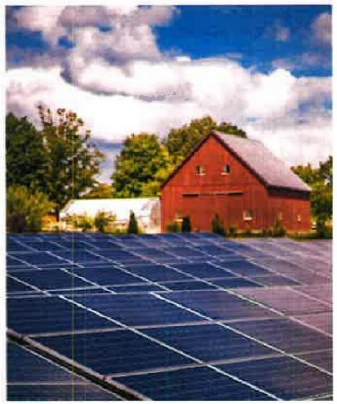
State policy approaches to dual-use include tax and other financial incentives, state-level land-use laws, renewable portfolio standards, and pollinator scorecards. State-level policies interact with local decision making in ways that can either enable or restrict local governments from enacting certain practices or policies.

Tax incentives

States can incentivize solar dual-use practices through land use taxes. If landowners are able to integrate solar development into their farming operation without a land-use tax change, they may be more receptive to the development. For example, Rhode Island has amended its Farm,

31 Ibid.
32 Ibid.
33 "Renewable energy explained: Portfolio standards." U.S. Energy Information Administration, November 30, 2022. Accessed March 2023.
34 Pascaris, Alexis S. "Examining existing policy to inform a comprehensive legal framework for agrivoltaics in the U.S." Energy Policy, December 2021. Accessed March 2023.
35 "DOE Announces $8 Million to Integrate Solar Energy Production with Farming." U.S. Department of Energy, Dec. 6, 2022. Accessed March 2023.
36 "Media Advisory: USDA awards over $4.7M to support and promote 'climate-smart' food production." University of Arizona, Dec. 19, 2022. Accessed March 2023.
37 Gonzalez, Maria. "UTRGV receives $2.2M grant for 'Climate-Smart' Commodities project." University of Texas Rio Grande Valley, Dec. 12, 2022. Accessed March 2023.

Forest, and Open Space Land law to exempt landowners from a land-use change tax if they are integrating a dual-use renewable energy generation system, which is defined as a wind or solar system that allows agricultural practices to continue around it under normal practices.[38] [39]



Similarly, in 2021, New Jersey enacted a Dual-Use Solar Law, which provides an incentive for keeping land at solar sites in agricultural production. The law established a pilot program allowing unpreserved farmland used for dual-use solar projects to be eligible for farmland assessment under certain conditions.[40]

The AgriSolar Clearinghouse maintains an interactive map detailing dual-use financial incentives throughout the United States, including potential funding sources, assistance programs, utility incentives, and tax breaks. It can be found at: agrisolarclearinghouse.org/financial-information-map.

Land-use laws

State-level land use laws can significantly impact where solar development can happen. For example, Illinois' Agricultural Areas Conservation & Protection Act creates land areas where only agricultural production is allowed.[41]

As dual-use has evolved, debates about whether implementation of these practices at solar sites should qualify as agricultural land use are ongoing. One practice states can employ to help facilitate dual-use at solar sites is to review land use planning goals and definitions of solar generation, farmland, and farm uses to ensure they do not preclude dual-use solar.[42]

Some states have created statewide siting standards to regulate clean energy development. For example, in early 2023, lawmakers in Illinois passed House Bill 4412, which dictates statewide setbacks for wind and solar development.[43] Alternative approaches, such as the creation of state-specific best practices, model ordinances, or voluntary siting matrices offer ways to preserve local control while also providing helpful guidelines for local decision makers.[44] [45]

38 "Rules and Regulations for Enforcement of the Farm, Forest, and Open Space Act." Rhode Island Department of State. Accessed March 2023.
39 Marleb, Dugan. "Dual-use Solar in the Pacific Northwest: A Way Forward." Renewable Northwest, 2019. Accessed March 2023.
40 "Chapter 170." New Jersey Legislature, 2021. Accessed March 2023.
41 Guarino, Jessica, and Tyler Swanson. "The Illinois Agrivoltaics Regulatory and Policy Guide Analyzes State and Local Laws." AgriSolar Clearinghouse, Feb. 1, 2023. Accessed March 2023.
42 Marleb, Dugan. "Dual-use Solar in the Pacific Northwest: A Way Forward." Renewable Northwest, 2019. Accessed March 2023.
43 Moore, Brenden. "New Illinois state energy project standards welcomed by some, resisted by others." The Pantagraph, February 11, 2023. Accessed March 2023.
44 Marleb, Dugan. "Dual-use Solar in the Pacific Northwest: A Way Forward." Renewable Northwest, 2019. Accessed March 2023.
45 Mouw, Lindsay. "Exploring Siting Guidance: Agriculture Siting Matrices Inform Renewable Energy Siting." Center for Rural Affairs, July 2022. Accessed March 2023.

Portfolio standards

As of 2021, 31 states and the District of Columbia had adopted renewable portfolio standards or clean energy goals.[46] Within these standards, "carve out" provisions can be used to encourage the adoption of certain technologies, such as solar and dual-use. As of 2021, 21 states had solar carve-out provisions in their renewable portfolio standards. Massachusetts' SMART program is one example of such a renewable portfolio standard that also incorporates incentives for dual-use.[47]

Other

Under the Massachusetts Department of Energy's Solar Massachusetts Renewable Target (SMART) program, specific kinds of dual-use solar systems, known as Agricultural Solar Tariff Generation Units (ASTGU), can qualify for financial incentives. To qualify, the land under the solar system must be in continuous agricultural production. The SMART program offers a base cents-per-kilowatt-hour compensation rate for new solar arrays. Systems using these practices that qualify as an ASTGU receive an additional 6 cents per kilowatt-hour to the base rate.[48] [49] [50]

Many states across the U.S. have created policies or programs to encourage or require implementation of pollinator habitat at solar

sites. These initiatives can vary widely in their structure and implementation. One tool is a pollinator scorecard, which provides a model to score pollinator-friendly practices. This score can be used to gauge if a site meets state or local requirements, to designate a site as pollinator-friendly, or to determine if a site qualifies for other types of incentives.[51]

For example, Minnesota state code (§216B.1642)[52] authorizes the Board of Soil and Water Resources to establish statewide guidance for solar project developers aiming for recognition under the Habitat Friendly Solar Program. The statute reads, "...an owner of a solar site implementing solar site management practices may claim that the site provides benefits to gamebirds, songbirds, and pollinators only if the site adheres to guidance set forth by the pollinator plan provided by the Board of Water and Soil Resources."[53] [54]

Local

Local land-use policy is the key leverage point

46 Bowers, Richard. "Five states updated or adopted new clean energy standards in 2021." U.S. Energy Information Administration, February 1, 2022. Accessed March 2023.
47 Pascaris, Alexis S. "Examining existing policy to inform a comprehensive legal framework for agrivoltaics in the U.S." Energy Policy, December 2021. Accessed March 2023.
48 "Dual-Use: Agriculture and Solar Photovoltaics." University of Massachusetts Amherst. Accessed March 2023.
49 "Guideline Regarding the Definition of Agricultural Solar Tariff Generation Units." Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs, Department of Energy Resources, Department of Agricultural Resources, April 26, 2018. Accessed March 2023.
50 "SMART Program Incentives for Solar Arrays." University of Massachusetts Amherst. Accessed March 2023.
51 "Pollinator-Friendly Solar Scorecards." Fresh Energy. Accessed March 2023.
52 "2019 Minnesota Statutes." Office of the Revisor of Statutes, Minnesota Legislature. Accessed March 2023.
53 "Minnesota Habitat Friendly Solar Program." Minnesota Board of Water and Soil Resources, 2019. Accessed March 2023.
54 Smith, Cody. "Amplifying Clean Energy with Conservation, Part One: Pollinator-Friendly Solar." October 2020. Accessed March 2023.

for enabling development on land suitable for combining agriculture and solar energy production.[55] This is because local governments usually have the most influence over land use, including the ability to regulate zoning and develop siting ordinances that dictate how and where development can occur. Tax incentives and renewable portfolio standards are seen more in state-level policy.

Tax incentives

Local governments have the ability to create tax incentives, though these are more common in state-level policy.

Land-use laws

Land-use laws are the primary lever for local governments to facilitate dual-use. However, despite rapid expansion of solar energy development, many local governments have not addressed siting in their ordinances. In a review of local-level policies in Illinois, researchers found that many counties had no solar siting ordinance on the books, and the counties that did represented drastically different approaches to zoning and land-use policy.[56] As of 2020, only 19% of zoning ordinances in Michigan addressed utility-scale solar siting.[57] When counties lack an ordinance, it can create uncertainty for decision makers and developers, who won't know if the land use is permitted or prohibited.[58]

Solar siting often depends on the county's comprehensive land-use plans and resulting zoning and siting ordinances. When developing ordinances, local decision makers often use the county's land-use planning goals to help guide the process. For example, in Buchanan County, Iowa, county supervisors cited language in their comprehensive land-use plan about preserving agricultural lands with highly productive soils to propose a restriction on clean energy development on lands with high CSR.[59] Expressing similar concern, Scott County, Iowa passed an ordinance restricting solar development on lands with high CSR.[60] [61]

Conversely, some counties have identified renewable energy development as a priority within their comprehensive land-use plan. Linn County, Iowa's comprehensive plan contains a section on renewable energy, which identifies an objective to "encourage development of local alternative and renewable energy resources through identification and removal of regulatory

55 Pascaris, Alexis S. "Examining existing policy to inform a comprehensive legal framework for agrivoltaics in the U.S." Energy Policy, December 2021. Accessed March 2023.
56 Guanno, Jessica, and Tyler Swanson. "The Illinois Agrivoltaics Regulatory and Policy Guide Analyzes State and Local Laws." AgriSolar Clearinghouse, Feb. 1, 2023. Accessed March 2023.
57 Pascaris, Alexis S. "Examining existing policy to inform a comprehensive legal framework for agrivoltaics in the U.S." Energy Policy, December 2021. Accessed March 2023.
58 Ibid.
59 Klotzbach, John. "County Considering Wind Turbine Ordinance Changes." Independence Bulletin Journal, Sept. 6, 2022. Accessed March 2023.
60 "Scott County Ordinance NO. 22-04." Scott County, Iowa, Sept. 15, 2022. Accessed March 2023.
61 Whiskeyman, Danny. "Scott County Board of Supervisors approves new solar ordinance." KWQC, Sept. 20, 2022. Accessed March 2023.

barriers."[62]

Additionally, local governments can adopt siting ordinances that dictate specific dual-use management practices at solar sites. For example, ordinances can require sites to be planted in native vegetation or pollinator habitat, or to be maintained by livestock grazing.

Portfolio standards

Both municipalities and utilities have the ability to set their own renewable electricity goals.

Other

Community agrisolar projects can improve local buy-in by providing an opportunity for community members to become shareholders.[63]

CONSIDERATIONS FOR LOCAL DECISION MAKERS: HOW ORDINANCES CAN FACILITATE DUAL-USE

Decision makers who want to facilitate the combination of clean energy development and agriculture should consider the following topics when engaging in the ordinance development or amendment process:

62. "Linn County Comprehensive Plan: Volume 1." Linn County, Iowa, July 19, 2013. Accessed March 2023.
63. Brunswick, Sarah, and Danika Marzillier. "The New Solar Farms: Growing a Fertile Policy Environment for Agrivoltaics." Minnesota Journal of Law, Science & Technology. March 4, 2023. Accessed March 2023.

Land-use Planning

Comprehensive land-use plans are commonly used by counties to help guide development. These plans reflect the values and vision of the community and, in rural areas, they often contain language relating to the preservation of agricultural heritage and farmland. The way this language is interpreted varies widely between counties, and some decision makers may have difficulty interpreting how language around agricultural resource protection relates to dual-use.[64]

Implementation of dual-use practices can provide an alternative to an either/or mindset relating to agriculture and clean energy development, as they allow land to stay in agricultural use. Combining livestock grazing, crop production, and other endeavors with solar sites preserves the agricultural roots of rural communities while also allowing landowners and counties to take advantage of the environmental and economic benefits of clean energy development.

Including renewable-energy development within the county's comprehensive plan can ensure the economic benefits of this development are taken into consideration when ordinances are created or amended in the future. Clean energy can benefit counties in the form of increased tax revenues, lease payments to local landowners, and job creation. Combining this development with dual-use can offer increased environmental benefits and provide new revenue streams for local farmers.

Zoning and Siting Regulations

Local decision makers can ensure that development is done in a way that meets the needs of the community by engaging in a proactive ordinance development process. By taking the time to create an ordinance before development has been proposed, decision makers can ensure there is time to receive

64. Marieb, Dugan. "Dual-use Solar: in the Pacific Northwest: A Way Forward." Renewable Northwest, 2019. Accessed March 2023.

community input and feedback on proposed language. Additionally, considerations can be made about setting additional land use expectations, such as dual use.

Counties wanting to enable dual-use integration should consider zoning schemes that allow for mixed land usage. This could include overlay districts, which would allow a special permit for solar in certain zones, or allowing development when certain land use standards are met, such placing a certain percentage of land into pollinator habitat.[65]

Siting regulations should be carefully crafted to ensure they don't restrict dual-use. For example, setting restrictions on panel height or developing overly prescriptive vegetation management requirements can limit dual-use opportunities.

Definitions

When creating definitions within zoning and siting regulations, local governments can ensure they do not preclude dual-use solar. This could include refining definitions for solar generation, farmland, and farm uses to ensure compatibility with desired dual-use practices.[66]

It is also important to determine wich applications and practices will be considered dual-use. For example, in Oregon, a rule was adopted allowing for dual-use practices on high-value soils. However, the rule only specifies agrivoltaics and grazing, meaning pollinator habitats or other conservation dual-use do not qualify.[67]

Interaction of Dual-use Goals

When creating policies, it is especially important to carefully consider how the dual-usage goals interact. Certain requirements may unintentionally restrict beneficial practices. For example, native vegetation or pollinator-friendly habitat requirements may unintentionally limit grazing opportunities if plants on the site are not suitable. In the same vein, to meet pollinator requirements vegetation must be allowed to bloom to ensure it is actually benefiting pollinators, requiring grazing schedules be modified to accommodate bloom times.[68]

It is wise to consider that 100% of land may not be able to be integrated into dual-use. Setting overly strict guidance could deter development if prescriptions are not feasible. Instead, requiring a percentage of land to be used for dual-use purposes introduces a level of flexibility while ensuring that the original intent of the usage policy is preserved.

Site Construction, Decommissioning, and Restoration

Although not directly related to dual-use, local governments can use ordinances to minimize land impacts during the construction and decommissioning of solar systems.

Solar projects generally have minimal impact on land quality, and land can be returned to farming at the end of the project's life cycle, if desired. However, being clear about how land will be

65. Pascaris, Alexis S. "Examining existing policy to inform a comprehensive legal framework for agrivoltaics in the U.S." Energy Policy, December 2021. Accessed March 2023.
66. Marieb, Dugan. "Dual-use Solar: in the Pacific Northwest: A Way Forward." Renewable Northwest, 2019. Accessed March 2023.
67. Ibid.
68. "Fact Sheet: Making the Case for Solar Grazing." Center for Rural Affairs, Dec. 20, 2021. Accessed March 2023.

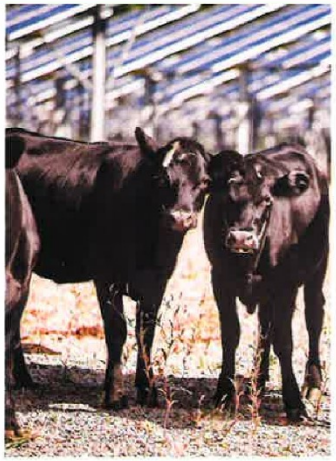
managed during construction as well as once a project is decommissioned can help protect land quality. Local governments can set requirements for construction, vegetation management, and decommissioning that spell out the expectations and obligations. This can also include requiring financial guarantees to ensure funds are available for decommissioning purposes and that local governments are not responsible for costs.[69]

KEY TAKE-AWAYS

Solar development is expected to rise significantly in the coming years. Although deployment models reflect that will require a large amount of land, it is expected it will require 0.5% of land in the contiguous U.S. and, in many cases, can be placed on already disturbed or marginal lands. Even if all proposed projects in Minnesota and Iowa were sited on prime farmland, it would only represent 1.32% and 0.11% of all prime land in those states, respectively.

Clean energy and agriculture do not require an either/or approach. Through thoughtful planning, local decision makers can craft policies that respect the property rights of local landowners and allow them to take advantage of opportunities to diversify their income, while at the same time encouraging dual-use and agrisolar practices that preserve the agricultural values of the local community.

Dual-use and agrisolar practices can include cultivating crops, utilizing livestock grazing, beekeeping, and planting native vegetation and pollinator habitat. These practices can create a variety of environmental and economic benefits, such as new revenue streams for local farmers, increased



pollinators, wildlife habitat, and soil health, reduced erosion, and carbon storage.

Policies exist at the federal, state, and local levels of government that can influence the implementation of dual-use solar and agrivoltiacs. These policies interact but overall, local land-use policies have the most significant role in impacting solar and agrivoltaic development.

By engaging in a proactive ordinance development process, local decision makers can ensure that development is done in a way that meets the needs of their community. Creating an ordinance in advance of development ensures there is time to receive community input and feedback on the proposed language.

69. Kolbeck-Urlacher, Heidi. "Decommissioning Solar Energy Systems Resource Guide." Center for Rural Affairs, June 2022. Accessed March 2023.

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FACT SHEET:

MAKING THE CASE FOR SOLAR GRAZING

As solar projects across the nation continue to expand, solar grazing has emerged as a valuable tool. Using livestock to manage vegetation at solar sites can enhance site value by keeping land in agricultural use, providing new income streams for local farmers, and adding environmental benefits such as decreased erosion and enhanced soil health.

"Agrivoltaics" is a term used to describe combining agriculture with renewable energy. Other types of agrivoltaics include producing hay, berries, vegetables, and honey at solar sites.[1]

ECONOMICS

Solar grazing is the utilization of livestock, usually sheep, to manage vegetation at solar sites. It takes the place of traditional mowing, offering numerous environmental and financial benefits and meeting clean energy and agricultural goals simultaneously. For project developers, contracting with local farmers to use solar grazing as a management tool can reduce operations and maintenance costs. A 2018 Cornell University study found that managing solar site vegetation with sheep grazing required two and half times less labor, making it less expensive than traditional landscaping.[2] Meanwhile, solar grazing provides livestock owners with additional pasture opportunities and the chance to be paid for a valuable service, increasing income to their business and adding to the economy of the rural communities where these projects are usually located.

ENVIRONMENTAL BENEFITS

Solar grazing can also add environmental benefits to a project site. Introducing livestock onto the landscape and partnering them with native vegetation can improve soil health and reduce runoff. The deep, complex root systems of native vegetation help retain water, reduce topsoil loss, and provide wildlife and pollinator habitat.[3] Sites with native vegetation can have three and one-half times more pollinators than sites without.[4] This vegetation provides habitat for bees and other pollinators, as well as ground nesting birds including sage grouse, pheasants, and quail. Pollinator plantings can coexist with solar grazing with careful planning and management, such as developing a rotational grazing plan that accommodates vegetation bloom periods.[5]

Sources

1 Frenay, Erica. "Solar Grazing: Livestock as Landscapers at Utility-Scale Solar Arrays." Cornell Small Farm Program, July 20, 2020, smallfarms.cornell.edu/2020/07/solar-grazing-livestock-as-landscapers-at-utility-scale-solar-arrays. Accessed November 2021.

2 Kochendoerfer, Nikola, et al. "The agricultural, economic and environmental potential of co-locating utility scale solar with grazing sheep." David R. Atkinson Center for a Sustainable Future, Cornell University, 2019, solargrazing.org/wp-content/uploads/2021/02/Atkinson-Center-Full-Report.pdf. Accessed November 2021.

3 Dreves, Harrison. "Beneath Solar Panels, the Seeds of Opportunity Sprout: Low-Impact Development of Solar Installations Could be Win-Win-Win for Food, Water, and Renewable Energy." National Renewable Energy Laboratory, 2019, nrel.gov/news/features/2019/beneath-solar-panels-the-seeds-of-opportunity-sprout.html. Accessed November 2021.

4 Scholte, Lisa A., et al. "Prairie strips improve biodiversity and the delivery of multiple ecosystem services from corn–soybean croplands." Proceedings of the National Academy of Sciences of the United States of America, Oct. 17, 2017, pnas.org/content/114/42/11247. Accessed November 2021.

5 "Solar Grazing FAQ." American Solar Grazing Association, solargrazing.org/faq. Accessed November 2021.

PLANNING

Including solar grazing as a goal in the beginning stages of project planning will allow developers to tailor sites for optimal grazing management. Solar grazing is most successful when deployed as part of a strategic, rotational grazing plan.

Photo courtesy of Minnesota Native Landscapes

STEP 1

Goal setting

Developers should identify their project goals and build a site plan that reflects the solar grazing co-usage goals. Other beneficial practices, such as pollinator or wildlife habitat and establishment of native vegetation, should be considered, but weighing how these goals can complement or impede each other is important.

STEP 2

Determine site conditions

Developers should develop a timeline for site establishment. Introduction of regular livestock grazing should be withheld until native vegetation at the site is fully established—between one and three years. Flash grazing during this period can be used for weed control. Consulting with local experts is key when selecting a seed mix for the site that is regionally appropriate and suitable for livestock grazing. Other factors that should be considered include site size, accessibility of the site, electricity and water access, and fencing. Although wildlife fencing provides benefits to sites with native plantings, it is not suited for grazing sites due to the gaps at the bottom.[6]

STEP 3

Select livestock species and determine population

Sheep are the most widely used and best-suited livestock for solar grazing.[7] They are smaller than cattle and are not likely to damage equipment. Cattle have been successfully used in solar sites, but panel height becomes a necessary consideration.[8] Determining the number of animals used during grazing management will depend on available forage and the length of the grazing period.

STEP 4

Establish a robust rotational grazing and vegetation management plan for the site

Creating a rotational grazing plan is key to ensuring proper management of vegetation and for the health of grazing animals. Consult with local grazing experts to create a goal-oriented, site-specific plan. Temporary fencing may be employed for "mob" or rotational grazing. Sheep should be moved at least once a week to allow recovery of grazed plants and should not return to a previously grazed paddock for at least six weeks.[9]

Sources, continued

6 Personal communication, Audrey Lopez, Grazing Manager, Minnesota Native Landscapes, October 2021.

7 "What is Solar Grazing?" American Solar Grazing Association, solargrazing.org/what-is-solar-grazing. Accessed November 2021.

8 Sharpe, K.T., et al. "Evolution of solar photovoltaic systems to shade cows in a pasture-based dairy herd." Journal of Dairy Science, March 2021, sciencedirect.com/science/article/pii/S0022030220316730. Accessed November 2021.

9 Frenay, Erica. "Solar Grazing: Livestock as Landscapers at Utility-Scale Solar Arrays." Cornell Small Farm Program, July 20, 2020, smallfarms.cornell.edu/2020/07/solar-grazing-livestock-as-landscapers-at-utility-scale-solar-arrays. Accessed November 2021.

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CONSIDERATIONS

Developers and farmers must work together to develop contracts that serve the needs of both parties. Longer-term contracts allow farmers to make investments in best practices. Site managers should ensure fencing, gates, and water access are maintained.[10] Carrying proper insurance and having clear contracts that spell out who is allowed at the site is important for the safety of the animals, equipment, and people.

SOLAR GRAZING AND SEED MIXES

Seed mixes should be regionally appropriate and site-specific. Consult with local experts to develop a location-specific mix. Many seed mixes can support both pollinators and livestock. If pollinator habitat is a goal, carefully timing grazing schedules is necessary to accommodate bloom times.

POLICIES

Policymakers can develop zoning and tax policies that incentivize beneficial practices, such as solar grazing. It is important to recognize that vegetation management goals may differ from site to site. Ordinances that include native vegetation and/or pollinator-friendly rules should not be so strict that they reduce opportunities for other beneficial practices, such as grazing.

- In 2021, New Jersey enacted a "Dual-Use Solar Law" which provides an incentive for keeping land at solar sites in agricultural production. S3484 established a pilot program allowing unpreserved farmland used for dual-use solar projects to be eligible for farmland assessment under certain conditions.[11]
- Under the Massachusetts Department of Energy's Solar Massachusetts Renewable Target (SMART) program, specific kinds of dual use solar systems, known as "Agricultural Solar Tariff Generation Units," can qualify for financial incentives. To qualify, the land under the solar system must be in continuous agricultural production.[12]

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10 "Recommendations." American Solar Grazing Association, solargrazing.org/recommendations/. Accessed November 2021.

11 "Chapter 170." New Jersey Legislature, 2021, njlegislature.gov.us/2020/Bills/PL21/170_.PDF. Accessed November 2021.

12 "Dual Use Agriculture and Solar Photovoltaics." University of Massachusetts Amherst, Center for Agriculture, Food, and the Environment, May 2016, ag.umass.edu/clean-energy/fact-sheets/dual-use-agriculture-solar-photovoltaics. Accessed November 2021.

FACT SHEET: ENVIRONMENTAL IMPACTS OF RENEWABLE ENERGY— WIND AND SOLAR

Renewables have been the fastest growing energy source since 2017 when costs reached a key milestone. Costs dropped enough to make wind and solar the cheapest form of conventional energy.[1] Rural communities often carry this infrastructure. This fact sheet looks at the environmental impacts of wind and solar development.

WIND

Bird and bat species are a top concern for protection from wind turbines.

Especially key protected, threatened, or endangered species: Indiana bat, northern long-eared bat, little brown bat, tri-colored bat, and bald eagles.

Wind developers are now performing acoustic surveys and radio tracking of threatened species to understand migration, mating, and nesting habits.

- Each developer must file for an Incidental Take Permit with the nearest U.S. Fish & Wildlife Service Ecological Services Office, which sets a limit to the amount of damage by wind turbines to vulnerable species.

That application includes a Habitat Conservation Plan detailing how the developer will not only avoid damaging, but protect vulnerable species.[2]

- These plans are part of complying with the Endangered Species Act.[3]
- Operating wind farms must conduct baseline bird and bat fatality monitoring in compliance with state and federal law.

Turbines are checked weekly for bird and bat fatalities.

- Investing in habitat conservation and considering the nesting and migration patterns are also options to meet requirements.

1 "Levelised Cost of Energy and Levelized Cost of Storage 2018." Lazard, Nov. 8, 2018, lazard.com/perspective/levelised-cost-of-energy-and-levelized-cost-of-storage-2018/. Accessed December 2018.
2 "Habitat Conservation Plan Handbook." U.S. Fish & Wildlife Service, Jan. 18, 2018, fws.gov/endangered/what-we-do/hcp_handbook-chapters.html. Accessed December 2018.
3 "Habitat Conservation Plans: Section 10 of the Endangered Species Act." U.S. Fish & Wildlife Service, Aug. 29, 2018, fws.gov/southwest/endangered/permits/hcp/hcp_wofactsheet.html. Accessed December 2018.

SOLAR

- Land used for utility scale solar projects can cause habitat loss.
  - Pollinator-friendly solar sites can combine habitat for pollinators with solar arrays, and has been supported through state policy in Maryland, Minnesota, New York, and Illinois.[4,5]
- Three states—Connecticut,[6] North Carolina,[7] and Washington[8]—have passed policies restricting siting solar projects on agricultural land through either state legislation or county ordinances.
  - As an alternative, low-impact solar and co-location of solar and agriculture is a growing area of research with three categories of design:
    1. Solar-centric
    2. Vegetation-centric
    3. Co-location[9]

Solar developers have found that combining solar generation with pollinator habitat or grazing land can reduce operations and maintenance costs.[10]

4 "Conservation: (525 ILCS55/1) Pollinator Friendly Solar Site Act." Illinois General Assembly, Aug. 21, 2018, ilga.gov/legislation/ilcs/ilcs3.asp?ActID=3900&ChapterID=44. Accessed December 2018.
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7 "PB 16-28." Currituck County Board of Commissioners, Feb. 20, 2017, co.currituck.nc.us/wp-content/uploads/2017/12/pb-16-28-currituck-county-udo-amendment-chapter-4-use-standards-02-20-2017.pdf. Accessed December 2018. This ordinance was put in place in February 2017 and repealed 18 months later.
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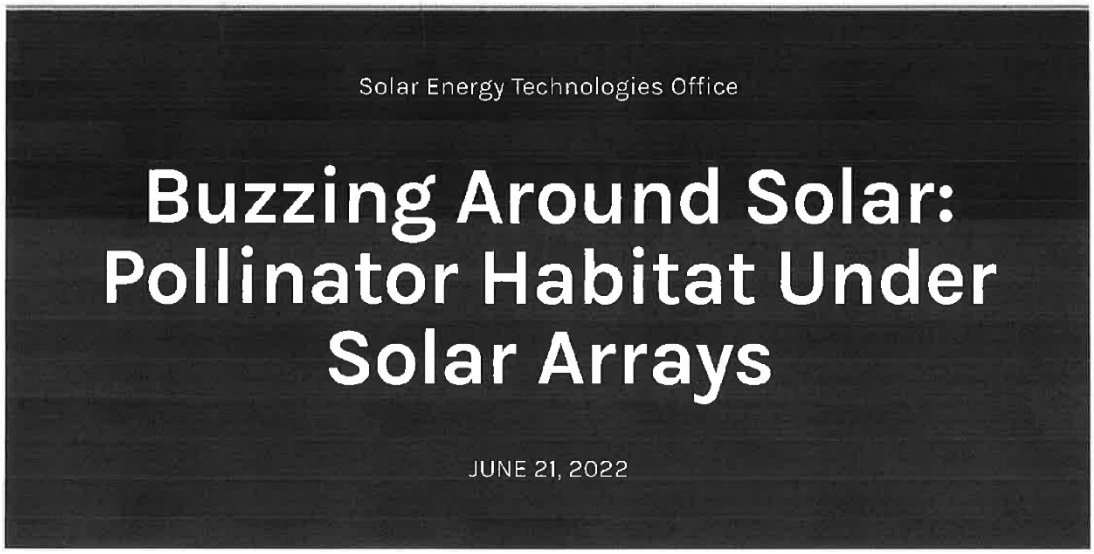
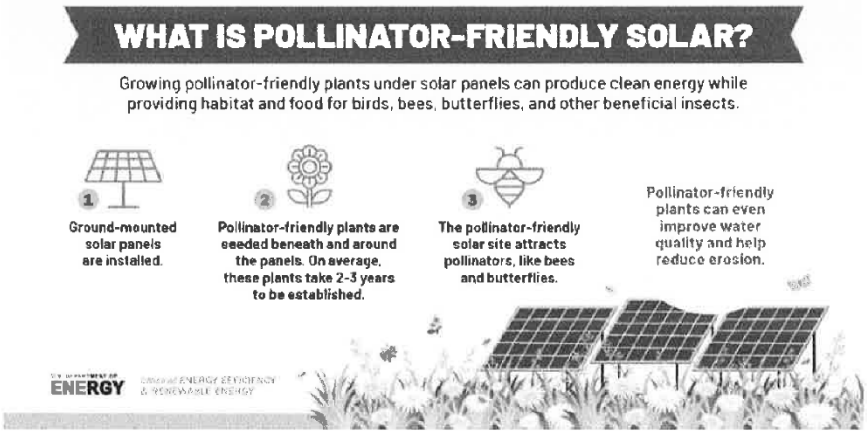
9 Mow, Benjamin. "Solar Sheep and Voltaic Veggies: Uniting Solar Power and Agriculture." U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy-National Renewable Energy Laboratory, June 6, 2018, nrel.gov/state-local-tribal/blog/posts/solar-sheep-and-voltaic-veggies-uniting-solar-power-and-agriculture.html. Accessed December 2018.
10 Macknick, Jordan. "Overview of Opportunities for co-location of agriculture and solar PV." U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy-National Renewable Energy Laboratory, June 14, 2016, canvt.org/wp-content/uploads/2013/01/NREL-Overview-of-opportunities-for-co-location-of-agriculture-and-solar-PV-1.pdf. Accessed December 2018.



By: Michele Boyd, Program Manager, Strategic Analysis and Institutional Support

Received from Bob Fritzmeyer, 11-27-23 - Woodbury County Zoning Commission Meeting



Pollinators—such as bees, butterflies, and other insects—are critical to the success of about 35 percent of global food crop production. In order to thrive, pollinators must have a suitable habitat. Establishing pollinator-friendly plants under and around ground-mounted solar arrays has the potential to provide this critical habitat and benefit both the pollinators and nearby agriculture. But a number of important questions remain about the impacts of pollinator-friendly solar and how to implement it at a large scale.

The U.S. Department of Energy Solar Energy Technologies Office (SETO) is working to better understand the economic, ecological, and performance impacts of co-locating pollinator habitat and solar arrays. This research is part of our broader agrivoltaics research, which studies how solar and agriculture can co-locate. Some of that research includes:

- Seed mixes and stormwater management in Georgia: A pollinator-friendly solar farm on former U.S. President Jimmy Carter's land is one of five solar sites being used to study stormwater infiltration and runoff at solar farms. They are testing three different seed mixes, including the

industry-standard grass, a low-diversity pollinator mix, and a high-diversity planting pollinator mix.

Black-eyed Susan flowers are blooming at sunrise at the Carter Farms solar site.

Jill Stuckey

- Ecological and performance impact studies in the Midwest: SETO funded a project led by the University of Illinois to investigate solar co-located with pollinator plantings at large-scale installations, with teams of researchers working at seven separate sites in the Midwest. From their findings, they will develop a pollinator planting manual, cost-benefit calculator, native seed mix selection tool, and pollinator assessment tool. Together, these tools will address questions on project cost, return on investment, logistical needs, and site- or project-specific constraints.

National Institute of Food and Agriculture
UNITED STATES DEPARTMENT OF AGRICULTURE

Protecting Pollinators Critical to Food Production

June 10, 2022

NIFA AUTHORS

Margaret Lawrence, Writer-Editor

Pollinators help ensure the world eats. Scientists estimate that about 75% of the world's flowering plants and about 35% of the world's food crops depend on animal pollinators to produce.

While more than 3,500 species of native bees help increase crop yields, pollinators include many more species than just bees. Flowers can be pollinated by both insects and animals - such as bees, wasps, moths, flies, butterflies, birds and even small mammals such as bats.

Despite their importance, many pollinators are declining in numbers, posing a threat not only to the world's ecosystems but to global food security as well. To help address overall pollinator decline, USDA's National Institute of Food and Agriculture (NIFA) partners with Land-grant Universities (LGUs), U.S. government laboratories, and private and nonprofit organizations to support research, education, and extension programs advancing pollinator health.

Since 2020, NIFA has awarded $15.98 million via more than 40 competitive grants including Agriculture and Food Research Initiative grants as well as non-AFRI grants. Additionally, NIFA capacity funding to Land-grant Institutions supported 28 additional research and Extension projects.

Multi-State Project Reaping Rewards

NIFA's Multi-State Research Fund also provides crucial support to projects that incorporate multiple institutions tackling vital projects. One such grant brought together the **University of California**, **Cornell University**, **Cornell Cooperative Extension**, **Delaware Cooperative Extension**, **University of Illinois**, **Louisiana State University**, **University of Massachusetts**, **Michigan State University**, **University of Minnesota**, **Mississippi State University**, **University of Nebraska**, **University of New Hampshire**, **North Carolina Cooperative Extension**, **Pennsylvania State University**, **Purdue University**, **Rutgers University, University of Vermont**, and **Virginia Tech.** Their goal—harness chemical ecology to address agricultural pest and pollinator challenges. To reduce reliance on pesticides, scientists explored ways to harness natural plant defenses, such as emitting chemicals that slow insect feeding, inhibit infections, call beneficial insects to their aid or warn other plants.

Received from Christopher Widman, 11-27-23 - Woodbury County Zoning Commission Meeting

To: Woodbury County Zoning Commision

Questions Submitted at Nov 27, 2023 meeting

1. Does the county have a map showing where the signed solar easements are located in the county? If so, can you provide this map to the public with a listing of parcels and owners?

2. Can the Solar Utilities within Ag Preservation Land designate a setback from a residence to a one mile radius? Studies have shown that property values within 0.5 miles of solar farms are negatively impacted by solar farms (See attached article or link) (link: Do Solar Farms Lower Property Values? A New Study Has Some Answers - Inside Climate News)

3. If the county grants an overlay within Ag Preservation Land and does not designate the setbacks greater than 0.5 miles, does the county think there is precedent to win a legal case brought from landowners within 0.5 miles of the solar farms who believe their land values are decreased due to the solar farm? Please provide a listing of legal cases that show legal precedent has been made in other counties.

4. Per the packet provided at the meeting today, it appears that the majority of the people who have spoken at prior meetings in favor of the solar projects on Ag Preservation land have signed easements with solar companies or utility companies. (See attached listing of landowners and parcels that have signed easement contracts.) It would appear those people are primarily promoting private interest rather than the general welfare of the county. If the Woodbury County Zoning Commission makes the changes to allow an overlay that would allow these landowners with existing easement contracts to build solar utilities on the Ag Preservation Land, does the county believe they can show that the changes were made within a comprehensive land use plan and promotes the general welfare of the county? If the county begins making changes to include more parcels from the landowners with easements, it could be seen as promoting private interest rather than the general welfare of the county.

5. In the packet provided it discusses the possibility of using the original Corn Suitability Rating (CSR) Vs the Corn Suitability Rating 2 (CSR2). The county assesses taxes based on CSR2 not CSR. When the county began using CSR2 to assess property taxes, property owners in the river bottom tried to argue that it was not a suitable rating for the land. However, the county and state disagreed and stated that CSR2 was a suitable rating for Ag Land. If the commission decides to use a CSR rating instead of a CSR2 rating, please provide evidence as to why they believe the old rating is better than the new rating? If they believe CSR values are more correct than CSR2, should the commission petition the Treasurer's Office to change the property valuations from CSR2 back to the old CSR valuation that was used over 10 years ago?

Christopher Widman
1866 220th Street
Bronson, IA 51007

Clean Energy

Do Solar Farms Lower Property Values? A New Study Has Some Answers

Researchers looked at sale prices of 1.8 million homes near utility-scale solar plants in six states—the largest analysis ever done on this subject.

By Dan Gearino
March 15, 2023

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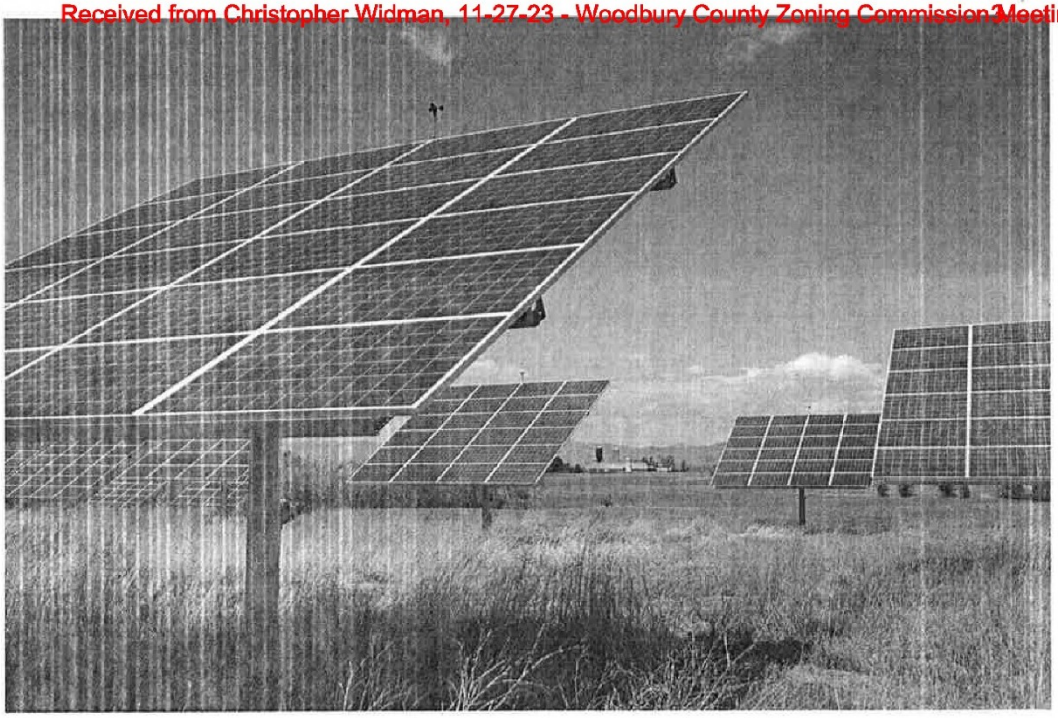


Solar tracker panels follow the sun's path on May 17, 2014 on a Champlain Valley dairy farm near West Haven, Vermont. Credit: Robert Nickelsberg/Getty Images

A new study finds that houses within a half-mile of a utility-scale solar farm have resale prices that are, on average, 1.5 percent less than houses that are just a little farther away.

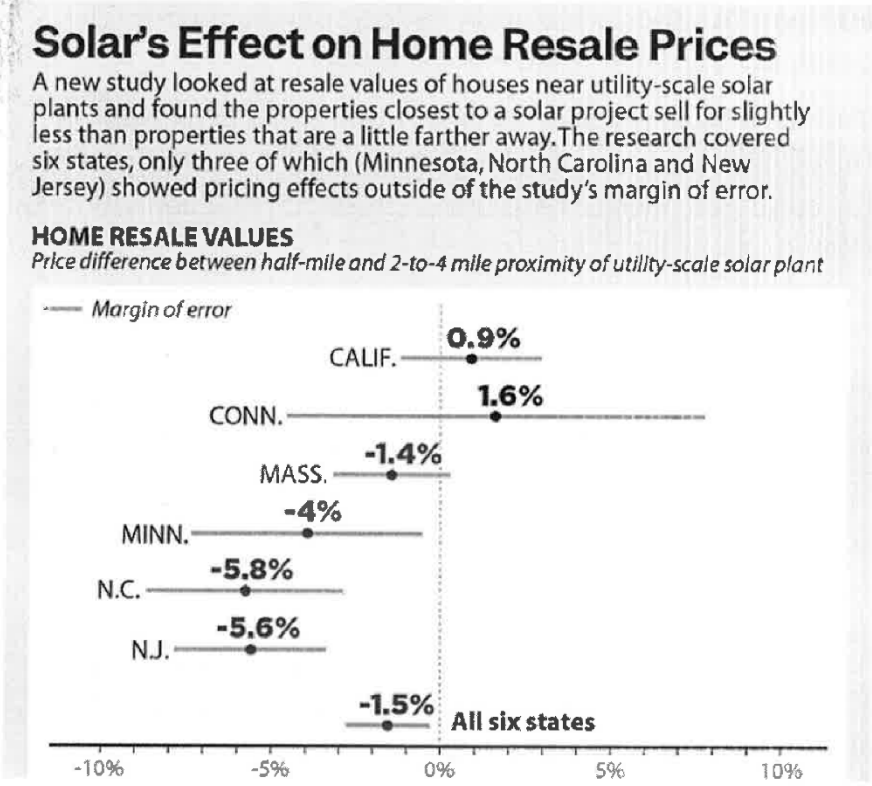
The research from Lawrence Berkeley National Laboratory helps to refute some of the assertions of solar opponents who stoke resistance to projects with talk of huge drops in property values. But it also drives a hole through the argument made by people in the solar industry who say there is no clear connection between solar and a drop in values.

The authors analyzed 1.8 million home sales near solar farms in six states and found diminished property values in Minnesota (4 percent), North Carolina (5.8 percent) and New

were within their margins of error, which means the price effects were too close to zero to be meaningful. The paper was published in the journal Energy Policy.
The authors accounted for differences in property features, inflation and other factors in order to isolate the effect of proximity to solar.

Ben Hoen, a co-author and research scientist at the Lawrence Berkeley lab, said the numbers are clear but additional research is needed to understand what's happening on the local level to lead to these price effects.

"We have a sense of the 'what,' but we don't know the 'why,'" he said.



For example, he doesn't have a thorough explanation for why the price differences are higher in some states than others.

The researchers chose this group of states because they were, except for Connecticut, the top five in the country for the number of solar installations of at least 1 megawatt as of 2019. They included Connecticut because it is an example of a state with a high population density near solar projects.

Hoen emphasized that the results show a period in time, with transactions that occurred from 2003 to 2020, and may not reflect prices right now.

Also, he noted that the paper's analysis doesn't take into account any of the financial benefits of solar for landowners and communities, which may include payments from the developer and a decrease in local taxes.

The study is being released at a time of rapid expansion in the number and size of solar projects, which is a key part of the country's push to reduce the emissions that contribute to climate change.

The scale of growth in solar development has been met with an intensifying resistance in local communities where some people argue that the projects are ugly and pose a threat to property values and human health. Solar opponents amplify these concerns on social media.

Of all the arguments against solar, the idea that it will hurt property values has been among the most potent, based on prior reporting by Inside Climate News about the local debates. At public hearings and in comments filed with regulators, some residents talk about how they fear reductions of 40 percent or more.

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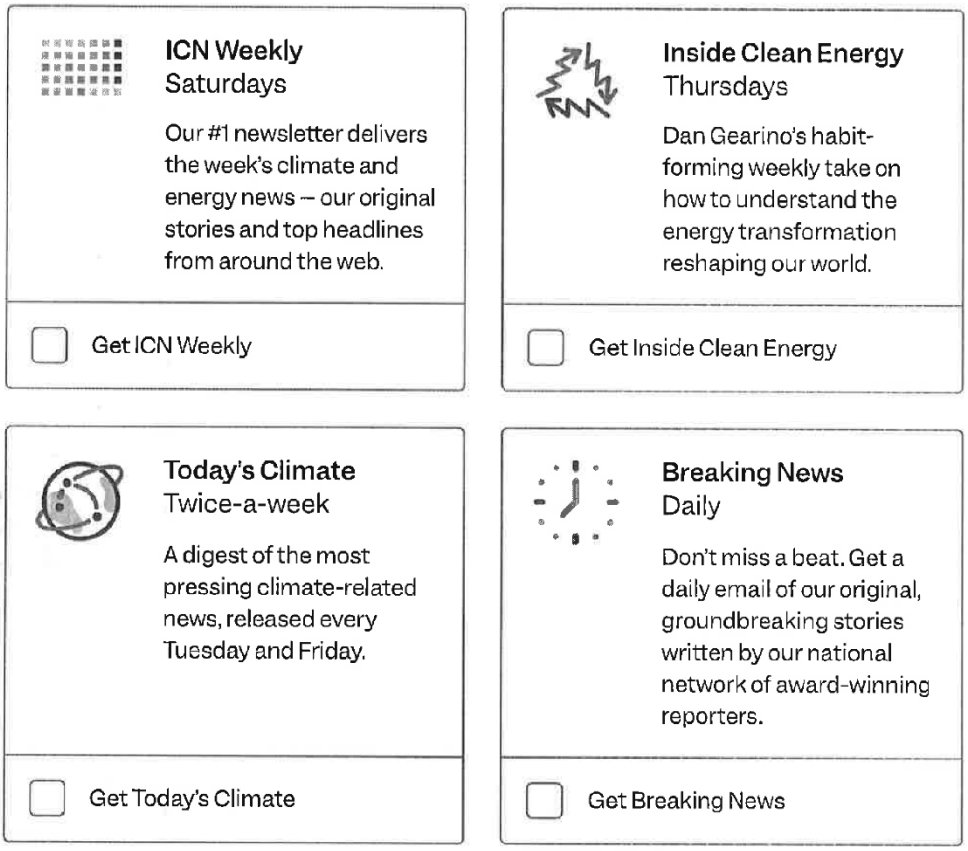

Asked if he saw anything in his data to support these claims, Hoen said there is "no evidence that an effect that large exists."

Jeffrey Jacquet, an Ohio State University professor who has written about conflicts over renewable energy projects, said the new paper is impressive in its depth and shows the need to ask more questions about the benefits and drawbacks of

"I think the takeaway is that the effect of renewables on property values is small on average, but it is not zero, and we need to correct for that negative impact," he said.

Before this latest study, the largest one done in the United States was in 2020 by researchers at the University of Rhode Island who looked at about 400,000 real-estate transactions in Rhode Island and Massachusetts. They found that the value of houses within one mile of a solar project decreased by an average of 1.7 percent following construction of the project.

The two studies each show a small decrease in values of properties near solar projects, although Hoen cautioned against comparisons because the two are different in their geographic scope and the number of transactions reviewed.

The Solar Industry Reacts

Clean energy advocates and the solar industry may be pleased that the study finds no large negative effect on property values, but they also are wary of the core finding that there is a measurable, albeit small, effect.

"There is nothing revelatory in this study—the results are not definitive and only cover a narrow data set," said Jason Ryan, a spokesman for the American Clean Power Association, a trade group, in a statement. "The report, which found no evidence of adverse impacts on property values in half the states studied, is largely consistent with many prior studies finding that solar projects don't adversely affect property values. Appraisal data from across the country also show similar conclusions."

property appraiser in Raleigh, North Carolina. He has spent about 15 years analyzing property values near solar projects. He often works on behalf of solar companies in regulatory cases before state and local regulatory agencies.

"You can't really measure things that small in real estate from an appraisal standpoint," he said.

Among the many problems with drawing conclusions from such a small difference is that there are many factors at play, including the desirability of the house and the features of the land, he said. The presence of a solar project is one of those factors, and it's difficult to say how much weight it has.

In his experience, solar projects do not lead to a pattern of a negative effect on the values of nearby properties.

Kirkland is far from alone in coming to this conclusion. In Chisago County, Minnesota, which has more solar projects than any other county in the state, officials have been monitoring real-estate transactions to try to detect any changes in resale prices as a result of solar development. They haven't found any negative effects, either in 2017 after the construction of the state's largest solar array, or as recently as December, according to the county assessor's

Hoen said that a 1.5 percent difference may not be significant for an appraiser looking at a small number of transactions, but it is significant in a statistical analysis like the one in the paper.

And, even if there are many factors at play, he is confident that proximity to solar is a strong factor explaining the price difference.

He is eager to ask follow-up questions in additional studies to get an idea of what solar-related factors are contributing to negative effects of pricing. For example, he wonders if an increase in local controversy surrounding a project leads to larger decreases in property values.

"Unpacking these types of mechanisms will take further study," he said.

Share this article

Dan Gearino

Clean Energy Reporter, Midwest, National Environment Reporting Network

Dan Gearino covers the midwestern United States, part of ICN's National Environment Reporting Network. His coverage deals with the business side of the clean-energy transition and he writes ICN's Inside Clean Energy newsletter. He came to ICN in 2018 after a nine-year tenure at The Columbus Dispatch, where he covered the business of energy. Before that, he covered politics and business in Iowa and in New Hampshire. He grew up in Warren County, Iowa, just south of Des Moines, and lives in Columbus

9

@DanGearino dan.gearino@insideclimatenews.org

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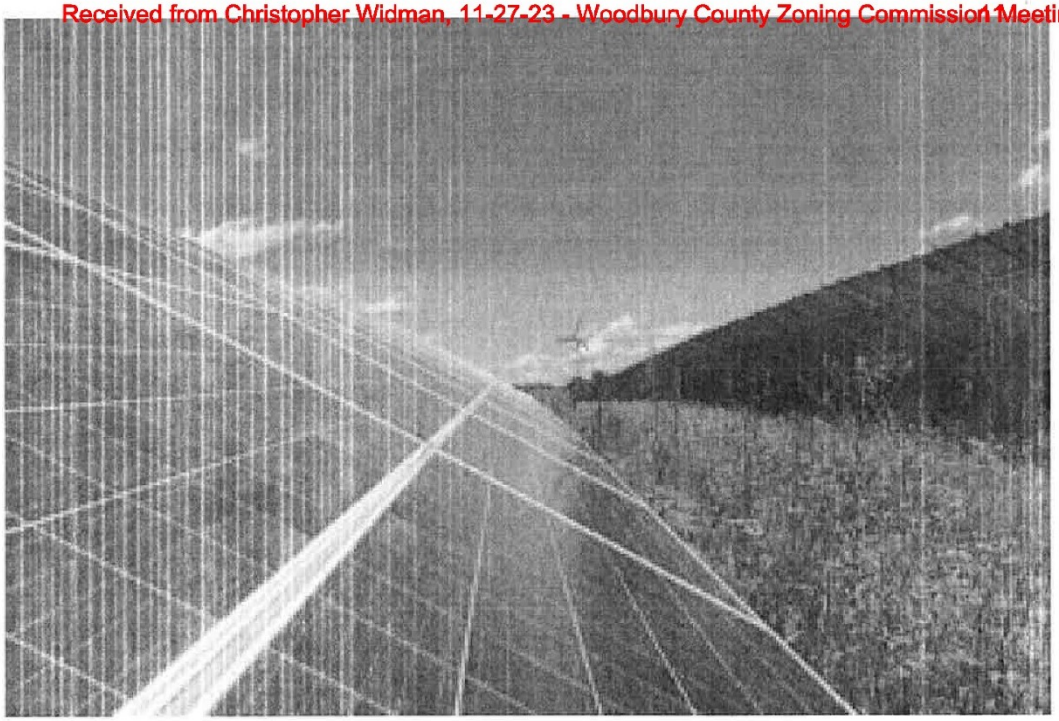
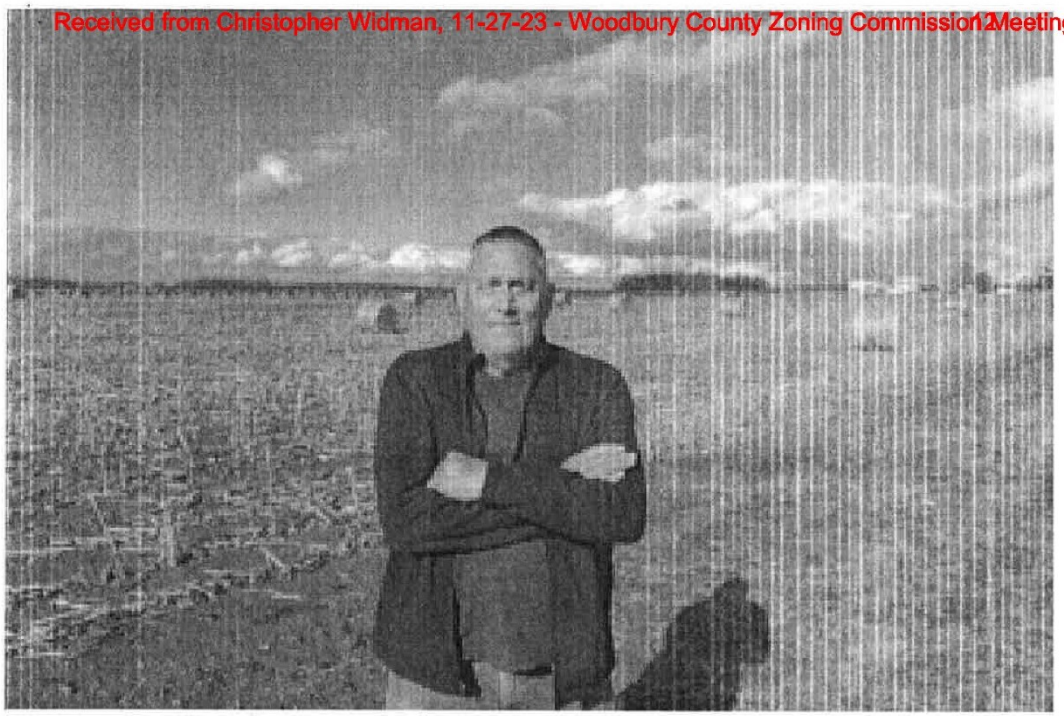


Community Solar Is About to Get a Surge in Federal Funding. So What Is Community Solar?

By Dan Gearino



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By Dan Gearino

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By Dan Gearino

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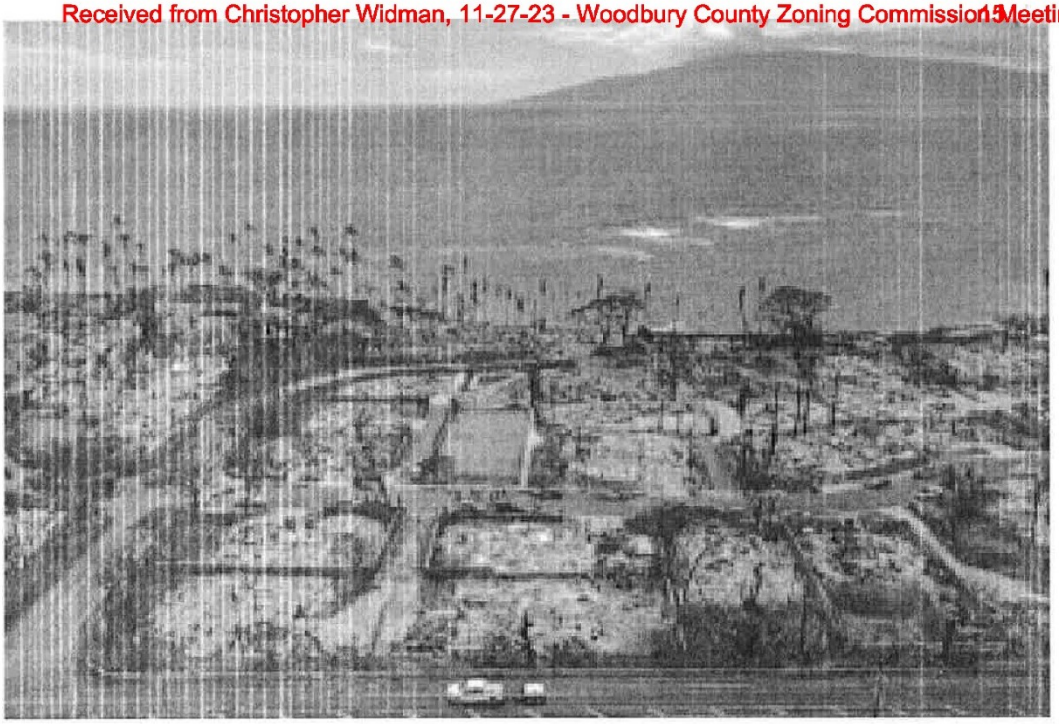
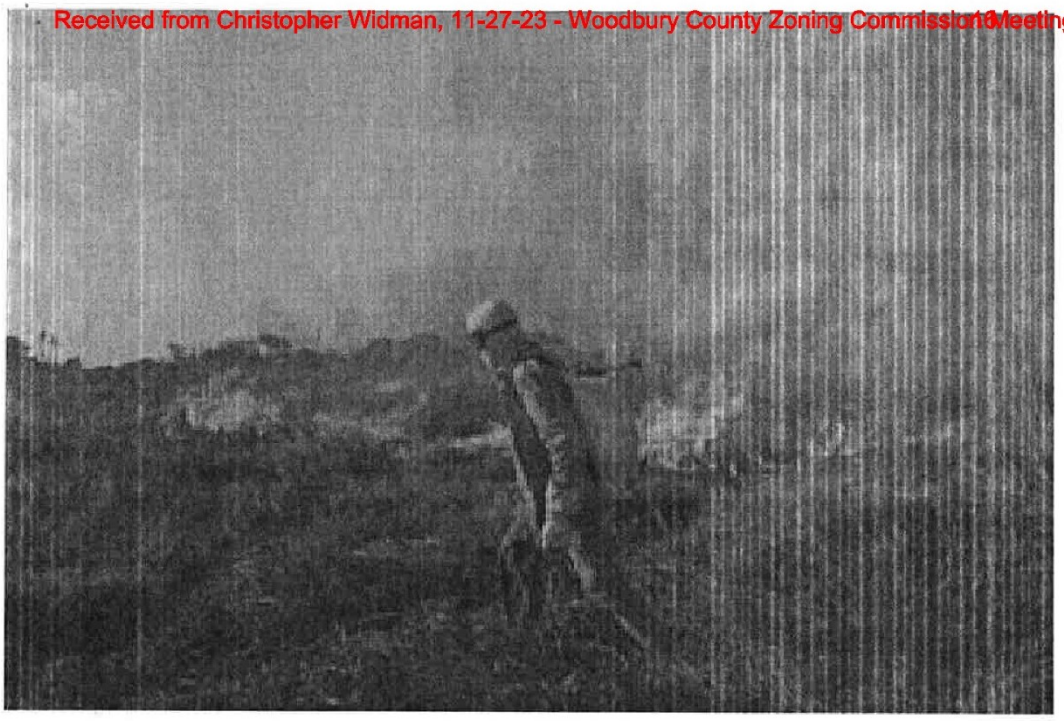
By Wyatt Myskow



US Regions Will Suffer a Stunning Variety of Climate-Caused Disasters, Report Finds

By Nicholas Kusnetz, Lee Hedgepeth, Amy Green, Phil McKenna, Dylan Baddour, Aydali Campa, Wyatt Myskow, Marianne Lavelle and Kristoffer Tigue



New Research Makes it Harder to Kick The Climate Can Down the Road from COP28

By Bob Berwyn

Clean Energy

What Happened to the Great Lakes Offshore Wind Boom?

Offshore wind projects cropped up all over the Great Lakes region in the early 2010s. By the end of the decade, all but one were gone. Developers, though still drawn to the lakes' powerful winds, have been reluctant to return.

By Nicole Pollack

A New Solar Water Heating System Goes Online as Its Developer Enters the US Market

As New York Officials Push Clean Hydrogen Project, Indigenous Nation Sees a Threat to Its Land

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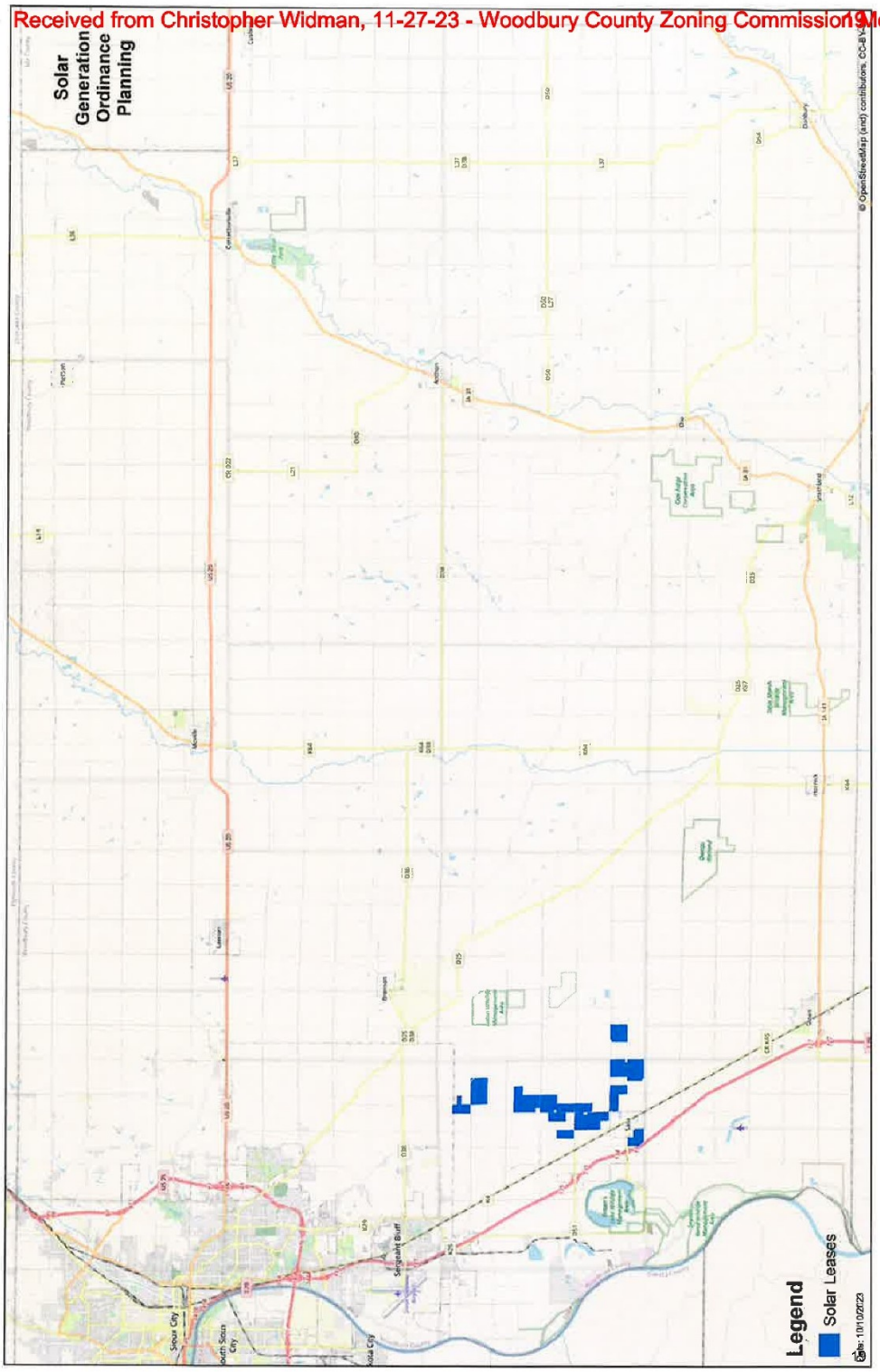

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	Gregory Jochum	874631200004	40
	Gregory Jochum	874631200006	37.16
9654	Leo Jochum	874714400001	39
	Leo Jochum	874714400002	40
	Leo Jochum	874714400004	29
	Leo Jochum	874714400005	39
	Leo Jochum	874702400001	19.5
	Leo Jochum	874702400002	19.5
	Leo Jochum	874702400003	38
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	Leo Jochum	844702400006	39
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	Leo Jochum	874711200003	39
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	Leo Jochum	874712100007	17.9
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	Gregory Jochum	874726100003	40

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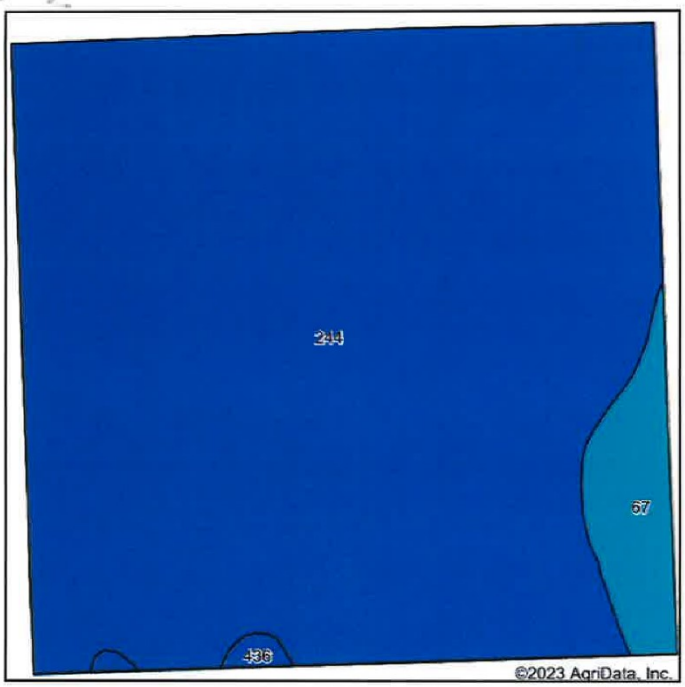
Soils Map



State: **Iowa**
County: **Woodbury**
Location: **5-86N-46W**
Township: **Sloan**
Acres: **153.5**
Date: **11/27/2023**

Maps Provided By: surety

Soils data provided by USDA and NRCS.

Area Symbol: IA193, Soil Area Version: 33								
Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
244	Blend silty clay, 0 to 2 percent slopes, rarely flooded	144.57	94.2%		IIIw	81	47	52
67	Woodbury silty clay, 0 to 2 percent slopes, rarely flooded	8.00	5.2%		IIIw	74	51	52
436	Lakeport silty clay loam, 0 to 2 percent slopes, rarely flooded	0.93	0.6%		Iw	89	74	71
				Weighted Average	**2.99**	**80.7**	**47.4**	***n 52.1**

**IA has updated the CSR values for each county to CSR2.
*n: The aggregation method is "Weighted Average using all components"
*c: Using Capabilities Class Dominant Condition Aggregation Method
Soils data provided by USDA and NRCS.

The CSR established an index rating soil map units (SMU) on their potential crop productivity. A CSR rating is based on the inherent properties of each SMU, average weather, and the frequency of use of the soil for row-crop production (Equation 1). The rating also assumes a SMU is adequately managed, artificially drained where required, SMUs located on lower landscapes are not frequently flooded, and there is no land leveling or terracing. Corn suitability ratings can range from 100 for SMUs that have no physical limitations for continuous row cropping to as low as 5 for SMUs with severe limitations for row cropping.

Equation 1

CSR = S - E - B ± W - C - D - SG - P - DSM - PM - MP (modified from Fenton et al., 1971)

S = slope
E = erosion
B = biosequence
W = wetness
C = calcareous soils
D = depth phase
SG = sandy or gravelly soils
P = precipitation factors
DSM = deposition and special soil modifiers
PM = parent material
MP = muck and peaty soils

Since the establishment of the CSR in 1971, the science for calculating CSR for a SMU became more robust as the knowledge base of soil properties was significantly enhanced and expanded. Another change since the establishment of the CSR in 1971 was the soil classification system in use at that time has since been replaced with the current classification system. With the change in soil classification systems, there are currently 500 soil series recognized in Iowa. That is 150 additional soils recognized than when the CSR was first established in 1971.

As the knowledge of soil's increased and more SMUs were recognized, the CSR calculation became more expert driven. In 2013, ISU introduced a new method for calculating CSR values called the Corn Suitability Rating 2 (CSR2) (Equation 2). The CSR2 method provided an index with ratings comparable to CSR, but was more consistent and transparent. This provided interested individuals the ability to calculate a CSR2 value from parameters that can be clearly understood and used.

Equation 2

CSR2 = S - M - W - F - D ± EJ (Burras et al., 2015)

S = taxonomic subgroup class of the series of the soil map unit (MU)
M = family particle size class
W = available water holding capacity (AWC) of the series
F = field condition of a particular MU
- Slope
- Flooding
- Ponding
- Erosion class
- Topsoil thickness

D = soil depth and tolerable rate of soil erosion
EJ = expert judgement correction factor
- Normally used with parent materials with very high bulk density and/or are usually clayey or sandy

Similar to the original CSR, the CSR2 assumes a SMU is adequately managed, artificially drained where required, and there is no land leveling or terracing. A major difference between the CSR and the CSR2 is the CSR included a rainfall correction factor where the CSR2 does not.

Soils Map

State: **Iowa**
County: **Woodbury**
Location: **31-87N-46W**
Township: **Grange**
Acres: **153.97**
Date: **11/27/2023**

Maps Provided By: surety

Soils data provided by USDA and NRCS.

Area Symbol: IA193, Soil Area Version: 33									
Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
244	Blend silty clay, 0 to 2 percent slopes, rarely flooded	153.62	99.8%		IIIw		81	47	52
552	Owego silty clay, 0 to 2 percent slopes, rarely flooded	0.35	0.2%		IIIw	IIIw	67	42	51
				Weighted Average	**3.00**	*-	**81**	**47**	***n 52**

**IA has updated the CSR values for each county to CSR2.
*n: The aggregation method is "Weighted Average using all components"
*c: Using Capabilities Class Dominant Condition Aggregation Method
*- Irr Class weighted average cannot be calculated on the current soils data due to missing data.
Soils data provided by USDA and NRCS.

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W = available water holding capacity (AWC) of the series
F = field condition of a particular MU
- Slope
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- Ponding
- Erosion class
- Topsoil thickness

D = soil depth and tolerable rate of soil erosion
EJ = expert judgement correction factor
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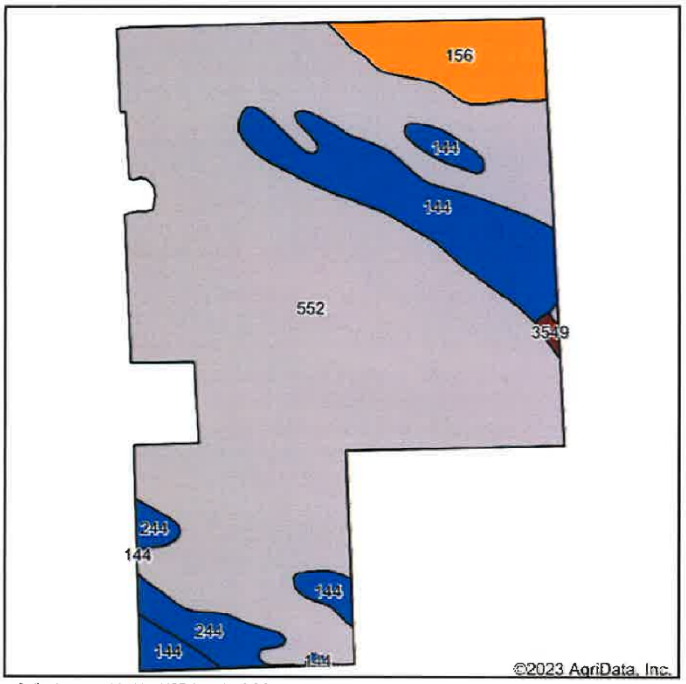
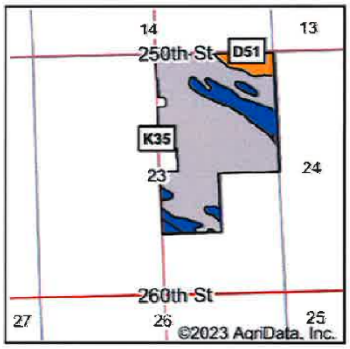
Received from Leo Jochum, 11-27-23 - Woodbury County Zoning Commission Meeting 5

Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Woodbury**
Location: **23-87N-47W**
Township: **Liberty**
Acres: **187.71**
Date: **11/27/2023**

Maps Provided By: surety
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N W E S

Area Symbol: IA193, Soil Area Version: 33

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
552	Owego silty clay, 0 to 2 percent slopes, rarely flooded	146.95	78.3%		IIIw	IIIw	67	42	51
144	Blake silty clay loam, 0 to 2 percent slopes, rarely flooded	23.10	12.3%		Iw	Iw	91	70	74
156	Albaton silty clay, 0 to 2 percent slopes, rarely flooded	11.21	6.0%		IIIw		58	51	49
244	Blend silty clay, 0 to 2 percent slopes, rarely flooded	5.99	3.2%		IIIw		81	47	52
3549	Modale complex, 0 to 2 percent slopes, rarely flooded	0.46	0.2%		Iw	Iw	77	63	57
				Weighted Average	**2.75**	***-**	**69.9**	**46.2**	***n 53.8**

**IA has updated the CSR values for each county to CSR2.
*n: The aggregation method is "Weighted Average using all components"
*c: Using Capabilities Class Dominant Condition Aggregation Method
*- Irr Class weighted average cannot be calculated on the current soils data due to missing data.
Soils data provided by USDA and NRCS.

The CSR established an index rating soil map units (SMU) on their potential crop productivity. A CSR rating is based on the inherent properties of each SMU, average weather, and the frequency of use of the soil for row-crop production (Equation 1). The rating also assumes a SMU is adequately managed, artificially drained where required, SMUs located on lower landscapes are not frequently flooded, and there is no land leveling or terracing. Corn suitability ratings can range from 100 for SMUs that have no physical limitations for continuous row cropping to as low as 5 for SMUs with severe limitations for row cropping.

Equation 1

CSR = S - E - B ± W - C - D - SG - P - DSM - PM - MP (modified from Fenton et al., 1971)

S = slope
E = erosion
B = bioscquence
W = wetness
C = calcareous soils
D = depth phase
SG = sandy or gravelly soils
P = precipitation factors
DSM = deposition and special soil modifiers
PM = parent material
MP = muck and peaty soils

Since the establishment of the CSR in 1971, the science for calculating CSR for a SMU became more robust as the knowledge base of soil properties was significantly enhanced and expanded. Another change since the establishment of the CSR in 1971 was the soil classification system in use at that time has since been replaced with the current classification system. With the change in soil classification systems, there are currently 500 soil series recognized in Iowa. That is 150 additional soils recognized than when the CSR was first established in 1971.

As the knowledge of soil's increased and more SMUs were recognized, the CSR calculation became more expert driven. In 2013, ISU introduced a new method for calculating CSR values called the Corn Suitability Rating 2 (CSR2) (Equation 2). The CSR2 method provided an index with ratings comparable to CSR, but was more consistent and transparent. This provided interested individuals the ability to calculate a CSR2 value from parameters that can be clearly understood and used.

Equation 2

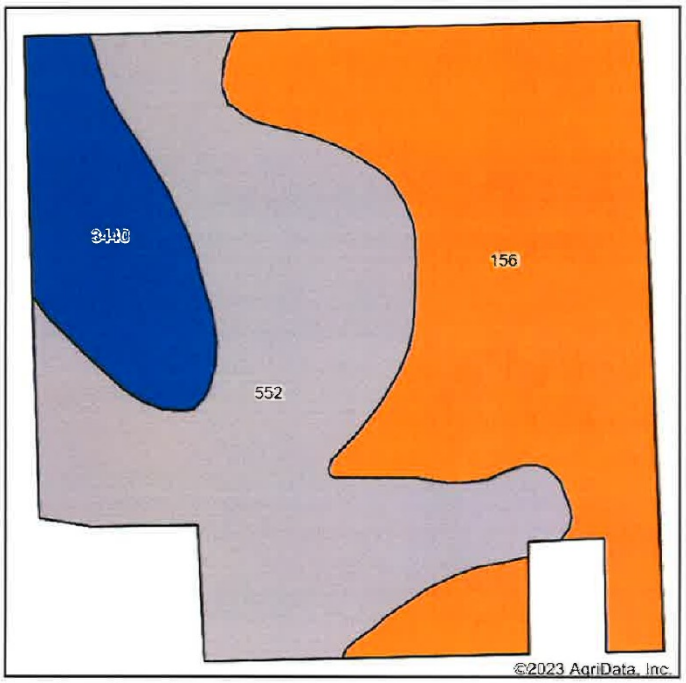
CSR2 = S - M - W - F - D ± EJ (Burras et al., 2015)

S = taxonomic subgroup class of the series of the soil map unit (MU)
M = family particle size class
W = available water holding capacity (AWC) of the series
F = field condition of a particular MU
- Slope
- Flooding
- Ponding
- Erosion class
- Topsoil thickness

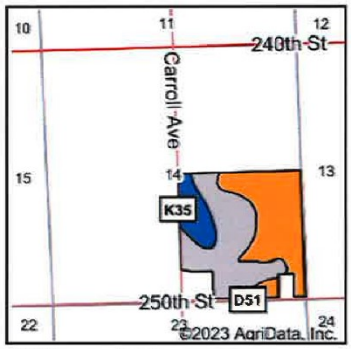
D = soil depth and tolerable rate of soil erosion
EJ = expert judgement correction factor
- Normally used with parent materials with very high bulk density and/or are usually clayey or sandy

Similar to the original CSR, the CSR2 assumes a SMU is adequately managed, artificially drained where required, and there is no land leveling or terracing. A major difference between the CSR and the CSR2 is the CSR included a rainfall correction factor where the CSR2 does not.

Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Woodbury**
Location: **14-87N-47W**
Township: **Liberty**
Acres: **140.07**
Date: **11/27/2023**

Maps Provided By: surety CUSTOMIZED ONLINE MAPPING © AgriData, Inc. 2023 www.AgriDataInc.com

N W E S

Area Symbol: IA193, Soil Area Version: 33									
Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
156	Albaton silty clay, 0 to 2 percent slopes, rarely flooded	61.74	44.1%		IIIw		58	51	49
552	Owego silty clay, 0 to 2 percent slopes, rarely flooded	60.39	43.1%		IIIw	IIIw	67	42	51
3440	Blencoe-Woodbury silty clays, 0 to 2 percent slopes, rarely flooded	17.94	12.8%		IIw		84	63	55
				Weighted Average	**2.87**	***-**	**65.2**	**48.7**	***n 50.6**

**IA has updated the CSR values for each county to CSR2.
*n: The aggregation method is "Weighted Average using all components"
*c: Using Capabilities Class Dominant Condition Aggregation Method
*- Irr Class weighted average cannot be calculated on the current soils data due to missing data.
Soils data provided by USDA and NRCS.

The CSR established an index rating soil map units (SMU) on their potential crop productivity. A CSR rating is based on the inherent properties of each SMU, average weather, and the frequency of use of the soil for row-crop production (Equation 1). The rating also assumes a SMU is adequately managed, artificially drained where required, SMUs located on lower landscapes are not frequently flooded, and there is no land leveling or terracing. Corn suitability ratings can range from 100 for SMUs that have no physical limitations for continuous row cropping to as low as 5 for SMUs with severe limitations for row cropping.

Equation 1

CSR = S - E - B ± W - C - D - SG - P - DSM - PM - MP (modified from Fenton et al., 1971)

S = slope	**SG** = sandy or gravelly soils
E = erosion	**P** = precipitation factors
B = biosequence	**DSM** = deposition and special soil modifiers
W = wetness	**PM** = parent material
C = calcareous soils	**MP** = muck and peaty soils
D = depth phase	

Since the establishment of the CSR in 1971, the science for calculating CSR for a SMU became more robust as the knowledge base of soil properties was significantly enhanced and expanded. Another change since the establishment of the CSR in 1971 was the soil classification system in use at that time has since been replaced with the current classification system. With the change in soil classification systems, there are currently 500 soil series recognized in Iowa. That is 150 additional soils recognized than when the CSR was first established in 1971.

As the knowledge of soil's increased and more SMUs were recognized, the CSR calculation became more expert driven. In 2013, ISU introduced a new method for calculating CSR values called the Corn Suitability Rating 2 (CSR2) (Equation 2). The CSR2 method provided an index with ratings comparable to CSR, but was more consistent and transparent. This provided interested individuals the ability to calculate a CSR2 value from parameters that can be clearly understood and used.

Equation 2

CSR2 = S - M - W - F - D ± EJ (Burras et al., 2015)

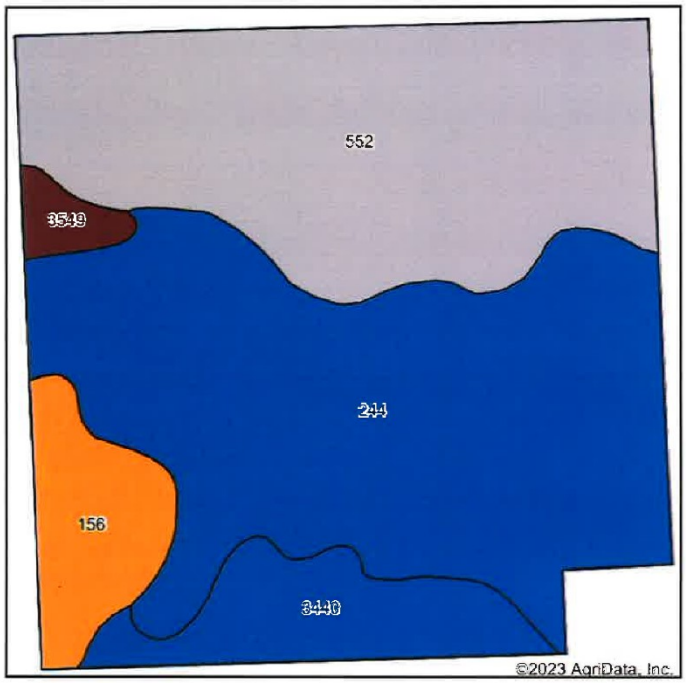
S = taxonomic subgroup class of the series of the soil map unit (MU)
M = family particle size class
W = available water holding capacity (AWC) of the series
F = field condition of a particular MU
- Slope
- Flooding
- Ponding
- Erosion class
- Topsoil thickness

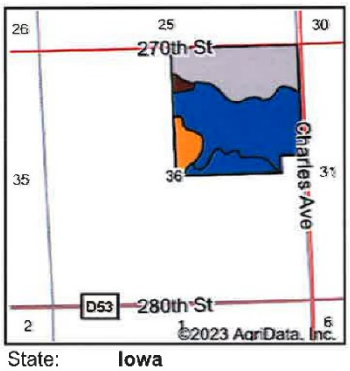
D = soil depth and tolerable rate of soil erosion
EJ = expert judgement correction factor
- Normally used with parent materials with very high bulk density and/or are usually clayey or sandy

Similar to the original CSR, the CSR2 assumes a SMU is adequately managed, artificially drained where required, and there is no land leveling or terracing. A major difference between the CSR and the CSR2 is the CSR included a rainfall correction factor where the CSR2 does not.

Received from Leo Jochum, 11-27-23 Woodbury County Zoning Commission Meeting

Soil Map





State: **Iowa**
County: **Woodbury**
Location: **36-87N-47W**
Township: **Liberty**
Acres: **152.17**
Date: **11/27/2023**

Maps Provided By: surety CUSTOMIZED ONLINE MAPPING © AgriData, Inc. 2023 www.AgriDataInc.com

Soils data provided by USDA and NRCS.

Area Symbol: IA193, Soil Area Version: 33

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
244	Blend silty clay, 0 to 2 percent slopes, rarely flooded	71.47	47.0%		IIIw		81	47	52
552	Owego silty clay, 0 to 2 percent slopes, rarely flooded	54.10	35.6%		IIIw	IIIw	67	42	51
3440	Blencoe-Woodbury silty clays, 0 to 2 percent slopes, rarely flooded	13.35	8.8%		IIw		84	63	55
156	Albaton silty clay, 0 to 2 percent slopes, rarely flooded	10.72	7.0%		IIIw		58	51	49
3549	Modale complex, 0 to 2 percent slopes, rarely flooded	2.53	1.7%		Iw	Iw	77	63	57
				Weighted Average	2.88	*-	74.6	47.2	*n 51.8

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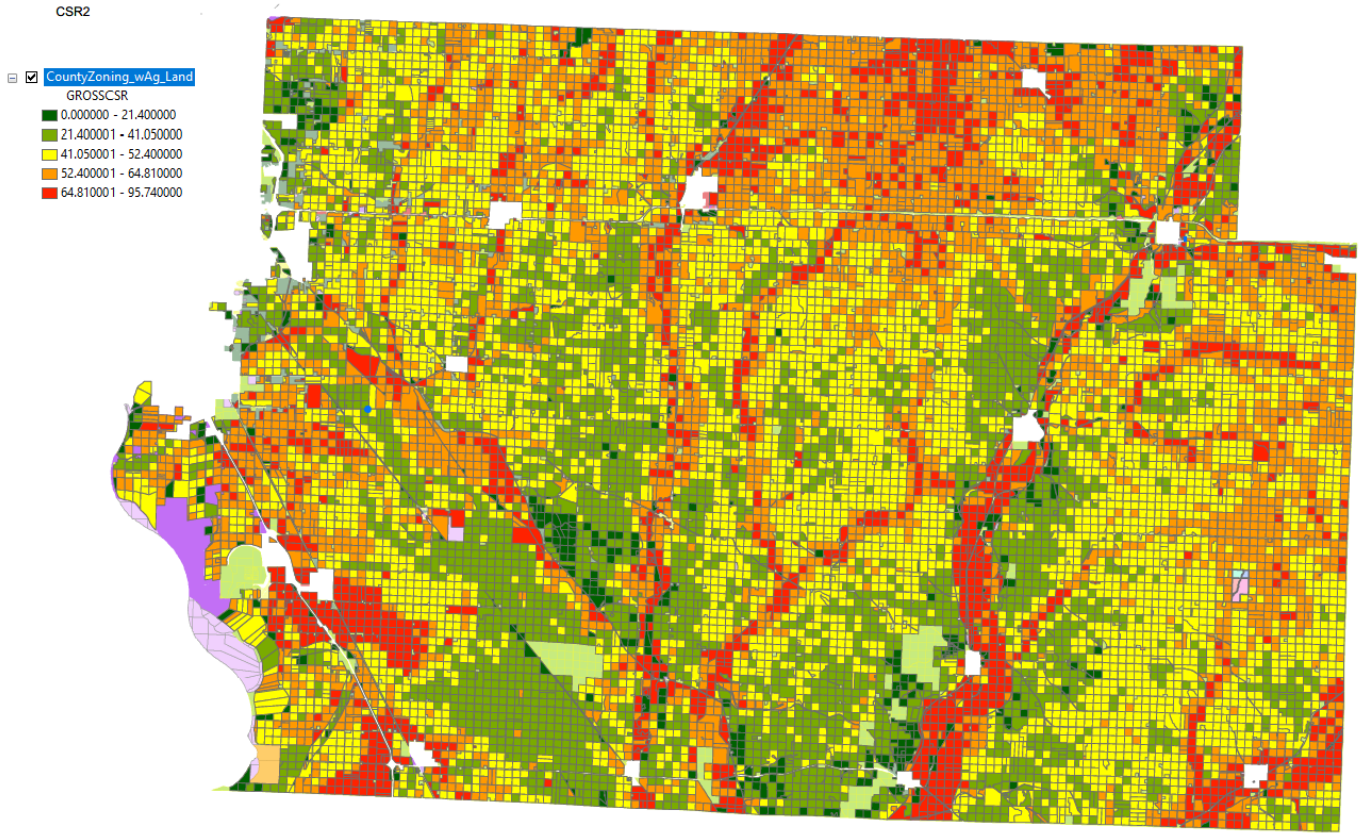
Appendix

CSR2 average by parcel in Agricultural Preservation (AP) Zoning District

*Data acquired via Schneider/Beacon

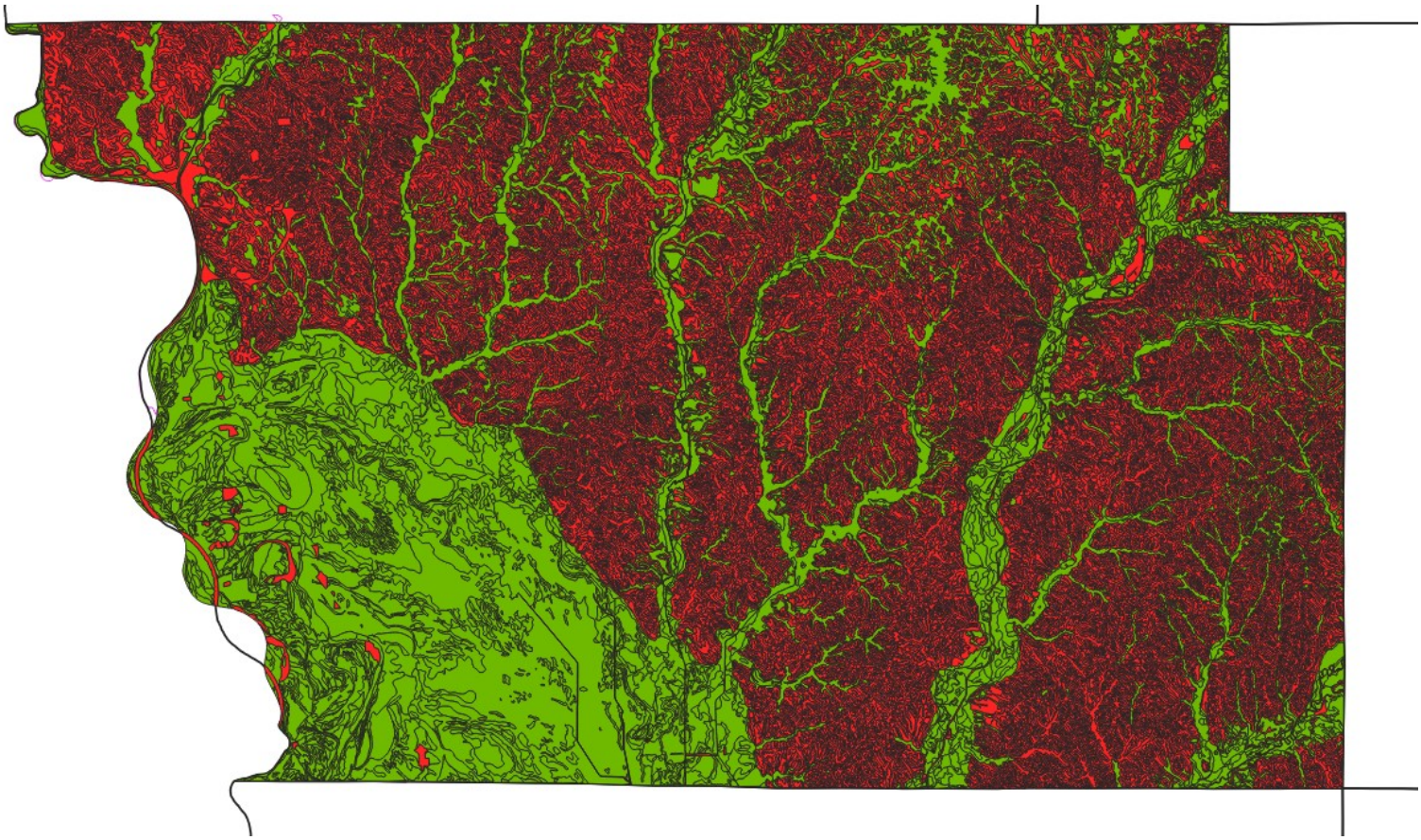
Using 65+ CSR2

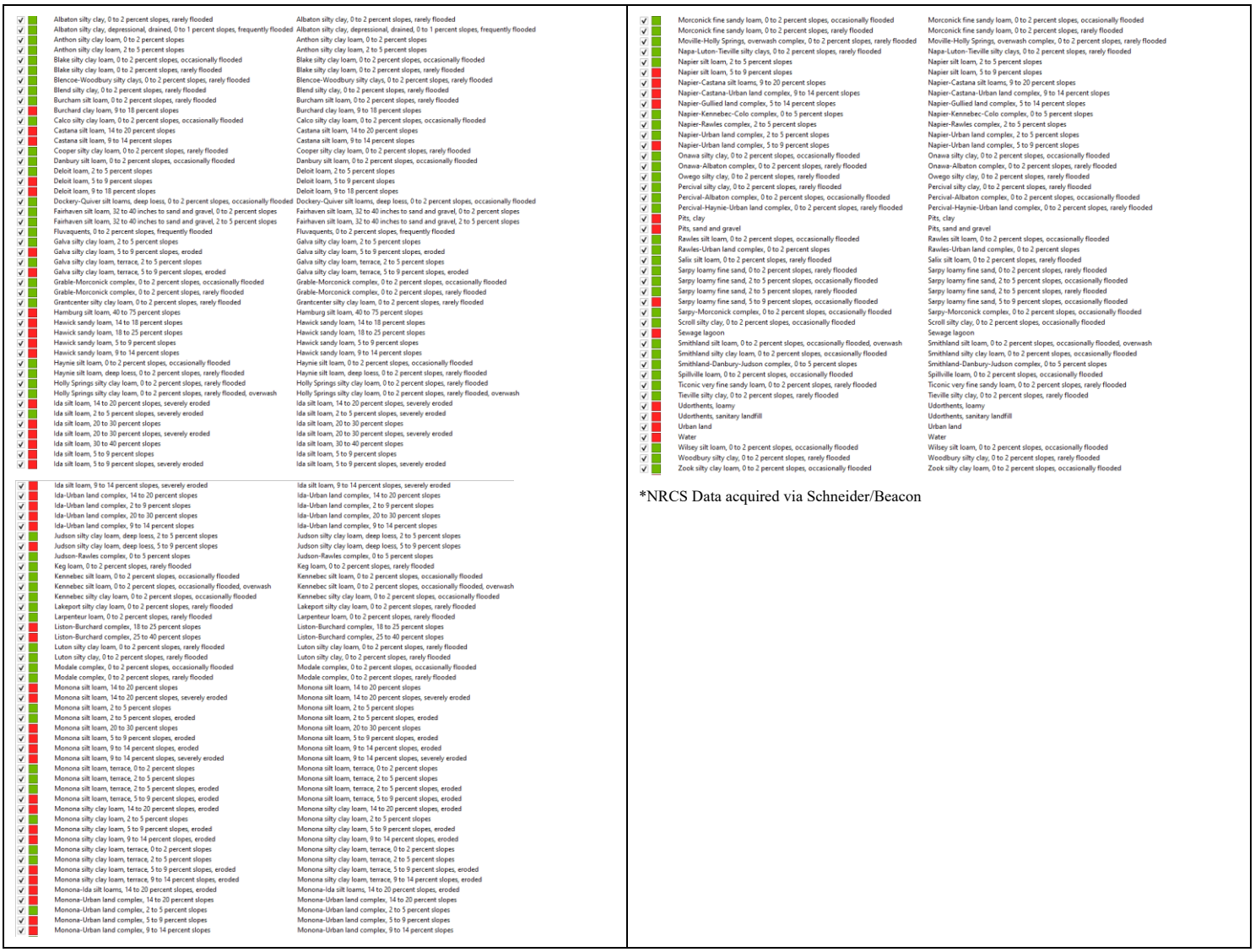


- **Agricultural Preservation: Estimated Total acres based on Schneider/Beacon gross acres with gross CSR2 greater than 65**
  - 204,405.91 Acres
- **Agricultural Preservation: Estimated Total acres based on Schneider/Beacon gross acres with gross CSR2 greater than 75**
  - 115,504.96 Acres

Soil types with slope content greater than 5% (Red)

*NRCS Data acquired via Schneider/Beacon



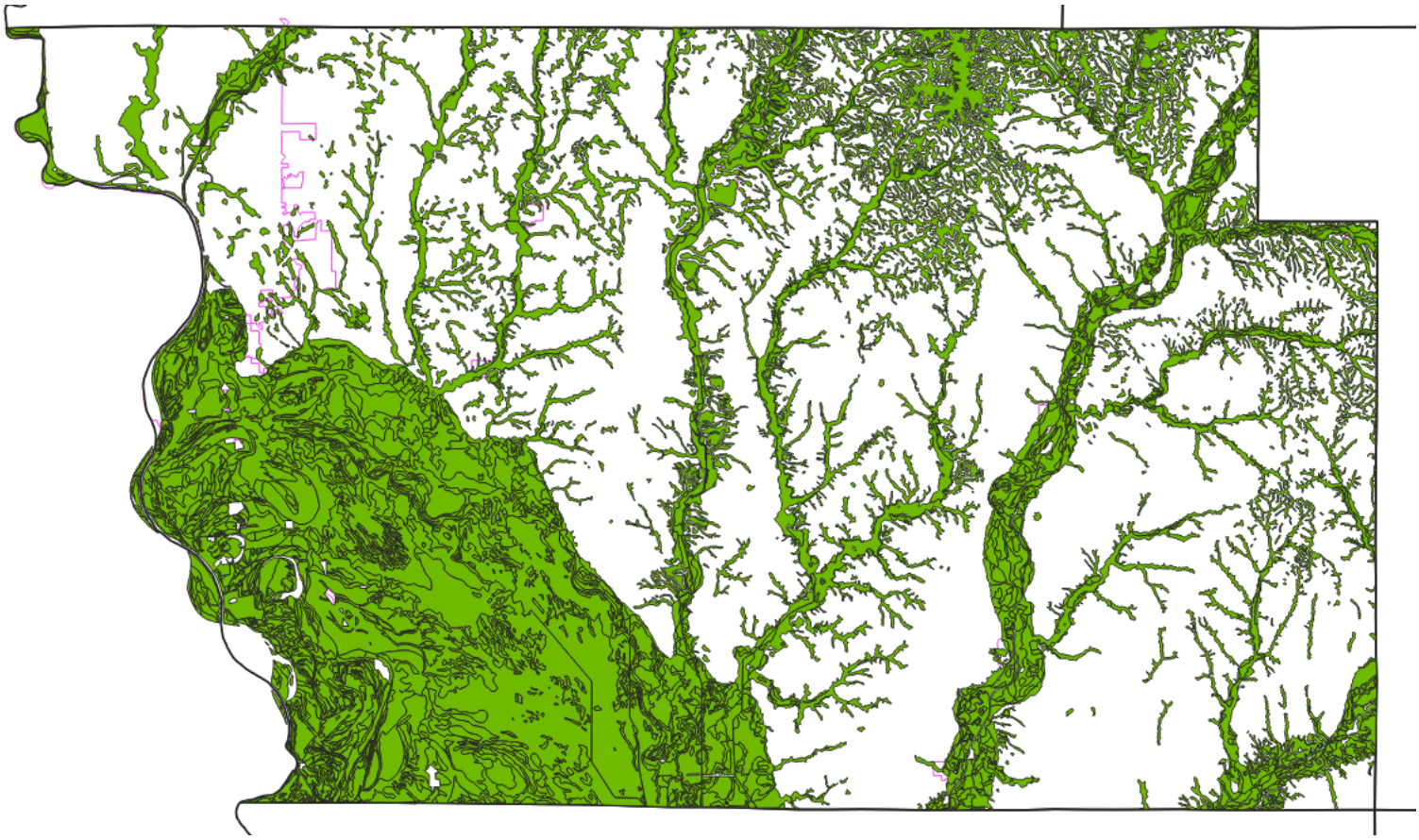


Albaton silty clay, 0 to 2 percent slopes, rarely flooded	Albaton silty clay, 0 to 2 percent slopes, rarely flooded
Albaton silty clay, depressional, drained, 0 to 1 percent slopes, frequently flooded	Albaton silty clay, depressional, drained, 0 to 1 percent slopes, frequently flooded
Anthon silty clay loam, 0 to 2 percent slopes	Anthon silty clay loam, 0 to 2 percent slopes
Anthon silty clay loam, 2 to 5 percent slopes	Anthon silty clay loam, 2 to 5 percent slopes
Blake silty clay loam, 0 to 2 percent slopes, occasionally flooded	Blake silty clay loam, 0 to 2 percent slopes, occasionally flooded
Blake silty clay loam, 0 to 2 percent slopes, rarely flooded	Blake silty clay loam, 0 to 2 percent slopes, rarely flooded
Blencoe-Woodbury silty clays, 0 to 2 percent slopes, rarely flooded	Blencoe-Woodbury silty clays, 0 to 2 percent slopes, rarely flooded
Blend silty clay, 0 to 2 percent slopes, rarely flooded	Blend silty clay, 0 to 2 percent slopes, rarely flooded
Burcham silt loam, 0 to 2 percent slopes, rarely flooded	Burcham silt loam, 0 to 2 percent slopes, rarely flooded
Burchard clay loam, 9 to 18 percent slopes	Burchard clay loam, 9 to 18 percent slopes
Calco silty clay loam, 0 to 2 percent slopes, occasionally flooded	Calco silty clay loam, 0 to 2 percent slopes, occasionally flooded
Castana silt loam, 14 to 20 percent slopes	Castana silt loam, 14 to 20 percent slopes
Castana silt loam, 9 to 14 percent slopes	Castana silt loam, 9 to 14 percent slopes
Cooper silty clay loam, 0 to 2 percent slopes, rarely flooded	Cooper silty clay loam, 0 to 2 percent slopes, rarely flooded
Danbury silt loam, 0 to 2 percent slopes, occasionally flooded	Danbury silt loam, 0 to 2 percent slopes, occasionally flooded
Deloit loam, 2 to 5 percent slopes	Deloit loam, 2 to 5 percent slopes
Deloit loam, 5 to 9 percent slopes	Deloit loam, 5 to 9 percent slopes
Deloit loam, 9 to 18 percent slopes	Deloit loam, 9 to 18 percent slopes
Dockery-Quiver silt loams, deep loess, 0 to 2 percent slopes, occasionally flooded	Dockery-Quiver silt loams, deep loess, 0 to 2 percent slopes, occasionally flooded
Fairhaven silt loam, 32 to 40 inches to sand and gravel, 0 to 2 percent slopes	Fairhaven silt loam, 32 to 40 inches to sand and gravel, 0 to 2 percent slopes
Fairhaven silt loam, 32 to 40 inches to sand and gravel, 2 to 5 percent slopes	Fairhaven silt loam, 32 to 40 inches to sand and gravel, 2 to 5 percent slopes
Fluvaquents, 0 to 2 percent slopes, frequently flooded	Fluvaquents, 0 to 2 percent slopes, frequently flooded
Galva silty clay loam, 2 to 5 percent slopes	Galva silty clay loam, 2 to 5 percent slopes
Galva silty clay loam, 5 to 9 percent slopes, eroded	Galva silty clay loam, 5 to 9 percent slopes, eroded
Galva silty clay loam, terrace, 2 to 5 percent slopes	Galva silty clay loam, terrace, 2 to 5 percent slopes
Galva silty clay loam, terrace, 5 to 9 percent slopes, eroded	Galva silty clay loam, terrace, 5 to 9 percent slopes, eroded
Grable-Morconick complex, 0 to 2 percent slopes, occasionally flooded	Grable-Morconick complex, 0 to 2 percent slopes, occasionally flooded
Grable-Morconick complex, 0 to 2 percent slopes, rarely flooded	Grable-Morconick complex, 0 to 2 percent slopes, rarely flooded
Grantcenter silty clay loam, 0 to 2 percent slopes, rarely flooded	Grantcenter silty clay loam, 0 to 2 percent slopes, rarely flooded
Hamburg silt loam, 40 to 75 percent slopes	Hamburg silt loam, 40 to 75 percent slopes
Hawick sandy loam, 14 to 18 percent slopes	Hawick sandy loam, 14 to 18 percent slopes
Hawick sandy loam, 18 to 25 percent slopes	Hawick sandy loam, 18 to 25 percent slopes
Hawick sandy loam, 5 to 9 percent slopes	Hawick sandy loam, 5 to 9 percent slopes
Hawick sandy loam, 9 to 14 percent slopes	Hawick sandy loam, 9 to 14 percent slopes
Haynie silt loam, 0 to 2 percent slopes, occasionally flooded	Haynie silt loam, 0 to 2 percent slopes, occasionally flooded
Haynie silt loam, deep loess, 0 to 2 percent slopes, rarely flooded	Haynie silt loam, deep loess, 0 to 2 percent slopes, rarely flooded
Holly Springs silty clay loam, 0 to 2 percent slopes, rarely flooded	Holly Springs silty clay loam, 0 to 2 percent slopes, rarely flooded
Holly Springs silty clay loam, 0 to 2 percent slopes, rarely flooded, overwash	Holly Springs silty clay loam, 0 to 2 percent slopes, rarely flooded, overwash
Ida silt loam, 14 to 20 percent slopes, severely eroded	Ida silt loam, 14 to 20 percent slopes, severely eroded
Ida silt loam, 2 to 5 percent slopes, severely eroded	Ida silt loam, 2 to 5 percent slopes, severely eroded
Ida silt loam, 20 to 30 percent slopes	Ida silt loam, 20 to 30 percent slopes
Ida silt loam, 20 to 30 percent slopes, severely eroded	Ida silt loam, 20 to 30 percent slopes, severely eroded
Ida silt loam, 30 to 40 percent slopes	Ida silt loam, 30 to 40 percent slopes
Ida silt loam, 5 to 9 percent slopes	Ida silt loam, 5 to 9 percent slopes
Ida silt loam, 5 to 9 percent slopes, severely eroded	Ida silt loam, 5 to 9 percent slopes, severely eroded
Ida silt loam, 9 to 14 percent slopes, severely eroded	Ida silt loam, 9 to 14 percent slopes, severely eroded
Ida-Urban land complex, 14 to 20 percent slopes	Ida-Urban land complex, 14 to 20 percent slopes
Ida-Urban land complex, 2 to 9 percent slopes	Ida-Urban land complex, 2 to 9 percent slopes
Ida-Urban land complex, 20 to 30 percent slopes	Ida-Urban land complex, 20 to 30 percent slopes
Ida-Urban land complex, 9 to 14 percent slopes	Ida-Urban land complex, 9 to 14 percent slopes
Judson silty clay loam, deep loess, 2 to 5 percent slopes	Judson silty clay loam, deep loess, 2 to 5 percent slopes
Judson silty clay loam, deep loess, 5 to 9 percent slopes	Judson silty clay loam, deep loess, 5 to 9 percent slopes
Judson-Rawles complex, 0 to 5 percent slopes	Judson-Rawles complex, 0 to 5 percent slopes
Keg loam, 0 to 2 percent slopes, rarely flooded	Keg loam, 0 to 2 percent slopes, rarely flooded
Kennebec silt loam, 0 to 2 percent slopes, occasionally flooded	Kennebec silt loam, 0 to 2 percent slopes, occasionally flooded
Kennebec silt loam, 0 to 2 percent slopes, occasionally flooded, overwash	Kennebec silt loam, 0 to 2 percent slopes, occasionally flooded, overwash
Kennebec silty clay loam, 0 to 2 percent slopes, occasionally flooded	Kennebec silty clay loam, 0 to 2 percent slopes, occasionally flooded
Lakeport silty clay loam, 0 to 2 percent slopes, rarely flooded	Lakeport silty clay loam, 0 to 2 percent slopes, rarely flooded
Larpenteur loam, 0 to 2 percent slopes, rarely flooded	Larpenteur loam, 0 to 2 percent slopes, rarely flooded
Liston-Burchard complex, 18 to 25 percent slopes	Liston-Burchard complex, 18 to 25 percent slopes
Liston-Burchard complex, 25 to 40 percent slopes	Liston-Burchard complex, 25 to 40 percent slopes
Luton silty clay loam, 0 to 2 percent slopes, rarely flooded	Luton silty clay loam, 0 to 2 percent slopes, rarely flooded
Luton silty clay, 0 to 2 percent slopes, rarely flooded	Luton silty clay, 0 to 2 percent slopes, rarely flooded
Modale complex, 0 to 2 percent slopes, occasionally flooded	Modale complex, 0 to 2 percent slopes, occasionally flooded
Modale complex, 0 to 2 percent slopes, rarely flooded	Modale complex, 0 to 2 percent slopes, rarely flooded
Monona silt loam, 14 to 20 percent slopes	Monona silt loam, 14 to 20 percent slopes
Monona silt loam, 14 to 20 percent slopes, severely eroded	Monona silt loam, 14 to 20 percent slopes, severely eroded
Monona silt loam, 2 to 5 percent slopes	Monona silt loam, 2 to 5 percent slopes
Monona silt loam, 2 to 5 percent slopes, eroded	Monona silt loam, 2 to 5 percent slopes, eroded
Monona silt loam, 20 to 30 percent slopes	Monona silt loam, 20 to 30 percent slopes
Monona silt loam, 5 to 9 percent slopes, eroded	Monona silt loam, 5 to 9 percent slopes, eroded
Monona silt loam, 9 to 14 percent slopes, eroded	Monona silt loam, 9 to 14 percent slopes, eroded
Monona silt loam, 9 to 14 percent slopes, severely eroded	Monona silt loam, 9 to 14 percent slopes, severely eroded
Monona silt loam, terrace, 0 to 2 percent slopes	Monona silt loam, terrace, 0 to 2 percent slopes
Monona silt loam, terrace, 2 to 5 percent slopes	Monona silt loam, terrace, 2 to 5 percent slopes
Monona silt loam, terrace, 2 to 5 percent slopes, eroded	Monona silt loam, terrace, 2 to 5 percent slopes, eroded
Monona silt loam, terrace, 5 to 9 percent slopes, eroded	Monona silt loam, terrace, 5 to 9 percent slopes, eroded
Monona silty clay loam, 14 to 20 percent slopes, eroded	Monona silty clay loam, 14 to 20 percent slopes, eroded
Monona silty clay loam, 2 to 5 percent slopes	Monona silty clay loam, 2 to 5 percent slopes
Monona silty clay loam, 5 to 9 percent slopes, eroded	Monona silty clay loam, 5 to 9 percent slopes, eroded
Monona silty clay loam, 9 to 14 percent slopes, eroded	Monona silty clay loam, 9 to 14 percent slopes, eroded
Monona silty clay loam, terrace, 0 to 2 percent slopes	Monona silty clay loam, terrace, 0 to 2 percent slopes
Monona silty clay loam, terrace, 2 to 5 percent slopes	Monona silty clay loam, terrace, 2 to 5 percent slopes
Monona silty clay loam, terrace, 5 to 9 percent slopes, eroded	Monona silty clay loam, terrace, 5 to 9 percent slopes, eroded
Monona silty clay loam, terrace, 9 to 14 percent slopes, eroded	Monona silty clay loam, terrace, 9 to 14 percent slopes, eroded
Monona-Ida silt loams, 14 to 20 percent slopes, eroded	Monona-Ida silt loams, 14 to 20 percent slopes, eroded
Monona-Urban land complex, 14 to 20 percent slopes	Monona-Urban land complex, 14 to 20 percent slopes
Monona-Urban land complex, 2 to 5 percent slopes	Monona-Urban land complex, 2 to 5 percent slopes
Monona-Urban land complex, 5 to 9 percent slopes	Monona-Urban land complex, 5 to 9 percent slopes
Monona-Urban land complex, 9 to 14 percent slopes	Monona-Urban land complex, 9 to 14 percent slopes
Morconick fine sandy loam, 0 to 2 percent slopes, occasionally flooded	Morconick fine sandy loam, 0 to 2 percent slopes, occasionally flooded
Morconick fine sandy loam, 0 to 2 percent slopes, rarely flooded	Morconick fine sandy loam, 0 to 2 percent slopes, rarely flooded
Moville-Holly Springs, overwash complex, 0 to 2 percent slopes, rarely flooded	Moville-Holly Springs, overwash complex, 0 to 2 percent slopes, rarely flooded
Napa-Luton-Tieville silty clays, 0 to 2 percent slopes, rarely flooded	Napa-Luton-Tieville silty clays, 0 to 2 percent slopes, rarely flooded
Napier silt loam, 2 to 5 percent slopes	Napier silt loam, 2 to 5 percent slopes
Napier silt loam, 5 to 9 percent slopes	Napier silt loam, 5 to 9 percent slopes
Napier-Castana silt loams, 9 to 20 percent slopes	Napier-Castana silt loams, 9 to 20 percent slopes
Napier-Castana-Urban land complex, 9 to 14 percent slopes	Napier-Castana-Urban land complex, 9 to 14 percent slopes
Napier-Gullied land complex, 5 to 14 percent slopes	Napier-Gullied land complex, 5 to 14 percent slopes
Napier-Kennebec-Colo complex, 0 to 5 percent slopes	Napier-Kennebec-Colo complex, 0 to 5 percent slopes
Napier-Rawles complex, 2 to 5 percent slopes	Napier-Rawles complex, 2 to 5 percent slopes
Napier-Urban land complex, 2 to 5 percent slopes	Napier-Urban land complex, 2 to 5 percent slopes
Napier-Urban land complex, 5 to 9 percent slopes	Napier-Urban land complex, 5 to 9 percent slopes
Onawa silty clay, 0 to 2 percent slopes, occasionally flooded	Onawa silty clay, 0 to 2 percent slopes, occasionally flooded
Onawa-Albaton complex, 0 to 2 percent slopes, rarely flooded	Onawa-Albaton complex, 0 to 2 percent slopes, rarely flooded
Owego silty clay, 0 to 2 percent slopes, rarely flooded	Owego silty clay, 0 to 2 percent slopes, rarely flooded
Percival silty clay, 0 to 2 percent slopes, rarely flooded	Percival silty clay, 0 to 2 percent slopes, rarely flooded
Percival-Albaton complex, 0 to 2 percent slopes, occasionally flooded	Percival-Albaton complex, 0 to 2 percent slopes, occasionally flooded
Percival-Haynie-Urban land complex, 0 to 2 percent slopes, rarely flooded	Percival-Haynie-Urban land complex, 0 to 2 percent slopes, rarely flooded
Pits, clay	Pits, clay
Pits, sand and gravel	Pits, sand and gravel
Rawles silt loam, 0 to 2 percent slopes, occasionally flooded	Rawles silt loam, 0 to 2 percent slopes, occasionally flooded
Rawles-Urban land complex, 0 to 2 percent slopes	Rawles-Urban land complex, 0 to 2 percent slopes
Salix silt loam, 0 to 2 percent slopes, rarely flooded	Salix silt loam, 0 to 2 percent slopes, rarely flooded
Sarpy loamy fine sand, 0 to 2 percent slopes, rarely flooded	Sarpy loamy fine sand, 0 to 2 percent slopes, rarely flooded
Sarpy loamy fine sand, 2 to 5 percent slopes, occasionally flooded	Sarpy loamy fine sand, 2 to 5 percent slopes, occasionally flooded
Sarpy loamy fine sand, 2 to 5 percent slopes, rarely flooded	Sarpy loamy fine sand, 2 to 5 percent slopes, rarely flooded
Sarpy loamy fine sand, 5 to 9 percent slopes, occasionally flooded	Sarpy loamy fine sand, 5 to 9 percent slopes, occasionally flooded
Sarpy-Morconick complex, 0 to 2 percent slopes, occasionally flooded	Sarpy-Morconick complex, 0 to 2 percent slopes, occasionally flooded
Scroll silty clay, 0 to 2 percent slopes, occasionally flooded	Scroll silty clay, 0 to 2 percent slopes, occasionally flooded
Sewage lagoon	Sewage lagoon
Smithland silt loam, 0 to 2 percent slopes, occasionally flooded, overwash	Smithland silt loam, 0 to 2 percent slopes, occasionally flooded, overwash
Smithland silty clay loam, 0 to 2 percent slopes, occasionally flooded	Smithland silty clay loam, 0 to 2 percent slopes, occasionally flooded
Smithland-Danbury-Judson complex, 0 to 5 percent slopes	Smithland-Danbury-Judson complex, 0 to 5 percent slopes
Spillville loam, 0 to 2 percent slopes, occasionally flooded	Spillville loam, 0 to 2 percent slopes, occasionally flooded
Ticonic very fine sandy loam, 0 to 2 percent slopes, rarely flooded	Ticonic very fine sandy loam, 0 to 2 percent slopes, rarely flooded
Tieville silty clay, 0 to 2 percent slopes, rarely flooded	Tieville silty clay, 0 to 2 percent slopes, rarely flooded
Udorthents, loamy	Udorthents, loamy
Udorthents, sanitary landfill	Udorthents, sanitary landfill
Urban land	Urban land
Water	Water
Wiley silt loam, 0 to 2 percent slopes, occasionally flooded	Wiley silt loam, 0 to 2 percent slopes, occasionally flooded
Woodbury silty clay, 0 to 2 percent slopes, rarely flooded	Woodbury silty clay, 0 to 2 percent slopes, rarely flooded
Zook silty clay loam, 0 to 2 percent slopes, occasionally flooded	Zook silty clay loam, 0 to 2 percent slopes, occasionally flooded

*NRCS Data acquired via Schneider/Beacon

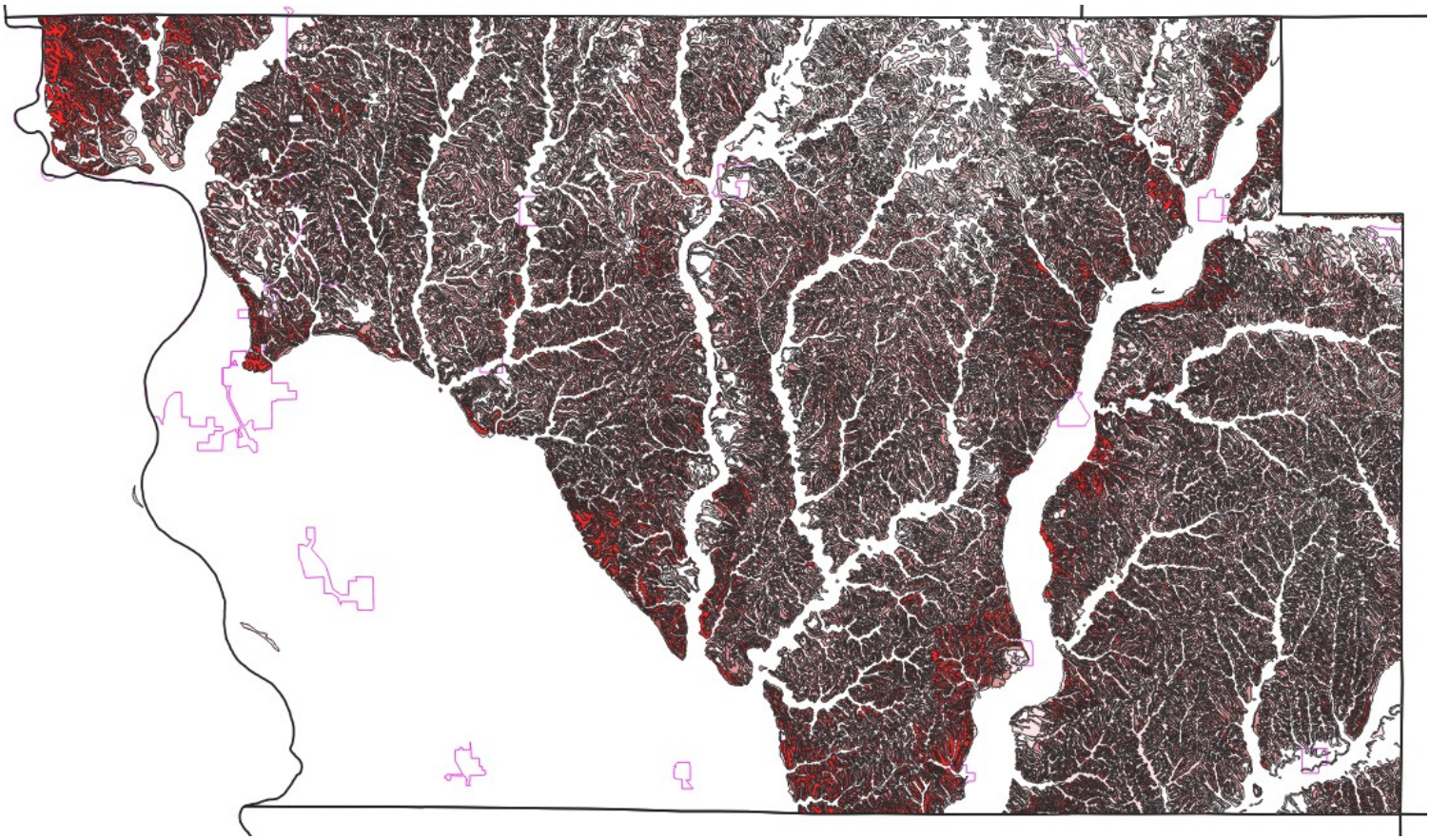
Areas with soil slope content between 0-5%

*NRCS Data acquired via Schneider/Beacon



Areas with soil slope content greater than 5%

*NRCS Data acquired via Schneider/Beacon



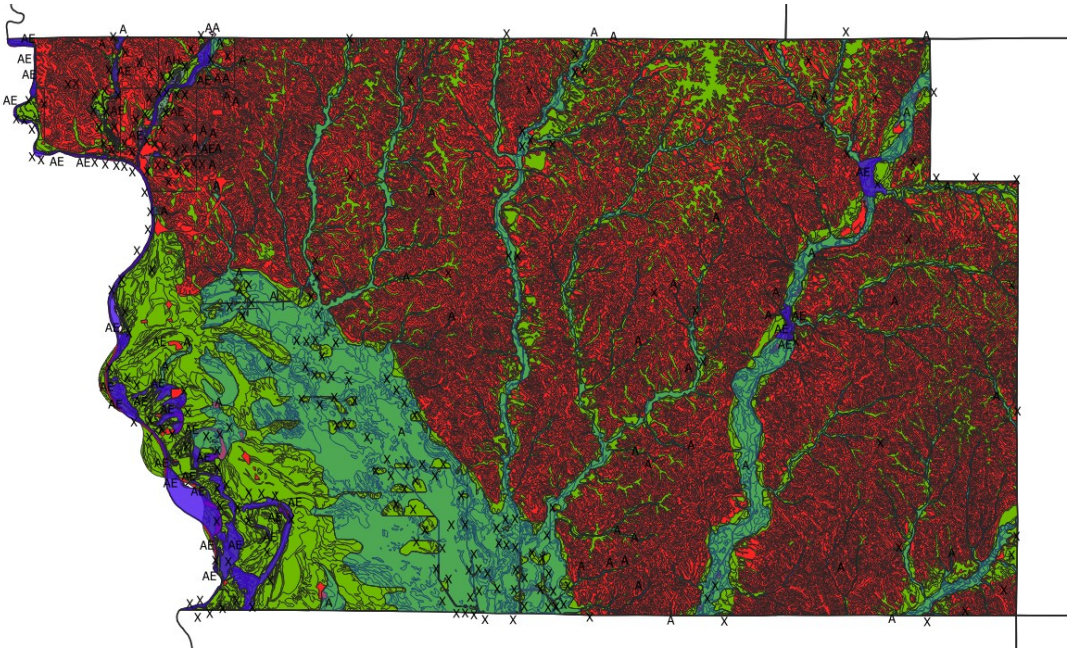
Floodplain and soils with slope content over 5%

*NRCS data and floodplain Data acquired via Schneider/Beacon

Blue Represents Floodplain Areas

Red represents areas with Slope over 5%

Green represents areas with Slope under 5%



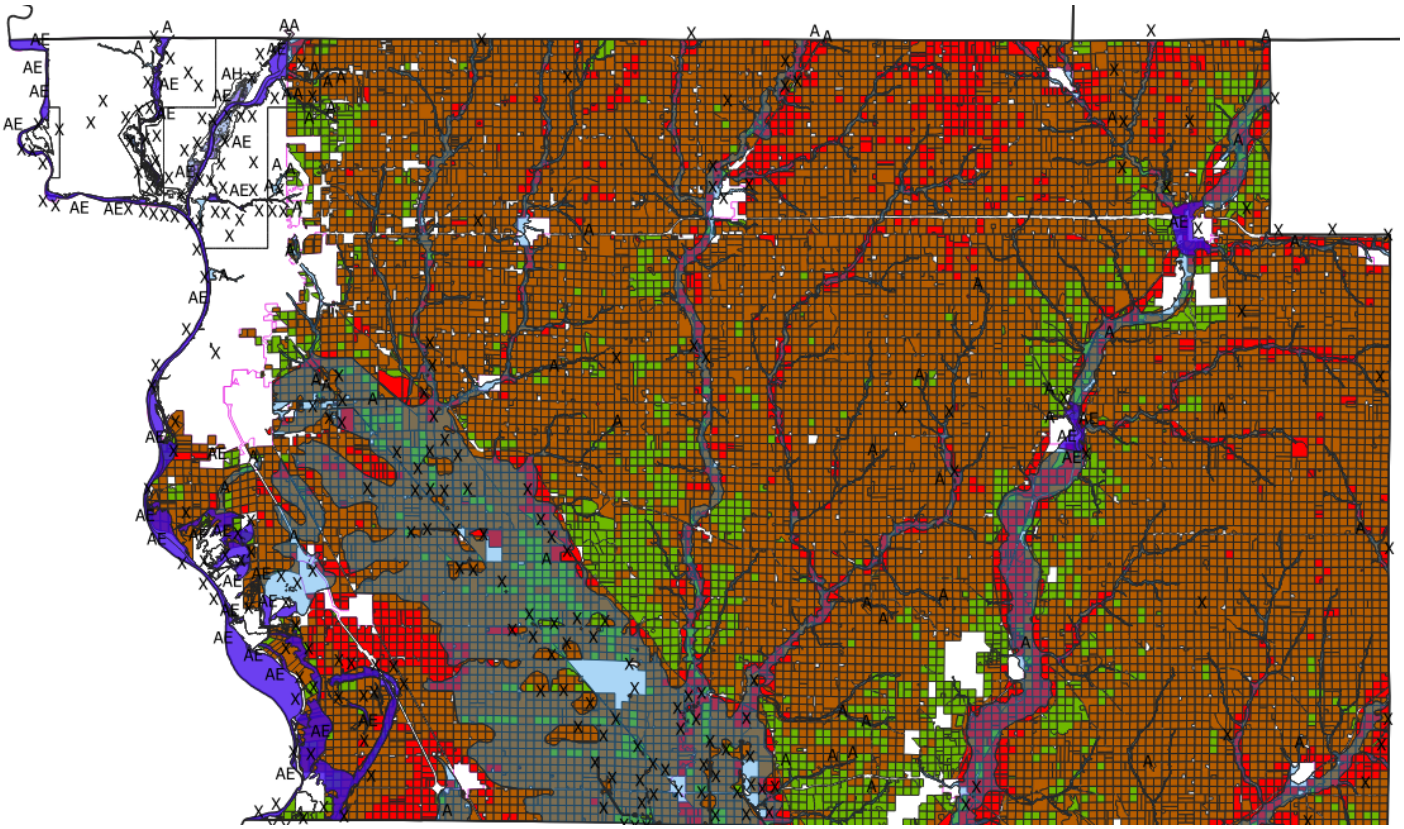
Floodplain and CSR2

*NRCS data and floodplain Data acquired via Schneider/Beacon

Floodplain – “Blue”

CSR2 –

0-35– “Green”
0-3635-64– “Brown”
0-3765-100 = “Red”



Stakeholder Positions

The Woodbury County Conservation Board voted at their December 14, 2023 meeting to recommend one-mile setbacks or separation distances from conservation areas as per page 5 in the minutes provided on the subsequent pages.

WOODBURY COUNTY, IOWA, CONSERVATION BOARD
MINUTES OF THE THURSDAY, DECEMBER 14, 2023, BOARD MEETING

The following is a true copy of the minutes of the meeting of the Woodbury County, Iowa, Conservation Board held on Thursday, December 14, 2023, at the Dorothy Pecaut Nature Center beginning at 4:00 p.m.

BOARD MEMBERS PRESENT
Aaron Gehling, Chris Zellmer-Zant, Cindy Bennett, Neil Stockfleth, and Tom Limoges

BOARD MEMBERS ABSENT
None

STAFF PRESENT
Dan Heissel, Brian Stehr, and Dawn Bostwick

OTHERS PRESENT
Mark Nelson, County Supervisor/Conservation Board Liaison
Dolf Ivener, Two Hawks LLC

CALL TO ORDER
Vice Chairperson Bennett called the meeting to order at 4:07 p.m.

CORRESPONDENCE ITEMS
None

PUBLIC PARTICIPATION
None

ITEM R1. Approve Consent Agenda

MOTION by Neil, second by Tom.

To approve the consent agenda.

VOTE:
Aye: Aaron Gehling, Cindy Bennett, Neil Stockfleth & Tom Limoges
Nay: None
Absent: Chris Zellmer-Zant

The consent agenda was approved and involved the following items:

C1. Approve Minutes of the October 19, 2023, Regular Meeting and November 11, 2023, Special Meeting

C2. Approve the October 2023 and November 2023 Claims and Expenditures

C3. Receive and Place on File the October 2023 and November 2023 Financial/Budget Reports

C4. Acceptance of Gifts/Donations:
- $7,000 from Rosie Kuehne for Playscape
- $1,128 from Siouxland Community Foundation for Playscape (via WCCF/Big Give)
- $500 from Gary & Anne Shaner for Playscape (via WCCF/Big Give)
- $600 from Lawrence & Juliann Delperdang for bird seed and animal care

- $200 Jason Wolfe for food & care of raptors
- $100 from Sandra Nation for Playscape
- $100 from Gary LeMoine for Tale Trail books
- Seashell collection from Teresa Dibble-Eichmann
- Nature Calls decorations from Pam Pfautsch
- Childrens' Big Books from Dan & Dolly Varner
- Nerf guns & darts from Gary LeMoine

(Chris Zellmer-Zant arrived at 4:08 p.m. and assumed chairperson duties.)

ITEM R2. Dolf Ivener – Solar Information

Dolf Ivener of Two Hawks LLC was present to discuss a possible solar project at Little Sioux Park. He and his partner started the solar project at Snyder Bend in 2020. Snyder Bend was chosen at that time because it was the easiest and had the most expensive electricity. Two Hawks owns the system at Snyder Bend and has a power purchase agreement with the conservation board. Dolf noted that in last four years the price of solar panels has been greatly reduced and there is now a 50% tax credit available. He would like to put a 300KW system in at Little Sioux Park to power the whole park. He asked for board approval to pursue this with MidAmerican. If they agree, he will bring information to the board for a decision. The board agreed by consensus to allow Dolf to approach MidAmerican and report back.

ITEM R3. Little Sioux Park Sewer Project Bids – Accept and Award Bids

Dan reported that the bid opening and public hearing for the Little Sioux Park sewer project was held on Tuesday, December 12th. Three contractors submitted bids and were present. Noah with JEO opened the bids and confirmed that they were complete. The project was split into three groups: A) Build the sanitary sewer service collection system, B) Install wastewater treatment system, and C) Build lateral field and associated force main. Doyle Construction of Fort Dodge, IA, had the low bid for Group A and Steve Harris Construction of Homer, NE, had the low bids for Groups B & C.

MOTION by Neil, second by Cindy.

To approve the plan specifications and forms of contract prepared by JEO for the Little Sioux Park site and utility improvements.[23-30]

VOTE:
Aye: Aaron Gehling, Chris Zellmer-Zant, Cindy Bennett, Neil Stockfleth & Tom Limoges
Nay: None
Absent: None

MOTION by Aaron, second by Tom.

To accept the bids as presented by Bainbridge Construction, Doyle Construction and Steve Harris Construction for the Little Sioux Park – Riverside Campground site and utility improvements project and award low bid of $267,005 for Group A to Doyle Construction of Fort Dodge, IA, and award low bid of $568,683.60 for Group B and $99,335.00 for Group C to Steve Harris Construction of Homer, NE. These will be contingent upon successful reference checks by JEO.[23-31]

[23-30] To approve the plan specifications and forms of contract prepared by JEO for the Little Sioux Park site and utility improvements.

[23-31] To accept the bids as presented by Bainbridge Construction, Doyle Construction and Steve Harris Construction for the Little Sioux Park – Riverside Campground site and utility improvements project and award low bid of $267,005 for Group A to Doyle Construction of Fort Dodge, IA, and award low bid of $568,683.60 for Group B and $99,335.00 for Group C to Steve Harris Construction of Homer, NE. These will be contingent upon successful reference checks by JEO.

VOTE:
Aye: Aaron Gehling, Chris Zellmer-Zant, Cindy Bennett, Neil Stockfleth & Tom Limoges
Nay: None
Absent: None

Dan reported that the DNR has done a site inspection and approved the system as planned. The permit should go through quickly, but work cannot start until the permit is in hand. Dan has requested to start on the collection system right away since it isn't part of the actual treatment system as the contractor wants to start in two weeks or less. The collection system work is required to be done by May 15th to avoid any disruption of the camping season.

ITEM R4. Budget Review – Supervisors' Letter – Changes

Dan presented an updated budget explanation sheet. He explained that the Board of Supervisors originally called for a 0% budget increase for FY25 but ended up allowing up to a 2% increase. The conservation department budget that was originally approved had an increase of 3.7%. Dan reduced the budget from $16,300 to $10,300. He will send an explanation letter along with the budget worksheet to the Supervisors.

MOTION by Neil, second by Tom.

To approve the amended FY25 budget as presented.[23-32]

VOTE:
Aye: Aaron Gehling, Chris Zellmer-Zant, Cindy Bennett, Neil Stockfleth & Tom Limoges
Nay: None
Absent: None

ITEM R5. Capital Improvement Projects Update

1. Nature Center Foundation & Retaining Walls

Dan updated the board on the nature center foundation project. Radar was completed on all floors upstairs and downstairs. There was a large area with voids in the classrooms, staff entrance, naturalist work room, and kitchen. That information has been sent to building services, the architect, and the engineers to make a recommendation. They will fill the voids with foam but won't jack the floors. They don't believe that the foundation has settled, but they are still monitoring the building to make sure it isn't continuing to move. The Supervisors have allocated $120,000 for the project.

Dan reported that the contractor looked at the garden retaining walls last month. The contractor said he would pour concrete walls to match the wall by the shelter and step it down 2'. He won't be able to do curved walls. The garden will be two tiers instead of three. A 15-20' strip will be left between the retaining wall and the light pole to allow for equipment access if necessary. This project might be started this spring.

Dan also had the contractor look at the area by the gravel parking lot in case erosion starts and was told they could tie the existing shelter wall in behind the parking area.

[23-32] To approve the amended FY25 budget as presented.

2. Little Sioux Park – Bellamy Campground

Dan stated that the contract with JEO included both Riverside and Bellamy campgrounds. Staff has been working on redesigning the Bellamy campground layout. The software used to collect the data has not been working well with the GIS program used to manipulate the data, specifically on field maps. Tyler has been on the phone with support trying to figure it out. GPS points were obtained to within a couple inches, and it has been laid out in the campground. The layout has been sent to JEO, and they are working to get plans and specs completed for Bellamy. The funds aren't available to complete the project right now, but the plans will be ready to go.

Dan reported that Little Sioux staff has already been putting fish structures in the south end of the pit. The three field staff members had to take an online miner training to be allowed access in the active pit due to MSHA rules.

3. Little Sioux Park Beach Discussion

Dan stated that Little Sioux Park has taken a hit in camping revenues due to the beach being closed, and water levels aren't expected to turn around anytime soon. He discussed the possibility of drilling a 250' well with Ben Kusler at the engineer's office and was told that it would need to be continually pumped. The well would cost $20,000, and an additional $20-30,000 would be needed for a pump and the electricity to run it.

Ben Kusler recommended grading the beach so there is a zero-grade entry with low water and a zero-grade entry with high water. Dan will talk to Mark Nahra and see if his staff can survey it this winter and find where the drops are. Ben offered to design it on his own time because he is retiring this month. If it looks like it will work, he will make a recommendation.

ITEM R6. Board Member/Staff Reports

1. Administrative Items

Dan reported on the following items:

a. January Meeting Date and Location

The next meeting will be held at 4:00 p.m. on January 11, 2024, at the Dorothy Pecaut Nature Center. Long-term planning for Southwood Conservation Area might be done at that time, and a meeting will be scheduled at that park first next summer.

b. Vests for Officers

Dan reported that a WCCB officer was recently on the scene of an active shooter incident, and it reinforced the need for rifle vests which Dan has been trying to get for the department for three years. Brian has asked two companies for quotes and has only received a quote from GH Armor so far at a cost of $9,800 to equip all eight officers with vests and ballistic helmets. He recently learned that the other company he contacted is being investigated by the DOJ because their armor is not meeting specs.

Discussion was held regarding possible grants. Dan stated that he tried for grants for this during his first three years here. Tom suggested applying for a $10,000 micro grant through MRHD and agreed to contract them about it.

(Chris left at 5:35 p.m. and Cindy assumed chairperson duties.)

MOTION by Aaron, second by Neil.

To pursue grants to purchase rifle vests for eight officers.[23-33]

VOTE:
Aye: Aaron Gehling, Cindy Bennett, Neil Stockfleth & Tom Limoges
Nay: None
Absent: Chris Zellmer-Zant

(Tom left at 5:37 p.m.)

c. Solar Farm Distance From Conservation Areas

Dan stated that he was contacted by Dan Priestly regarding solar panel setbacks for conservation areas, and he recommended a one-mile setback.

MOTION by Neil, second by Aaron.

To support the adoption of a one-mile setback from conservation areas for solar arrays in the proposed county zoning rules.[23-34]

VOTE:
Aye: Aaron Gehling, Cindy Bennett, & Neil Stockfleth
Nay: None
Absent: Chris Zellmer-Zant & Tom Limoges

d. Old Business

Midway Park Fishing Jetty: Dan reported that Brian's fish habitat stamp grant request for the Midway Park fishing jetty scored third at the review with an award of approximately $80,000. However, later the head of the scoring committee called and said that one of the scores was entered incorrectly which bumped Woodbury down to fourth with an award of $65,000. Dan requested a copy of the score sheets, and it looks like an 8 turned into a 9 on both Woodbury and Ida counties. The scorer was contacted, and they gave 8 to Woodbury and 9 to Ida. Dan is going to call them on it.

O'Connell Property: Dan was contacted by the Iowa Natural Heritage Foundation about another offer from Erik O'Connell on his 116-acre property. He is now offering appraised value, but it would cost $2,000-$3,000 for the appraisal. Dan stated that the property has been timbered and overgrazed and does not attach to any current WCCB property. He added that the landscape has changed with available grants, county budget, and money available. It was agreed by board consensus to pass on it again.

2. Nature Center Activities

The nature center programs and visitors reports for October and November were presented. Theresa was unable to attend the meeting, but board members were referred to her printed report.

[23-33] To pursue grants to purchase rifle vests for eight officers.
[23-34] To support the adoption of a one-mile setback from conservation areas for solar arrays in the proposed county zoning rules.

3. Park Activities

Brian reported on the following park activities:

- Little Sioux staff worked with Bedrock Gravel to truck unwanted overburden to the lakeside campground area that was cleared earlier this year, and it ended up being enough to finish up the project. The area will now be frost seeded or seeded in the spring.
- A local eagle scout recently made 20 fish structures and, with the help of staff, placed the structures in the north pit of Midway Park.
- Southwood staff completed a burn on the Salsness and Zook properties.
- Southwood staff spent several days clearing and replacing half of the Fowler Forest fence near the dam.
- Brown's Lake and Snyder Bend staff have placed large rocks around the parking areas to replace the posts.
- Little Sioux staff moved rock to make a parking lot at Peters Pit.
- Liam Bell has been working with Northland CDL Training and Licensing to complete his CDL training. Most was done online, but he will travel to Mason City next Monday and Wednesday for driving training and testing. This was a considerable savings compared to doing it through WIT.
- Both F150 trucks have been ordered from Barry Motor with a spring delivery expected. Nothing has been heard about the Chevy 1-ton except that the build date was pushed from October to January.
- Dan reported that the insurance check for the totaled truck was written to the conservation board. The money is required to be deposited back into the fund that the truck was paid from and won't be allocated to the conservation budget line. Dan sent an email to Dennis Butler stating that he will be amending the conservation budget for that amount in the spring, and the balance due for the replacement truck will come from the conservation department budget.
- Brian has been looking for a trailer to replace two 1998 models at the end of their life span. There is $17,000 remaining in the budget which should be enough to cover it.

4. Board Information

Aaron asked if any WCCB staff are able to adjust the valve at Brown's Lake. Brian stated that staff have been shown how to do it, but they do not have a key. Only state employees are allowed to adjust it.

5. Other Business

None

ITEM R7. Director's Annual Review

The board went into closed session for the Director's annual performance evaluation at 6:21 p.m. by motion from Aaron and second by Neil. Vice Chairperson Bennett held the roll call vote: Aaron Gehling-Aye, Neil Stockfleth-Aye, Cindy Bennett-Aye, Chris Zellmer-Zant-Absent and Tom Limoges-Absent.

The board discussed Director Heissel's performance for the past year and goals for the future. The session was recorded.

At 6:46 p.m., Aaron moved to come out of closed session, which was seconded by Neil and carried unanimously by roll call vote: Aaron Gehling-Aye, Neil Stockfleth-Aye, Cindy Bennett-Aye, Chris Zellmer-Zant-Absent and Tom Limoges-Absent.

ITEM R8. Adjournment

The meeting was adjourned at 6:48 p.m.

The above minutes were recorded by Dawn Bostwick.

Recording Secretary, Dawn Bostwick

Board Secretary, Tom Limoges

Board Chair, Chris Zellmer-Zant

Public Comments and Documentation Submissions Since November 30, 2023

Daniel Priestley

From: Leo Jochum <leojochum@gmail.com>
Sent: Tuesday, January 9, 2024 9:53 AM
To: Daniel Priestley
Subject: comments for Jan 17 study session
Attachments: Impacting Farm Values.docx; Solar's Impact on Rural Property Values 1.pdf

Dan and Planning and Zonning:,
Please include this material in the packet for the study session.
Thank you, Leo

Renewable energy in Iowa is the main reason that Iowa consumers have a utility monthly rate of $116.32 versus a national average of $147.64 which is a savings of about $370 per year for every Iowa household according to independent research.
According to the US Energy Information Administration Overview, Iowa ranks among the top five states in per capita total energy consumption and out of those five it is the only non crude oil producing state.
However in Renewable Energy, Iowa is the top ethanol producing state providing about one fourth of the nation's ethanol. Woodbury County is the third largest county in Iowa with approximately 570,000 acres of farmland raising 195,000 acres of corn but does not have an ethanol plant. One can only assume a large amount of Woodbury's corn production goes to ethanol plants in Ida, Plymouth, Cherokee in Iowa and Dakota Co,Ne. In addition to that how much distillers grain comes back to Woodbury for supplements to cattle and hog feed.
At the beginning of the ethanol era a Woodbury Co farmer tried to organize a group of individuals to invest in an ethanol plant but could not generate enough interest. As a result Woodbury Co now sends a sizable amount of bushels of corn out of the county.
In 2022 nearly two thirds of Iowa's electricity came from renewable resources, almost all of it from wind, second in the nation to Texas.
Wind energy powers 62% of Iowa's net generation, the highest of any state.
Significant economic benefits of the wind industry include payments to landowners, short and long term jobs creation and spending on goods and services in supporting industries.
Woodbury Co opted for a more restrictive ordinance based on concerns with safety issues in the event of a tower collapse or blade failure, the disruptive "whoosh" sound of the turbine blade rotation and the nighttime aviation lights constantly blinking in the neighboring houses. While the wind ordinance does not eliminate a wind project it appears that Mid America has paused their wind turbine project.
However Woodbury County residents still receive the benefit of lower electric rates made possible by wind energy in Iowa.
With the electric power plants utilizing coal being in existence for 50 plus years there is environmental pressure to shut down some of these generating plants.
According to the U.S. Energy Information Administration, Port Neal 1&2 started in 1964 and 1972 with a combined generating capacity of 496.2 MW and both were retired in 2016. Unit 3 started operating in 1975 with 584.1 MW capacity.

Comments and documentation received from Leo Jochum, 1/9/24

The grid infrastructure that supported the combined production of 1080.3 MW is still in existence today creating a significant opportunity for a Utility Solar Project North and East of Salix.
Independent researchers have found that solar is very clean, non polluting and eco friendly.
The World Health Organization and a number of Universities across the nation have found through research that solar is non toxic and does not create health problems. The sound emitted is less than 50 decibels during the day and almost zero after sunset.
At the September 26, 2023 Woodbury Co Board of Supervisors meeting an agenda item was introduced to give direction to Planning and Zoning for further consideration during public hearings regarding Utility Scale Solar which stated:
" Upon public hearing comments and further reflection, we offer an alternative to be considered that might be preferable, namely the expansion of "Light Industrial." We would ask that landowners who so desire such utility scale solar be rezoned to this, presently constituting only 101 acres of Woodbury Counties 570,000 acres. Landowners could continue to farm the land but open up an avenue that would be far preferable than Agricultural Preservation and much more appropriate."
In addition it was recommended that the 5% slope would be in effect only for fixed arrays.
It was also recommended to change the 2% cap on total acres to a 1% cap every four years allowing approximately 5700 acres every four years which would present an opportunity to revisit the policy every four years.
During the Supervisors discussion Mr. Priestly introduced some information about how a Renewable Energy Overlay might apply for a Utility Solar Project. The Overlay concept was very well received as the main objective was to keep the land in the AP Zone so it can revert back to agricultural production when the lease reaches maturity.
Utility Solar will have a financial benefit to the county in the form of electrical generating tax which is more than five times the annual ag real estate rate. This is a direct benefit for all the residents of Woodbury County as it helps hold down all real estate tax.
Another economic boost comes during the construction phase when there can be upwards of 200 employees for two years in the construction phase.

After the solar project is in operation there will also be full time employment positions available and possible service contracts for maintenance and repairs. And in most cases non typical new businesses create new businesses.
And lastly but just as important the lease payments to the landlords can be reinvested in the local businesses and community. It might be putting up an irrigation pivot, building a machine shed or buying a piece of farm equipment.
But we have also heard concerns from people that are concerned that just a few people are receiving the money from this project and they will use it to take advantage of their neighbors and squeeze out the people that are not as fortunate. This is far from the truth. There are twelve different families involved in this project and all of them are involved in agriculture. There is not any absentee landowners out of state in this project. It is all local people committed to making our community a safe and healthy environment.
Renewable Energy is at the forefront of large businesses looking to expand or relocate at the local and national level and Woodbury County has an excellent opportunity to attract major companies to the General Industrial area in Southbridge when the new interchange becomes a reality.
How did Woodbury County miss the opportunity for an ethanol plant while our four neighboring counties each built one?

Comments and documentation received from Leo Jochum, 1/9/24

I understand the pause on the wind energy with the concerns on safety and health and maybe this is where Utility Solar can fill in the gap.
Prior to 1990 most solar panels had an efficiency rating of around 14%. Now the efficiency of Utility Solar is at 25% thanks to the private company research of Boeing, Panasonic and Sharp. At the present time efficiency values as high as 44.4% have been achieved in laboratory settings. It's only a matter of time before it will be applied in the real world.
Woodbury County has a unique opportunity to attract new businesses and to encourage Renewable Energy at the same time. Utility Solar is non polluting, non toxic, low profile and does not obstruct neighboring businesses. It will be utilizing the infrastructure that is already in place in addition to creating a safe haven for small wildlife.
The concern that people have about protecting our farmland will be met by implementing the Renewable Energy Overlay Zone. This will protect the acres in the General Industrial Area to be used for its intended purpose and the local community, county, Sioux City and surrounding area will benefit.

Comments and documentation received from Leo Jochum, 1/9/24

Source: https://www.farmprogress.com/commentary/how-solar-is-impacting-farmland-values#

PrairieFarmer

How solar is impacting farmland values

Land Values: We can learn what might happen in Illinois by studying what's happening out East, where solar development is several steps ahead.

The **Illinois Society of Farm Managers and Rural Appraisers** does not have a formal position on solar development. Members will tell you there is always concern when productive soil is lost, but at the same time, many would argue that landowners should have the freedom to do what they want with their land, within reason. Loosely fettered land ownership is one of the fundamental rights that makes this nation great.

You may ask, if all these solar farms are going to be built, how will that affect my farm's values?

Lessons from the East

Last month, the American Society of Farm Managers and Rural Appraisers hosted a webinar, "Solar's Impacts on Rural Property Values." ASFMRA member-appraisers Rich Kirkland from North Carolina and Don Fisher from New York shared their experiences appraising property near solar developments. Their markets are further along in the development of solar energy than we are here in Illinois.

In these types of projects, appraisers look for factors that increase external obsolescence. External obsolescence is described as a form of depreciation caused by factors not on the property itself, such as economic, social or environmental.

Both appraisers discussed different categories where external obsolescence occurs. The ones considered among the more negligible for solar are potential hazardous materials in the panels, odor, noise and traffic. U.S. EPA has done substantial studies on solar projects, and its findings are that the developments bring little impact on the local environment. Once built, the developments are largely static and produce little to no odor, noise or traffic.

Comments and documentation received from Leo Jochum, 1/9/24

Other concerns the appraisers spent more time looking at were stigma and undesirable viewshed or diminished views from the property. Often when a development is initiated, neighboring landowners who may like solar projects in general find they don't like them next to their property. In the industry, these protesters are described as NIMBY: Not In My Back Yard.

Land values

Kirkland and Fisher found that when appraisers were surveyed in areas where solar projects have gone in, the difference in the range of valuation ran from down 25% to up 10% when compared to properties not within the immediate area of the project. When that survey was further filtered and separated by those appraisers who actually conducted appraisals for properties near solar developments, they found that the appraisers who did not appraise nearby came in with lower anticipated valuations when compared to the appraisers who actually did a nearby appraisal. That indicates that the expectation of lower valuations did not hold true when properties actually sold.

And how about the view? Kirkland and Fisher's studies indicated that when there were adequate setback requirements and vegetation planted to block the views, impact on local land values was negligible to positive.

So, if Illinois values follow the trends we see in areas of the nation with more solar development, we may lament the loss of productive ground — but we can be assured that the value of our own farms nearby should not be affected.

Solar's Impact on Rural Property Values

By ASFMRA Press posted 02-15-2021 10:23 PM

0 RECOMMEND

The difference that experience makes when it comes to the perceived and actual impacts of solar on nearby property values.

In recent years, public ly surrounding solar farms has gained the attention of property owners and appraisers. As with any large-scale development, the change represented by utility scale solar can be cause for concern. Naysayers express worries involving impacts to viewshed, drainage problems, the idea of replacing productive agricultural lands with an industrial use, and more. Much of this worry comes back to one thing: the potential impact on property values.

A recently completed study from the University of Rhode Island looked at 400,000 transactions in New England over the course of 15 years, finding that suburban residential property values suffered negative impacts when nearby solar farms replaced resources perceived as scarce, such as green space. On the other hand, this same study found no associated impact on property values for solar farms located in rural areas.

Meanwhile, a survey by the University of Texas at Austin asked 37 appraisers a series of questions about property value impacts based upon proximity to utility-scale solar projects. On average, the surveyed appraisers believed that there was a negative relationship between solar farms and nearby property values, though the appraisers with strong negative opinions also answered "No" when asked whether they had prior experience assessing property located near large solar installations. Dr. Varun Rai, who led the study, stated that the results "suggest that experience assessing near a solar installation is associated with a much less negative estimate of impact." He also noted that "the median and mode of all estimates of impact was zero, suggesting negative estimates from a few respondents were pulling down the mean."

Patricia McGarr, who serves as the National Director of CohnReznick Advisory's Valuation Practice, has conducted a number of property value impact studies involving solar, and spoke on the subject at the ASFMRA Illinois Chapter's Annual Meeting in 2019. McGarr's studies found no consistent negative impact on residential property value that could be attributed to nearby solar farms. She also asserted that township and county assessors have tremendous amounts of data that point in the same direction.

McGarr referenced the 1,000-acre "North Star" solar project located in Chisago County, Minnesota. There, the county assessor found no adverse impact on nearby property values, noting, "It seems conclusive valuation hasn't suffered."

McGarr has attended many public hearings on proposed solar developments and listened to residents taking issue with the idea of putting good farm land out of production and potential impacts to viewsheds and drainage tiles. "Owners of transitional ag lands, or lands that are in the path of development, are concerned about any changes that could have future impacts on sale values," she explained.

But McGarr believes solar developers are addressing these issues. It's now common practice for developers to include vegetative screening as a visual buffer between solar farms and adjacent properties to account for aesthetic concerns. In regards to drainage, developers are "conducting drainage tile studies and being vigilant [...] so that they don't reroute the drainage."

"Solar is an interim use," McGarr added. "There are no contaminants and the land sits fallow, allowing the soil quality to improve. It's not like you're paving things over."

Donald Fisher, ARA, served six years as Chair of the ASFMRA's National Appraisal Review Committee and 19 years as Chair of the Editorial Committee. Donald is the Executive Vice President of CNY Pomeroy Appraisers, and has done several market studies examining the impact of solar on surrounding residential values.

"Most of the locations were in either suburban or rural areas, and all of those studies found either a neutral impact or, ironically, a positive impact, where values on properties after the installation of solar farms went up higher than time trends," he explained.

According to Fisher, solar development has begun to compete with rural residential development and Concentrated Animal Feeding Operation (CAFO) farmers seeking new acreage. "In certain markets," he said, "the solar developers are paying as much as rural residential developers and CAFO farmers."

Howard Halderman, AFM, President and CEO of Halderman Real Estate and Farm Management, attended a recent solar talk hosted by the Indiana Chapter of the ASFMRA. Halderman's takeaway was that properties immediately adjacent to a solar farm may see a negative impact, but tactics to hide the solar farm from view could help offset those effects.

Halderman believes that other rural properties would likely see no impact, and farmers and landowners should even consider possible benefits. "In some cases, farmers who rent land to a solar company will insure the viability of their farming operation for a longer time period. This makes them better long-term tenants or land buyers so one can argue that higher rents and land values will follow due to the positive economic impact the solar leases offer," he explained.

Rich Kirkland, who owns Kirkland Appraisals in Raleigh, North Carolina, began exploring solar a little over a decade ago, or as he puts it, "right around the whole recession period, when solar really began to take off around here."

Since then, Kirkland has prepared property value impact studies for solar developers in 19 states, performing nearly 100 matched-pair analyses along the way. In a large majority of those comparisons, he observed a -5% to 5% difference in square foot sales prices, a range that he describes as statistically insignificant.

"If you take all of those matched-pairs and average them out, you'll find a difference of about 1%. That's not enough to make a claim on," he says.

Similar to Halderman, Kirkland believes that issues can arise if a solar development is situated too close to a property, or if nothing is done to conceal it from view. However, he concluded, "In rural and suburban areas, I'm not finding any consistent negative impact from solar farms as long as there's at least 100 feet between the [solar] farm and the property, and enough landscaping to hide the panels."

Comments and documentation received from Leo Jochum, 1/9/24

Woodbury County Comprehensive Plan 2040

Woodbury County Comprehensive Plan for 2040

simpco

Acknowledgements & Contributors

Steering Committee

Gary Brown, Former Director, Woodbury County Emergency Services
David Gleiser, Former Director, Woodbury County Community and Economic Development
Kevin Greime, Director, Siouxland District Health Department
Dan Heissel, Director, Woodbury County Conservation Board
Mark Nahra, County Engineer, Woodbury County Secondary Roads
Scott Mitchell, Director, Woodbury County Emergency Services
Michael Montino, Coordinator, Woodbury County Emergency Management
Dan Priestley, Zoning Coordinator, Woodbury County Community and Economic Development
Keith Radig, Woodbury County Board of Supervisors
Chad Sheehan, County Sheriff, Woodbury County Sheriff's Office
Tom Theisen, Chair, Woodbury County Board of Adjustment
Christine Zellmer-Zant, Chair, Woodbury County Zoning Commission

Woodbury County Board of Supervisors

Matthew Ung, Chairperson – 4th District
Jeremy Taylor, Vice Chairperson – 5th District
Daniel Bittinger II, Supervisor – 2nd District
Mark Nelson – 3rd District
Keith Radig – 1st District

Woodbury County Zoning Commission

Christine Zellmer-Zant, Chairperson
Thomas Bride, Vice Chairperson
Corey Meister
Jeffrey O'Tool
Barb Parker
Dan Bittinger, Board Liaison
Keith Radig, Board Liaison

Woodbury County Board of Adjustment

Daniel Hair, Chairperson
Pam Clark, Vice Chairperson
Ashley Christensen
Tom Thiesen
Doyle Turner
Dan Bittinger, Board Liaison

SIMPCO Staff

Erin Berzina, Regional Planning Director
Corinne Erickson, Regional Planner

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Introduction

Comprehensive Plan Purpose

The Woodbury County Comprehensive Plan 2020 is intended to serve as an advisory document that outlines the county's vision. The purpose of this comprehensive plan is to provide a current inventory of community services and resources and a thoughtful statement of the community's vision and goals for the future. This comprehensive plan includes analysis of the following planning topics: Housing, Economic Development, Transportation, Public Infrastructure and Utilities, Community Facilities and Services, Land Use and Natural Resources, and Disaster Response, Recovery and Resiliency.

The plan can inform grant applications and leverage funding for community projects. Funding agencies look to the plan to learn about the community resources and needs. County Staff can utilize the comprehensive plan as a guide in their work on behalf of the community. The comprehensive plan document provides legal justification for community decisions and ensures that local policies are in step with those of state, regional, and federal planning best practices. The plan process incorporated public participation and facilitated intergovernmental collaboration through review and consideration of neighboring jurisdictions policy and plans.

Iowa Smart Planning

In 2010, Iowa's legislation passed the Iowa Smart Planning Act that encourages communities to incorporate ten smart planning principles when drafting a comprehensive plan. The following ten (10) smart planning principles are intended to produce greater economic opportunity, enhance environmental integrity, improve public health outcomes, and safeguard a community's quality of life. All the Iowa Smart Planning topics are discussed or referenced in this comprehensive plan document. The Woodbury County Comprehensive Plan 2040 considers the Smart Planning Principles outlined in the Iowa Smart Planning Act.

IA Smart Planning Principles

1) Collaboration
2) Efficiency, Transparency, and Consistency
3) Clean, Renewable, and Efficient Energy
4) Occupational Diversity
5) Revitalization
6) Housing Diversity
7) Community Character
8) Natural Resources and Agricultural Protection
9) Sustainable Design
10) Transportation Diversity

The ten smart planning principles are described in Iowa Code Section 18B.1. The Code also states guidelines for the plan contents including the following thirteen elements that are described in the Iowa Smart Planning Guide and restated in the corresponding chapters of this comprehensive plan. Thirteen smart planning elements include: 1) Public Participation, 2) Issues and Opportunities, 3) Land Use, 4) Housing, 5) Public Infrastructure and Utilities, 6) Transportation, 7) Economic Development, 8) Agricultural and Natural Resources, 9) Community Facilities, 10) Community Character, 11) Hazards, 12) Intergovernmental Collaboration, 13) Implementation.

Plan Process

Woodbury County contracted services with Siouxland Interstate Metropolitan Planning Council (SIMPCO) to facilitate the Comprehensive Plan update process. This project was funded by the Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020. Some of the goals of the CARES Act are to invest in future stability, growth, and opportunity and to develop a strong and resilient recovery. By nature, a comprehensive plan informs future directions, decisions, and policies through the analysis of current and past conditions. This insight contributes to future economic strength, as well as improvements to quality of life, housing, transportation, and all other aspects that support residents' daily lives. In addition, this comprehensive plan devotes a chapter to disaster response, recovery, and resiliency to ensure that Woodbury County uses foresight in planning and preparation for future pandemics and other natural disasters.

Discuss the CARES Act funds and how this project was selected. Make sure to address COVID19 as part of the disaster response chapter. Discuss steering committee selection. The following timeline was followed to review and adopt this Comprehensive Plan.

Meeting or Task	Date
Introduction Meeting – Steering Committee Introduction, Background, SWOT, Schedule	**February 11, 2021** SIMPCO – Virtual Format
Steering Committee Meeting #2 SWOT, Data Analysis and County Trends	**April 15, 2021** SIMPCO - In-person/Virtual Hybrid Format

Public Input Survey	**July 5-August 31, 2021** Online and Paper Survey
Steering Committee Meeting #3	**October 21, 2021** SIMPCO - In-person/Virtual Hybrid Format
Public Open Houses (4)	**September, 2022** Hornick, Moville, Sergeant Bluff, Anthon
Steering Committee Meeting #4	**October 26, 2022**
Steering Committee Meeting #5	**November 30, 2022**
Steering Committee Meeting #6	**February 13, 2023**
Final Public Open House	**April 26, 2023** Woodbury County Courthouse in Sioux City
Public Comment Period **PZ Meeting (4th Monday every month)** **Board of Supervisors 3 readings (meet weekly)**	

Plan Adoption, Distribution and Amendments

Woodbury County is encouraged to review and amend the plan as needed through the County Zoning Commission and County Board of Supervisors. The Woodbury County Comprehensive Plan 2040 was updated and adopted by Resolution #2023-_____ on _____. Following its adoption, copies of the comprehensive plan or amended plan shall be sent or made available to neighboring counties, cities within the county, the council of governments or regional planning commission where the county is located, and public libraries within the county. Section 335.5 Iowa Code states the following regarding notice, adoption, and distribution of the plan.

> ***Iowa Code 2021 335.5 Regulations and Comprehensive Plan — considerations and objectives - notice, adoption, distribution.***
> *4. a. A comprehensive plan recommended for adoption or amendment by the zoning commission established under section 335.8 may be adopted by the board of supervisors. The board of supervisors shall not hold a public hearing or take action on the recommendation until it has received the zoning commission's final report containing the recommendation.*
>
> *b. Before taking action on the recommendation, the board of supervisors shall hold a public hearing at which parties in interest and citizens shall have an opportunity to be heard. Notice of the time and place of the hearing shall be published as provided in section 331.305.*
>
> *c. The board of supervisors may amend a proposed comprehensive plan or amendment prior to adoption. The board of supervisors shall publish notice of the meeting at which the comprehensive plan or amendment will be considered for adoption. The notice shall be published as provided in section 331.305.*

Public Participation

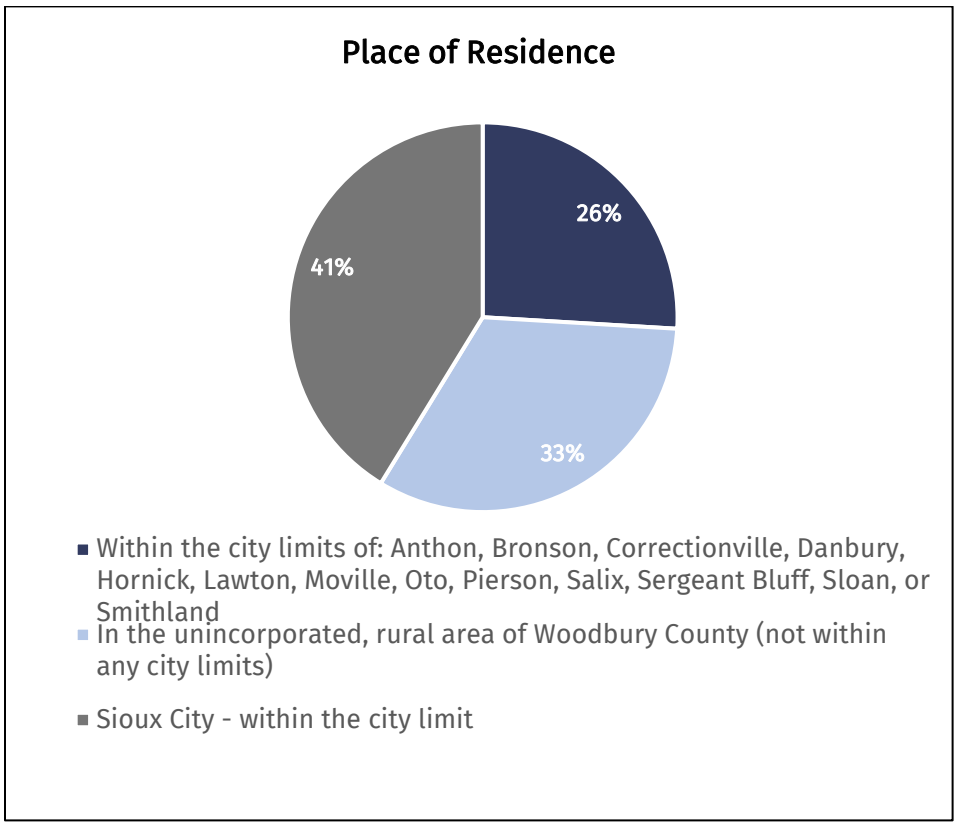
Iowa Smart Planning Guide states the following regarding the public participation element of the comprehensive plan: Information relating to public participation during the creation of the comprehensive plan or land development regulations, including documentation of the public participation process, information identified in the public comment received, and identification of any work groups created to assist in the process.

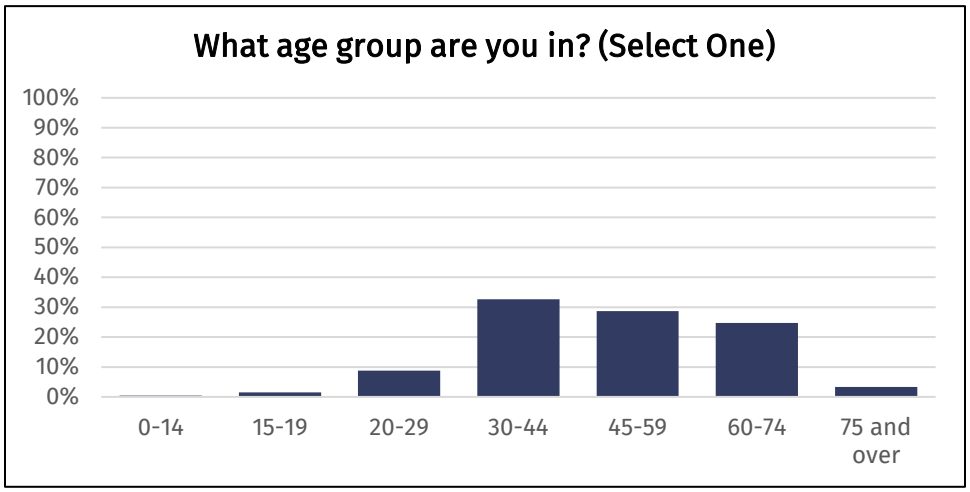
Woodbury County Comprehensive Plan 2040 Public Input Survey

SIMPCO staff developed and administered a public input survey in summer 2021 to gather public opinions to help advise Comprehensive Plan goals. Members of the public were invited to share their opinions about plan topics including Housing, Economic Development, Transportation, Public Infrastructure and Utilities, Community Facilities and Services, Land Use and Natural Resources, and Disaster Response, Recovery and Resiliency. The survey included 15 questions covering the aforementioned topics. Paper copies of the survey were hand-delivered to City Halls, with the exception of closed buildings at the time of delivery, and completed paper copies of surveys were hand-collected from City Halls. An online survey was distributed and marketed during the period of July 5 – August 31, 2021. Paid Facebook marketing was utilized as an online marketing tool to increase responses, and a booth at the Woodbury County Fair was secured to increase awareness. As part of the Woodbury County fair booth, a Yeti cooler was raffled to increase participation. Four hundred fifty-eight (458) County residents participated in the survey. Full results of the survey can be found in Appendix 9 and results are summarized by topic within each chapter.

Public Input Survey Participant Demographics

Four hundred fifty-eight (458) Woodbury County residents and business owners participated in the public input survey period of July 5 – August 31, 2021. The following graphs show the survey participant age and location. Survey results relevant to each topic will be presented in each chapter, to highlight the results most pertinent to the chapter's subject matter. The survey produced rich feedback from residents that was instrumental in the creation of the County's goals and objectives for 2040.





Open Houses

SIMPCO staff held four (4) public input meetings throughout the month of September 2022 in Hornick, Moville, Sergeant Bluff, and Anthon. Draft goals and objectives for each chapter and the current land use map of the county were printed on large posters and displayed on easels. Attendees were encouraged to read the posters at their own pace and fill out comment cards on topics of interest. SIMPCO and county staff were available to answer questions, field verbal comments, and discuss community concerns.

number of attendees, input gathered.

After a draft of the plan was completed in April 2023, SIMPCO staff hosted a final public open house in partnership with County staff at the Woodbury County Courthouse in Sioux City. This followed the same format as prior open houses, with information from each topic area in the plan summarized and displayed on posters. Comment cards were provided to attendees, and staff members from SIMPCO and the County were available to answer questions and collect input.

The event was advertised in local newspapers throughout the County, on the Facebook page for the project, and on the project website. On event flyers and Facebook posts, the planning team provided a link where anyone who was unable to attend the event could contribute comments.

number of attendees, input gathered, photo.

During the public comment period (#/#/2023 - #/#/2023), the full draft plan was sent via email to a diverse contact list of relevant interests in the county. These interests included agencies and organizations related to social services, natural resources, economic development, housing, public health, transportation, and telecommunications. The draft was also distributed to all county staff and each city located in the county.

Website and Social Media

A website was created to hold plan documents and information, steering committee meeting agendas, minutes, and presentations. A Facebook page was created to promote plan updates, direct residents and business owners to the plan website, and increase participation in public input.

SIMPCO staff created a video presentation about the draft goals and objectives that were presented at town halls, which was posted to the project website and advertised on Facebook. Comments on the draft goals and objectives were collected in November 2022. Participants

who contributed at least three comments about the goals were entered into a drawing to win one of two gift cards. The comments about the draft goals and objectives gathered from online and in person events are compiled in Appendix 9.

Vision Statement

A vision statement is an aspirational statement about the community and its direction for the future. The Woodbury County Comprehensive Plan Vision Statement was drafted from steering committee input and from public comments gathered through the community survey. The major themes from each source were used to form the following vision statement.

Woodbury County is a place where:

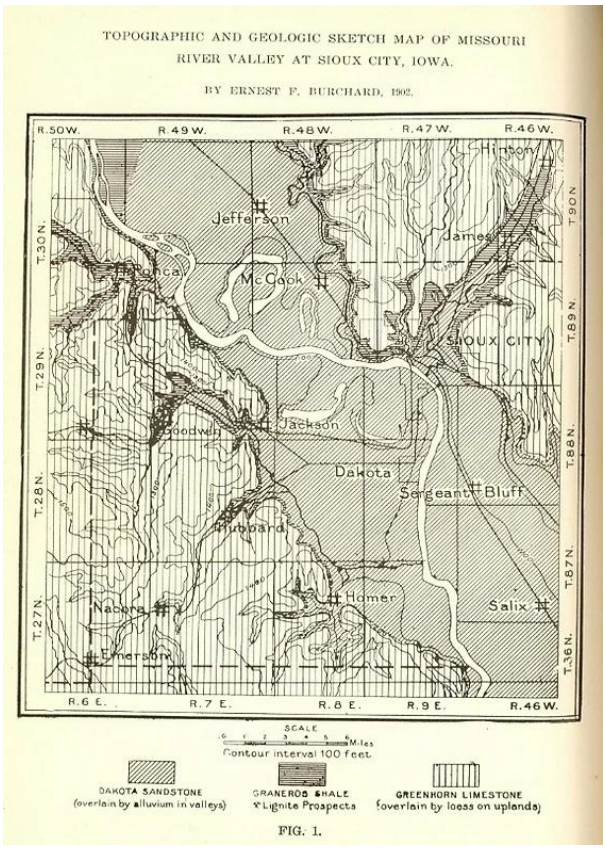
- *rural character and a strong sense of community are shared;*
- *land development is managed in a way that complements and enhances the County's character and upholds residents' ideals;*
- *economic development is rooted in a diverse, agriculture-based economy, focused on opportunities to grow and enhance existing businesses and industry, provide a supportive environment for new enterprises, and develop a robust workforce;*
- *conservation and stewardship of natural resources is a matter of pride and shared ownership;*
- *demand for a quality and affordable standard of living is met;*
- *government exists to serve people and to protect the public health, safety, and welfare to ensure a prosperous and resilient future.*

Community Profile

Location and History

Woodbury County is located in Northwestern Iowa, bordered by Plymouth County, Iowa on the north, Union County, North Dakota to the northwest, and the Nebraska counties of Dakota and Thurston to the west. Northwest Woodbury County is comprised of the Sioux City Metropolitan area, which serves as the economic hub of the tri-state region.

The Missouri River forms the western county and state border and has shaped the landscape of western Iowa for thousands of years. Woodbury County is located within the unique Loess Hills landform, created from wind deposits of riverbed soils from the Missouri River valley that were crushed into a fine powder by glaciers during the last ice age. These geological forces shaped the landscape into rolling hills and gave the soil its characteristic "sugar clay" texture.



Sioux City Public Library Virtual Collections. Proceedings of the Academy of Science and Letters.

Prior to European settlement in the 19th century, the land that Woodbury County now occupies was a mixture of loess prairie, deciduous forests, wetlands, and alluvial ecosystems. Several Native American communities, such as the Great Oasis, Mill Creek, and Oneota cultures occupied this region hundreds of years prior to European settlement. Around the time of European settlement, the Dakota Sioux were living in the region. As European settlers pushed westward, many Native American tribes such as the Ho-Chunk (Winnebago) people were forced to move from the Great Lakes area to this region.

Once European explorers, such as Lewis and Clark, mapped and recorded western land, these areas were gradually opened up to European settlers. As this region grew in European population, the county received official recognition by the Iowa legislature in 1853. Originally called Wahkaw, it was renamed Woodbury County in honor of a United States Congressman and Supreme Court justice, Levi Woodbury, from New Hampshire. The young settlement of Sioux City, platted just two years prior, was declared the county seat in 1856, replacing the original county seat of Floyd's Bluff. The county's location along the Missouri River, as well as the rich loess soils, made this region ideal for agriculture. Proximity to the Missouri River also contributed to the growth and success of the region's agricultural and meatpacking industries by providing access to western markets via steamboat trade. The development of the railway network solidified Sioux City's economic role as a gateway for the shipment of goods via train from major eastern cities such as Chicago, to western markets in the Dakotas and Montana Territories via steamboat.

Government Structure

The County Board of Supervisors consists of five elected officials serving four-year terms and the administrative offices of the Finance/Operation Controller, Board Administrative Coordinator, and an Executive Secretary/Public Bidder. The board has many responsibilities which exhibit characteristics of both executive and legislative powers in their many varied duties. For example, this body functions as the county's financial management office, makes decisions about taxation, is responsible for construction and maintenance of the county road system, and determines the disposition of claims against the county. The Board of Adjustment is a quasi-judicial committee made up of five appointed citizens who live in unincorporated Woodbury County. They make decisions about zoning interpretations, conditional uses, and variances in the case of unusual circumstances that would result in unnecessary hardship for a resident's land if the code were enforced verbatim.

In addition to the Board of Adjustment, there are eight other committees that are mandated by State of Iowa code, 16 committees based on various Chapter 28E, or cross-jurisdictional agreements, five based on general agreements, and five special purpose committees. The county's administrative offices handle a wide range of duties, such as public health, social services, and tax collection. A list of these committees and administrative offices is included for reference below.

Administrative Offices:

- Sioux City Assessor
- Woodbury County Assessor
- Attorney
- Auditor
- 911 Communication Center
- Community and Economic Development
- Conservation Board
- Elections Office
- Emergency Services
- Human Resources
- Motor Vehicle
- Recorder
- Secondary Roads
- Sheriff
- Siouxland District Health
- Social Services
- Treasurer
- Veteran Affairs
- Weed Commissioner

Mandated Committees:

- 911 Service Board
- Board of Adjustment
- Conservation Board
- DECAT Board
- Emergency Management Commission

General Agreement Committees:

- Community Action Agency of Siouxland Board of Directors
- Highway 20 Association
- Law Enforcement Authority
- Siouxland Economic Development Corporation
- STARCOMM

Chapter 28E Agreement Committees:

- Area Solid Waste Board (Landfill)
- Hungry Canyons

- Loess Hills Alliance
- Loess Hills Development and Conservation Authority
- Loess Hills Economic Development
- Loess Hills Scenic Byway
- National Resources Conservation Service
- Region IV Hazardous Materials Commission
- Western Iowa Tourism
- Regional Workforce Investment Board
- Rolling Hills Community Services Region
- Security Institute Commission
- SIMPCO
- Siouxland District Board of Health
- Siouxland Human Investment Partnership
- WCICC

Special Purpose Committees:

- Commission to Assess Damages
- Health and Wellness Committee
- Policy Review Committee
- Safety and Security Committee
- Woodbury County Courthouse Advisory
- Committee for Historical Preservation

Population and Demographic Trends

Since the year 2000, Woodbury County's population has stayed relatively steady, increasing by just two percent. The unincorporated area of the county has seen a loss of about four percent of the population between 2000 and 2020, while the county's 15 incorporated towns have seen variable gains and losses (summarized in Table 1.1). The fastest growing communities in Woodbury County were Lawton (35% increase) and Sergeant Bluff (51% increase). Despite the various changes in population amongst the county's communities, the proportion of residents in rural versus urban areas has remained relatively consistent with just a few gradual changes over the past 20 years, as detailed in Table 1.2. The rural population, including both small rural towns and unincorporated areas has decreased slightly since 2000. At the same time, the proportion of county residents living in the urban areas of Sioux City and Sergeant Bluff increased.

Population Change 2000-2020				
	2000	2010	2020	Percent Change 2000-2020
Woodbury County	103,877	102,172	105,941	2%
Unincorporated	8,465	8,200	8,162	-4%
Anthon	649	565	545	-16%
Bronson	269	322	294	9%
Correctionville	851	821	766	-10%
Cushing	253	220	230	-9%
Danbury	384	348	320	-17%
Hornick	253	225	255	1%
Lawton	697	908	943	35%
Moville	1,583	1,618	1,687	7%
Oto	145	108	72	-50%
Pierson	371	366	337	-9%
Salix	370	363	295	-20%
Sergeant Bluff	3,321	4,227	5,015	51%
Sioux City	85,013	82,684	85,797	1%
Sloan	1,032	973	1,042	1%
Smithland	221	224	181	-18%
State of Iowa	2,926,324	3,046,355	3,190,369	9%

Table 1.1 U.S. Census Bureau, Decennial Census of 2000,2010, and 2020.

From Woodbury County's past population changes, we can make a guess as to what the population will be in the future. However, it is important to note that projecting future population based on past trends is a simplified way of looking ahead. When using this method, we are working under the assumption that any economic, cultural, or demographic factors that have driven past population levels will remain the same in the future, which is unlikely. Figure 1.1 includes three different projections based on the rate of change from 2000 to 2010, the rate of change from 2010 to 2020, and the rate of change from 2000 to 2020. Taken together, these three scenarios project Woodbury County's population to range between 105,259 and 107,449 by 2060, representing a rate of population change between -2% and 4%.

Urban vs. Rural Population, Woodbury County 2000-2020							
	2000		2010		2020		Percent Change
	Count	*Percent*	*Count*	*Percent*	*Count*	*Percent*	*2000-2020*
Woodbury County Total	**103,877**	--	**102,172**	--	**105,941**	--	2%
All Incorporated Cities	95,412	91.9%	93,972	92.0%	97,779	92.3%	2%
Incorporated Urban *(Sioux City & Sergeant Bluff)*	88,334	85.0%	86,911	85.1%	90,812	85.7%	3%
Incorporated Rural *(without Sioux City & Sergeant Bluff)*	7,078	6.8%	7,061	6.9%	6,967	6.6%	-2%
Unincorporated Rural	8,465	8.1%	8,200	8.0%	8,162	7.7%	-4%
Total Rural Population	15,543	15.0%	15,261	14.9%	15,129	14.3%	-3%

Table 1.2. U.S. Census Bureau, Decennial Census of 2000, 2010, and 2020.

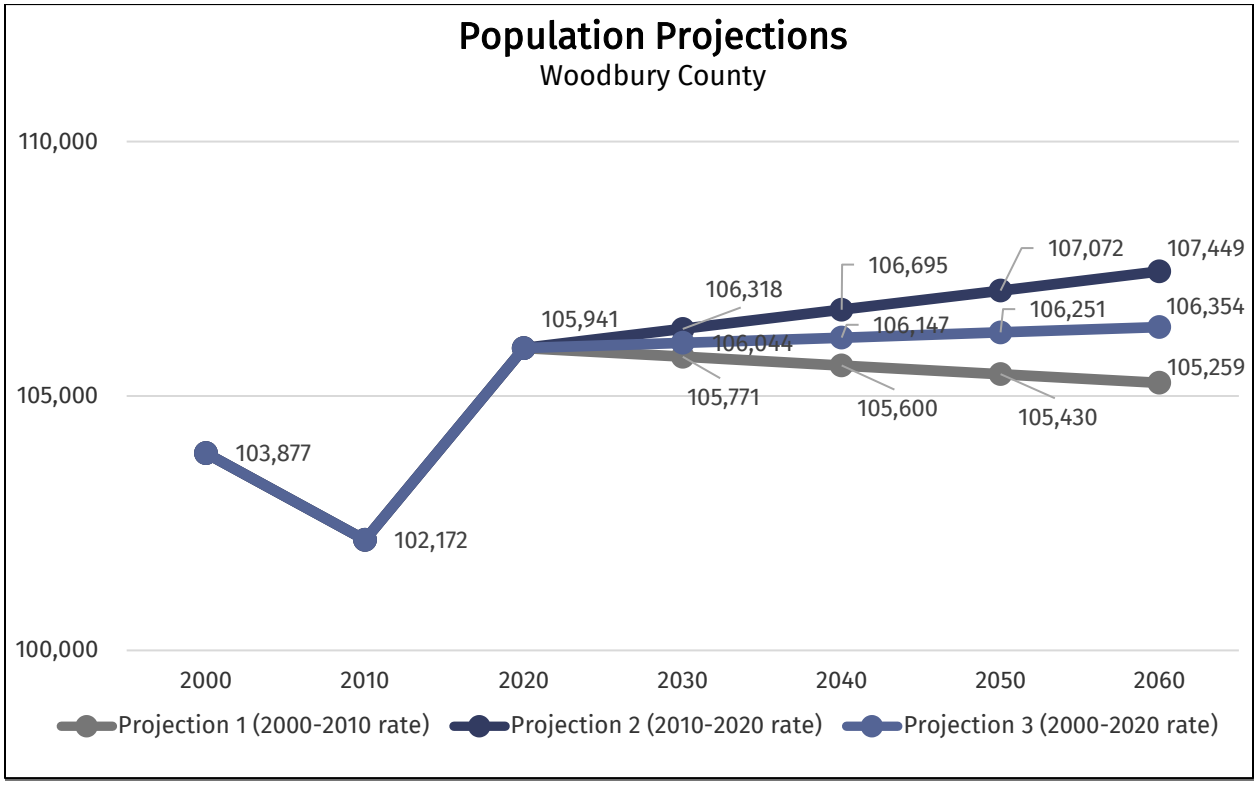


Figure 1.1

Age Structure

Compared to the State of Iowa as a whole, Woodbury County has a similar age structure. One subtle difference is Woodbury County's population has a slightly higher percentage of residents under 18 years of age, and a corresponding lower proportion of adults (about a three percent difference compared to the state population). The median age of Woodbury residents is 35.8, also slightly lower than the state's median age of 38.2.

The population pyramids illustrate significant shifts in the county population's age composition over the past twenty years. Since 2000, the proportion of residents in their 50's and 60's increased by about 170 percent, while the proportion of those in their 70's or older increased by 50 percent. This shift corresponds with aging of the Baby Boomer generation, born between 1946 and 1964, which is known for being a larger sized cohort. Also, during this time the proportion of children under the age of 18 decreased by about six percent.

Select Age Categories Compared to State of Iowa, 2020 Estimates				
Age Category	Iowa 2020	Percent of Total	Woodbury 2020	Percent of Total
5 to 14	410,171	13%	15,029	15%
15 to 17	122,854	4%	4,439	4%
Under 18	728,487	23%	26,767	26%
18 to 24	316,660	10%	9,922	10%
15 to 44	1,217,575	39%	40,302	39%
16 and over	2,504,540	80%	78,697	77%
18 and over	2,421,524	77%	75,920	74%
21 and over	2,282,254	72%	71,268	69%
60 and over	741,508	24%	21,431	21%
62 and over	657,440	21%	19,102	19%
65 and over	537,401	17%	15,452	15%
75 and over	236,791	8%	6,394	6%
Total Population	3,150,011	--	102,687	--
Median age	38.3		35.8	

Table 1.3. U.S. Census Bureau, American Community Survey, 2020 5-year estimates.

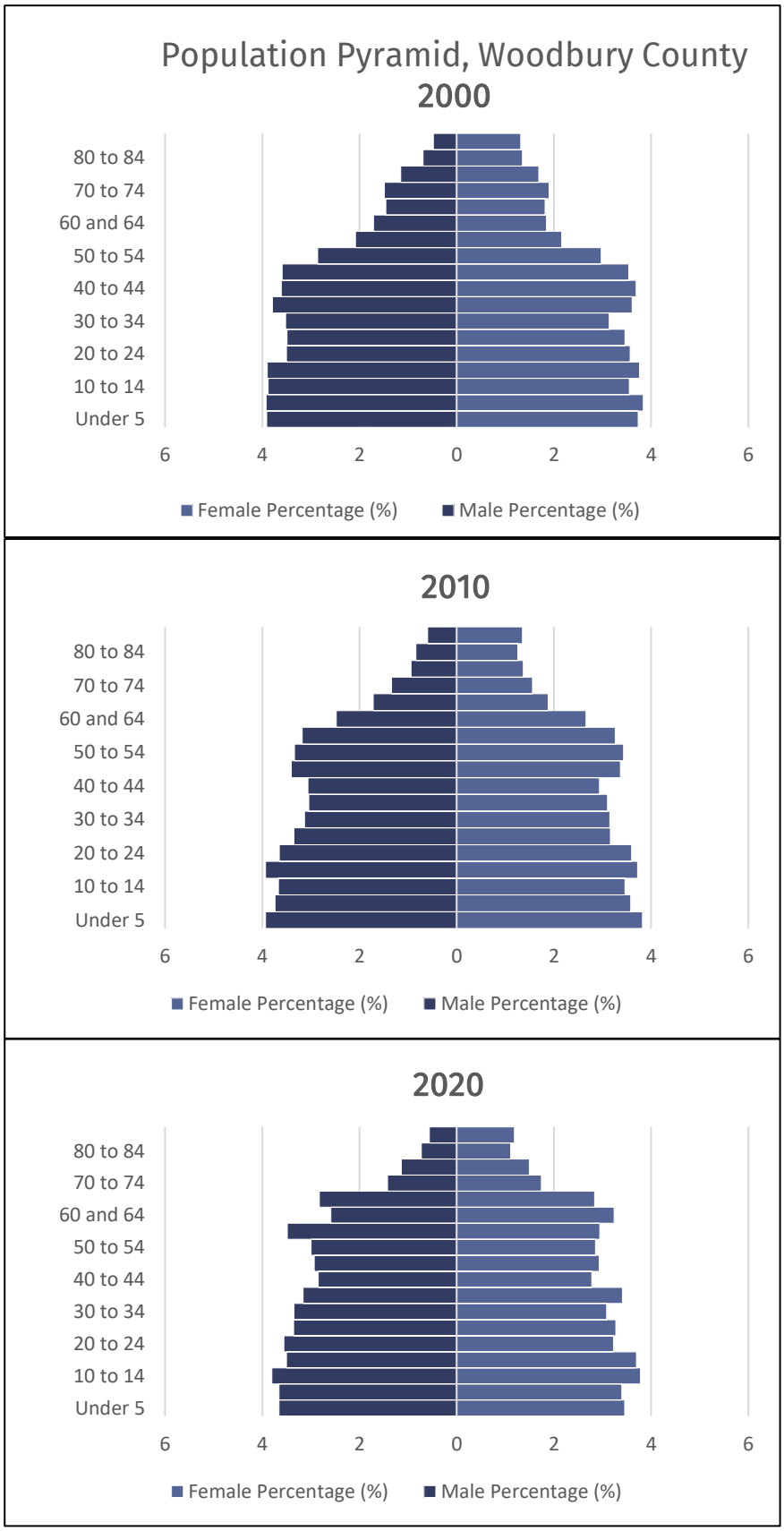


Figure 1.2. U.S. Census Bureau, Decennial Census Data of 2000, 2010, and 2020.

Median Age & Dependency Ratios, 2020 Estimates				
	Median Age	Age dependency ratio	Old-age dependency ratio	Child dependency ratio
Woodbury County	35.8	69.8	25.6	44.3
Anthon	45.5	68.7	42.2	26.5
Bronson	35.7	57.0	18.8	38.2
Correctionville	42.2	101.6	43.3	58.3
Cushing	33.3	79.7	38.3	41.4
Danbury	41.0	88.7	45.5	43.2
Hornick	32.9	64.4	21.3	43.1
Lawton	40.4	80.7	35.8	44.9
Moville	33.7	73.4	24.9	48.5
Oto	56.4	118.9	86.5	32.4
Pierson	32.5	75.3	20.7	54.5
Salix	37.6	64.0	24.0	40.1
Sergeant Bluff	36.6	72.0	19.4	52.7
Sioux City	34.1	67.8	22.6	45.1
Sloan	41.0	67.5	31.7	35.8
Smithland	48.3	80.6	43.0	37.6
State of Iowa	38.3	67.2	28.5	38.7
United States	38.2	62.5	26.1	36.5

Table 1.4. U.S. Census Bureau, American Community Survey, 2020 5-year estimates.
**Light blue cells are at least 5% greater than the state level.*
**Dark blue cells are at least 20% greater than the state level.*

The dependency ratio describes the ratio of dependents – residents below age 18 and age 65 and above - to the working population, defined as those aged 18 through 64. The breakdown of this ratio between seniors and children is one way of understanding the balance between different age groups in a community. Having a large age dependency ratio describes a population with a relatively small workforce in comparison to the number of retirees and children too young to work. This has implications for social and economic costs, such as those associated with childcare, healthcare, and caretaker duties. These figures can help indicate the needs of communities that have growing numbers of seniors versus the needs of communities with many young families and a growing school-aged population.

As indicated in Table 1.4, the age dependency ratio in Woodbury County overall was high compared to the United States and the State of Iowa, with the bulk of dependents coming from a higher proportion of children. There was a slightly lower proportion of seniors compared to the state and national ratios. However, these figures vary considerably amongst the county's cities and towns, indicating the diverse needs of Woodbury's individual communities. For example, Anthon has a relatively older population, with a high proportion of retired residents and seniors, while Sergeant Bluff has a younger population with greater childcare needs.

Diversity

Over the past 20 years, the racial diversity of Woodbury County has increased substantially; more so than in the state of Iowa as a whole. In the year 2000, non-white residents comprised less than ten percent of the population. This figure had increased to more than a quarter of the county's population by the year 2020. The population of residents identifying as Hispanic or Latino has followed a similar pattern of increasing faster than in the state overall. Twenty years ago, the percentage of Hispanic or Latino residents in Woodbury County was under ten percent. This population has nearly doubled in the past two decades, comprising just under 20% of the population by the year 2020. The increasing diversity of Woodbury County's population is a strength of the region that will help to encourage more people of diverse backgrounds, as well as those who value diversity, to locate here in the future.

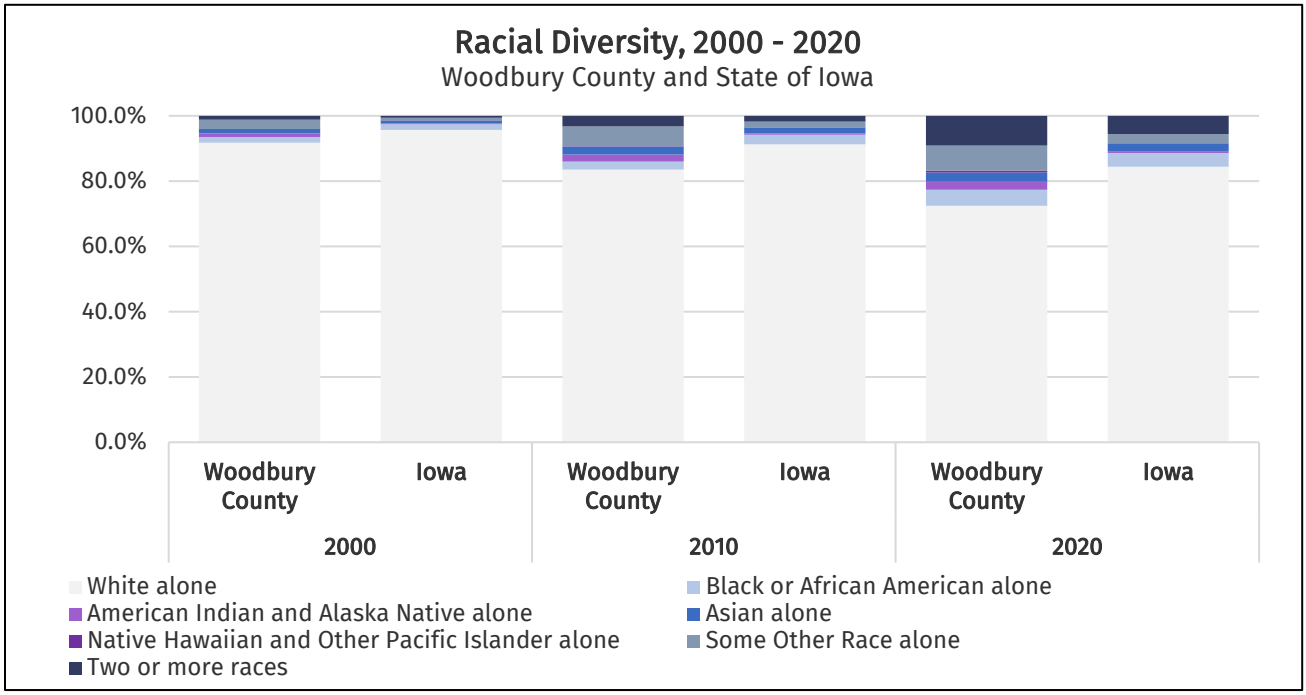


Figure 1.3. U.S. Census Bureau, Decennial Census of 2000, 2010, and 2020.

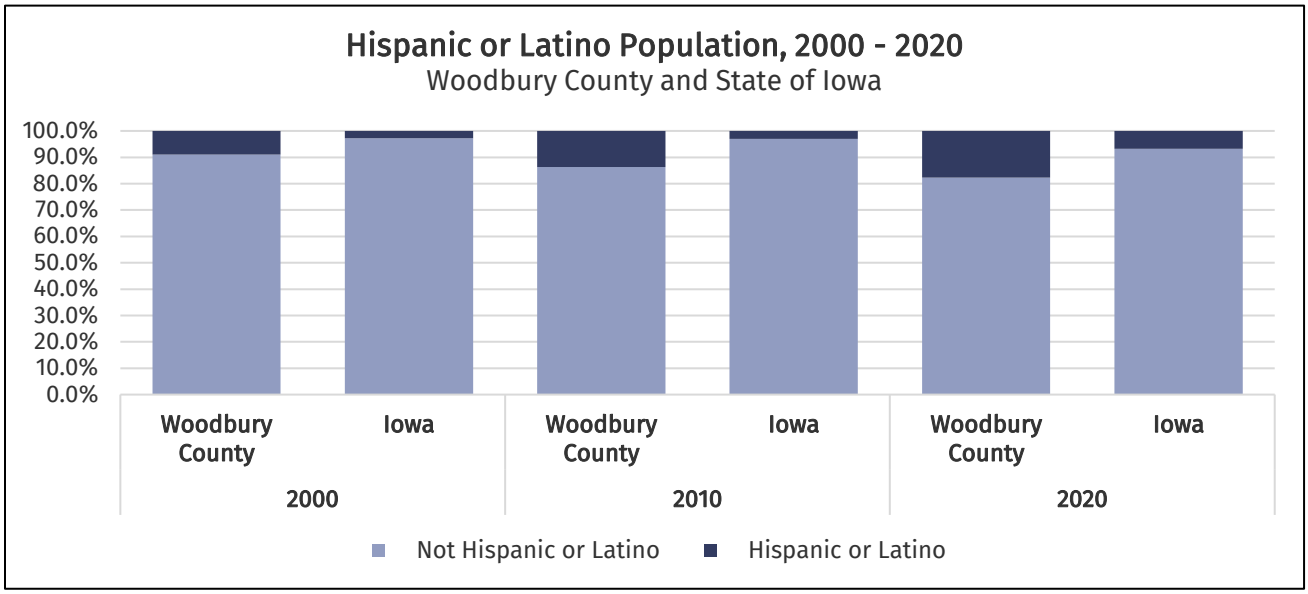


Figure 1.4. U.S. Census Bureau, Decennial Census of 2000, 2010, and 2020.

Chapter 1: Housing

Section	Contents
Iowa Smart Planning	Housing Element
Housing Trends	Occupancy, average household size, total households, etc.
Housing Stock	Types and age of housing
Costs	Costs of housing over time
Home Values	Home values over time
Owner-occupied Housing	Homeowner demographics
Homelessness	Data about homelessness
Survey Results Synopsis	Public Comment
Goals and Objectives	Goals and objectives

Iowa Smart Planning Principles

The 2010 Iowa Smart Planning Guide states the following about Housing:

> **Housing Element**: Objectives, policies, and programs to further the vitality and character of established residential neighborhoods and new residential neighborhoods and plans to ensure an adequate housing supply that meets both the existing and forecasted housing demand. The comprehensive plan or land development regulations may include an inventory and analysis of the local housing stock and may include specific information such as age, condition, type, market value, occupancy, and historical characteristics of all the housing within the municipality. The comprehensive plan or land development regulations may identify specific policies and programs that promote the development of new housing and maintenance or rehabilitation of existing housing and that provide a range of housing choices that meet the needs of the residents of the municipality.
>
> **Housing Diversity Principle**: Planning, zoning, development, and resource management should encourage diversity in the types of available housing, support the rehabilitation of existing housing, and promote the location of housing near public transportation and employment centers.

Housing Trends

The number of households and occupied housing units have remained relatively stable throughout the past two decades. This is to be expected considering that the population of Woodbury County has increased by just two percent since the year 2000.

The rental vacancy rate and the owner-occupied vacancy rate have both decreased over the past two decades. This trend reflects the national and statewide trend of decreasing vacancy rates due to a shortage of new housing units compared to increasing demand. The shortage in suitable housing units for sale could also explain the increase in the percentage of residents renting over time. Would-be buyers have been priced out of the housing market due to price hikes driven by short supply.

Housing Trends Woodbury County, 2000-2020				
	2000	2010	2020	Percent change 2000-2020
Total Households	39256	38739	39523	0.7%
Average household size	2.58	2.52	2.53	-1.9%
Households with one or more people under 18 years	37%	33.3%	34.8%	-5.9%
Householder living alone, 65 and older	11.5%	11.3%	11.8%	2.6%
Total housing units	41394	41616	42701	3.2%
Occupied housing units	39151	38739	39523	1.0%
Owner-occupied units	26859	26576	26638	-0.8%
Renter-occupied units	12292	12163	12885	4.8%
Total vacant housing units	2243	2877	2932	30.7%
% of total housing units that are vacant	5.4%	6.9%	6.9%	26.7%
# of rental units that are vacant/for rent	1023	871	877	-14.3%
% of rental units that are vacant/for rent	7.7%	6.7%	6.3%	-18.0%
# of vacant units for sale	411	435	293	-28.7%
% of owner-occupied units that are vacant/for sale	1.5%	1.6%	1.1%	-27.0%

Table 2.1. Data from U.S. Census Bureau ACS 5-year estimates for 2010 & 2020

Housing Stock

The predominant housing type in Woodbury County is single family detached homes, which make up about 75% of all units. The remaining quarter of units are attached single family units, multifamily apartment buildings and condos, and mobile homes.

The age of Woodbury County's housing stock presents both a challenge and a unique strength. More than 53% of housing units were built prior to 1960, and roughly 76% of housing units were built prior to 1980, or at least 42 years ago. These older homes are a unique asset to the community, adding character and beauty to neighborhoods.

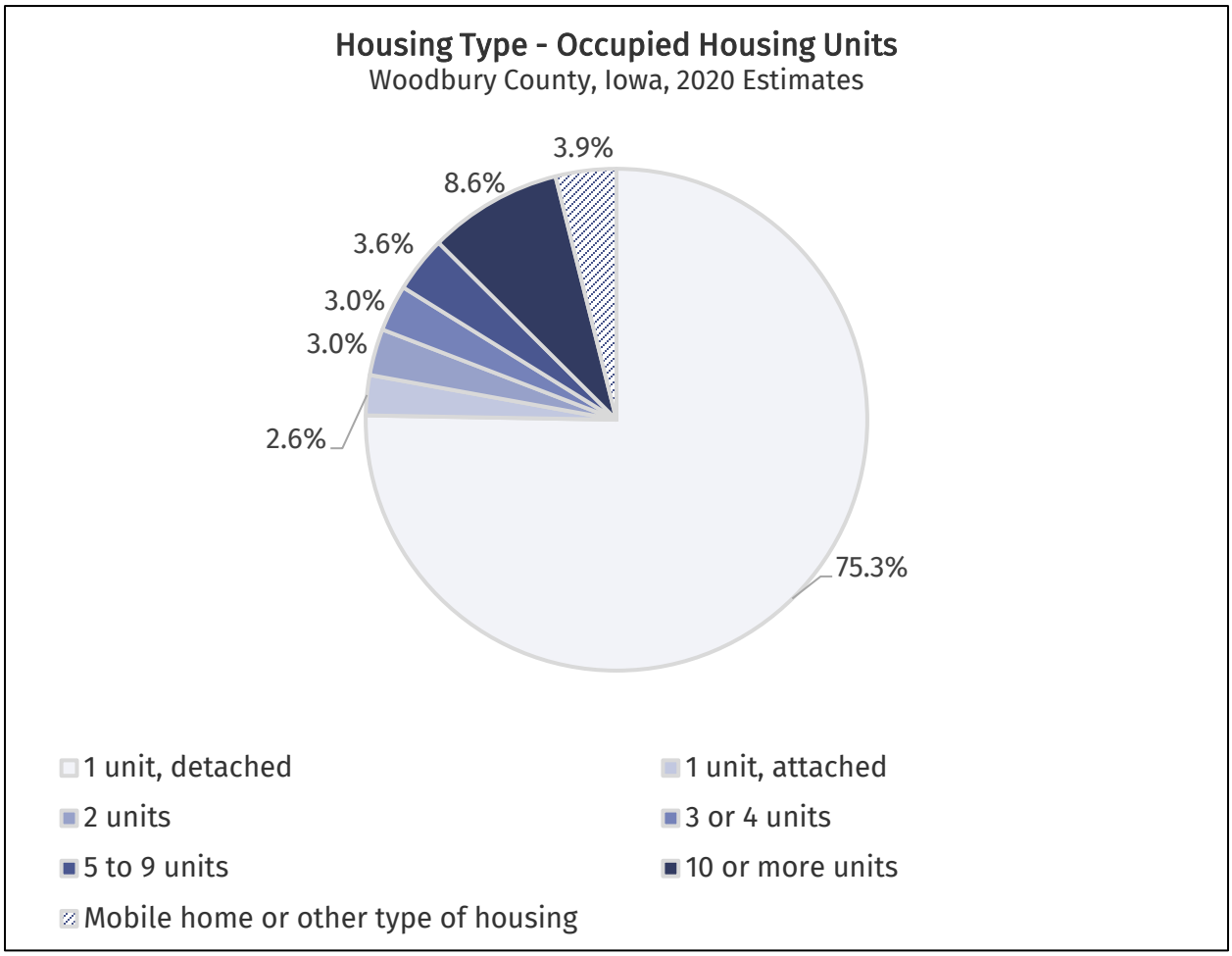


Figure 2.1. U.S. Census Bureau, American Community Survey, 2020 5-year estimates.

At the same time, older homes require maintenance and eventual replacement of aging materials and infrastructure. There is a need for housing rehabilitation assistance to maintain and restore older housing stock. Not only does this benefit homeowners, but this benefits the community by preventing properties from falling into dilapidated condition, increasing surrounding home values, and reducing the need for new construction. In distributing information about housing rehabilitation programs, outreach should be targeted to homeowners that may be impacted by flooding, in need of septic system updates, lead abatement, or other immediate safety concerns. Low-income, minority, disabled, and senior residents should also be a priority in outreach efforts for such programs.

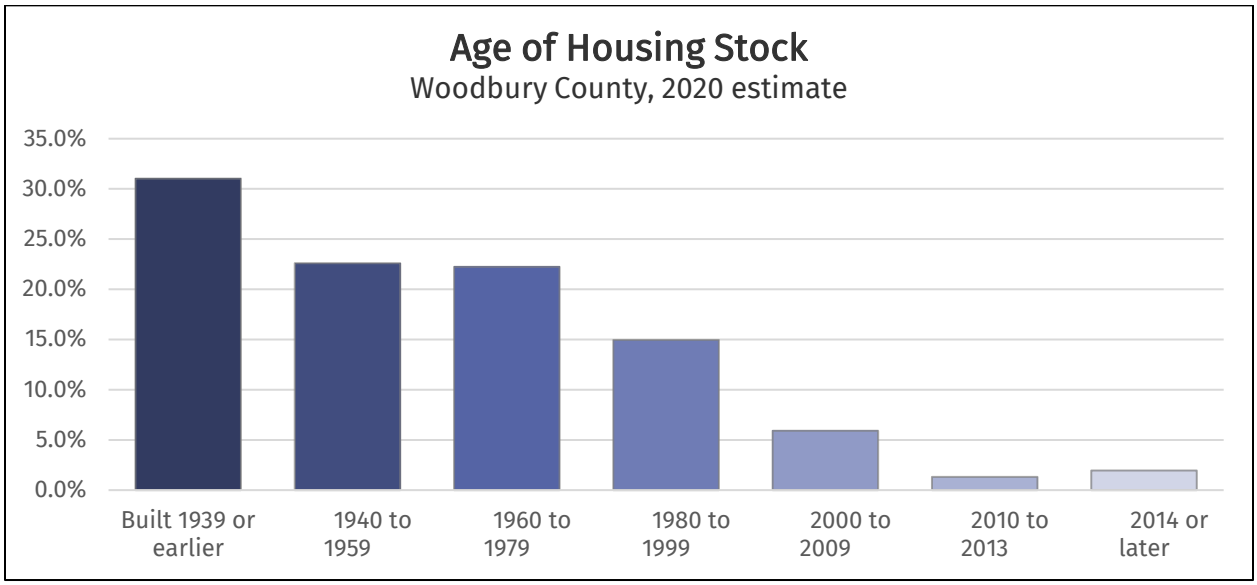


Figure 2.2. U.S. Census Bureau, American Community Survey, 2020 5-year estimates.

Housing Costs

When comparing housing costs as a percentage of household income across different income ranges, we can distinguish which households are burdened by housing costs. Housing costs are considered affordable when they comprise less than 30% of household income. As demonstrated by the series of diagrams in Figure 2.3, a majority of households with incomes less than $20,000 are burdened by housing, paying more than 30% of their income toward housing costs. About half of households earning between $20,000 and $34,999, and about a quarter of households earning between $35,000 and $49,999 are burdened by housing costs. High housing costs above the 30% threshold leave few funds for food, healthcare, and basic household supplies in an increasingly expensive economy. About 23% of Woodbury County households across all income ranges were paying over 30% of household income toward housing costs in 2020.

Percent of Household Income Spent on Housing

Woodbury County, IA
2020 Estimates

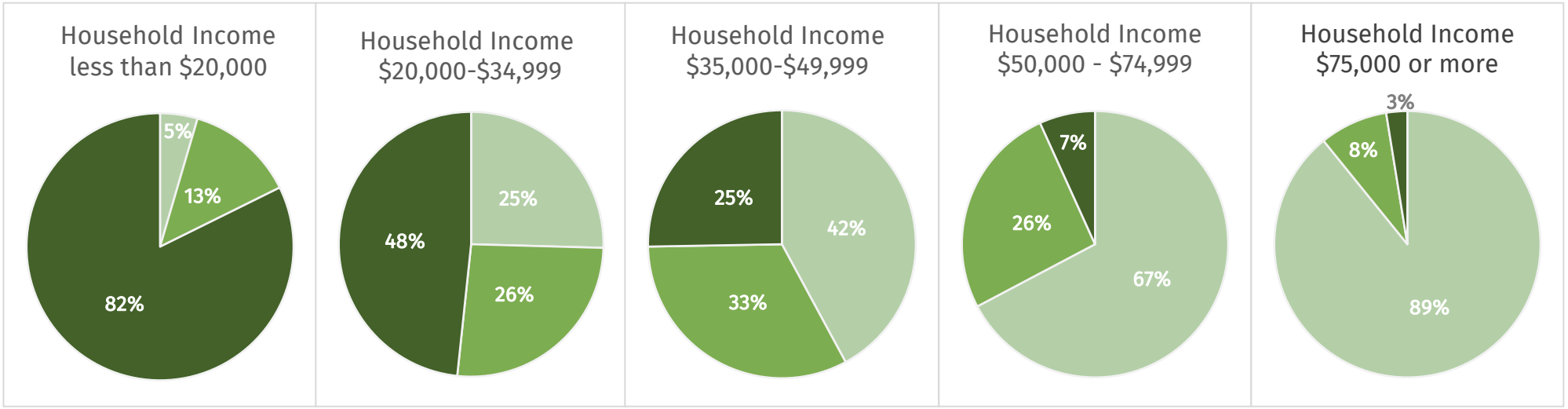


Figure 2.3. U.S. Census Bureau, American Community Survey, 2020 5-year estimates.

When it comes to housing cost burdens, renters are much more likely to pay disproportionately high costs compared to their income than homeowners. In contrast, homeowners are more likely to pay less than 30% of household income toward housing costs. The chart in Figure 2.4 demonstrates this pattern.

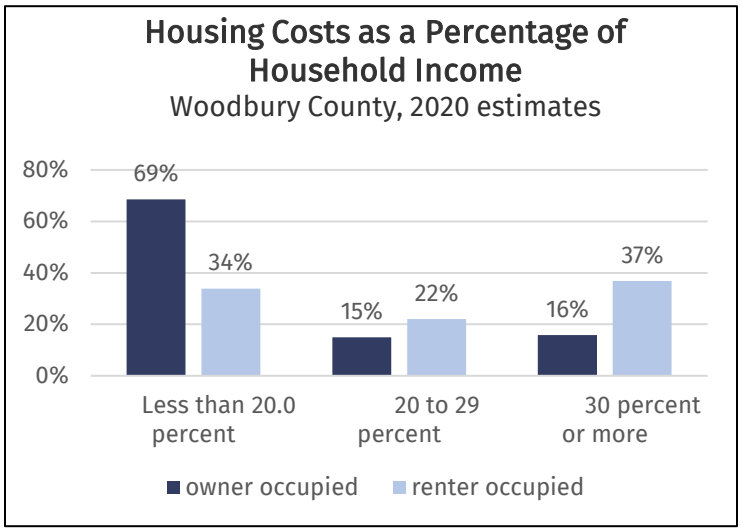


Figure 2.4: In 2020, 37% of renters were burdened by housing costs, compared to 16% of homeowners.

Between 2000 and 2020, the percentage of rent-burdened households in Woodbury County increased by roughly 7%, which suggests that rent prices have been increasing at a faster rate than household income. County residents would benefit from more affordable, diverse, and creative housing solutions before this trend becomes more pronounced locally. Increasing the overall supply of rental units, both affordable and market rate, will help to slow the rate of rent cost increases. Encouraging the development of upper story units above downtown store fronts would help to introduce additional housing variety in small towns and increase the supply of housing units. In addition, supporting flexibility in residential zoning to allow for innovative housing solutions, such as the construction of accessory dwelling units, can also lay the groundwork for additional housing variety that could potentially serve as a source of supplemental income for homeowners. Lastly, encouraging the use of energy- and water-efficient appliances for new construction and retrofitted buildings can offset costs for residents while reducing the environmental impact of housing.

Home Values

In the state of Iowa as well as at the county level, home values have shifted higher over the past two decades. Median home values had nearly doubled in Iowa with an increase of 90% between 2000 and 2020. They increased by about 71% in Woodbury County over the same period. Compared to the state of Iowa overall, Woodbury home values are increasing more slowly, but the same trend can be observed.

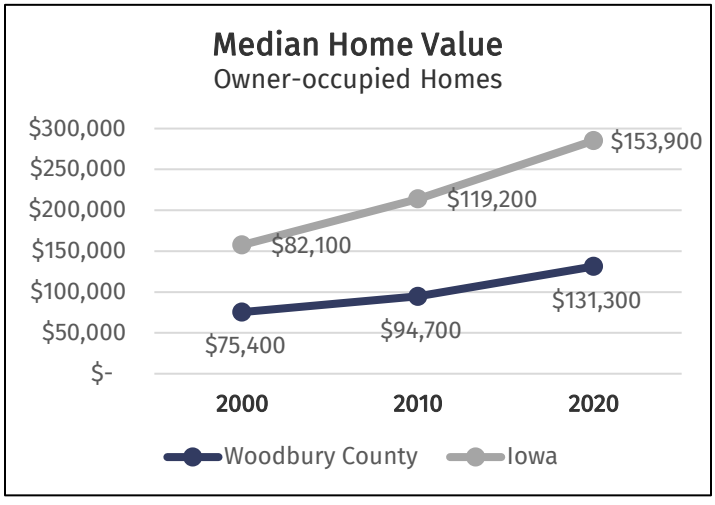


Figure 2.5. U.S. Census Bureau, American Community Survey, 5-year estimates for 2000, 2010, and 2020.

In 2020, it was estimated that less than one third of homes in Woodbury County were valued below $100,000.

Increasing home values in Woodbury are generally positive for homeowners, however this sets the bar higher for lower-income residents to purchase homes. In addition, due to the abundance of homes built prior to the 1940's, many of Woodbury County's homes require extensive updates and renovations. However, the value of these older homes is increasing as well, effectively placing them out of reach for many buyers when considering the costly renovations necessary to update the homes in addition to the purchase price.

Residents would benefit from informational materials about homebuyer assistance and financial counseling resources to aid first-time homebuyers purchase homes, especially while prices are increasing. Home rehabilitation assistance programs would benefit low-income homeowners by offsetting the cost of updates to older homes.

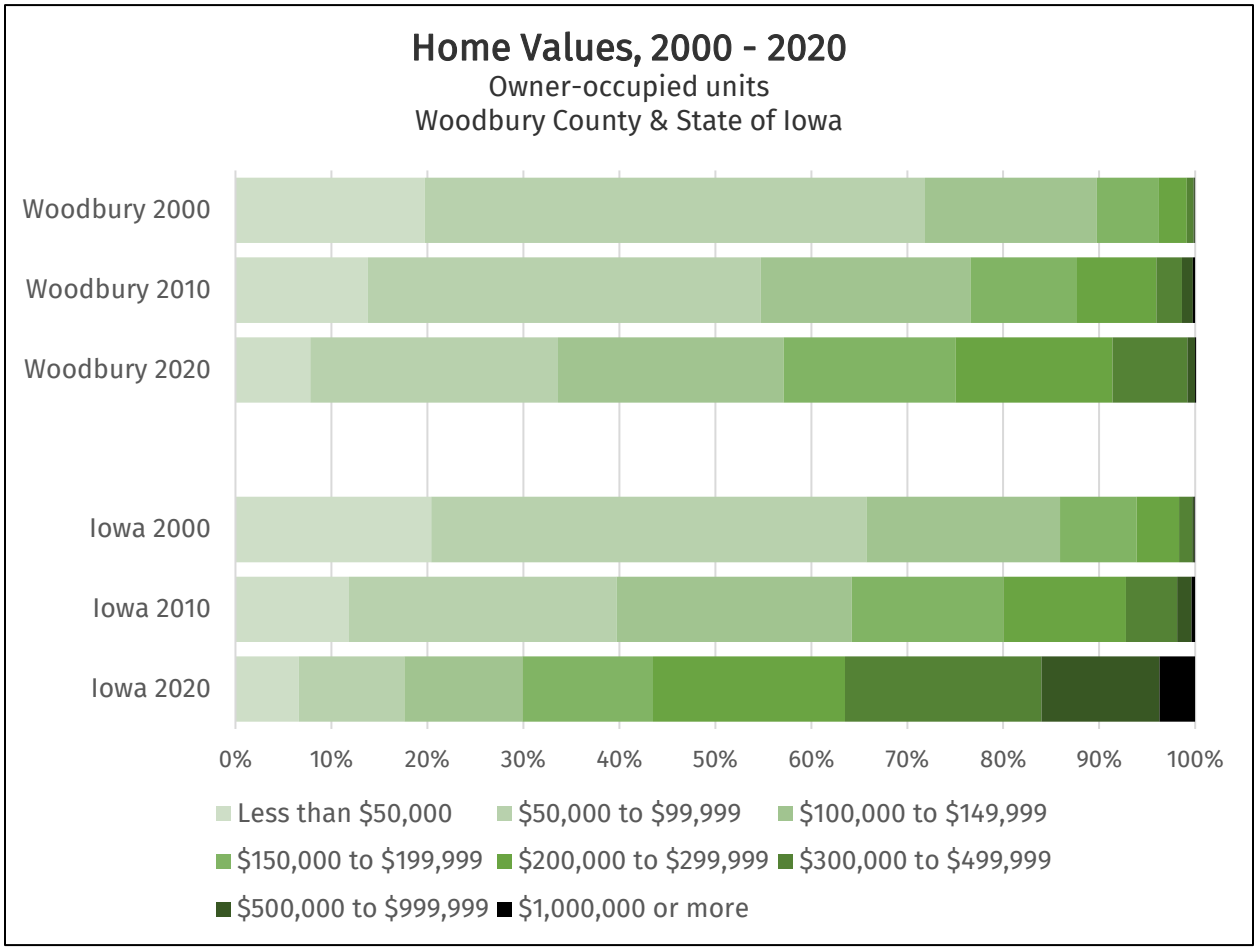


Figure 2.6. U.S. Census Bureau, American Community Survey, 5-year estimates for 2000, 2010, and 2020.

Owner-occupied housing

In the past twenty years, an increasing number of non-white residents have become homeowners in Woodbury County and in Iowa overall. However, in 2020 only about seven percent of homes were owned by householders of color, immensely disproportionate to the population of people of color that make up about 28% of the total population in Woodbury County. This trend has also been very slow to develop, with minority-owned homes increasing by less than 2% since the year 2000. Figure 2.7 illustrates the disparity between the percentage of renters and homeowners of color, with people of color substantially overrepresented as renters and making very slow gains in the rate of homeownership over the past two decades. To help close this gap, it is important that information about first-time homebuying and financial resources are distributed in minority neighborhoods and made accessible in residents' first language.

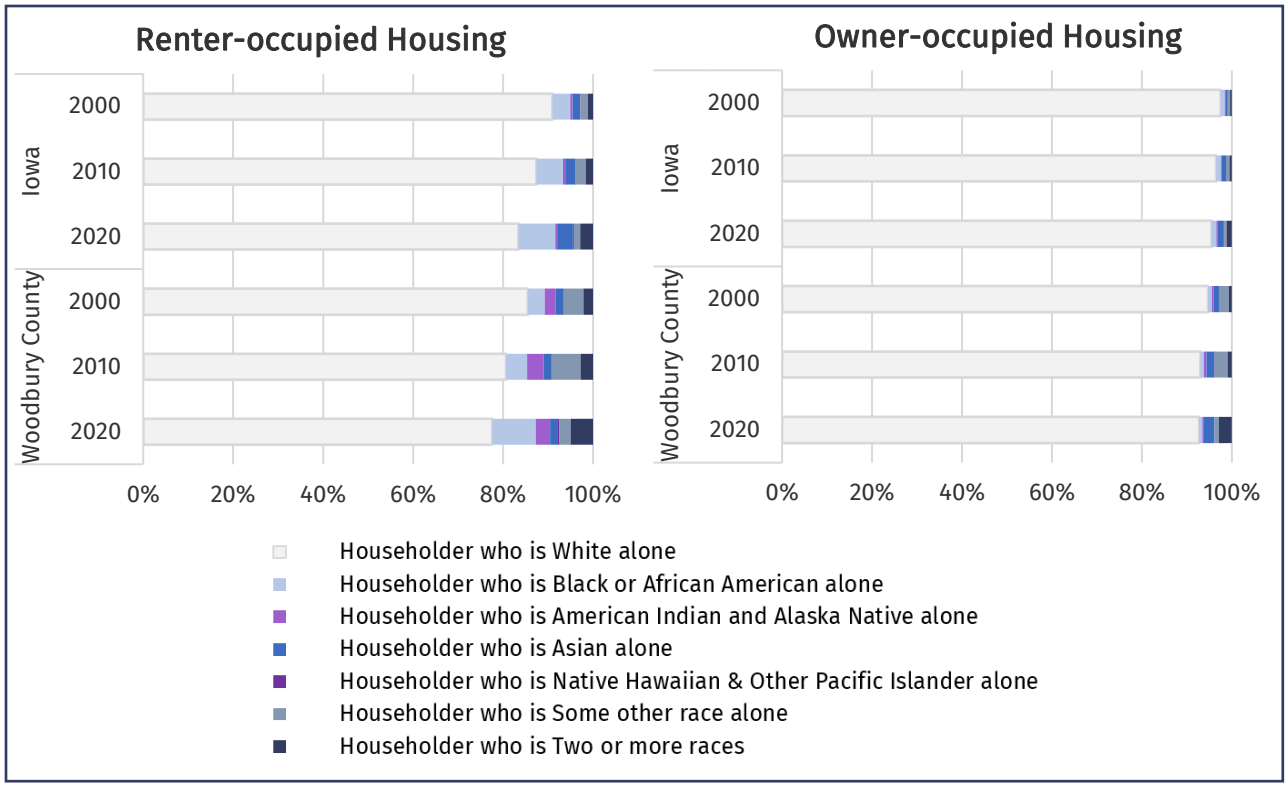
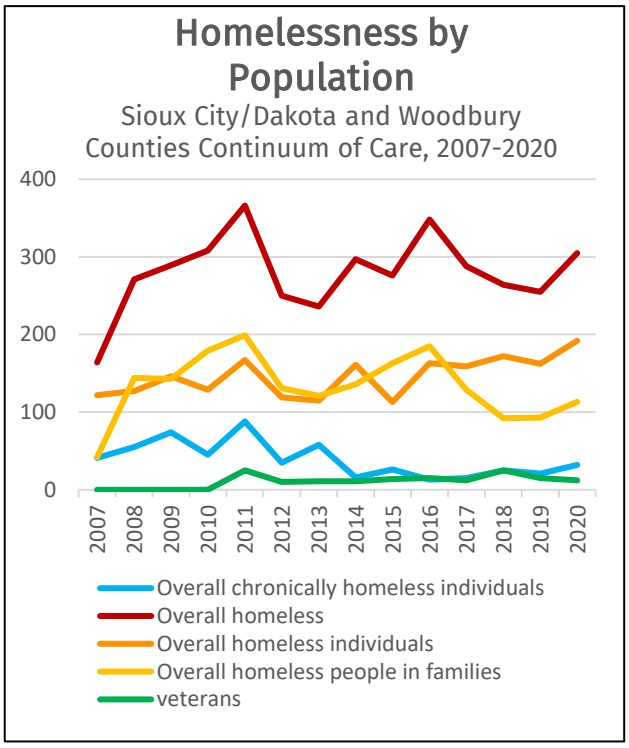
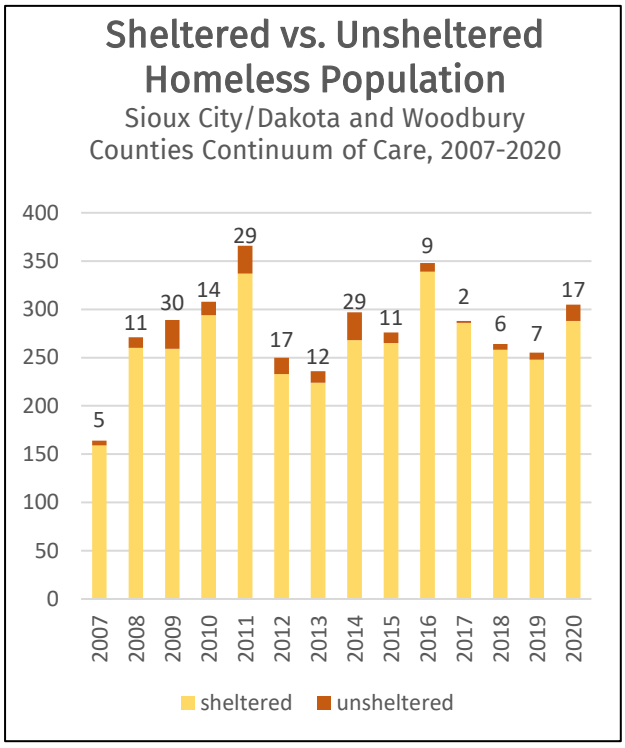


Figure 2.7. U.S. Census Bureau, American Community Survey, 5-year estimates for 2000, 2010, and 2020.

Homelessness

At the beginning of 2020, the total number of homeless individuals in the region had increased by 20% from the previous year. The largest increases of the above populations were those of chronically homeless individuals and the unsheltered population. The effects of the pandemic have most likely exacerbated this trend. During a point in time count in January of 2019, there were beds available for just 61% of homeless individuals in the region, while there was an excess capacity of 12 beds for homeless families. Efforts toward decreasing the number of homeless individuals and breaking the cycle of homelessness should continue by directing funding toward emergency shelters, housing, and social work services for homeless individuals living in the county.





Figures 2.8 and 2.9. From National Alliance to End Homelessness, 2021.
Notes: "Unsheltered" includes vehicles, sidewalks, trains, parks, etc. "Chronic homelessness": These individuals have disabilities and have also: 1) been continuously homeless for at least a year; or 2) experienced homelessness at least four times in the last three years for a combined length of time of at least a year.

Survey Results Synopsis

Housing Characteristics

In a survey distributed during the development of this plan, residents were asked to rank their satisfaction in terms of housing inventory availability, variety of housing types, housing costs, and the condition of housing. Overall, residents were the least satisfied when it came to housing affordability, followed by availability, variety, and condition respectively. Residents of unincorporated areas had all-around higher satisfaction with all four housing aspects. The small rural towns and Sioux City shared similar levels of concern when it came to housing condition and affordability. Variety of housing types and availability of housing were more significant issues for small rural towns, but still of concern for the other areas of the county.

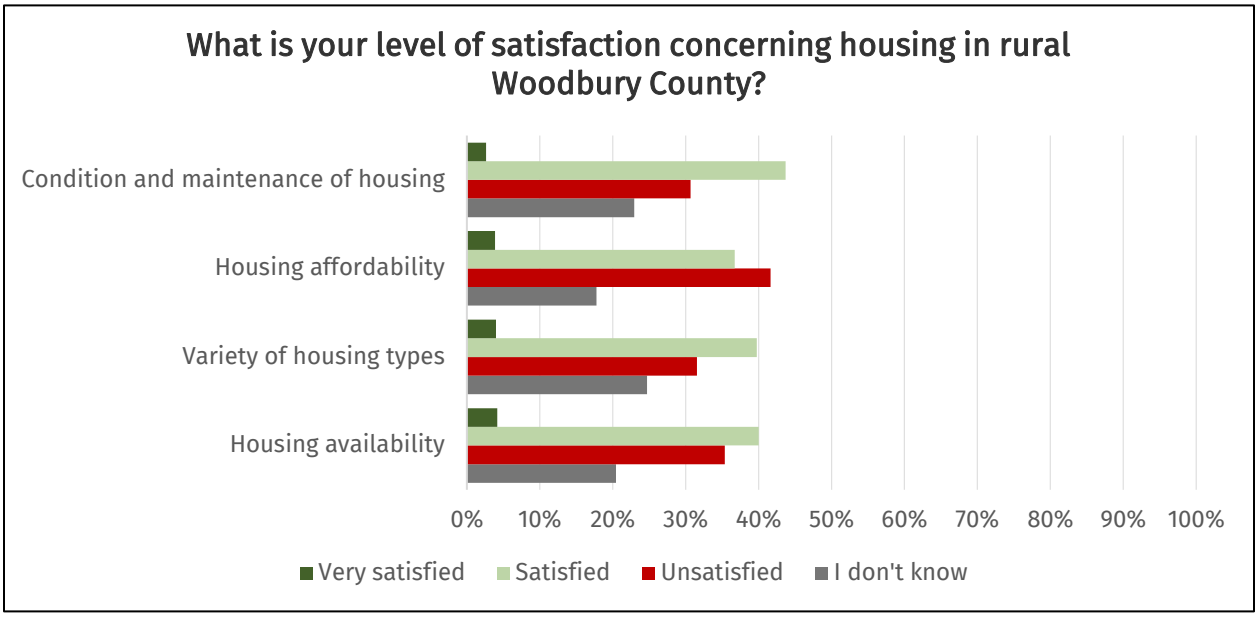


Figure 2.10.

Unincorporated areas: Overall, respondents who lived in unincorporated areas rated all four housing aspects as more satisfactory than residents living in cities. About 29% were unsatisfied with housing affordability, 21% unsatisfied with the variety of housing, 17% unsatisfied with the condition of housing, and 23% unsatisfied with housing availability.

Small rural towns: Residents of small rural towns were the least satisfied with housing availability (51% unsatisfied) and affordability (51% unsatisfied). Amongst these respondents, 42% were unsatisfied with the variety of housing types, and 40% unsatisfied with the condition of housing.

Sioux City: Urban residents living in Sioux City were more likely to express dissatisfaction with housing affordability compared to rural residents, with 54% of respondents unsatisfied with housing costs and several comments reflecting the lack of affordability as well. About 36% were unsatisfied with housing availability, 36% unsatisfied with housing conditions, and 35% unsatisfied with variety.

Housing-related Assets and Weaknesses

When asked to choose amongst a list of potential positive qualities to identify the county's top three assets, over one third of survey respondents chose the "rural character," while just under one third cited the "cost of living" as a top positive quality.

However, when asked about the county's greatest weaknesses, a sizeable number of respondents (16 percent) felt that "cost of living" was actually a weakness of the county. In several open-ended questions, affordability of housing was specifically mentioned by about five respondents as a need or weakness. About 30 percent rated "limited housing availability" amongst the top three weaknesses.

Housing issues overall (affordability, inventory, and availability) were among the top five priorities that respondents thought would be the most important in the next 20 years, with 13 percent of respondents voting for this topic.

While residents expressed an appreciation for the rural character of the county; affordability, limited housing stock, condition of housing, and the variety of housing options were concerning to many survey respondents.

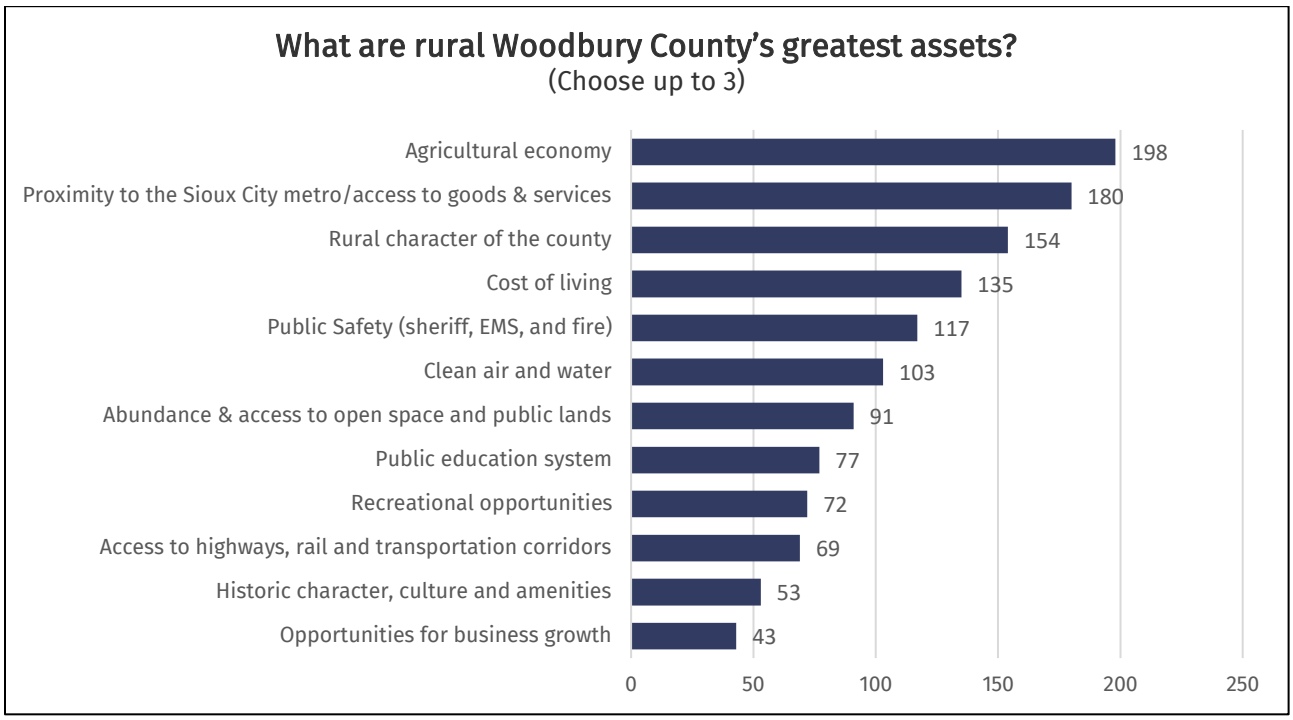


Figure 2.11.

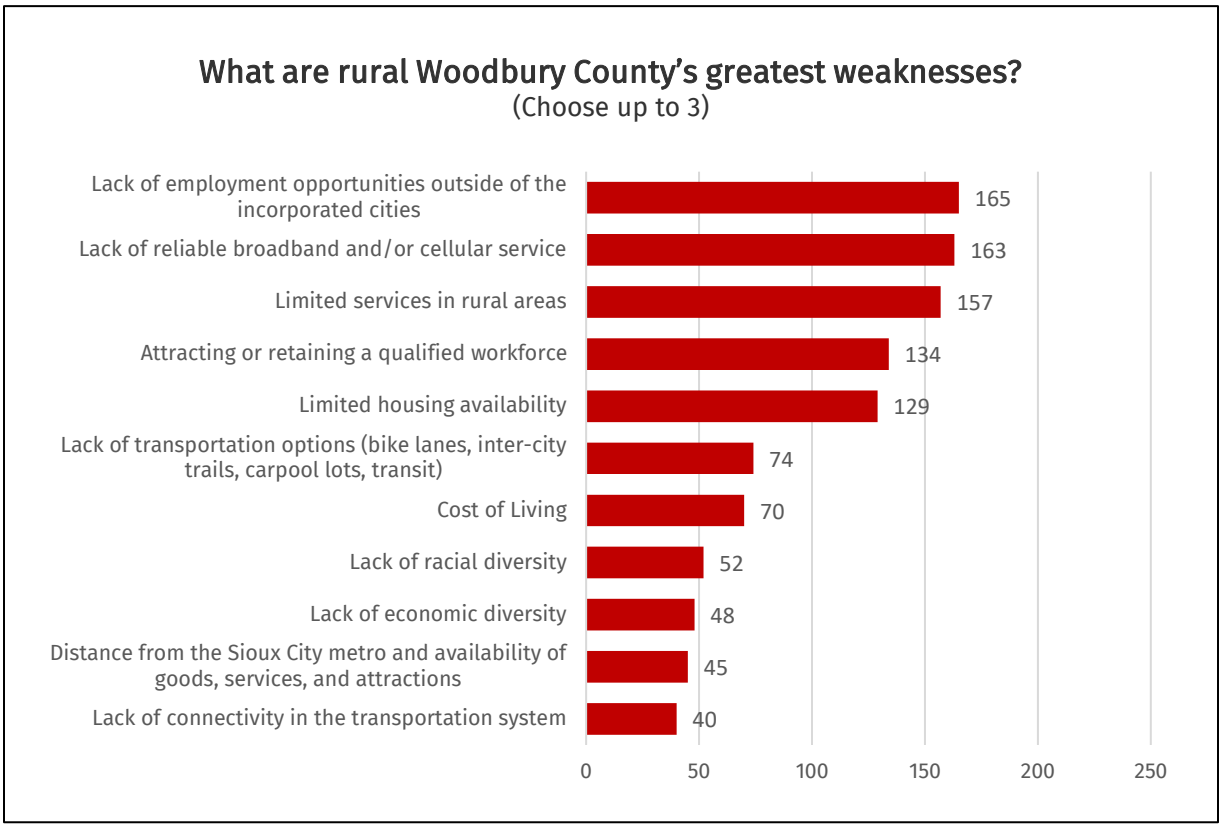


Figure 2.12. Other weakness identified in comments: "High housing costs" (2)

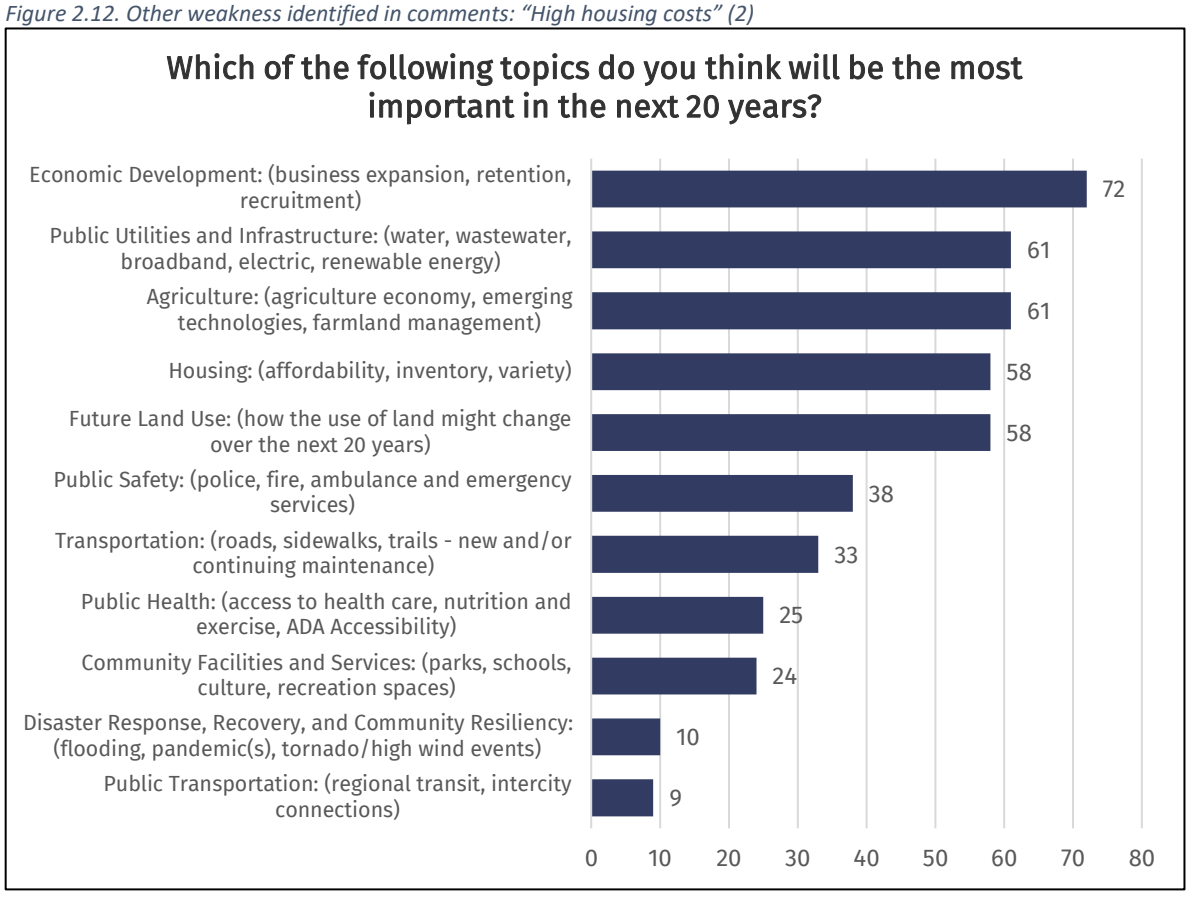


Figure 2.13. Need identified in survey comments: "More affordable housing" (4 comments).

Goals & Objectives

Quality

- ***Goal:*** **Improve the condition of existing housing stock to ensure homes are safe, efficient, and resilient.**
    - ***Objective:*** Provide rehabilitation assistance resources for homeowners living in historic or outdated structures.
    - ***Objective:*** Target outreach to minority and under-resourced communities to ensure that information and resources are equitably distributed.
    - ***Objective:*** Target outreach to homeowners that may be impacted by disasters, in need of septic system updates, lead abatement, or other immediate safety concerns.

Affordability

- ***Goal:*** **Increase the variety of housing options to maximize affordability and availability for residents of all income levels.**
    - ***Objective***: Encourage flexibility in residential zoning to allow residents to meet housing needs with the construction of accessory dwelling units or home additions that can provide additional rental units and supplemental income, housing for extended family, or homecare arrangements for caretakers.
    - ***Objective:*** Increase the quantity of high quality, affordable rental units by encouraging the development of a variety of multi-family housing options within incorporated cities that meet the diverse needs of residents of all ages.
    - ***Objective:*** Increase the number of affordable housing units in Woodbury County.
    - ***Objective:*** Encourage the development of upper story units above downtown store fronts to introduce additional housing variety in small towns.

Rural character

- ***Goal:*** **Preserve the rural character of the county.**
    - ***Objective:*** Limit density in rural areas outside of incorporated cities.
    - ***Objective:*** Protect agricultural land, wildlife habitat, and outdoor recreational land.
    - ***Objective:*** Prioritize new development to locate adjacent to existing town limits, and prioritize the rehabilitation of existing structures, infill development, and brownfield redevelopment.

Access to housing

- ***Goal:*** **Expand access to safe, high-quality housing for all residents in Woodbury County.**
    - ***Objective:*** Direct funding toward the provision of high-quality, affordable housing options for vulnerable populations: low-income residents, seniors, and residents with disabilities.
    - ***Objective:*** Direct funding toward emergency shelters, housing, and social work services for homeless individuals living in the county.
    - ***Objective:*** Connect residents with funding opportunities that provide financial assistance for housing rehab.

Homeownership

- ***Goal:*** **Assist residents in the path from renting to becoming homeowners.**
    - *Objective:* Connect residents with information and resources that aid in the purchase of homes, such as down payment assistance grants for first time or low-income residents, and low-cost financial counseling. Particular care should be taken to reach out to residents of color and immigrant communities with these opportunities; providing resources, information, and support in residents' native language when applicable.

Chapter 2: Economic Development

Section	*Contents*
Iowa Smart Planning	Economic Development Element
Commercial and Industrial Areas	Commercial and industrial areas of the county
Industry Clusters	Strong industries in the county
Laborshed	Woodbury County's economic center
Employment & Income	Employment rates, poverty, and income
Education	Education levels
Workforce Development	Workforce development needs and opportunities
Workforce Housing	Workforce housing needs and opportunities
Quality of Life	Quality of life improvements
Broadband & Cellular Service	Broadband and cellular service coverage
Economic Development Programs	Economic development programs
Survey Results Synopsis	Public Comment
Goals and Objectives	Goals and objectives

The term economic development varies in definition but can be defined as long-term public investments to increase the prosperity of the community. Economic development can include investments in business retention, expansion, and recruitment, workforce development, agriculture, recreation, and natural resource conservation. Traditional indicators of a strong economy include analysis of the community's unemployment rate, income levels, wages, and diversity of industry or occupation categories. This Economic Development chapter consists of the following: census income and industry data, unemployment data, major employers, education data, health considerations, broadband access, economic development programs, economic development results from the community survey, and goals for the future.

Iowa Smart Planning Principles

The 2010 Iowa Smart Planning Guide states the following in regard to Economic Development:

> **Economic Development Element:** Objectives, policies, and programs to promote the stabilization, retention, or expansion of economic development and employment opportunities. The comprehensive plan or land development regulations may include an analysis of current industries and economic activity and identify economic growth goals for the municipality. The comprehensive plan or land development regulations may also identify locations for future brownfield or grayfield development.
>
> **Occupational Diversity Principle**: Planning, zoning, development, and resource management should promote increased diversity of employment and business opportunities, promote access to education and training, expand entrepreneurial opportunities, and promote the establishment of businesses in locations near existing housing, infrastructure, and transportation.

Commercial and Industrial Areas

A majority of the commercial and industrial activity in Woodbury County is located within or in the vicinity of the City of Sioux City as the region's economic hub. However, many of the small towns of Woodbury County also support local commercial areas, farm operations, and industrial activities as well. The commercial and industrial activities of the county are illustrated in the map below.

The Commercial and Industrial Areas Map may be used to consider the following:

1. Existing available commercial and industrial property
2. Comparison to zoning and land use maps including areas zoned for commercial and industrial uses
3. Proximity of commercial and industrial uses to residential and other community uses
4. Future commercial and industrial expansion or consolidation
5. Transportation infrastructure maintenance and expansion (I.e. roads, sidewalks, and trails)
6. Utility infrastructure maintenance for business retention
7. Identify and improve commercial and industrial clusters

**Map of commercial/industrial areas

Industry Clusters[1]

Location quotient bls.gov

Compared with the nation as a whole, Woodbury County has a high concentration of employment in many industries related to food production. The industries of highest employment concentration relative to the nation are animal slaughtering and processing, refrigerated warehousing and storage, food manufacturing, meat and meat product wholesalers, animal food manufacturing, grain and field bean wholesalers, farm product raw material wholesalers, and cattle feedlots. Other industries that are concentrated in Woodbury County include refrigeration equipment wholesalers, construction equipment wholesalers, motor vehicle wholesalers, and structural metals manufacturing.

Traded Clusters

The Iowa Economic Development Authority's cluster mapping tool identifies six strong traded clusters in Woodbury County. Traded clusters are groups of related industries that are uniquely specialized and concentrated in the county. These industries serve markets outside of the region and fuel the local economy.

Iowa Economic Development Cluster Mapping

Woodbury's strongest clusters were identified in 2016 to be: Distribution and Electronic Commerce, Education and Knowledge Creation, Livestock Processing, Food

[1] US Economic Development Administration defines clusters as geographic concentrations of firms, workers and industries that do business with each other and have common needs for talent, technology, and infrastructure. Clusters are essentially networks of similar, synergistic, or complementary entities that are engaged in or with a particular industry sector; have active channels for business transactions and communication; share specialized infrastructure, labor markets, and services; and leverage the region's unique competitive strengths to stimulate innovation and create jobs. Clusters may cross municipal, county, and other jurisdictional boundaries.

Processing and Manufacturing, Downstream Metal Products, and Downstream Chemical Products.

Industries of employment

One of Woodbury County's unique economic strengths is the prevalence of manufacturing job opportunities. The county exceeds state and national employment percentages by a sizeable margin in the manufacturing industry employment. To a lesser degree, the county also employs a greater percentage of residents in the industries of retail trade, construction, and wholesale trade, compared to the state of Iowa and the nation.

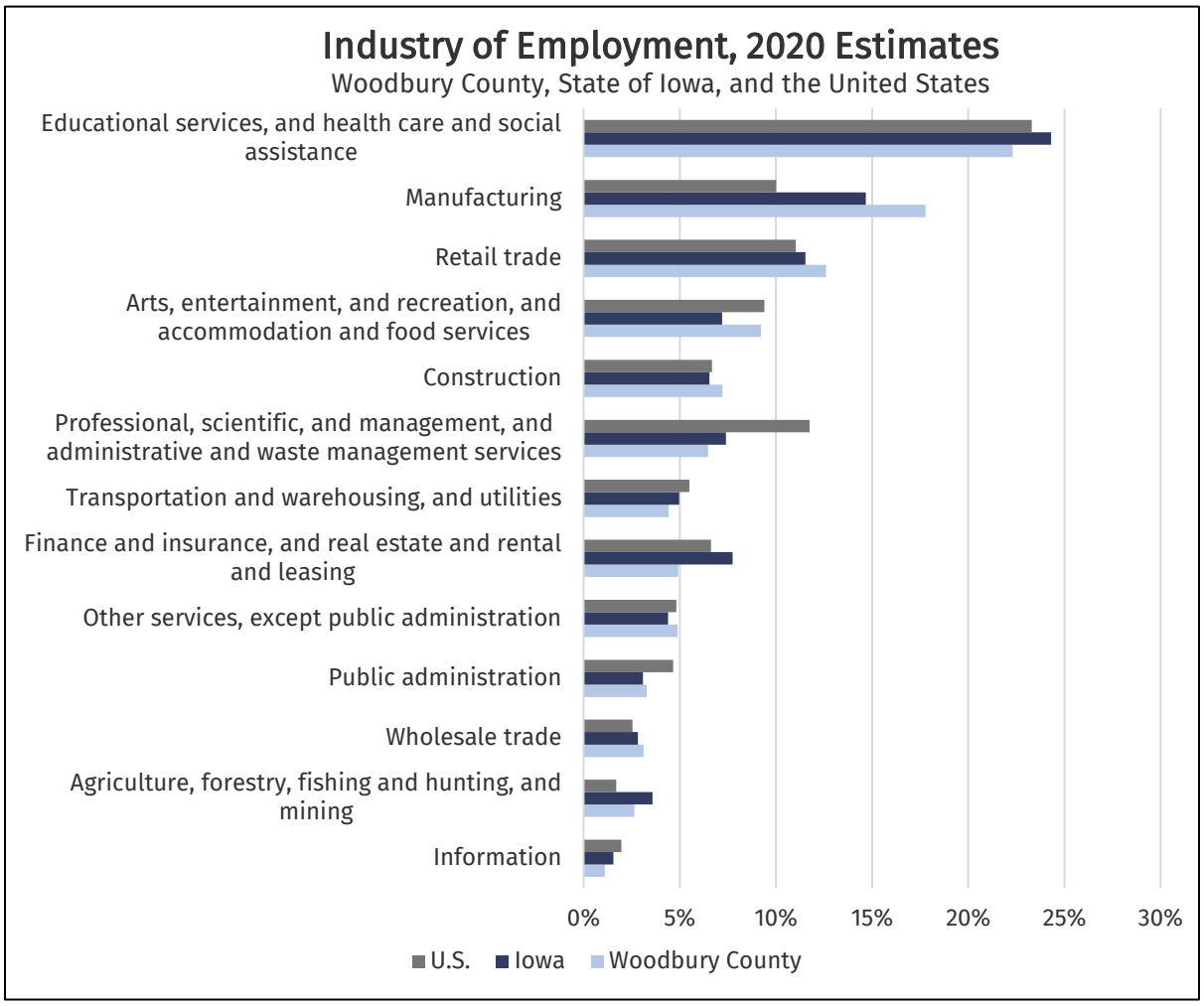


Figure 3.1. U.S. Census Bureau, American Community Survey, 5-year estimates for 2020.

Woodbury County's Top Employers

The top employers in the Siouxland metro area employing more than 1,000 people are MercyOne Health System, Seaboard Triumph Foods, Sioux City Community Schools, Tyson Fresh Meats, Unity Point Health, and Wells Enterprises. A full list of the region's top employers in 2021 from the Siouxland Chamber of Commerce is included for reference in Appendix 2.

CF Industries plant facility. Image source: MessengerNews.net

Laborshed

Sioux City is the primary employment center for the Siouxland MSA, which includes the greater tri-state metropolitan area in Iowa, Nebraska, and South Dakota. In an analysis of the Siouxland MSA laborshed by Iowa Workforce Development, it was found that the Woodbury County communities that had the highest number of workers commuting into Sioux City for employment were Sergeant Bluff, Moville, Lawton, Salix, and Sloan. While some residents of all the communities in the county commute into and out of Sioux City for work, these closer towns have more residents making this commute.

Several surveyed residents expressed concerns with how few quality, high-paying jobs are available in rural communities, making it necessary to commute long distances into Sioux City and other employment centers. Many residents would like to see a growth of local businesses in rural communities to provide more job opportunities, and to support a high quality of life in rural Woodbury County. The most commonly desired type of business was a grocery store, followed by a variety of local retail shops such as antique stores, secondhand stores, boutiques, and bookstores, as well as restaurants and breweries.

Employment & Income

Income

The county's median household income tends to be about two to ten percent lower than the median household income for the state of Iowa. The gap between state and local income in 2020 was the smallest it has been in the past two decades, with Woodbury households earning 98% of the state's median household income.

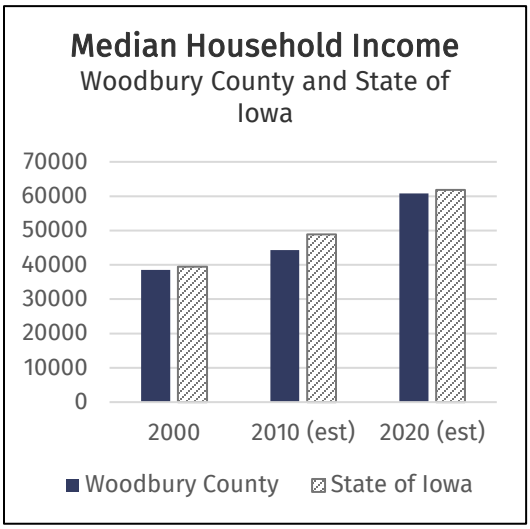


Figure 3.2. U.S. Census Bureau. Decennial Census of 2000. American Community Survey, 5-year estimates for 2010 and 2020

Poverty

The percentage of individuals in Woodbury County with income below the federal poverty level was estimated to be 12.4% in 2020. This was higher than the proportion of residents earning below the poverty level for the State of Iowa (11.1%), but slightly less than the nation as a whole (12.8%).

While the percentage of residents living in poverty is in line with state and nationwide figures, there are several areas of concentrated poverty within Sioux City, where more than 20% of residents have income below the poverty level (Siouxland District Health, Health Needs Assessment, 2022-2024). Of these areas there are two census tracts in downtown Sioux City where nearly 50% of residents are earning below the poverty level. A majority of the residents in these areas are people of color from historically underrepresented groups.

While not as high of a percentage or as concentrated as in Sioux City, poverty is not unique to the urban areas of the county. More than 1,000 rural Woodbury County residents were estimated in 2020 to be living in poverty as well. This demonstrates the varying needs of residents between different communities of Woodbury County and amongst different neighborhoods within the same community. The county should continue to identify and facilitate access to appropriate supports and resources for residents struggling with poverty.

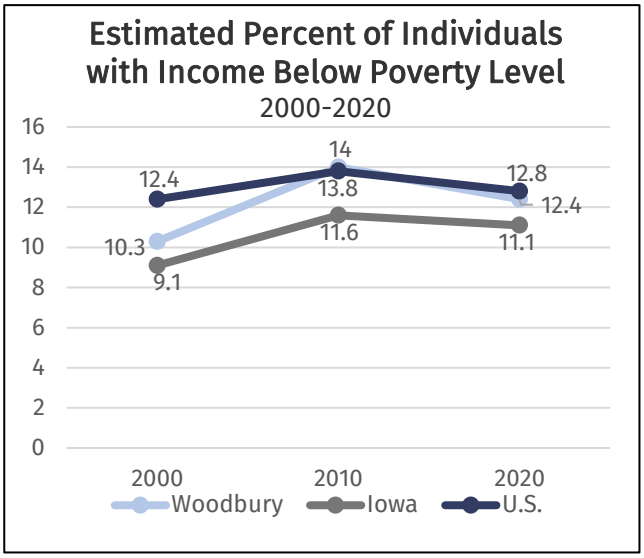


Figure 3.3. U.S. Census Bureau, American Community Survey, 5-year estimates for 2000, 2010, and 2020

Unemployment

Historically, the unemployment rate of Woodbury County has tracked closely with that of the State of Iowa, and is typically lower than that of the nation as a whole. Due to the economic disruptions of the COVID-19 pandemic, Woodbury County suffered its highest unemployment rates in recent history in the year 2020. The national unemployment rate has since returned to a level consistent with pre-pandemic figures, however, the state and county unemployment rates were still higher than pre-pandemic levels in 2021.

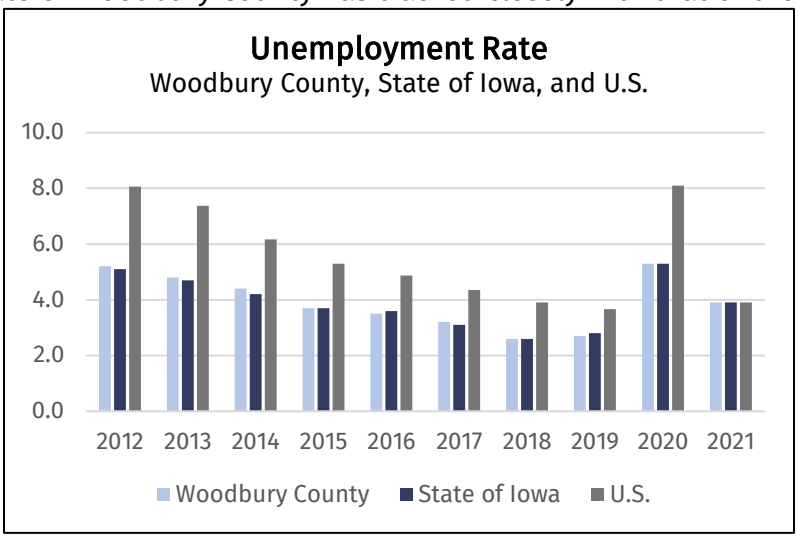


Figure 3.4. Bureau of Labor Statistics, Local Area Unemployment, 2012-2021.

Education

The 2020 estimated percentage of residents who are high school graduates or higher in Woodbury County, 87.7%, is on par with the national average of 88.5%. When compared to the state of Iowa at 92.5%, the county has a lower proportion of high school graduates. The county was also estimated to have a lower percentage of residents attaining a bachelor's degree or higher when compared to the state and country.

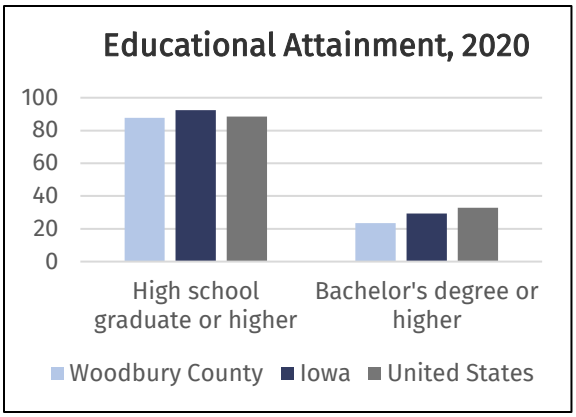


Figure 3.5. U.S. Census Bureau, American Community Survey, 5-year estimates for 2020.

Educational disparities

When analyzing education attainment levels by race within Woodbury County, disparities in education levels become apparent. While the percentage of Woodbury residents who have graduated high school is comparable across racial groups, non-white residents were more likely to have less than a high school diploma and less likely to have attained a bachelor's degree or higher according to 2020 estimates. The county should work across jurisdictions and with communities of color to identify barriers to educational access and to provide appropriate services and support.

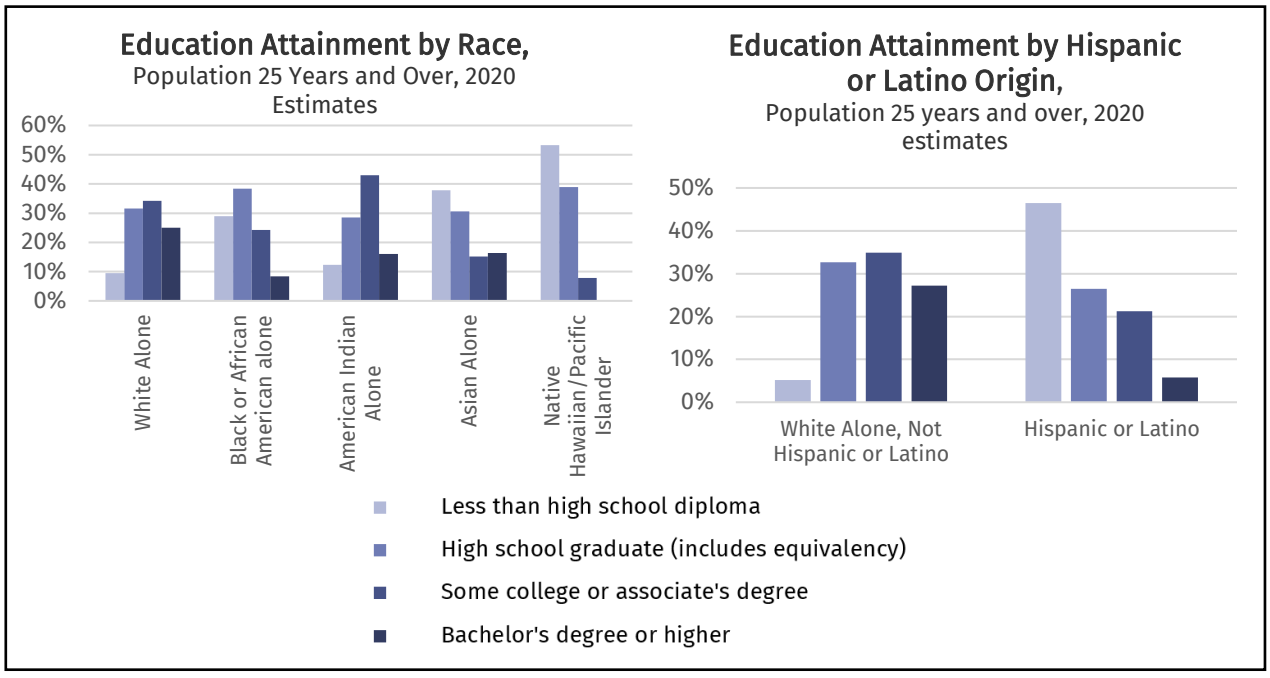


Figure 3.6. U.S. Census Bureau, American Community Survey, 5-year estimates for 2020.

Workforce Development

As described in the preceding sections of this chapter, there are several challenges that must be addressed to cultivate economic opportunity for the county's workforce. A majority of job opportunities in the county are located in the Sioux City metro area, while rural residents living in small towns and unincorpated areas of the county must commute a long distance. Survey feedback has indicated the lack of high-quality jobs and few small businesses operating in

rural communities. Many county residents of both rural and urban areas live on incomes below the federal poverty line, while access to education and associated educational attainment levels in the county are below those of the state overall, especially amongst students of color. The county can take steps to address these challenges with the development of a strong workforce that meets the needs of growing industries.

To prepare the emerging workforce for growing industries, partnerships and ongoing communication between high schools, community colleges, businesses, and community organizations are vital. Industry leaders can keep educational professionals informed of in-demand skills and competencies and offer related internships or apprenticeships, while educators can align their curriculum with these needs, and match students with these hands-on learning opportunities. One example of alignment between training opportunities and an emerging industry is Western Iowa Technical Community College's Wind Energy Technician Program. Northwest Iowa is a wind-rich region that can expect to see further growth of wind farms, and the need for skilled technicians to install and maintain these facilities. This alignment between industry demands and workforce development will not only prepare students for skilled, in-demand positions, but the specialized skills of the region's workforce can also be marketed toward relevant industries and businesses that may be seeking a community in which to locate.

In order to draw industries to the region, the county can collaborate with regional chambers of commerce and economic development entities to market and promote training or education opportunities in the region. In particular, unique training opportunities, such as the new flight school at Sioux Gateway Airport, can be marketed to related industries with the aim of filling a regional economic niche.

Rendering of the Oracle Aviation Center; anticipated construction in 2023. Image source: RS&H, Inc. and City of Sioux City.

To encourage the development of small businesses in Woodbury County's rural areas, the county can support residents by sharing resources about opportunities to learn basic business competencies. Partnering with community colleges to provide basic business workshops and seminars would help residents gain needed information while providing a recruitment opportunity for local academic business programs. Particular care should be given to marketing educational opportunities to low-income residents, immigrant communities, people of color, and other underserved groups, providing financial assistance information and translation to commonly spoken languages.

Workforce housing

The provision of workforce housing, or homes that serve middle-income workers is important for residents and local employers alike. The cost of housing has been continually increasing for both owners and renters, with an increase of about 71% between 2000 and 2020 for Woodbury County. Finding affordable homes within a reasonable commuting distance to job opportunities can determine whether potential employees are able to accept a job offer and move to the region. The availability of workforce housing strengthens the regional economy by drawing in employees that support local businesses- a vital role in today's competitive hiring landscape.

Iowa's Economic Development Authority administers the Workforce Housing Tax Incentive program to offset costs to developers for building a variety of new units that are affordable for middle income households. There is a per unit cost cap on these projects, and typically they are required to be located on brownfield or infill sites to ensure they are within a reasonable distance to job opportunites. In Woodbury County, this program has stimulated the development of 57 multi-family rental units and 16 owner occupied, single family townhome units for completion in 2023. To continue filling the gaps in diverse housing options and in turn support a strong workforce in Woodbury County, the county can coordinate with local economic development organizations to ensure information about this program is shared with developers and the business community.

Quality of Life

The quality of life of a community is a broad term that takes into account many factors that impact residents' standard of living, such as safety, access to health care, education opportunities, comfort, stress level, and cultural enrichment. While every topic covered in this comprehensive plan influences residents' quality of life, there are certain aspects of quality of life that relate directly to economic development. For example, providing a diverse array of opportunities for recreation and entertainment throughout the year contributes to residents' mental well-being, social connections, and physical activity levels. Building cultural attractions based on unique assets of the county, such as natural and historical features, provides residents opportunities for education and cultural enrichment. Encouraging healthy lifestyles, proactive medical check-ups, and the creation of exercise facilities throughout rural areas are actions that support the improvement of residents' physical health.

Dorothy Pecaut Nature Center; Woodbury County Parks

All three of these examples demonstrate how investments in residents' quality of life contribute to a robust economy. The physical and mental health, safety, financial security, and all-around well-being of the workforce are the basis for a strong economy.

In survey feedback, county residents expressed a desire for expanded medical services throughout rural communities, as well as the need for additional recreational, cultural, and

family-friendly entertainment amenities. Quality of life improvements such as parks, trails, fishing, nature centers, and festivals were mentioned as desired changes.

Broadband and Cellular Service

According to Connected Nation Iowa's Broadband Map (2022), about 97.3% of Woodbury County households have access to the minimum speed that meets the Federal Communications Commission's definition of broadband, 25 mbps for download/3 mbps for upload, by means of any technology (fiber, cable, DSL, etc.). This map is displayed in Figure 3.7. Over 1,000 Woodbury County households do not have reliable access to broadband.

According to the U.S. Census Bureau's American Community Survey of 2020, nearly one fifth of Woodbury County's households did not have an internet subscription, compared to 9.7 percent of households nationwide. Households earning less than $20,000 annually were far less likely to have internet access of any kind, with 40 percent of these households falling into this category.

From survey input about residents' experience living in rural Woodbury County, one of the most frequently identified weaknesses of the county was the poor broadband and cellular service in rural areas. Nearly 40 percent of survey respondents identified this as a top weakness of the county, while 14 percent believed investment in public utilities and infrastructure, such as broadband and improved cellular service, would be one of the most important issues to address in the next 20 years. Internet connectivity and/or cell phone service issues were also mentioned by about 19 residents in open-ended comments throughout the survey.

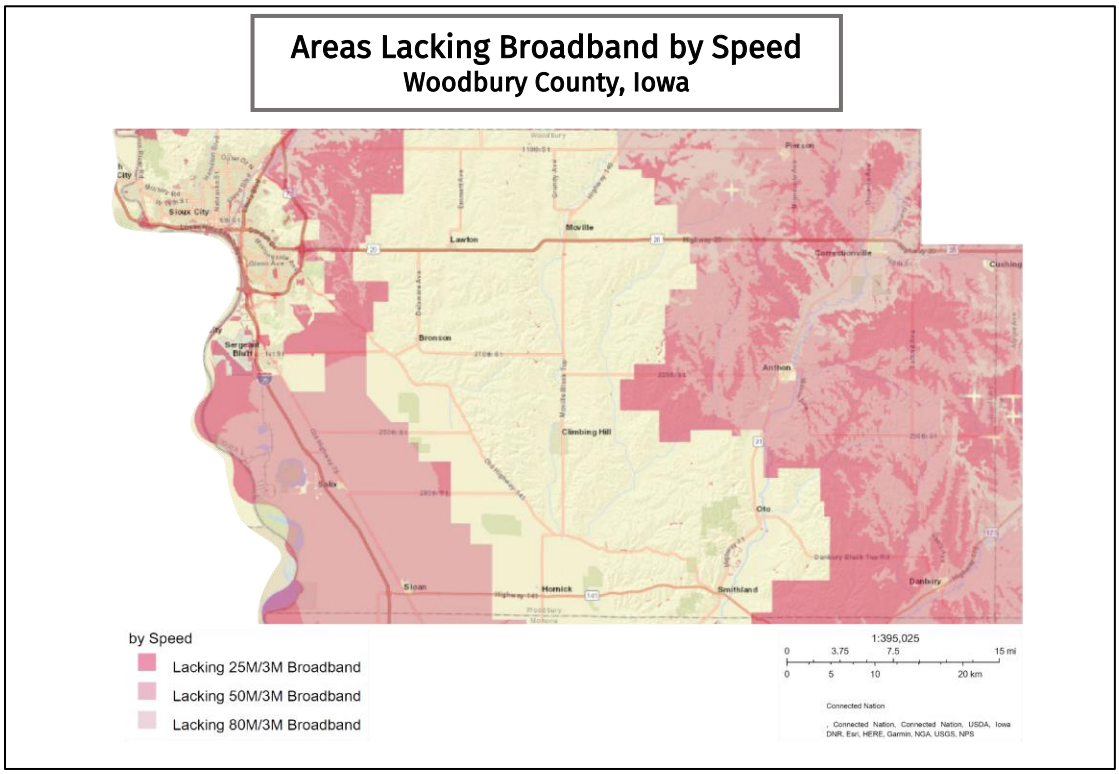


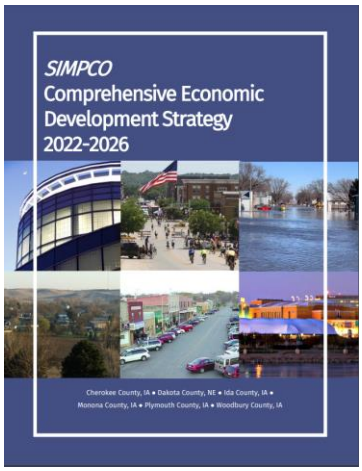
Figure 3.7. Connected Nation, USDA, 2022.

While the Connected Nation Iowa's Broadband Map suggests that a vast majority of residents have access to broadband, a far greater percentage of Woodbury County residents are foregoing internet subscriptions than would be expected based on national data. While household income is certainly a factor, other residents may be avoiding an internet subscription due to insufficient or unreliable connection.

An increasing number of goods and services are being offered online, including crucial public services such as healthcare, telehealth, emergency response, social services and benefits, job boards, and secondary and post-secondary educational opportunities. Reliable connection to these resources is vital for residents' health, safety, and full participation in the economy.

Economic Development Programs

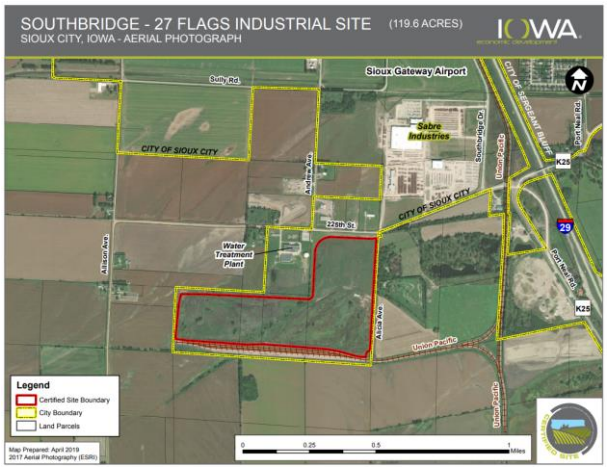
SIMPCO Economic Development



Siouxland Interstate Metropolitan Planning Council (SIMPCO) hosts a Comprehensive Economic Development Strategy (CEDS) Committee. The CEDS Committee develops and administers the 5-year economic development plan that is required for the region's Economic Development District (EDD) designation through the US Economic Development Administration (EDA). The vision of the plan is that the SIMPCO region will be a preferred location for innovative businesses and entrepreneurs who desire a skilled workforce, quality infrastructure, high quality of life for residents, and a positive business environment in order to contribute to continual regional economic success. This document can be accessed from SIMPCO's website, simpco.org, under the Economic Development division.

Certified Sites

The Iowa Economic Development Authority's (IEDA) Certified Sites program provides a credential for development-ready locations that are available for industrial operations. These locations are presented in a searchable database maintained on the IEDA's website, displaying relevant data and documentation of each site's amenities. Woodbury County is home to two such locations, both situated south of Sioux City and Sergeant Bluff near the Sioux Gateway Airport. The 117-acre Southbridge 27 Flags Industrial Site is suitable for heavy industry, while the Sergeant Bluff Industrial Park of roughly the same size is appropriate for "light industrial



manufacturing, logistics and warehouse distribution, food production and biotech industries" (IEDA). Both sites are immediately accessible by Interstate 29, U.S. Highways 20, 60, and 75, and railway operated by the Union Pacific Railroad Company provides access to markets in Omaha and Minneapolis. Both are also just minutes away from air service via the Sioux Gateway Airport and Missouri River barge service via the Big Soo Terminal.

The Southbridge Interchange is a new Interstate 29 interchange that is planned for development in 2027. This new access will be located south of the Sergeant Bluff rest stop, near 235th Street. The addition of this interchange will enhance the efficiency of operations located at both the Southbridge 27 Flags and the Sergeant Bluff Certified Sites, reducing travel times for the distribution of goods, and enhancing fuel efficiency. With this convenient access to the interstate, Woodbury County can also anticipate future commercial and industrial developments adjacent to the interstate corridor and within the industrial area between Sergeant Bluff and 260th Street, roughly bordered on the west and east by the Missouri River and Interstate 29 respectively.

Work Ready Community

Woodbury County ACT Work Ready Communities designation in January 2019.

In 2019, Woodbury County was the first in Iowa to become certified as a Work Ready Community by ACT. This program strives to close the skills gap by aligning the needs of industries and the skills of job seekers. Individuals about to enter the workforce can earn the ACT WorkKeys National Career Readiness Certificate, which is an industry-recognized credential proving competency in commonly-required workplace skills. This helps individuals entering the workforce find suitable positions without relocating to another community. This certification is a draw for industry leaders, ensuring that Woodbury County has a workforce equipped to support their company.

Survey Results Synopsis

Assets and Weaknesses Relevant to Economic Development

Woodbury County's primary assets that were identified by survey participants included first and foremost the agricultural economy, which was selected by the largest number of residents (44 percent). The rural county's proximity to the goods, services, and attractions of the Sioux City metro was the secondmost popular answer (40 percent), followed by the rural character of the county (34 perccent), and the cost of living (30 percent). Other relatively popular selections were related to quality of life assets of rural Woodbury County such as clean air and water (23 percent), and abundance and access to open space and public lands (21 percent). In open-ended comments, several residents cited qualities such as shared community values, the character of fellow residents, or the quiet atmosphere living in rural Woodbury County.

Less-frequently selected assets included the public education system (17 percent), recreational opportunities (16 percent), historic character, culture and amenities (12 percent), and opportunities for business growth (10 percent).

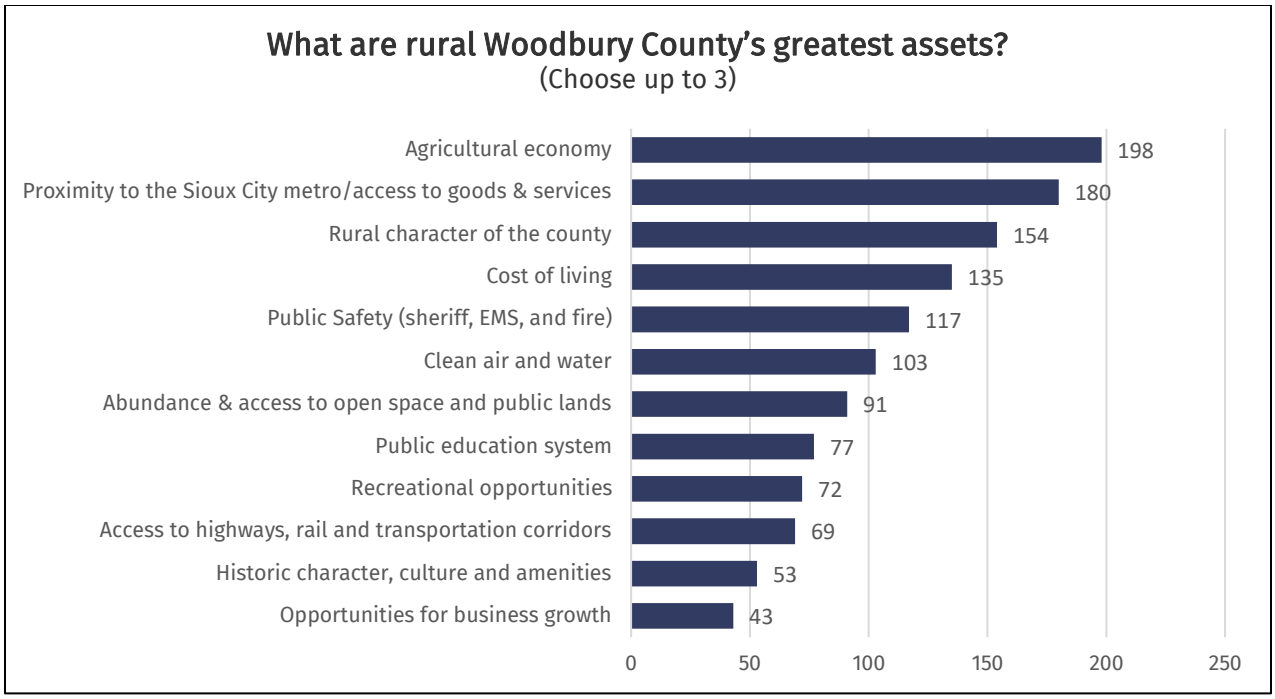


Figure 3.8. Other assets from open-ended questions: shared community values, high character of residents, and quiet atmosphere.

Of the weaknesses identified by survey participants, the most frequently selected were few employment opportunities in rural areas (39 percent), lack of reliable broadband and/or cellular service (38 percent), limited services in rural areas (37 percent), and difficulty attracting or retaining a qualified workforce (32 percent). In open-ended comments, survey respondents also mentioned high taxes, the lack of recreational opportunities, and few amenities such as senior centers and other services.

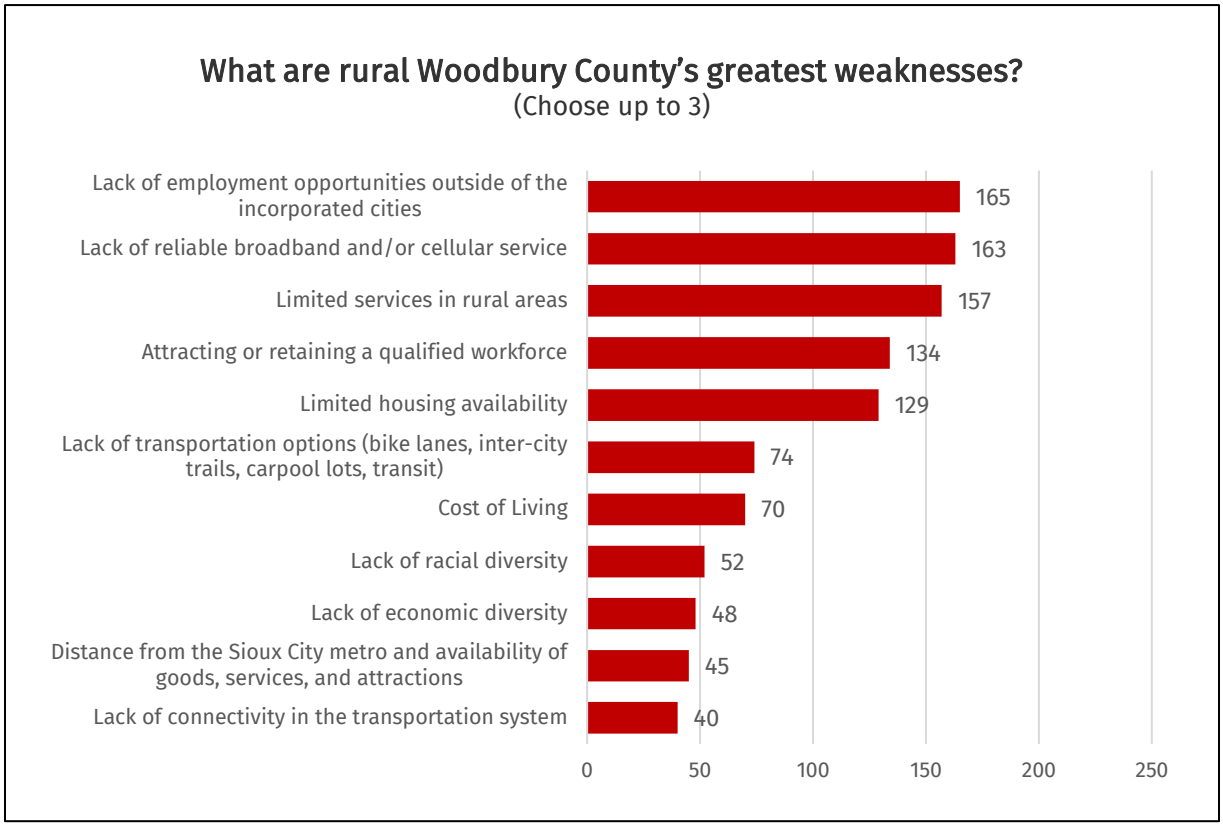


Figure 3.9. Other weaknesses from open-ended comments: high taxes, lack of recreational opportunities, few amenities, lack of jobs paying a high wage, unreliable cell phone service and broadband.

Desired Changes

Economic development was ranked as the most important topic to address in the next 20 years. One of the most frequently mentioned issues amongst survey respondents was broadband and cell service connectivity and reliability. In addition, residents expressed the desire for more grocery stores in rural areas; small local shops such as secondhand stores, antique shops, bookstores, boutiques, and general stores; as well as food establishments such as breweries and restaurants. Respondents repeatedly brought attention to the need for access to emergency health and medical services. Recreational, cultural, and family-friendly entertainment amenities such as parks, bike trails, pools, fishing, nature centers, amusement parks, and festivals were all desired quality of life improvements for rural residents. Lastly, some respondents cited the need to provide better support for young entreprenuers, strengthen the agricultural economy and increase protections for farmland and the Loess Hills throughout the county. While residents desire the addition of small businesses and services to rural communities and enjoy the amenities of the nearby Sioux City metro, they express appreciation for the rural character, the agricultural economy, the natural features, and the community values that make rural Woodbury County unique.

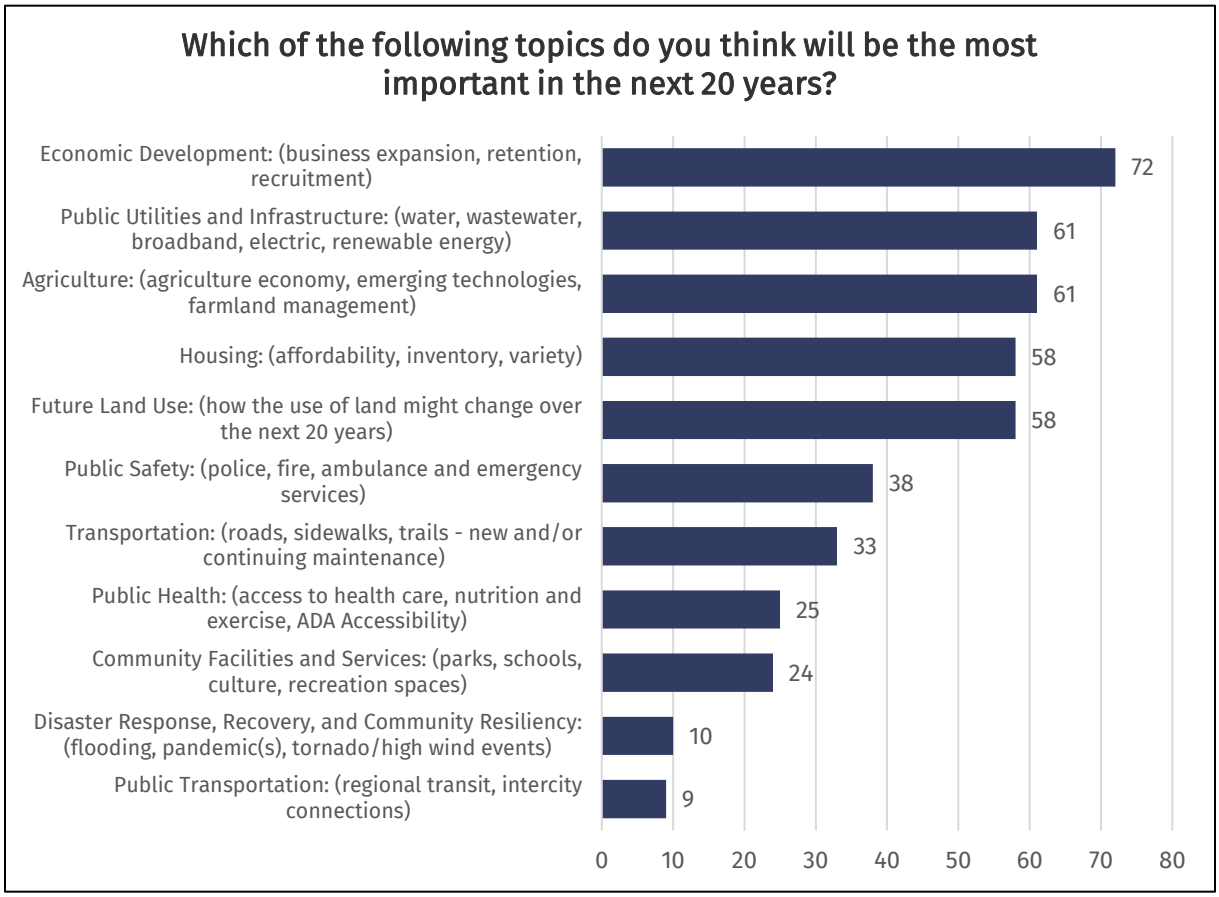


Figure 3.10. Other needs identified in comments: recreation besides bars and casinos, fewer dollar stores and more local businesses, better job opportunities, enable young entrepreneurs to get started, encourage agricultural ventures, strengthen the agricultural economy.

What types of businesses do you patronize in *rural* Woodbury County?	
Common responses:	
Restaurants	122
Gas or service stations	105
Grocery or convenience store	75
Salon or barber	21
Home goods & clothing	19
Bars	22
Banks	17
Local small businesses	17
Agricultural (feed stores, farm supply)	12
Doctor or pharmacy	15
Farmers market or local farms	7

Table 3.1. See Appendix 9 for a full list of answers.

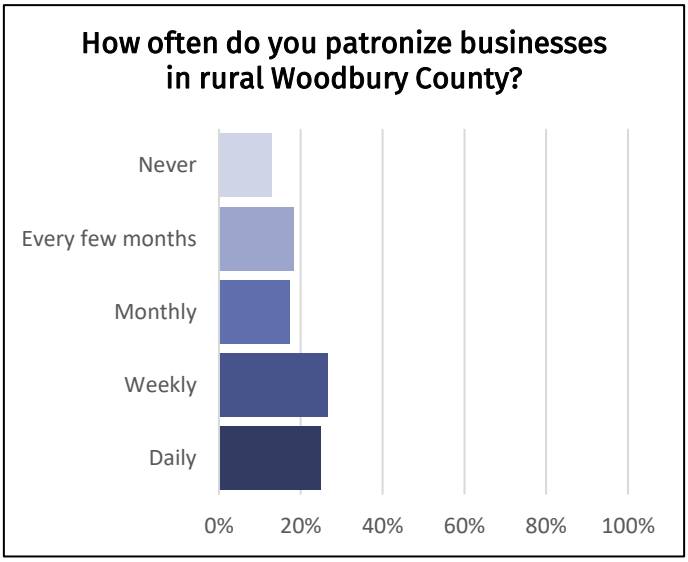


Figure 3.11.

What types of businesses or services would you like to have in Woodbury County?
Grocery stores (32)
More local shops (24): antiques, secondhand stores, brewery, bookstore, general stores, boutiques, storefronts, and restaurants (9)
More public services: transportation (6), emergency health & medical care (19), police
Recreation opportunities (8): parks (5), kid and family-friendly recreation (12), bike trails (3), hiking trails, nature center, fishing, shooting range, water park, pools (2), amusement park, festivals
Improve internet (11) & cell service (3)
More affordable housing (4)
Auto repair/service centers (4)

Table 3.2. See Appendix 9 for a full list of answers.

Goals & Objectives

Regional Alignment

- ***Goal:*** **Coordinate economic development initiatives with regional priorities.**
    - Coordinate economic development initiatives with the Comprehensive Economi Development Strategy (CEDS) Committee and refer to the CEDS document to ensure alignment with the goals and strategies therein.

Industry & Workforce

- ***Goal:*** **Maintain core industries that are the backbone of Woodbury County's economy by marketing Siouxland as a regional center for food production and related agricultural industries.**
    - Maintain Woodbury County's ACT® Work Ready Community status.
    - Continually communicate with industry leaders to identify emerging in-demand skills and qualifications.
    - Work with local colleges and high schools to continually improve training opportunities for students to learn in-demand skills necessary to support the region's industry clusters.
    - Coordinate across jurisdictions to assist in the marketing and promotion of the county's Certified Sites.
- ***Goal:*** **Encourage the diversification of Woodbury County's economy, in support of small businesses which generate nearly half of all economic activity nationwide, as well as larger enterprises.**
    - Coordinate with city jurisdictions of Woodbury County to offer access to supportive resources, networking opportunities, and financial information for residents interested in starting a small business.
    - Maintain partnership with Iowa's West Coast Initiative to develop economic opportunities in the Siouxland region.
    - Consider the development of alternative energy industry partnerships.
    - Provide language supports for non-English speaking business owners, prospective business owners ,and employees where necessary.

Quality of Life

- ***Goal:*** **Work to enhance Woodbury County's quality of life to draw and retain families, employees, and residents of all ages in the region.**
    - Continue to invest in innovative improvements such as recreation and entertainment opportunities.

    - Build upon unique assets of the county, such as natural features and historical resources to create enriching cultural experiences for residents.
    - Improve access to internet connectivity by investing in broadband infrastructure.
- *Goal:* **Encourage healthy lifestyles to maximize residents' quality of life.**
    - Support the expansion of health services such as clinics and exercise facilities in rural areas.
    - Refer to the Siouxland District Health Department's Health Needs Assessment and Health Improvement Plan for guidance and consider the health and wellness impacts of all county activities, programs, and policies.
    - Support education for regular wellness exams to increase early detection of serious illness.

Equity

- *Goal:* **Ensure that educational and economic opportunities are accessible to all residents, regardless of race, age, sex, religion, or ability.**
    - Continue to identify and facilitate access to appropriate supports and resources for residents struggling with poverty.
    - Work across jurisdictions and with underrepresented populations, such as people of color, low-income residents, and those with disabilities, to identify barriers to educational access and provide appropriate services and support.
    - Actively market educational and job opportunities to underrepresented communities.

Chapter 3: Transportation

This chapter includes information about existing transportation infrastructure and services in Woodbury County and a list of transportation goals and objectives for the future.

Section	Contents
Iowa Smart Planning	Transportation Element
Streets	Street network
Public Transit	Demand response and fixed route systems
Commuting to Work	Commuting patterns
Trail Network	Regional trails
Railroad	Rail traffic
Air	Commercial air service
Water	Barge facilities
SRTPA Long Range Transportation Plan	SRTPA Long Range Transportation Plan
Survey Results Synopsis	Public Comment
Goals and Objectives	Goals and objectives

Iowa Smart Planning Principles

The Iowa Smart Planning document states the following in regards to transportation:

> **Transportation Element:** Objectives, policies, and programs to guide the future development of a safe, convenient, efficient, and economical transportation system. Plans for such a transportation system may be coordinated with state and regional transportation plans and take into consideration the need for diverse modes of transportation, accessibility, improved air quality, and interconnectivity of the various modes of transportation.
>
> **Transportation Diversity Principle:** Planning, zoning, development, and resource management should promote expanded transportation options for residents of the community. Consideration should be given to transportation options that maximize mobility, reduce congestion, conserve fuel, and improve air quality.

Streets

Major routes of Woodbury County's street network include Interstate 29 running along the western border, the principal arterial of U.S. Highway 20 running west/east across the county, and U.S. Highway 75, running north/south through the Sioux City metro area. The other principal arterials in the county, Iowa State Highways 12, 376, and Hamilton Boulevard, are also located in Sioux City. Minor arterials in rural Woodbury County include Iowa State Highways 141, 175, 31, and 140, with numerous minor arterial routes in the Sioux City metropolitan area. In addition to these roadways, the county also has a network of major and minor collectors, as well as local roads. The full street network is illustrated in the map in Figure 4.1, according to the Federal Functional Classification and the Iowa Department of Transportation.

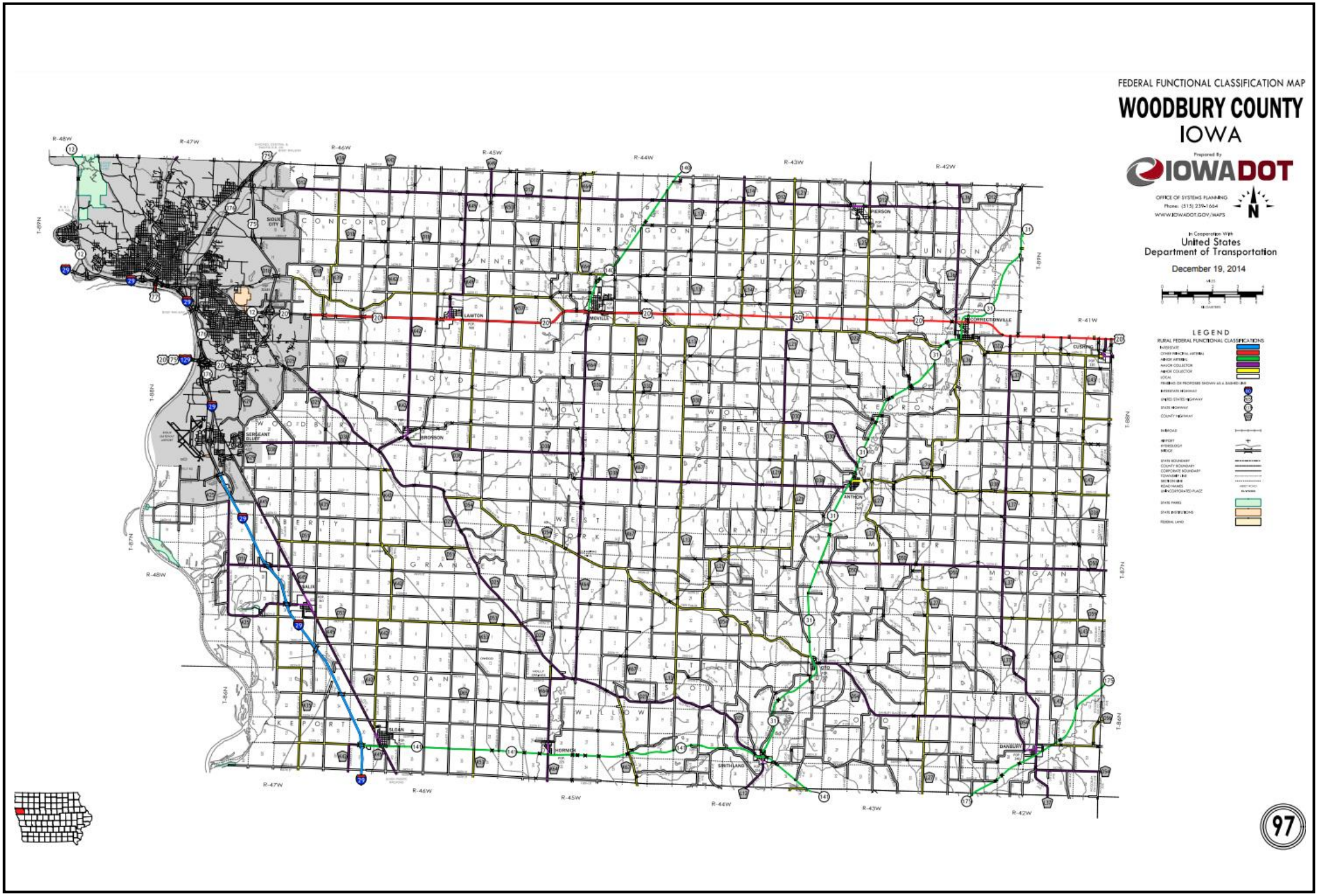


Figure 4.1. Woodbury County, Iowa Federal Funcional Classification Map. Iowa DOT, 2014.

U.S. Interstate 29, U.S. Highway 20, and U.S. Highway 75 are important routes for commercial vehicles, carrying thousands of trucks each day throughout Siouxland and across state lines. State Highways 141, 31, 140, 175, 376, and 12 also contribute, to a lesser extent, to the flow of commercial traffic across the region. Iowa Department of Transportation road volume data is included for reference in the appendix for the interstate as well as U.S. and state highways in Woodbury County. A summary of vehicle miles traveled (VMT) on Woodbury County's rural and municipal road networks is included in Table 4.1. This metric factors in both the average annual daily traffic on the road network as well as the length of roadways. For example, while there are many more miles of the rural primary network than in the municipal primary network, the VMT is not markedly different due to the greater volume of traffic on municipal routes.

Vehicle Miles Traveled, Woodbury County, 2020 (1,000's)								
Rural interstate	Rural primary	Secondary	Rural Total	Municipal Interstate	Municipal Primary	Municipal	Municipal Total	Total
82,571	130,802	75,153	288,526	106,291	122,194	273,897	502,382	790,908

Table 4.1. Source: Iowa Department of Transportation, 2020

Woodbury County's Secondary Roads Department provides construction, road maintenance, engineering, and snow/ice removal for all roads outside of city jurisdictions that are not part of the state or federal highway systems. Farm to Market routes and Area Service class "A" roadways are prioritized in terms of construction, reconstruction, maintenance, and snow/ice removal, while Area Service class "B" and "C" roadways are built and maintained to the minimums outlined in state and county codes.

Woodbury County Secondary Roads Summary, 2020	
Secondary Miles	1,350.48
Secondary Open Miles	1,338.48
Secondary Legal Not Open Miles	12.01
Secondary Open Surfaced Miles	1,276.62
Secondary Open Not Surfaced Miles	61.75
Percentage Surfaced Secondary Roads	94.52%
Rural Open Roads All Systems	1,436.57
Rural Primary Miles	102.45
Rural Open Surfaced Miles	1,374.27
Total Open New/Resurfaced Rural Miles 2020	0.00
Total Open Rural Miles Unknown Surface Type	0.11
Percentage County Miles Farm-to-market	31.34%

Table 4.2. Iowa DOT Secondary Road Report, 2020

Construction priorities in recent years have been pavement resurfacing projects and the replacement or repair of street bridges, as many of these structures are aging and in need of attention to maintain their safe use. Residents surveyed about transportation infrastructure in Woodbury County have expressed concern with the state of rural roadways, especially unpaved roads that tend to accumulate potholes with the changing seasons. When asked how they would rate the condition of unpaved rural roads, 28% determined the condition to be "poor". Surveyed residents responded more favorably when asked about the condition of paved rural roadways (47% "good" or "excellent"), the safety of railroad crossings (50% "good" or "excellent"), snow removal (47% "good" or "excellent"), and the amount, condition, and reflectivity of signs along roadways (62% "good" or "excellent").

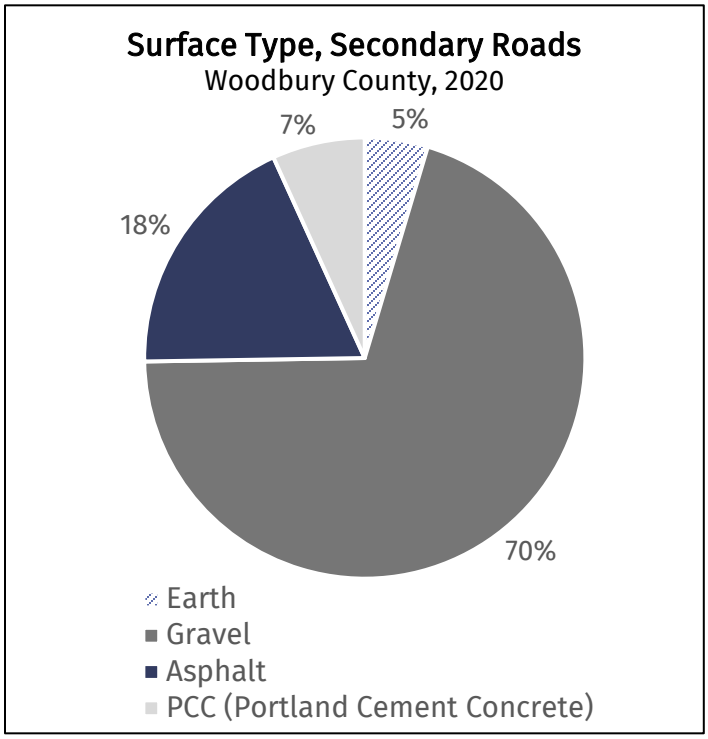


Figure 4.2. Source: Iowa DOT, 2020.

Woodbury County Bridge Conditions, 2021							
Structural Deficiency (SD)		Bridge Condition			Weight Restrictions		
Total SD	No SD	Good	Fair	Poor	Restricted	Unrestricted	Out of Service
82	368	192	176	82	74	370	6

Table 4.3. Source: Iowa Department of Transportation, Iowa Bridges Story Map, 2021.

Interstate-29 Southbridge Interchange

With the continued development of industrial activities south of Sioux City and Sergeant Bluff near the Missouri River, the addition of an interchange on Interstate 29 near Port Neal Road has recently been approved by the Iowa DOT. This project will be moving forward over the next several years. Having direct interstate access in this area will greatly improve the efficiency of current industrial operations nearby, reducing the number of miles between manufacturing sites and the interstate. It will also support further development of commercial and industrial sites in the vicinity. The improved interstate access will be another draw for potential firms to locate in the Siouxland area, in addition to other regional amenities such as the IEDA's Certified Sites, proximity to the Missouri River, air service, human capital, and strong agricultural economy.

Loess Hills National Scenic Byway

The Loess Hills National Scenic Byway is a driving route that highlights the beautiful natural landscapes of northwest Iowa, from gently rolling hills to steep ridges and bluffs containing prairie and woodland ecosystems. Starting from the north in Plymouth County, the route enters Woodbury County through Stone State Park, carries briefly along I-29 before continuing southeast between Bronson and Smithland. There are several opportunities for hiking and wildlife observation along the route in Stone State Park, the Oak Ridge Conservation Area, Southwood Conservation Area, and the Fowler Forest Preserve. The Smokey Hollow Loop between Oto and Smithland and the Stagecoach Loop South of Smithland offer additional scenic views of the Loess Hills. The towns of Sioux City, Sergeant Bluff, Bronson, Lawton, Oto, and Smithland offer services and various attractions to visitors along the way.

Photo source: iowaculture.medium.com

Crash Data

Woodbury County Annual Crash Data							
Year	Total Crashes	Total Occupants	Total Vehicles	Fatalities	Serious Injuries	Minor Injuries	Possible Injuries
2022	2,247	5,398	4,202	5	24	282	476
2021	2,262	5,319	4,193	8	34	233	486
2020	2,174	5,201	4,025	10	46	238	429
2019	2,479	5,997	4,557	12	39	244	533
2018	2,387	5,879	4,469	5	34	232	521
2017	2,346	5,775	4,382	8	43	250	501
2016	2,364	5,732	4,385	10	37	273	629

Table 4.4. Source: Iowa DOT, Iowa Crash Analysis Tool (ICAT)

Over the past seven years, Woodbury County has had an annual average of about eight fatal automobile crashes and about 37 crashes resulting in serious injury to at least one person involved. Several hundred crashes resulting in minor or possible injuries also take place each year in Woodbury County. While human error is inevitable and it is unrealistic to eliminate crashes entirely, roadway design can be improved to incorporate safety features, such as shoulders on two-lane highways, roundabouts at appropriate intersections, road diets, and improved sign reflectivity. The U.S. Department of Transportation's Federal Highway Administration promotes the Safe System Approach to holistically enhance user safety and reduce the likelihood of fatalities and serious injuries from crashes. This approach proactively identifies and mitigates risks, recognizes the vulnerability of road users, assumes that people will make mistakes, and embeds redundant safety measures in anticipation of user error. These strategies can be incorporated into roadway design to improve safety for Woodbury County residents.

Electric Vehicles

While the Sioux City metro area has about one dozen locations for electric vehicle drivers to recharge their batteries, there are currently no recharging stations in rural Woodbury County. Electric vehicle infrastructure will be a growing need over the next several decades and presents an opportunity to improve the quality of life for rural residents. According to the U.S. Department of Energy and the Bureau of Labor Statistics, rural drivers tend to drive on average ten more miles daily and spend an average of 44% more on gasoline and motor oil compared to residents living in an urban area. As affordable electric vehicles are developed, this technology will offer rural residents considerable cost savings from a reduction in fuel and maintenance throughout the life of the vehicle.

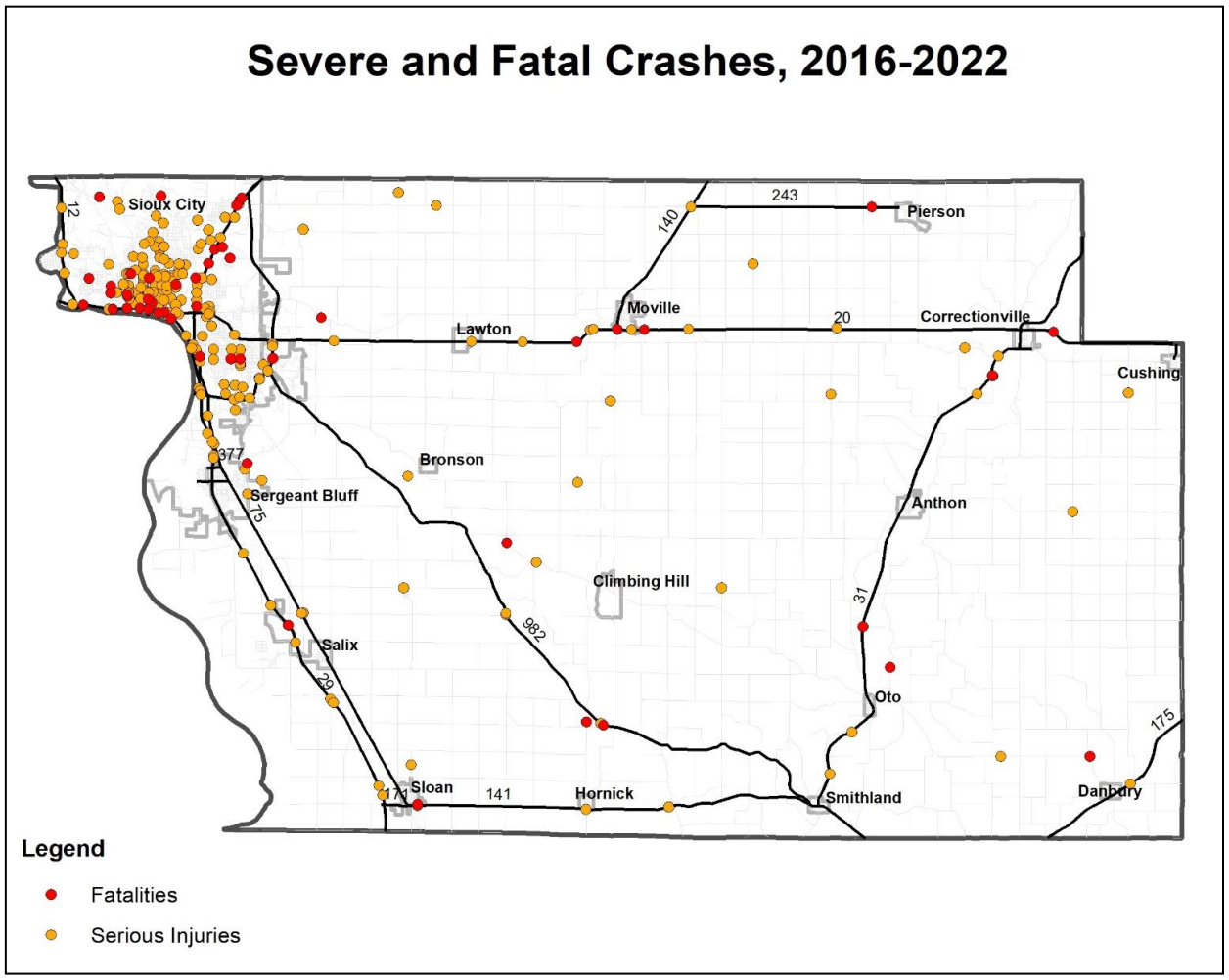


Figure 4.3. Severe and Fatal Crashes in Woodbury County, 2016-2022. Iowa DOT Crash Analysis Tool (ICAT).

The Federal Highway Administration has designated a network of alternative fuel corridors where the required maximum distance between public charging stations is 50 miles to ensure that electric vehicle owners have reliable access to stations across the country. In Iowa, portions of Interstate 80 are designated “ready corridors” and other sections of this interstate are in development to achieve the required charging station density. Interstate 29 in Woodbury County has been identified as a “pending corridor” that will be developed as a designated alternative fuel corridor soon. With the federal government’s push to expand electric vehicle infrastructure, there will be funding opportunities in the near future to help localities, business

owners, and individuals adapt to the growing need for recharging stations and electric equipment. MidAmerican Energy Company also offers incentives for businesses to provide charging stations and for Iowa residents to purchase electric vehicles.

Public Transit

Woodbury County is served by the Jefferson Lines bus service company, which provides a route connecting Sioux City to two transfer points: Sioux Falls, South Dakota to the north, and Omaha, Nebraska to the south. From these transfer points, connections to many other destinations throughout the midwest region are available.

The Siouxland Regional Transit System (SRTS) provides public transportation and paratransit service throughout Woodbury County as well as Cherokee, Ida, Monona, and Plymouth counties in Iowa, Dakota County in Nebraska, and southern Union County in South Dakota. This service is available to all residents, including those who may require specialized transportation, such as those with disabilities or in need of transportation to medical appointments. Service is on demand with direct pick-up and individualized destinations scheduled with 24-hour advanced notice. The SRTS fleet of vehicles is ADA accessible, equipped with mobility device lifts, seatbelts, and car seats upon request. Contract transportation is also available for businesses to assist in transporting employees to work.

Prices for SRTS services are detailed in the table below. Reduced fares are available for riders age 60 and over. In 2021, SRTS provided 81,402 rides with a total of 554, 665 operating miles.

Service	Rate
Curb-to-curb	$4.00 plus $0.50 per mile
Door-to-door	$7.00 plus $0.50 per mile
Dakota Dunes	$5.00 one way
Jefferson or Elk Point	$15.00 one way
Sergeant Bluff	Free within city limits and $2.00 per one way within Sioux City metro including Dakota Dunes

Table 4.5. Siouxland Regional Transit System, 2022.

The Sioux City Transit System provides bus service throughout the tri-state metropolitan area, including Sioux City, North Sioux City, and South Sioux City.

While these public transportation options are available, less than one percent of residents used transit to meet the needs of their daily commute according to 2019 estimates. In 2021, the Sioux City Transit System sought public input for route and scheduling improvements to meet residents' changing needs and preferences. They launched a trip planner tool in 2022 that allows users to find detailed directions and route information from their mobile device. As these agencies continue to find additional ways to enhance the convenience of the transit system, ridership could increase and reduce the number of single-occupancy vehicle trips taken each day.

Commuting to Work

For Woodbury County residents, the predominant form of transportation for commuting to work was by driving alone in a car, truck, or van, with 83% of residents using this mode according to 2020 estimates. Carpooling was the second most common form of transportation (9.5%), followed by walking (2%), public transportation (1.1%) and other means (.4%). About 4% of residents reported working from home, eliminating their commute. Encouraging the use of alternative means of transportation and reducing the number of single occupany vehicle trips would help to improve traffic safety, reduce roadway congestion, and improve air quality in the region. The Siouxland Regional Transit System partners with commercial businesses and industries in the region to offer employees a vanpooling service. SRTS lends a van to a group of employees of the same company to share as a means of transportation to work. The employees operate the vanpool based on a set pick-up and drop-off schedule each day. This arrangement saves employees the costs of driving their own vehicles to work each day, while employers save space in the parking lot, reduce congestion, and offer a unique benefit to their staff members.

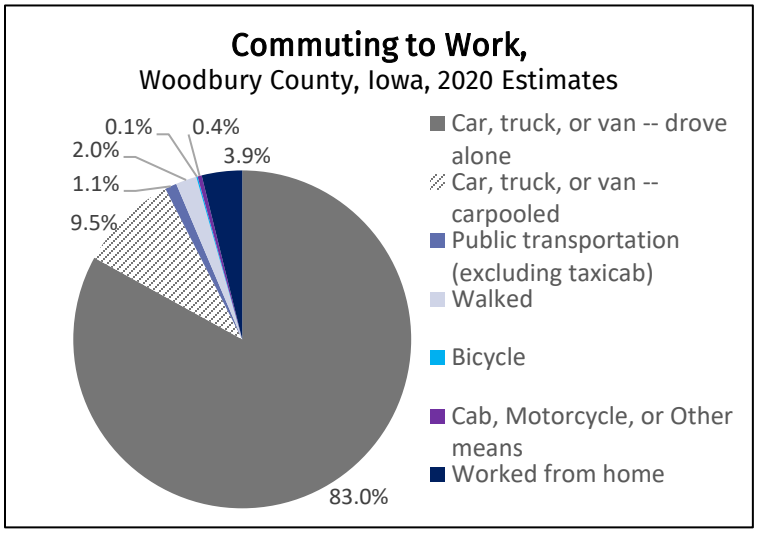


Figure 4.4. U.S. Census Bureau, American Community Survey, 5-year Estimates of 2020.

Trail Network

Many of Woodbury County's rural communities maintain multi-use trails within their respective jurisdictions. In addition, three parks within Woodbury County's Conservation Board network- Brown's Lake Bigelow, Little Sioux, and Snyder Bend parks- contain bicycle paths. Several county parks offer hiking trails as well, including Fowler Forest Preserve, Little Sioux Park, Snyder Bend Park, and Southwood Conservation Area. The Union Bridge Trail, a two mile route connecting Little Sioux Park and the City of Correctionville, was completed in 2007. The trail network within the metropolitan area of Sioux City and Sergeant Bluff is growing increasingly connected, with further expansions planned in the next several years. For example, the Plywood Trail, currently in initial phases of development, will eventually connect the City of Sioux City to the Plymouth County cities of Hinton, Merrill, and Le Mars.

Despite these developments, there is still great demand for expanding and further connecting the county's trail network, especially in rural areas of the county. When asked about the county's weaknesses, 74 of the respondents (17%) identified a lack of transportation options (bike lanes, inter-city trails, carpool lots, transit) to be among the county's top three weaknesses. About 18 survey respondents of Woodbury County identified the addition of biking and hiking trails and other outdoor recreation opportunities as desired improvements in open-ended comments.

Improving infrastructure for alternative transportation and expanding the trail system network is an ongoing effort at the state level, as detailed in the Iowa DOT's Active Transportation Plan. Similar efforts are also taking place within many of the county's communities and has been stated as a priority in many of the towns' comprehensive plans. For example, the City of Anthon's comprehensive plan envisions the extension of the Union Bridge Trail that could connect Anthon, Correctionville, and Oto on the west side of the county. Projects such as these have the potential to increase the percentage of residents using alternative forms of transportation and to improve the quality of life for rural residents where there is an identified lack of recreational opportunities.

Railroad

Many tons of products make their way to, from, and through Woodbury County by way of a network of railroad lines converging in Sioux City. Commodities shipped on Iowa's rail network include farm products, food, chemicals, and coal. Rail operations are vital to the success of the agricultural economy, connecting the products and commodities produced in Woodbury County to regional and national markets. Railroads are essential, however they can sometimes present safety hazards for drivers and other road users. While collisions between trains and roadway users are infrequent in Woodbury County, with only three train-involved crashes between 2017 and 2021, the addition of rail crossing signals, signs, rumble strips, and crossing gates can improve the safety of at-grade railroad intersections.

Dakota and Iowa Railroad (DAIR): operates between Dell Rapids, South Dakota and Sioux City, via a connection with BNSF rail at Elk Point, South Dakota. Annual gross tons per mile: 3.0-4.99 million.

Burlington Northern Santa Fe Railway Co. (BNSF): Operates one route travelling northwest of Sioux City through South Dakota, a route southwest of Sioux City heading south through Nebraska, and a route north of Sioux City through Minnesota. Annual gross tons per mile: 20.0-39.99 million.

Chicago Central and Pacific Railroad (CC): Owned by the Canadian National Railway (CN). Operates a route between Sioux City and Chicago. This route heads north of Sioux City before traveling east across the state. Annual gross tons per mile: 3.0-4.99 million.

Union Pacific Railroad (UP): Routes heading north and south connect Sioux City with Minneapolis and Omaha. Annual gross tons per mile: 10.0-19.99 million.

Air

The Sioux Gateway, or Brigadier General Bud Day Field Airport is located about seven miles southwest of Sioux City and east of Sergeant Bluff. This airport is a commercial service facility offering direct daily service to Denver, Colorado and Chicago, Illinois. United Express is currently the sole commercial airline at this facility. Connections to other destinations both domestic and international are available through the United network. Typically, about 45,000 passengers fly from this airport annually on average. However, service was greatly reduced due to COVID-19 disruption in 2020 and 2021, as was the case across the country.

In addition to commercial flights, the Sioux Gateway Airport is also used for roughly 10,000 general aviation operation flights, and between 3,000 and 5,000 military flights annually. The

185th Air Refueling Wing, an Air National Guard unit based at the Sioux Gateway Airport, consists of nearly 900 members. Members range from traditional guardsmen to full-time military personnel, air technicians, and state contract employees. This unit is ready for deployment during national emergencies, providing aid during such disasters as Iowa flooding events and the aftermath of Hurricane Katrina. They also provide vital support to international missions of the U.S. Air Force by refueling aircraft with their fleet of KC-135 refueling tankers.

A new flight school is currently set to be established at the Sioux Gateway Airport site by the end of 2022. This program will be a partnership between Oracle Aviation LLC and Morningside University to offer a Bachelor of Science degree in aviation-related fields. New facilities for training, instruction, and administrative offices as well as hangar space and site improvements are planned developments for this project.

Water

Marine Highway M-29 was designated in 2013 as a U.S. Maritime Administration Marine Highway Route between Sioux City and Marine Highway M-70 beginning in Kansas City, Missouri. This route is intended to connect shippers in the Sioux City region to larger eastern routes and markets via the downstream confluence with the Mississippi River. The purpose of the marine highway system is to reduce the volume of surface freight and rail transportation, to relieve subsequent congestion and reduce the wear and tear on highway infrastructure. It is also thought that marine transportation provides an opportunity to increase the fuel efficiency of freight transportation while strengthening supply chains. Despite this designation, Sioux City does not contain a major marine port, and unfavorable river conditions between low water levels and flooding have preempted the majority of waterway freight traffic in recent years. Although barge freight has been hindered by river conditions in the recent past, the marine highway designation does make facilities along the route eligible for federal funds to improve or expand port infrastructure. The further development of barge freight is a future possibility for the region. Information from the Iowa DOT about several private barge facilities on the Missouri River is provided below.

Ag Processing, Inc.:
- Rail Car Storage Capacity: 250 cars
- Barges Worked Capacity: 1
- Barges Stored Capacity: 3
- Dry Storage Facilities: 3.5 million bushels
- Liquid Storage Facilities: 36 million pounds
- Major Commodities Handled: soybeans, soybean products, biodiesel

Big Soo Terminal: Tegra Corporation
- Rail Car Storage Capacity: 75 cars
- Barges Worked Capacity: 2 Barges
- Stored Capacity: 12
- Dry Storage Facilities: 120,000 tons
- Liquid Storage Facilities: 22,000 tons
- Major Commodities Handled: Dry bulk fertilizer, grain, soybean meal and oil, steel, lumber, road salt, molasses, feed stuffs, and wind energy components with heavy lifts

Jebro, Inc.: Asphalt and petroleum products

Koch Nitrogen Co. LLC:

Rail Car Storage Capacity: 55 cars
Barges Worked Capacity: 1
Barges Stored Capacity: 3
Dry Storage Facilities: 20,000 tons
Liquid Storage Facilities: 20,000 tons
20 acre lay down yard
Major Commodities Handled: Anhydrous ammonia, urea, urea ammonium, and nitrate solution

SRTPA Long Range Transportation Plan

The Long Range Transportation Plan for the Siouxland Regional Transportation Planning Association (SRTPA) synthesizes demographic, economic, passenger, and freight forecasts and analyzes how these trends will interact with expected land use to impact demands on the transportation system. This document, updated every five years with a 20 year planning horizon, can serve as a reference for Woodbury County in transportation decisions, to ensure alignment between regional- and county- level goals, projects, and policies.
This document is also developed with the input of constituent cities and counties. Providing this input to the SRTPA during the development of the LRTP will help to advance Woodbury County's goals and objectives in coordination with regional priorities.

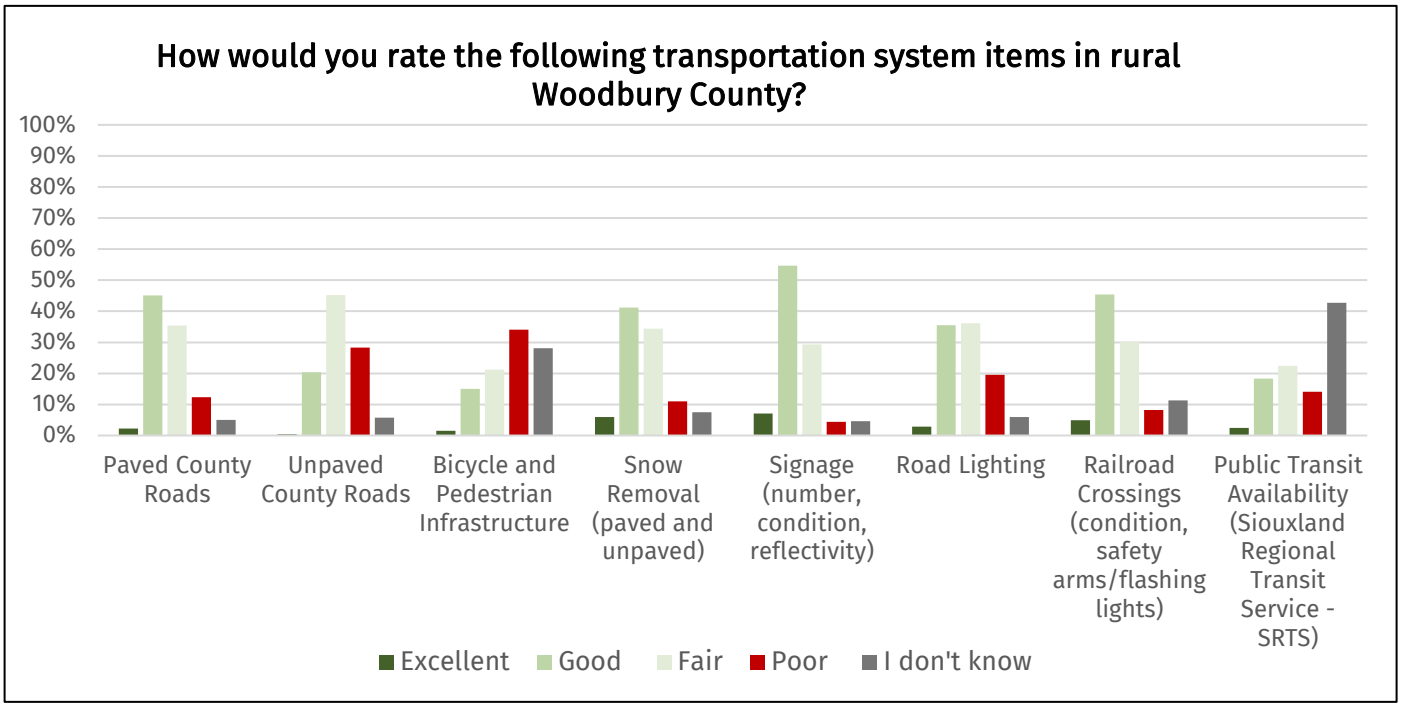
Survey Results Synopsis

Unpaved county roads were rated as "poor" by 129 survey respondents (28%), and the upkeep of rural roads was also identified as an area of concern in open-ended comments by about 21 survey participants. Bicycle and pedestrian infrastructure was rated "poor" by about 154 respondents (34%). When asked about the county's weaknesses, 74 of the respondents (17%) identified a lack of transportation options (bike lanes, inter-city trails, carpool lots, transit) as one of the top three weaknesses, while 40 of the respondents (9%) identified a lack of connectivity in the transportation system as one of the top three weaknesses.

When asked about which issues would be the most important in the next 20 years, transportation (roads, sidewalks, trails- new and/or continuing maintenance) was identified by 33 respondents (7%) as an area that should be prioritized.

Aspects of the transportation system that were more often rated as "good" or "excellent" were paved county roads (47% "good" or "excellent"), snow removal (47% "good" or "excellent"), roadway signage (62% "good" or "excellent"), and railroad crossings (50% "good" or "excellent").

Figure 4.5.



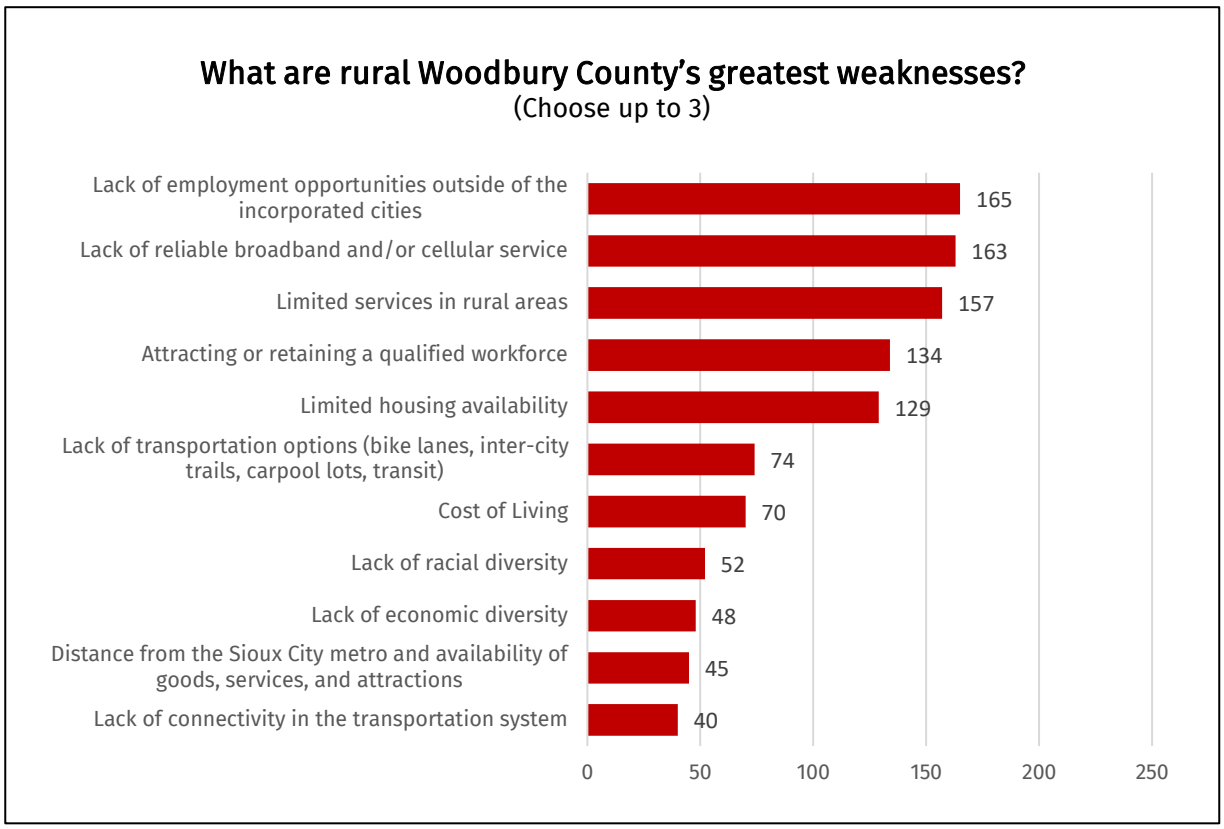


Figure 4.6. Other weaknesses from open-ended comments: Poor upkeep of rural roads (9) and infrastructure (3), Lack of recreational options (1) and walking/biking lanes (1). Roads are rough and dangerous.

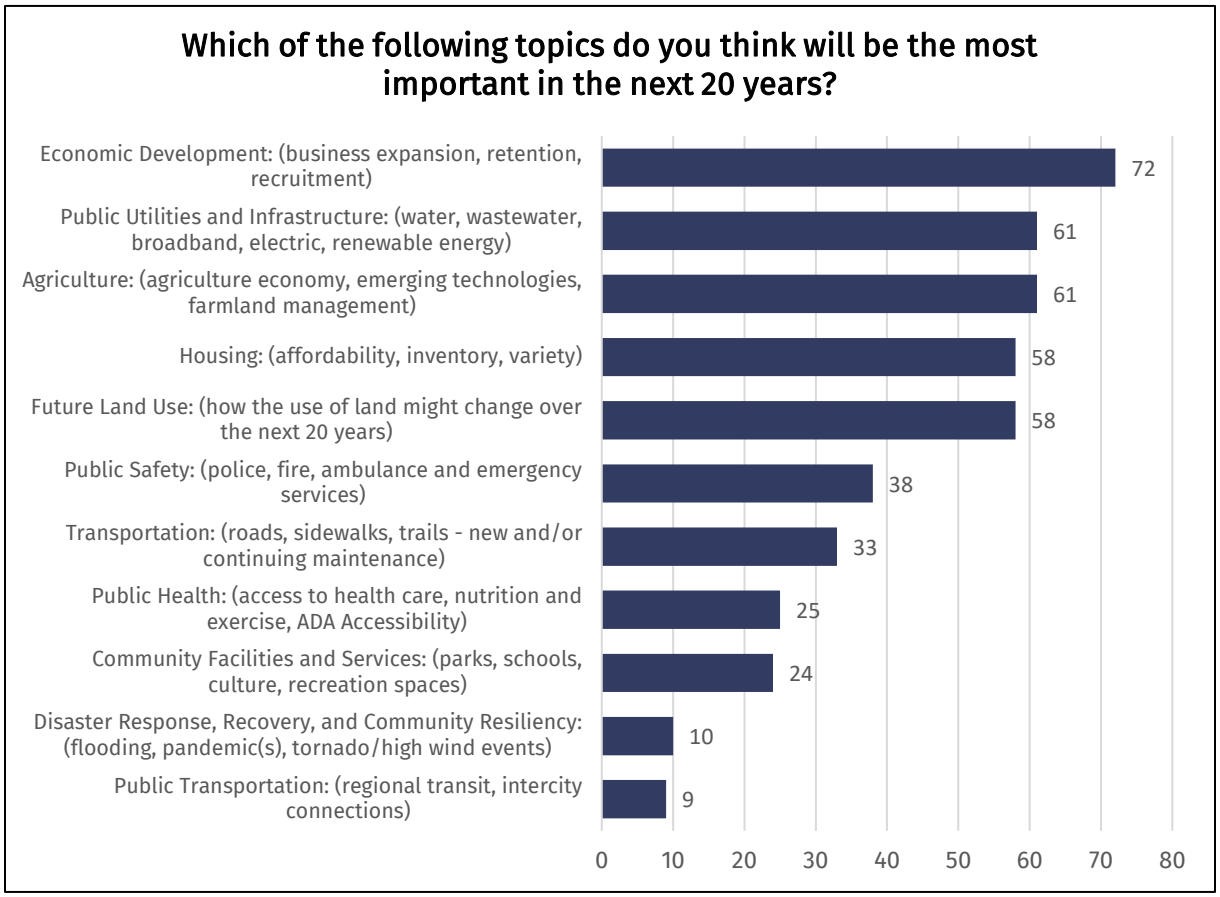


Figure 4.7. Open-ended comments related to transportation: Desired assets: More public services (Transportation (6), Recreation opportunities (8), Bike trails (3), Hiking trails.)
Identified needs: Unpaved road improvements (11), Need for more bike trails (2), Keep bikes off busy roads (2).

Goals & Objectives

Safety

- ***Goal:*** **Prioritize user safety across all transportation modes in Woodbury County.**
    - Continually seek to improve safety for all transportation users.
    - Continue to rehabilitate or replace poorly-rated bridges.
    - Continue to work with Iowa DOT and the public to identify areas of the state and county highway system in need of maintenance or resurfacing.
    - Work with municipal and state jurisdictions to address sources of frequent traffic incidents.
    - Provide safety-enhancing infrastructure dedicated to bicyclists and pedestrians to reduce conflicts between these users and vehicles.
    - Seek funding for railroad crossing safety improvements.
    - Incorprate principles of the Federal Highway Administration's Safe System Approach into roadway design to reduce crash frequency and severity.
    - Support safety improvements to Sioux Gateway Airport facilities to maintain adequate, essential air services to the region.

Accessibility

- ***Goal:*** **Ensure equitable access to Woodbury County's transportation system for all residents.**
    - Promote the Siouxland Regional Transit System throughout the county, making information available in Spanish and other frequently-spoken languages.
    - Consider the needs of all transportation users, especially those who have mobility limitations due to physical, intellectual, or developmental disability; age; income; or language barriers.
    - Support the use of alternative modes of transportation with the installation of infrastructure such as bicycle facilities, sidewalks, trails, and greenways.

Environment

- ***Goal:*** **Mitigate the environmental impacts of transportation projects while proactively seeking opportunities for long-term transportation sustainability investments.**
    - Take advantage of federal and state funding to expand infrastructure for electric vehicles throughout the county, including rural areas.
    - Preserve scenic views, open space, and historic or cultural features along the Loess Hills National Scenic Byway.
    - Refer to the Environmental Mitigation Activities of the SRTPA Long Range Transportation Plan before and throughout all transportation planning and development activities.
    - Collaborate with the Woodbury County Conservation Board, Iowa Department of Natural Resources, Iowa Environmental Protection Agency, and other environmental stewardship organizations to determine the potential consequences of transportation projects to water, air, habitat, land use, cultural and historical resources, other natural resources, and residents' health. Care should be taken to avoid or minimize negative impacts.
    - Work with the Siouxland Regional Transit System to promote public and shared transit opportunities to employers, such as vanpooling.
    - Partner with municipalities to develop carpooling lots where residents can leave vechicles during work hours.

- *Goal:* **Expand the network of multi-use trails in Woodbury County.**
    - Collaborate with the Woodbury County Conservation Board to maintain and expand the County trail system.
    - Strive to make regional trail connections between the trail systems of County and municipal parks.
    - Align County trail plans with the vision, goals, strategies, and recommendations of the Iowa Department of Transportation's Bicycle and Pedestrian Long Range Plan.

Economy

- *Goal:* **Maintain the quality and efficiency of high priority roadways, railways, water, and air services that are essential to the regional economy.**
    - Prioritize higher-volume roadways and those that are used to transport goods, such as farm to market routes, roadways along industrial and commercial corridors, and roadways connecting to intermodal facilities for rehabilitation and repair.
    - Encourage projects that increase efficiency, minimize congestion, and reduce energy expenditure.
    - Consider life cycle costs in decision-making, taking into account the cost of maintaining new infrastructure in the long-term.
    - Where possible, prioritize improvement of existing systems over expansion of new infrastructure.
    - Support the maintenance and expansion of commercial airline service in Sioux Gateway Airport.
    - Support the establishment of additional barge terminals on the Missouri River where river conditions allow.
    - Support efficient development of commercial and industrial operations in the Southbridge Interchange region.

Chapter 4: Public Infrastructure and Utilities

Section	Contents
Iowa Smart Planning	Public Infrastructure and Utilities Element
Energy	Electricity, natural gas, and renewable energy
Drinking Water	Public water systems and wells
Wastewater	Wastewater management
Telecommunications	Cellphone and broadband service
Waste Management	Solid waste management and recycling
Pipelines	Planning considerations for pipelines
Survey Results Synopsis	Public Comment
Goals and Objectives	Goals and objectives

Iowa Smart Planning Principles

The Iowa Smart Planning document states the following in regard to public infrastructure and utilities:

> **Public Infrastructure and Utilities Element:** Objectives, policies, and programs to guide future development of sanitary sewer service, storm water management, water supply, solid waste disposal, wastewater treatment technologies, recycling facilities, and telecommunications facilities. The comprehensive plan or land development regulations may include estimates regarding future demand for such utility services.
>
> **Clean, Renewable, and Efficient Energy principle**: Planning, zoning, development, and resource management should be undertaken to promote clean and renewable energy use and increased energy efficiency.

Energy

Electricity and Natural Gas

MidAmerican Energy is Woodbury County's centralized supplier of electricity and natural gas. This utility company generates the electrical power delivered to residents from a mixture of coal, natural gas, wind, and nuclear or other sources. The company operates two major coal-powered generating plants, the George Neal North and South facilities, located south of Sergeant Bluff and west of Salix.

Woodbury County Rural Electric Cooperative (REC), headquartered in Moville, is the other major supplier of electricity in the county, providing service to 3500 farms, homes, and businesses in unincorporated rural areas. Woodbury County REC sources power from hydroelectric facilities on the Missouri River operated by the Western Area Power Administration, as well as coal from mines in North Dakota and Wyoming. The coal is then burned in plants operated by the Basin Electric Power Cooperative in North Dakota. Although this utility's energy mix does not include renewable sources, customers can voluntarily contribute to the development of wind energy production by paying a fee in support of the Prairie Winds green energy program.

Both energy suppliers offer a variety of resources to enhance energy savings for residential and commercial customers. MidAmerican Energy offers rebates for appliance recycling, the installation of new high-efficiency heating and cooling units, programmable thermostats, and has several available tools for energy auditing and efficiency assessment. Woodbury County REC also offers a variety of rebates for the installation of new efficient appliances, as well as free residential and commercial on-site energy assessments. During these assessments, customers are given advice about how to increase energy efficiency using weatherization and insulating materials.

Renewable Energy

There are currently no wind facilities located in Woodbury County, and many residents have been vocally opposed to these developments due to the impact wind facilities would have on the county's rural landscape.

At the same time, there is a great deal of federal support for shifting the energy source of the electric grid away from carbon-based fuels in favor of renewable options such as wind and solar. Due to a variety of federal and state financing programs, tax incentives, and funding opportunities, the network of wind turbines is growing throughout the country, state, and region. Tax credits are also incentivizing the installation of solar voltaic energy systems on private property. With these considerations, it is likely that the county could see demand from landowners for renewable energy developments in the future, as these facilities could present an economic opportunity for farmers and other landowners.

While wind turbines are largely unpopular in Woodbury County, renewable energy technologies are changing rapidly. The method of energy production and aesthetic form of wind and solar technologies are likely to continue developing over the next 20 years. With further development such technologies could become more appealing and less intrusive to residents. Supporting the development of diverse energy sources and planning ahead for regulations around these facilities will put the county in a position to embrace those that are appealing to residents and beneficial to the economy.

Electric Vehicle Infrastructure

Currently, there are no public electric vehicle charging stations located in rural Woodbury County, however there are five in Sioux City and one in Sergeant Bluff. The Federal Highway Administration has designated a network of alternative fuel corridors where the required maximum distance between public charging stations is 50 miles to ensure that electric vehicle owners have reliable access to stations across the country. In Iowa, portions of Interstate 80 are designated "ready corridors" and other sections of this interstate are in development to achieve the required charging station density. Interstate 29 in Woodbury County has been identified as a "pending corridor" that will be developed as a designated alternative fuel corridor soon.

Due to the length of time it takes to charge an electric vehicle versus refueling with gasoline, electric vehicle charging stations represent an economic development opportunity for small towns and rural areas that are a significant distance from designated alternative fuel corridors. Having these stations will allow electric vehicle owners access to areas off the designated network, and vehicle owners that must wait for their vehicle to charge are likely to tour the town they stopped in and patronize local restaurants and businesses. Lastly, electric vehicles, while prohibitively expensive for most residents at current costs, are projected to become less

expensive over time as competition amongst manufacturing companies increases and production scales. According to the International Council on Clean Transportation, it is expected that electric and crossover vehicles will achieve cost parity with conventional vehicles before 2030 (ICCT.org). With this in mind, it would be prudent to anticipate the adoption of this technology and proactively expand the rural network of electric vehicle charging stations.

Drinking Water

In incorporated towns within the county, municipal facilities provide treated drinking water, while a variety of establishments such as industrial campuses and golf courses treat drinking water on site. There are 30 public water systems in Woodbury County which are detailed in Chapter 4 of the Appendix.

Drinking water for residents of Woodbury County is sourced from groundwater aquifers. While cities supply treated water to residents in their jurisdiction, residents and businesses not served by one of these public water supplies rely on private well systems for drinking water and are responsible for monitoring their well systems to ensure the water quality meets standards for drinking. The level of susceptibility to contamination varies depending on the underlying geology, hydrology, and depth of the source aquifer. Common contaminants range from naturally occurring heavy metals and pathogens, to agriculture-related pesticides, fertilizer run-off, and human or animal waste. The presence of coliform bacteria can indicate contamination from a septic tank, lagoon, or animal feedlot.

The Siouxland District Health Department provides permits for new well construction, reconstruction, and well plugging for those no longer in use. They also direct residents to the Iowa Department of Natural Resources (IDNR) for information about well construction requirements, maintenance, and how often well water should be tested to ensure the source is free from harmful contaminants. The Grants to Counties Water Well Program directs funding from the Iowa Department of Public Health's Bureau of Environmental Health Services to the Siouxland District Health Department, allowing them to provide free well water sampling and analysis for residents. The IDNR provides a database of Certified Well Contractors for well owners in need of water system reconstruction, rehabilitation, renovation, and repair. This certification is required by law to ensure that all well work is performed by a qualified professional.

Wastewater

In Woodbury County, there are six impaired rivers: the Missouri, Perry Creek, Floyd River, West Fork of the Little Sioux River, Little Sioux River, and the Maple River. In addition, Snyder Bend Lake and Browns Lake are listed as impaired water bodies by the IDNR. The protection of surface water quality is not only important for the health of aquatic ecosystems, but also ensures that the county's rivers and streams continue to provide opportunities for outdoor recreation such as boating, fishing, hunting, and wildlife watching. Human health is an important consideration in supporting clean rivers and streams as well. In some areas, ground water drinking sources are quickly recharged by surface waters, so contamination introduced into the river system heavily influences drinking water quality.

Sanitary Systems

Treating wastewater properly before it enters waterways can help to safeguard the ecological health of Woodbury County's rivers and streams. Like rural drinking water provision, sanitary sewer services are provided by municipalities for residents living in the incorporated cities of the county. Sanitary sewers collect household, commercial, and industrial waste that is then treated to standards established by the EPA before releasing this water into the river system.

In unincorporated, rural areas of the county, residents maintain their own onsite wastewater systems, such as septic tanks or lagoons. The Siouxland District Health Department is responsible for permitting the construction of new septic systems and conducting inspections that ensure the system meets state requirements. All new septic systems and those getting rebuilt or modified must undergo a pre-installation site inspection, as well as a post-construction inspection. Upon sale of a property served by a private septic system, the system must undergo a Time of Transfer inspection to ensure the presence of a functioning secondary treatment method.

Stormwater Management

Improving water quality also requires the mitigation of contaminants and sediments that can be picked up by rainwater and carried into waterways via natural pathways, called nonpoint source pollution, and via storm sewer discharge. Nonpoint source pollution can be mitigated with the use of a constellation of strategies such as eliminating excessive use of road salt, building buffers between waterways and agricultural operations, using cover crops to prevent soil erosion, construction site management, and green infrastructure installations.

Each municipality is responsible for storm sewers that drain water from roads and other impermeable surfaces within the city limits. In unincorporated Woodbury County, the Secondary Roads department manages storm water outside of city jurisdictions by engineering elements such as roadside ditches and culverts into road and bridge design that prevent roadway flooding. While these flood prevention elements are crucial components of stormwater management, limiting nonpoint source pollution from stormwater requires collaboration between many departments to implement interdisciplinary mitigation strategies.

Telecommunications

Broadband Service

Reliable access to the internet has become a necessity for full participation in the economy, to further one's education, access public services, find information, and for basic health and safety considerations. According to Connected Nation Iowa's Broadband Map (2022), about 97.3% of Woodbury County households have access to the minimum speed that meets the Federal Communications Commission's definition of broadband, 25 mbps for download/3 mbps for upload, by means of any technology (fiber, cable, DSL, etc.). Over 1,000 Woodbury County households do not have reliable access to broadband. With many such residents living in remote areas without rapid access to medical facilities and other basic services, broadband availability and reliability is all the more vital for these households. Broadband services bridge physical distance, allowing these households to contact care in the case of emergencies, to access telehealth services, or to order household supplies.

Western Iowa Telecom (Wiatel) provides access to phone, internet, and cable services for most of central and eastern Woodbury County, while Long Lines and Sparklight are the primary

providers of these services for western parts of the county in the vicinity of Sioux City. While several internet service providers operate in rural Woodbury County, slow internet speed was one of the recurring complaints raised by county residents when surveyed about the county's weaknesses, important topics to address in the next 20 years, additional service needs, and when asked for open-ended comments. Despite internet service providers operating in the county, nearly 20% of Woodbury County residents did not have an internet subscription according to the Census Bureau's 2020 American Community Survey. While this is likely due in part to the cost of the service, it could be that households are foregoing a subscription due to insufficient or unreliable service.

With the approval of the Infrastructure Investment and Jobs Act of 2021 that allocates at least $100 million for Iowa broadband improvement, residents can expect to see greater investment in the rural broadband network over the next few years. Broadband expansion will be prioritized based on communities without connection, those lacking a stable or sufficient connection, institutions such as schools and hospitals without service, as well as high-poverty areas. Funding will be invested in assistance programs to offset the cost of internet service for low-income households and multi-family buildings, and broadband data collection, mapping, and planning. This law also increases funding for the USDA's Rural Broadband Program that provides loans to increase internet connectivity specifically in rural areas that are underserved by the current infrastructure.

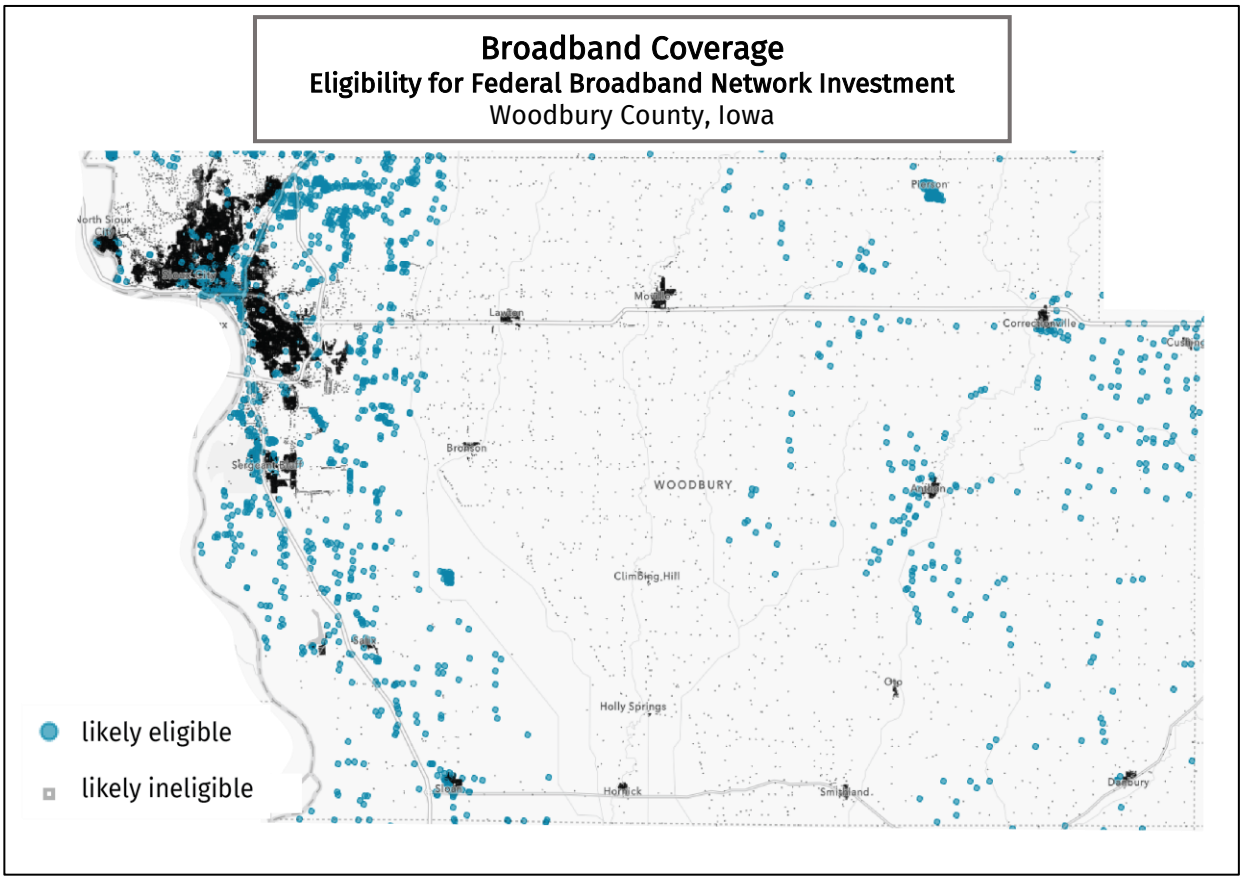


Figure 5.1. Source: State of Iowa's Office of the Chief Information Officer. "Likely eligible": areas reported to have "broadband service below 100 mbps down/20 mbps up. Gray points and clusters of gray appearing black are areas that are "likely ineligible" for broadband improvement funding due to sufficient service.

The map in Figure 5.1, developed by the State of Iowa's Office of the Chief Information Officer, displays broadband coverage across the county. This data will be used to facilitate decisions regarding what communities will be eligible for federal investment toward improvement of the broadband network across the state. The areas with blue points deemed "likely eligible" are areas reported to have "broadband service below 100 mbps down/20 mbps up (including satellite, mobile wireless, and fixed wireless) with no disqualifying prior state or federal incentive". Gray points and clusters of gray points appearing black are areas that are "likely ineligible" for broadband improvement funding due to sufficient service.

Cell Phone Service

Another frequently raised issue from public input was the lack of quality cellphone service in rural Woodbury County. While many major cellphone service providers, such as Verizon, AT&T, and T-Mobile, serve areas of the county, cell towers tend to be located in cities or along major roadways. Some unincorporated areas are close enough to cities to be within service range of one or more towers, however other areas are too distant to benefit from a reliable phone signal. There is a need for more reliable coverage between rural towns in Woodbury County for the safety of residents.

Waste Management

Each incorporated town contracts with private waste hauling companies to serve residents and businesses, while residents of unincorporated areas outside of municipal service areas coordinate waste hauling independently.

Woodbury County's Area Solid Waste Agency is responsible for operating the Woodbury County Transfer Station located at 2210 Ida Avenue in Moville. The County currently contracts with Gill Hauling for the operation of this site, serving the communities of Anthon, Bronson, Correctionville, Cushing, Danbury, Lawton, Moville, Oto, Pierson, Salix, Sergeant Bluff, Sloan, and Unincorporated Woodbury County. Solid waste from the Woodbury County Solid Waste Planning Area is consolidated and processed at this transfer station facility before getting distributed to landfill sites for final disposal. In addition to solid waste, this site accepts recyclable materials including household appliances, electronic waste, cardboard, metal, glass, paper, plastic, and scrap metal. The recyclable items are processed further by four individual companies that specialize in specific materials. Information on these recycling companies, as well as annual tonnage data from the Woodbury County Transfer Station can be found in Chapter 4 of the Appendix.

The City of Sioux City operates a recycling facility called the Citizen's Convenience Center where residents can properly dispose of materials that would not fit or would not be accepted in their curbside bin. For example, this site accepts yard waste, construction debris, scrap metal, furniture and other bulky items, appliances, and tires for a small fee to help offset recycling costs. Residents can dispose of household hazardous wastes such as paint, lawn chemicals, oil, cleaners, and solvents. The facility also operates the Swap Shop where residents can pick-up or drop-off reusable household materials free of charge.

Each county is required to create a comprehensive solid waste reduction plan in coordination with the waste management district serving the area. The Woodbury County Area Solid Waste Agency's plan reports on annual tonnage, public survey results, and outlines goals and objectives for the future. There are three main goal areas for the county: development of funding for recycling, increasing the availability of public education regarding waste management, and working to coordinate resources to improve recycling access in rural areas. While this document is useful for understanding the general goals of the agency, the inclusion of additional information, such as state-mandated waste reduction targets and historical trends in recycling volumes would give the public a more complete snapshot of specific waste management goal. Describing potential challenges facing the achievement of waste reduction goals in this plan would also help the public understand what resources and actions are needed to overcome them.

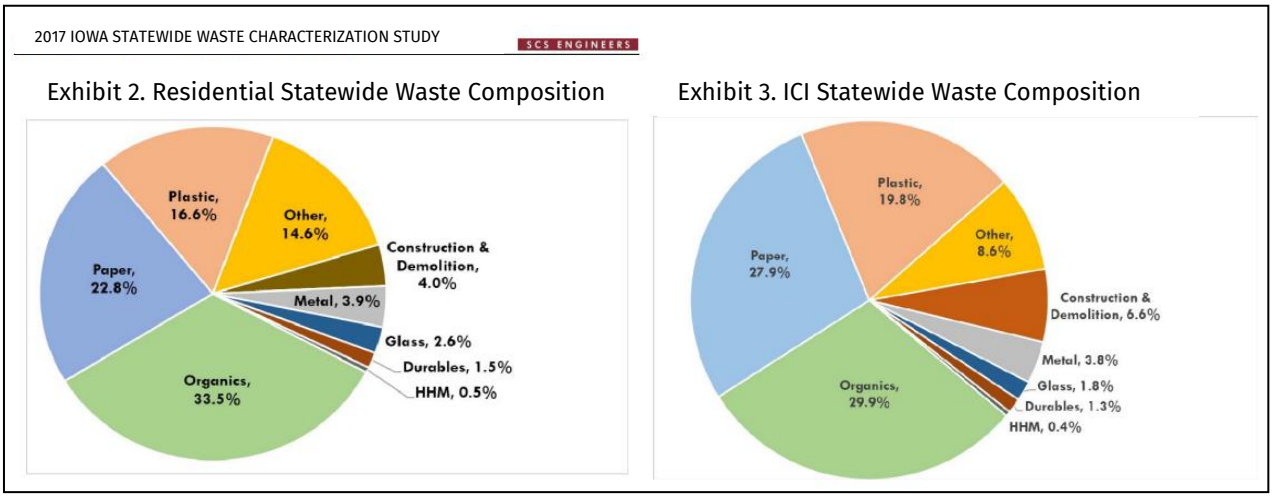


Figure 5.2. Charts describing statewide waste composition from Iowa DNR's 2017 Waste Characterization Study.

The Iowa Department of Natural Resources releases a waste characterization study every five years, analyzing the composition of solid waste heading to landfills from residences and commercial, institutional, and industrial operations throughout the state. Figures from the most recent complete report are included below, illustrating this composition. This information could be factored into goal setting and when considering the creation or expansion of services and programs. The state of Iowa also administers an alternative voluntary waste management program called the Iowa Solid Waste Environmental Management System (EMS), which emphasizes environmental best practices and continuous improvement. If a waste agency's application is accepted, the agency is designated as an EMS and staff receive specialized training and consultation with the DNR.

Although it is difficult to engage the public on waste management, it would be valuable to increase the amount of publicly-available information and data on the county's website. This could also be a platform for expanded public communication and to share the importance of waste management services and reduction strategies. Partnership with employers, institutions, and organizations to gather more input from rural residents about gaps in waste management services would supply the planning process with a more robust dataset.

Pipelines

Throughout the United States, pipelines carry a wide variety of materials, fuels, and byproducts in an underground network beneath the landscape. Most of these pipelines are owned by private entities and all are regulated by federal requirements. The map below shows the 207 miles of gas transmission and hazardous liquid pipelines in Woodbury County under the jurisdiction of the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA). In addition, the map shows the location of past pipeline accidents (for liquid pipelines) or incidents (for gas pipelines) that have occurred.

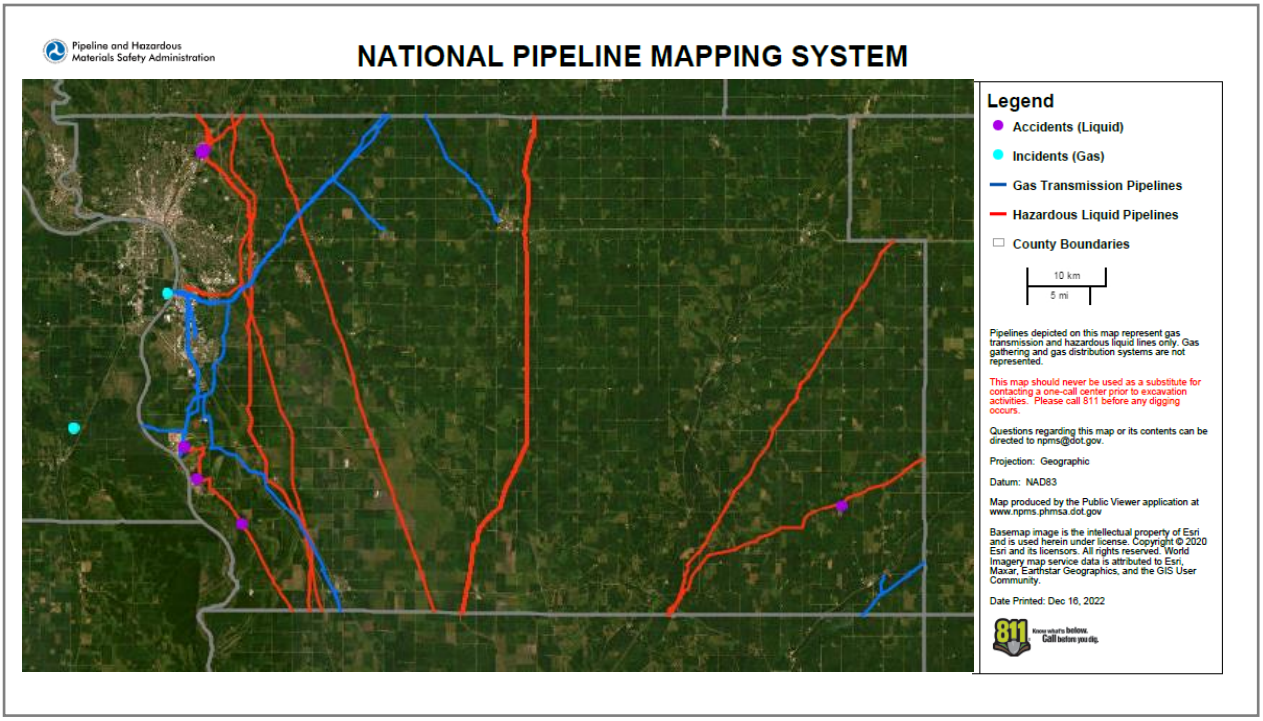


Figure 5.3. Pipeline and Hazardous Materials Safety Administration, 2022.

While underground pipelines are numerous across the country and not unique to Woodbury County, it is important for residents to have ample opportunity to learn about pipeline projects and provide their input and potential concerns about these facilities. Furthermore, when considering new pipeline projects, county officials should take into account and advocate for the health and safety of residents and protection of natural resources essential for health. The location of pipelines should be carefully planned to maximize safety and minimize health impacts in the event that an accident or spill occurs. Additional caution should be practiced when considering hazardous or toxic substances.

Survey Results Synopsis

When asked to rate various utilities and public infrastructure components, residents responding to the public input survey rated electricity, garbage collection, phone (land line), sanitary sewer system, storm water system, and water system the most positively. Residents frequently responded "I don't know" in regards to the sanitary and stormwater systems and water system, most likely due to these functions taking place out of sight, especially when utilizing a municipal system. The utilities that were most consistently rated as "poor" or "fair" were broadband/internet (63% poor or fair), cellular phone service (55% poor or fair), and recycling (39% poor or fair).

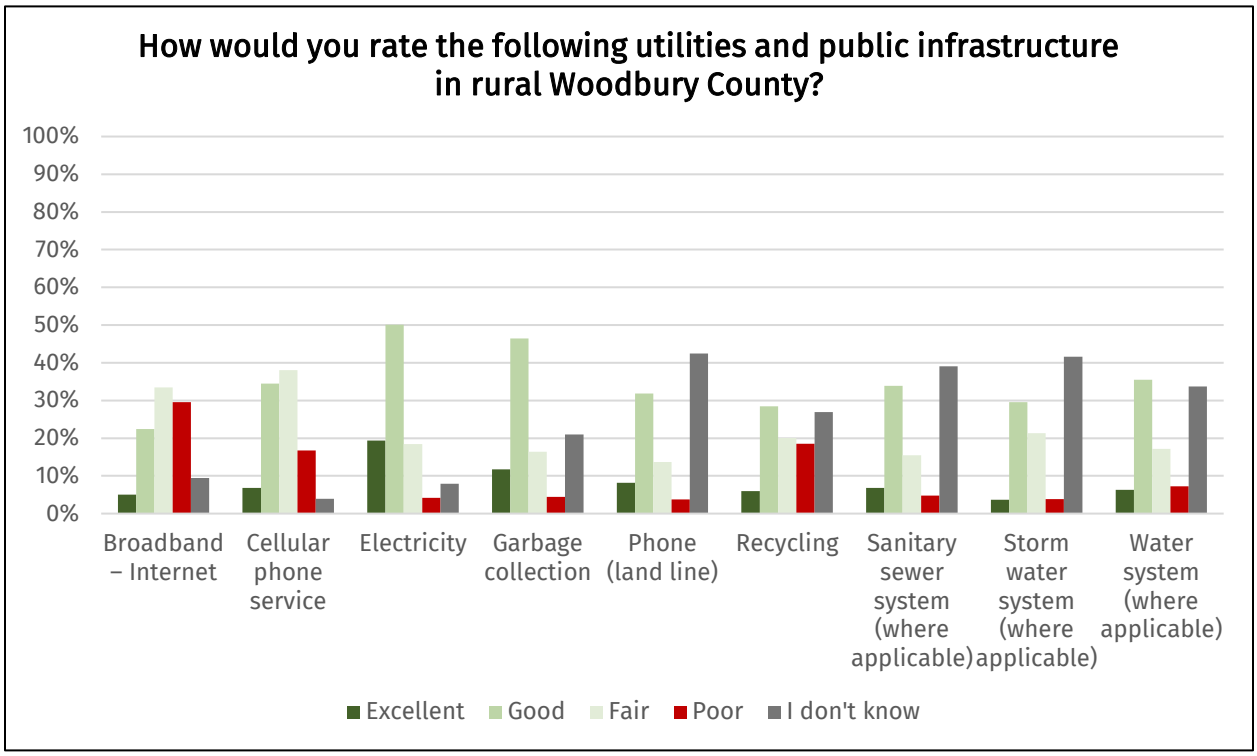


Figure 5.4.

When asked to choose Woodbury County's top weaknesses, "lack of reliable broadband and/or cellular service" was the second-most frequently chosen issue. This issue was also frequently reflected in several open-ended comments throughout the survey, most notably in response to the question "What types of businesses or services would you like to have in Woodbury County?".

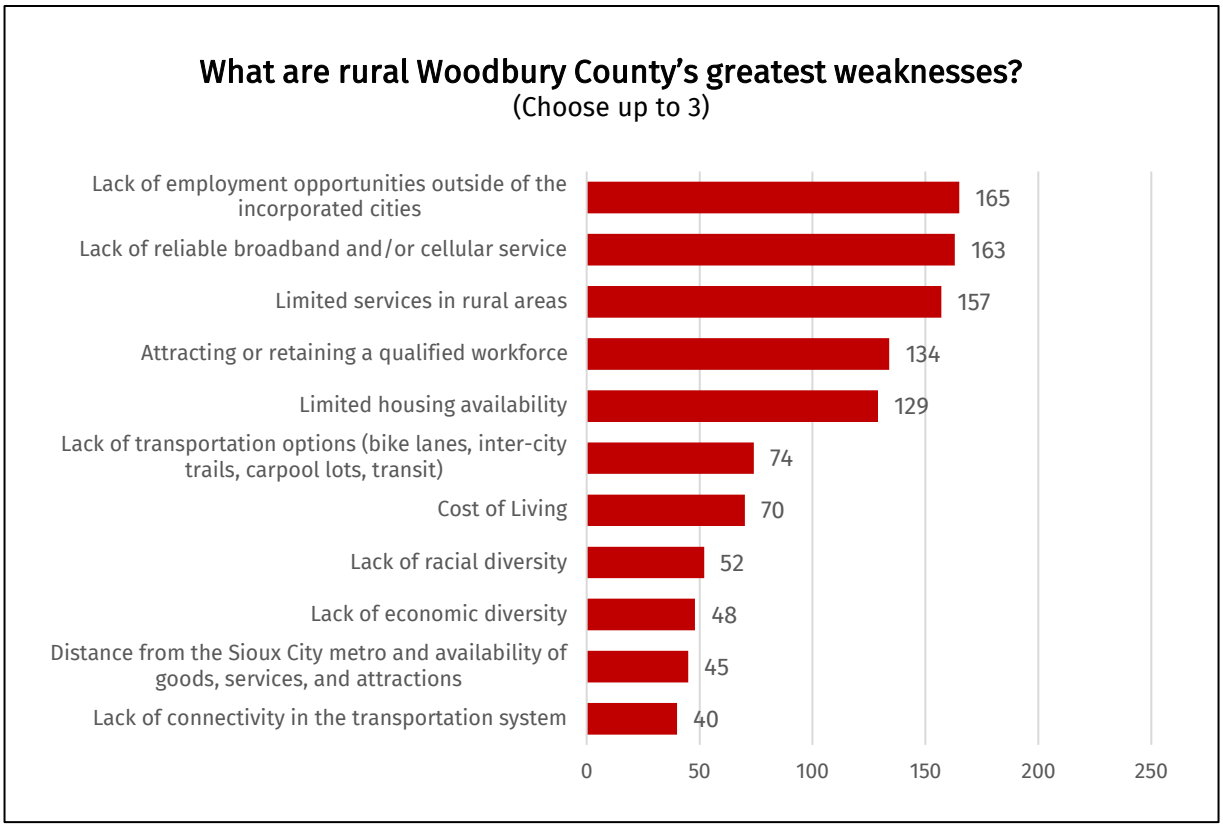


Figure 5.5. Weaknesses identified in open-ended comments: Lack of reliable cell service (2) and broadband, Lack of rural water.

A great deal of interest in the county's utilities and infrastructure was expressed by residents overall. When asked what general topics will be the most important in the next 20 years, residents ranked "Public Utilities and Infrastructure: (water, wastewater, broadband, electric, renewable energy)" in second place, tied with agricultural considerations. In addition to the broadband issues, concerns about water service and water quality were expressed in several comments; in particular, pollution from agricultural and animal operations.

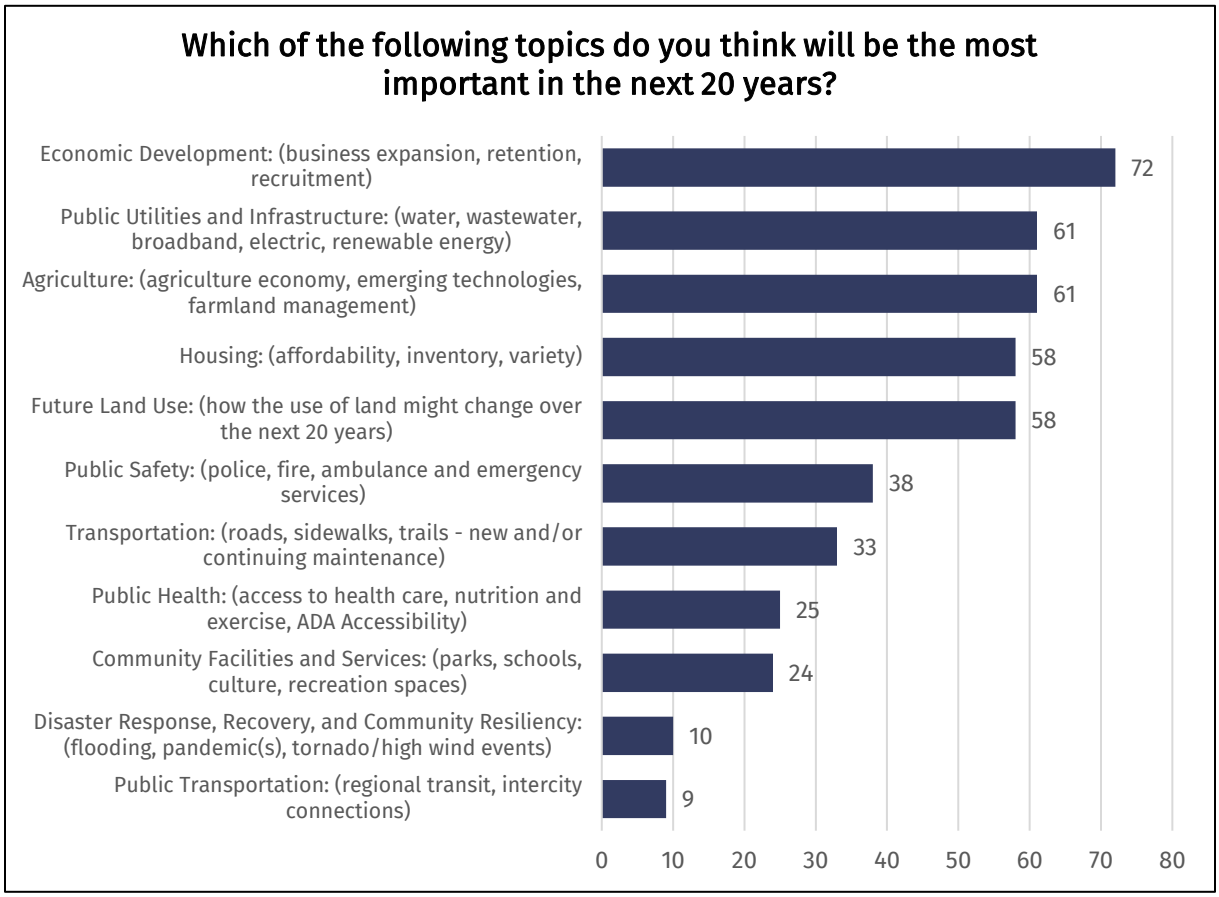


Figure 5.6. Desires identified in open-ended comments: Improved internet (11) and cell service (3), Protection of water & air quality from hog, poultry, and dairy operations, Address litter.

Goals & Objectives

Communication

- ***Goal:*** **Expand upon publicly available information on the Woodbury County website.**
  - Electronically publish up-to-date planning documents, meeting information, and maps for all county departments.
  - Share County data in a downloadable, practical format.

Energy

- ***Goal:*** **Encourage energy efficiency for residential, commercial, and industrial consumers in Woodbury County.**
  - Bring awareness to energy efficiency incentive and assessment programs available through MidAmerican Energy and Woodbury County REC.

- ***Goal:*** **Support technological advances in energy production.**
  - Work with energy providers to diversify and expand energy sources.

Water and Sewer

- ***Goal:*** **Ensure safe drinking water for all rural Woodbury County residents.**

    - Provide educational materials about the importance of regular well inspections and bring awareness to free well inspections offered by the County.
    - Maintain compliance with state and federal standards for community water systems.
- *Goal:* Protect ground and surface water from contamination.
    - Seal and regularly inspect wellheads that are no longer in use.
    - Provide resources and information to rural residents about septic system maintenance.
    - Provide information to realtors about the time of transfer process for septic system inspection when selling properties.
    - Connect farmers and ranchers with technical assistance and resources for preventing fertilizer and animal waste runoff.
    - Encourage the use of green infrastructure for stormwater management where water carrying concentrated contaminants is likely to be intercepted.
    - Align County Conservation Board actions with the goals and strategies outlined in Iowa's Nonpoint Source Management Plan and collaborate with the Iowa Department of Natural Resources to mitigate nonpoint source water pollution.

- *Goal:* Encourage practices that increase water efficiency amongst County residents, commercial establishments, institutions, and municipal utilities.
    - Encourage the use of strategies and best practices outlined in the Iowa Association of Municipal Utilities' efficiency planning and conservation workbook, WaterWise.
    - Adopt water saving practices in County buildings.

Broadband and Cellular Service

- *Goal:* Improve internet access for rural Woodbury County residents.
    - Take advantage of federal and state sources of funding to improve broadband infrastructure in rural areas.
- *Goal:* Expand cellular service in rural Woodbury County.
    - Coordinate with telecommunications companies to address areas of the County where cellular service is poor.

Waste Management

- *Goal:* Promote waste reduction and recycling practices.
    - Encourage and educate on innovative initiatives such as community composting, yard waste disposal, institution-level waste reduction plans (government, schools, festivals, event spaces), and repurposing/repairing/borrowing/trading used items.
    - Reduce and enforce illegal dumping in rural Woodbury County.
    - Provide education on handling and disposal of trees and brush.
    - Coordinate across jurisdictions to address waste management gaps identified in the 2020 Municipal Solid Waste (MSW) Satisfaction Survey that was distributed

in development of the Woodbury County Area Solid Waste Agency's Comprehensive Plan.
    - Participate in the State of Iowa's Solid Waste Environmental Management Systems (EMS) program.
    - Coordinate across regional jurisdictions to improve access to recycling services in rural areas.
    - Implement and encourage the utilization of programs and best practices provided by the Iowa Department of Natural Resources' Financial and Business Assistance (FABA) department.
    - Consider results of the Iowa Statewide Waste Characterization Study in goal setting and when planning the creation or expansion of waste management services and programs.

Electric Vehicles

- *Goal:* Expand the network of public electric vehicle charging stations to rural Woodbury County.
    - Continue work with other local, regional, and state leaders to develop an electric vehicle infrastructure plan.
    - Apply for federal and state funding sources set aside for rural electric vehicle infrastructure.

Chapter 5: Community Facilities and Services

Section	Contents
Iowa Smart Planning	Community Facilities Element
Government Buildings	City Hall/Community Center, Post Office
Parks and Recreation	Parks and Recreation
Educational Services	Library, K-12 Schools, Higher Education
Public Safety	Police, Fire Rescue, Ambulance
Health and Social Services	Social Services, Hospitals and Clinics, Wellness
Events and Culture	Events and Culture
Survey Results Synopsis	Public Comment
Goals and Objectives	Goals and objectives

The focus of this chapter is to identify the existing community facilities, public safety, social services, parks, and recreational amenities available to residents of Woodbury County and within the fourteen rural Woodbury County communities. After providing an inventory of these services, this chapter will detail the goals and objectives for future planning as it relates to Woodbury County's community facilities. These goals and objectives were created with input from County residents who expressed their thoughts on what they cherish about their community, as well as their concerns, unmet needs, and ideas for future development.

Iowa Smart Planning Principles

The Iowa Smart Planning document states the following about community facilities and services:

> **Community Facilities Element:** Objectives, policies, and programs to assist future development of educational facilities, cemeteries, health care facilities, childcare facilities, law enforcement and fire protection facilities, libraries, and other governmental facilities that are necessary or desirable to meet the projected needs of the municipality.
>
> **Community Character Element:** Objectives, policies, and programs to identify characteristics and qualities that make the municipality unique and that are important to the municipality's heritage and quality of life.

Government Buildings

Woodbury County Courthouse

The Woodbury County Courthouse is the headquarters for the county's governing body, the Board of Supervisors. The Board of Supervisors is comprised of five elected officials, with an administrative staff consisting of a Finance/Operation Controller, Board Administrative Coordinator and an Executive Secretary/Public Bidder. Public board meetings are held each Tuesday in the basement of the Sioux City Courthouse at 4:30 PM. The courthouse is also home to many of the County's administrative offices and countywide service departments.
The courthouse building itself is a unique historical asset for the County.

Added to the National Register of Historic Places in 1973, the Woodbury County Courthouse was designed by local architect William Steele in partnership with George Elmslie and William Purcell. Each of them had worked with Frank Lloyd Wright in the past and designed the courthouse to exemplify his famous Prairie School style of architecture. The design focused on the functionality and practicality of the interior spaces, considering how employees and members of the public would interact with each office and facility within the building, rather than prioritizing a stately exterior. This break from the mold of a classic exterior that reads to the public as a place of government was controversial at the time, drawing criticism for being "unusual," "extreme," and "radical". However, the design was approved by the board of supervisors, and the building completed in 1918. Today, the Woodbury County Courthouse is an architectural treasure that the public can enjoy, through self-guided visits or scheduled tours. The building was added to the National Register of Historic Places in 1973 and is the largest publicly owned building designed in the prairie school style of architecture in the world.

Each of the fourteen rural, incorporated municipalities in Woodbury County operate local government and community facilities unique to their residents' needs, as outlined in Table 6.1.

Government Facility	Anthon	Bronson	Correctionville	Cushing	Danbury	Hornick	Lawton	Moville	Oto	Pierson	Salix	Sergeant Bluff	Sloan	Smithland
City Hall	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Community Center	+		+			+	+	+			+	+	+	
Post Office	+	+	+	+	+	+	+	+	+	+	+	+	+	+
City Maintenance Facility	+		+				+							
Court house	+													
Police Station												+		
Fire Department			+									+		

Table 6.1.

Parks and Recreation

Woodbury County Conservation Board

The Woodbury Conservation Board's Dorothy Pecaut Nature Center, located in Stone State Park, delivers professional environmental education and outdoor recreation programming to the public. Facilities at the nature center include an amphitheater, playground, natural history and ecological exhibits, gardens, and hiking trails. Admission to the center is free, with fees for special events and recreation programs.

In addition to offering education and recreation opportunities via the nature center, the Woodbury County Conservation Board's purpose is to manage the county's "natural resources in an ecologically sound manner; and to conserve and interpret our natural, historic, and cultural resources". To this end, the Conservation Board maintains "four large, developed parks, over 5,000 acres of undeveloped wildlife areas, several day use areas and river accesses". These park areas are distributed throughout the County, most within a short drive of Woodbury's rural towns. Each park offers a unique landscape and recreational opportunities such as biking, boating, swimming, and hiking. Available facilities vary by site, but many provide amenities such as restrooms, picnic areas, and shelters for rent.

Woodbury County Conservation Board Parks																									
	Size (acres)	Restrooms	Drinking water	Parking	Handicap Access	Foot Traffic Only	Shower House	Dump Station	Picnic Area	Boat ramp	Playground	Shelter	Shower House	Wireless Internet	Camping	Cabins	Bicycling	Fishing	Hunting	Shooting Range	Swimming	Paddle Sports	Wildlife Viewing	Hiking Trails	Equestrian Trails
Brown's Lake Bigelow Park	36	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Copeland Park Access	0.36			+														+				+			
Curtin Timber	210			+		+													+				+		
Dixon Access				+														+				+	+		
Flemming Area	90			+		+													+				+		
Fowler Forest Preserve	160	+	+	+		+			+		+	+											+	+	
Inkpaduta Access	2																	+				+			
Little Sioux Park	609	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Meyer Access				+														+				+	+		
Midway Park	20	+		+					+	+								+				+	+		
M.L. "Stub" Gray Shooting Range	629	+		+	+															+					
Oak Ridge Conservation Area	2,082			+		+													+				+		
Oswego Wetland Complex	1,330			+		+													+				+		
Riverside Bluffs	135					+																	+		
Shagbark Hills	379			+		+													+				+		
Snyder Bend Park	35	+	+	+	+		+	+	+	+	+	+		+	+	+	+	+				+	+	+	
Southwood Conservation Area	623	+	+	+	+		+	+	+	+	+		+	+	+	+		+	+			+	+	+	+
Walling Access Area	13			+						+								+	+			+	+		

Table 6.2. Blue plus symbol indicates facilities are accessible for people with disabilities.

Iowa Department of Natural Resources

The Iowa Department of Natural Resources (IDNR) also manages many ecologically important areas throughout Woodbury County. Stone State Park preserves 1,000 acres of bur oak forest and loess prairie, a distinctive habitat that supports dozens of native plant and animal species unique to the Loess Hills. Visitors can explore the park through 15 miles of hiking trails, including six miles of multi-use trails available for mountain biking and horseback riding. Included within Stone State Park is the Mount Talbot State Preserve, a 90-acre area of high-quality prairie with a rich diversity of native species. This preserve is restricted to use by hikers.

IDNR Wildlife Management Areas	
Brown's Lake	Omadi Bend
Dakota Bend	Sioux Bend
Glover's Point	Snyder Bend
IPS Property	Table Marsh
Lakeport	Weedland Access
Luton	Winnebago Bend
Mile Long Island	

Table 6.3.

In addition to Stone State Park, the IDNR also maintains several Wildlife Management Areas throughout the county, listed in Table 6.3. These areas are funded by the sale of hunting and fishing licenses, as well as an excise tax on the sale of hunting and fishing equipment. Therefore, the management goal for these areas is to restore wildlife habitat that provides food and shelter for wildlife species, allowing them to perpetuate their population. Hunting of approved species is seasonally permitted in these areas.

The Loess Hills National Scenic Byway

The Loess Hills National Scenic Byway passes through Woodbury County from the Northwest near Stone State Park, travelling southeast through Smithland, before continuing into Monona County. The loess hills landform is a geological treasure of western Iowa. This formation of rolling hills developed from thousands of years of windblown glacial deposits along the Missouri River at the end of the last ice age. The 60-foot-deep loess soils support a rich diversity of prairies plants and unique wildlife. This route offers views of the Missouri River valley, rolling grass hills, and several scenic excursion loops past sites of historical or cultural significance. Along the route, travelers can also explore outdoor recreation areas and the local attractions of Woodbury County's rural towns.

Inkpaduta Canoe Trail

Beginning in southwestern Minnesota, the Inkpaduta Canoe Trail meanders through Woodbury County from north of Correctionville, down through Smithland, and continuing into Monona County. With consistent access points along the way, this route allows kayakers and canoers to take in the natural beauty of Woodbury County from a unique perspective. Route maps are available from the Iowa Department of Natural Resources.

The Nature Conservancy of Iowa

The Nature Conservancy of Iowa manages a 150-acre tallgrass prairie preserve in Sioux City near Briar Cliff University. As one of the nation's largest prairie preserves located in an urban setting, the Sioux City Prairie provides students from across the region with a hands-on learning opportunity.

City Parks

In addition to these park and recreation amenities throughout the county, each of the fourteen rural towns in Woodbury County contains parks and recreation opportunities within their respective jurisdictions. These are summarized in Table 6.4 below.

City Parks	
Anthon	**Moville**
• O'Neill Park • Stahl Park • Forsling • Lee Schroeder	• The Moville City Park & Main Street Pavilion • Memorial Park and the Memorial • Jack Haskell Swimming Pool • Veterans Park • Midway Park • Ridge Housing Development Park • The Moville Walk & Bike Trail • The Meadows Country Club & Golf Course
Bronson	**Pierson**
• Bronson City Park	• Pierson City Park & Native Plant Area • Jenni Battern Memorial Park
Correctionville	**Salix**
• Copeland Park • Community swimming pool • Trail connection to Little Sioux Park • Downtown pocket park • South side military park • Roadside park on HWY 20 • Correctionville Golf Club • Tennis, pickleball, and basketball courts	• Salix Community Park
Cushing	**Sergeant Bluff**
• Cushing City Park	• Jefferson Park • Jewel Park • Baker Park • Recreation Complex • Kiwanis Park • Indoor Batting Facility • Sergeant Bluff Pool • Splash Pad
Danbury	**Sloan**
• Danbury City Park • Danbury Health & Recreation Center	• City Park • Ray Nordstrom Sports Complex • Splash Pad (future construction)
Hornick	**Smithland**
• Hornick Centennial Park	• Smithland City Park
Lawton	
• Fitness Center • Football Field & Track • Veterans Park • Tara Way Park & Picnic Shelter	

Table 6.4.

Educational Services

Woodbury Public Library

Both formal and informal educational opportunities are available to residents of Woodbury County. The Woodbury Public Library, headquartered in Moville, also operates three branches in Pierson, Hornick, and Danbury. Together these branches serve residents of the Towns of Moville, Hornick, Danbury, Pierson, Climbing Hill, Bronson, Lawton, and Rural Woodbury County. The Woodbury County library system operates several bookmobiles that bring books to schools, day care centers, senior centers, and rural residents for checkout. In addition to books and learning materials, the library provides a source of information to locate community resources, such as senior care facilities, scholarships for students, and drivers' education. Storytime events and summer reading programs are also offered for children.

Woodbury County Conservation Board

The Woodbury County Conservation Board provides professional outdoor & environmental education to residents of all age groups. For school groups, staff at the Dorothy Pecaut Nature Center are available to visit classrooms and to host field trips to the nature center or a county park. They also provide programs for youth groups such a scouts, 4-H, and others to earn badges and complete service projects. In addition, educational and recreational programs that encourage outdoor exploration are available to the public.

Colleges and Universities

In terms of formal education opportunities, there are several colleges and universities that offer degrees and certifications in a wide array of career fields. The following higher education institutions are located in Woodbury County:

- Briar Cliff University, Sioux City
- Iowa State University (ISU) Extension, Sioux City
- Morningside College, Sioux City
- St. Luke's College, Sioux City
- Western Iowa Tech Community College, Sioux City

School Districts

Woodbury County is covered by nine school districts that educate students in grades pre-K through 12. Students in the City of Sioux City are part of the Sioux City Community School District, while those who live in an unincorporated portion on the east side of the county attend the Battle Creek-Ida Grove Community School District. The schools and public libraries are listed below for each of Woodbury County's fourteen rural towns.

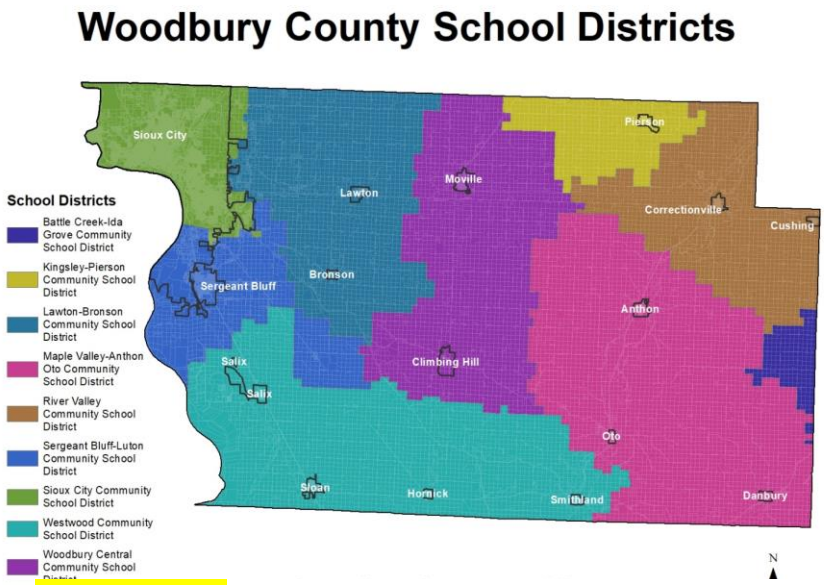


Figure 6.1. Fix map!

Woodbury County's Educational Facilities

Anthon	Bronson	Correctionville
Maple Valley Anthon Oto Community School District ○ MVAO Elementary School- Anthon Building (pre-K -5) ○ MVAO Elementary School- Mapleton Building (pre-K -5) ○ MVAO Middle School (grades 6-8) – located in Mapleton ○ MVAO High School (grades 9-12) – located in Mapleton Hamann Memorial Library	Lawton–Bronson Community School District ○ Lawton-Bronson Elementary (grades pre-K-6) – located in Bronson ○ Lawton-Bronson Jr./Sr. High (grades 7-12) – located in Lawton	River Valley Community School District ○ River Valley Elementary (grades pre-K-5) – located in Washta ○ River Valley Junior High/High School (grades 6-12) – located in Correctionville Correctionville City Library
Cushing	**Danbury**	**Hornick**
River Valley Community School District ○ River Valley Elementary (grades pre-K-5) – located in Washta ○ River Valley Junior High/High School (grades 6-12) – located in Correctionville Cushing Community Library	Maple Valley Anthon Oto Community School District ○ MVAO Elementary School- Anthon Building (pre-K -5) ○ MVAO Elementary School- Mapleton Building (pre-K -5) ○ MVAO Middle School (grades 6-8) – located in Mapleton ○ MVAO High School (grades 9-12) – located in Mapleton Danbury Catholic School Cord Memorial Branch of the Woodbury County Public Library	Westwood Community School District (pre-K – 12) – located in Sloan Hornick Branch of the Woodbury County Public Library
Hornick	**Lawton**	**Moville**
Westwood Community School District (pre-K – 12) – located in Sloan Hornick Branch of the Woodbury County Public Library	Lawton–Bronson Community School District ○ Lawton-Bronson Elementary (grades pre-K-6) – located in Bronson Lawton-Bronson Jr./Sr. High (grades 7-12) – located in Lawton	Woodbury Central Community School (pre-K – 12) – located in Moville Woodbury County Library Headquarters

Oto	Pierson	Salix
Maple Valley Anthon Oto Community School District ○ MVAO Elementary School- Anthon Building (pre-K -5) ○ MVAO Elementary School- Mapleton Building (pre-K -5) ○ MVAO Middle School (grades 6-8) – located in Mapleton ○ MVAO High School (grades 9-12) – located in Mapleton	Kingsley-Pierson Community School District ○ K-P Elementary (grades K-4) – located in Kingsley ○ K-P Middle School (grades 5-8) – located in Pierson ○ K-P High School (grades 9-12) – located in Kingsley Pierson Branch of the Woodbury County Public Library	Westwood Community School District (pre-K – 12) – located in Sloan
Sergeant Bluff	**Sloan**	**Smithland**
Sergeant Bluff-Luton Community School District ○ Sergeant Bluff-Luton Primary School (grades pre-K – 2) – located in Sergeant Bluff ○ Sergeant Bluff-Luton Elementary School (grades 3 – 5) – located in Sergeant Bluff ○ Sergeant Bluff-Luton Middle School (grades 6 – 8) – located in Sergeant Bluff ○ Sergeant Bluff-Luton High School (grades 9 – 12) – located in Sergeant Bluff ○ Sergeant Bluff Public Library	Westwood Community School District (pre-K – 12) – located in Sloan Sloan Public Library	Westwood Community School District (pre-K – 12) – located in Sloan

Table 6.5.

Public Safety

Woodbury County Emergency Services responds to both medical and fire emergencies in all fourteen rural Woodbury County communities when needed. The mission of Woodbury County Emergency Services is, “to protect lives and protect property” and “strive to maintain a strong bond with the emergency responder community and citizens by involving them in education, prevention and protection.”

Woodbury County’s Emergency Management Department works closely with Emergency Services, as well as the governments, law enforcement, organizations, and private entities of Woodbury County to coordinate disaster preparation, response, and recovery planning. This department uses protocols established by the National Incident Management System to standardize operations and response.

The county Sheriff’s Department’s mission is to partner with county residents "to secure and promote safety in our community.” Transparency is deeply valued by this department to maintain the trust of residents. Officers respond to any public emergency, including fires, medical, and public disturbances. They also patrol to enforce traffic and controlled substance laws and investigate vehicle accidents.

Public Safety Services	
Anthon	**Bronson**
Anthon Community Ambulance Service Anthon Fire Department 712-373-5227	Bronson Fire Department 712-948-3535
Correctionville	**Cushing**
Correctionville Fire Department 712-372-4791	Cushing Fire Department 712-384-2781
Danbury	**Hornick**
Danbury Fire Department 712-893-5000 Danbury Ambulance Service 712-893-0031	Hornick Volunteer Fire Department 712-874-3500
Lawton	**Moville**
Lawton Ambulance Lawton Fire & Rescue 712-944-5214	Moville Ambulance Department Moville Fire Department 712-873-3201 Moville Police Department 712-870-1250
Oto	**Pierson**
Oto Community Ambulance Service 712-827-4400	Pierson Fire Department (712) 375-5015
Salix	**Sergeant Bluff**
Salix Fire Department (712) 946-5000	Sergeant Bluff Fire Department 712-943-5000 Sergeant Bluff Police Department 712-943-9603
Sloan	**Smithland**
Sloan Fire and Rescue 712-428-3333	Smithland Fire and Rescue 712-889-2275 Little Sioux Grant Township Fire Department
Woodbury County	
Law Enforcement Center 712-279-6049 Woodbury County Sheriff’s Office 712-279-6010 Woodbury County Emergency Services: fire & EMS operations 712-876-2212	

Table 6.6.

Health & Social Services

Siouxland District Health Department (SDHD)

Siouxland District Health is the public health department for Woodbury County, with the mission to lead “a collaborative effort to build a healthier community through improved access to health services, education and disease prevention." SDHD serves residents with programs

that promote family and community health, environmental health, acute disease epidemiology and preparedness, and chronic disease prevention. The SDHD social service programs accessible to county residents are listed below.

- HOPES program: Healthy Opportunities for Parents to Experience Success. A researched-based home visiting program for families that begins during pregnancy or at the birth of a child and can continue for up to 4 years of the child's age.
- Personal Care Homemaker Program: Provides assistance with household work and errands, to allow people to remain independent in their homes.
- Immunization services
- Hawk-I health care: An insurance program for Iowa children in families with limited incomes.
- The Child Health CARE for KIDS Program: Services to support children and families eligible for Medicaid in accessing preventive health services.
- Maternal Health Program: Support services for pre- and post-natal care.
- Care for Yourself Breast and Cervical Cancer Early Detection Program (IA BCCEDP): Program staff can help schedule clinical breast exams, mammograms, pelvic exams, and Pap tests, and help connect patients with treatment if needed.
- Health Maintenance Program: Home health services for eligible patients with a stable chronic condition.
- I-Smile™ Oral Health Program: To increase the number of children and pregnant women in Iowa with a dental home, this program provides oral screenings, oral hygiene and dental nutritional counseling, and care coordination.
- Siouxland WIC: Serves pregnant, postpartum, and breastfeeding women, infants, and children up to the age of 5. Participants receive an eWiC card for buying healthy foods, access to nurses and dietitians, and referrals for other services as needed.
- Laboratory services: The SDHD laboratory provides water analysis; sexually transmitted disease (STD) examination, treatment, and education; HIV testing and counseling; drug of abuse testing; DNA/paternity test collection; blood lead testing; and pollen counting.

In addition to providing these social services, as part of the Community Health Needs Assessment, the Siouxland District Health Department compiles extensive data on residents' access to preventative healthcare, social determinants of health, quality of life factors contributing to health, and health outcomes. This assessment culminates in the Health Improvement Plan, which outlines a strategic approach to addressing public health issues identified in the community that fall into four categories: mental health care, preventative care, substance misuse, and physical health care. These four factors are important for the general health and wellness of community members. The county should refer to the Health Needs Assessment and Health Improvement Plan for guidance and consider the health and wellness impacts of all county activities, programs, and policies.

Woodbury County Commission of Veteran Affairs

The Woodbury County Commission of Veteran Affairs helps veterans and their legal dependents access veteran's benefits and provides temporary assistance with basic living needs.

Iowa Department of Human Services (IDHS)

Woodbury County's IDHS department is in Sioux City and provides services for all county residents. Services include assistance with cash, childcare, food, and job training; refugee

services; child welfare services; abuse safety and protection services; medical insurance programs; state supplementary assistance; and mental health and disability services.

Rolling Hills Community Services Region

Iowa's Mental Health and Disability Service (MHDS) regional system allows adults across the state access to quality care no matter where they live. Woodbury County is a part of the Rolling Hills Community Services Region, which provides access to outpatient counseling, psychiatry, and psychology; transitional housing and support programs; outreach programs; and substance abuse, crisis, and integrated health services.

Siouxland Mental Health Center

The Siouxland Mental Health Center is a nonprofit community health center serving all residents of Woodbury County. They operate four facilities throughout Sioux City, and one office in Moville. Services include therapy, psychiatry, emergency services, community support programs, case management, and intensive psychiatric rehabilitation.

Health and social services are available in some of Woodbury's rural towns as well. These are listed in Table 6.7 below.

Health and Social Services
in Woodbury County's Incorporated Towns

Anthon	Correctionville
• MercyOne Anthon Family Medicine • Mills Pharmacy	• MercyOne Correctionville Family Medicine • Correctionville Specialty Care Nursing Home
Lawton	**Sloan**
• Lawton Senior Living	• Burgess Family Clinic
Moville	**Sergeant Bluff**

• Community Basket Food Pantry
• Medical providers:
  ○ MercyOne Moville Family Medicine
  ○ Moville Family Dentistry
  ○ Vision Care Clinic
  ○ CNOS Physical Therapy Office
  ○ Senior Center / American Legion
  ○ Lewis Drug
  ○ Linden Chiropractic Office
• Moville Senior Center
	• The Sergeant Bluff Helping Hands Food Pantry
	• City of Sergeant Bluff Senior Center
	• Medical Services:
	  ○ Sergeant Bluff Family Medicine UnityPoint Clinic
	  ○ WEL-Home Health Sergeant Bluff
	• Assisted Living Facilities:
	  ○ Floyd Place Assisted/Senior Living
	  ○ Embassy Health Care Community
	• Skilled Care:
	  ○ Pioneer Valley Living & Rehab
	• Senior Housing:
	  ○ Maupin Pines

Table 6.7.

Events and Culture

Woodbury County Fair

The Woodbury County Fair takes place each summer at the County Fairgrounds in Moville to celebrate the region's agriculture and bring neighbors together. The family friendly events and activities include fairground rides, rodeos, demolition derbies, food vendors, and 4-H events.

Each of the county's rural towns are unique in their cultural institutions, events, and community character. Below, in Table 6.8, is a list of each town's community spaces, organizations, and events.

Events & Cultural Organizations in Woodbury County's Incorporated Towns	
Anthon	**Moville**

• American Legion
• Big Band Dances at the Community Center
• Hamman Memorial Library
• The Woodbury County Freedom Rock
• Veteran's Memorial Wall
• Churches:
  ○ Church of Christ
  ○ Anthon United Methodist Church
  ○ St. Joseph's Catholic Church
  ○ Trinity Lutheran Church
	• American Legion
	• Moville Chamber of Commerce Events (eg Easter Egg Hunt, Moville Days, The Chamber Golf Tournament, Halloween Trick-or Treat Night, A Christmas Celebration)
	• Churches:
	  ○ New Hope Church
	  ○ Moville United Methodist Church
	  ○ Trinity Lutheran Church
	  ○ Immaculate Conception Church

Bronson	**Oto**

• Bronson City Park, Ball Fields & Shelter House
• 4th of July Celebration
• Churches:
  ○ Elliott Creek Presbyterian Church
	• American Legion
	• City Festivals & Events (eg Oto Days pie-baking contest, City Carnival)
	• Churches:
	  ○ United Church of Christ

Correctionville	**Pierson**

• American Legion
• Veterans of Foreign Wars
• The Correctionville Public Library
• Correctionville Museum in the historic Merchants State Bank building
• The George A Bailey and Mary Tinkel House (AKA The Bailey Mansion), a building on the National Historic Register
• Correctionville Chamber of Commerce (numerous activities for business growth & promotion)
• Correctionville Betterment Group: events and local celebrations including 4th of July fireworks, Easter Egg Hunt, and Christmas events
• Churches:
  ○ Church of Christ
  ○ Grace Lutheran
  ○ Grace United Methodist
	• American Legion
	• Old School Bell Memorial
	• Veterans War Memorial
	• 4 Angels Memorial
	• Pierson Golf Association
	• Pierson Annual Community Events (eg Easter Egg Hunt, Santa Days, Veterans Day Program, Memorial Day Program, Golf Tournaments, Little League Ball Games, Golfstock Music Festival, annual John Mahoney Car Show)
	• Churches:
	  ○ Pierson United Methodist Church

Cushing	**Salix**

• American Legion
• Churches:
  ○ First United Methodist Church
  ○ Saint John's Lutheran Church
	• Churches:
	  ○ Salix Community United Methodist Church
	  ○ St. Joseph Catholic Church

Danbury	**Sergeant Bluff**
• American Legion/Senior Center • Danbury Library	• American Legion • American Legion Memorial

• Danbury Health & Rec Center
• Churches:
  ○ St. Mary's Rectory
  ○ United Methodist Church
	• Sergeant Bluff Community Development Corporation
	• Sergeant Bluff Community Action Team events & public safety initiatives
	• Annual Pioneer Valley Days Festival
	• Annual Winter Festival
	• Sergeant Bluff Historical Society & Museum
	• Churches:
	  ○ Community United Methodist Church
	  ○ Friendship Community Church
	  ○ New Life Lutheran Church
	  ○ Shepherd of Peace Lutheran Church

Hornick	**Sloan**

• Hindman-Steele American Legion Post
• Hornick Depot Museum
• Event venues: Hornick Town Hall and Legion Hall
• Churches:
  ○ United Methodist Church
	• American Legion
	• Sloan Golf Course
	• Sloan Museum
	• Churches:
	  ○ Evangelical Covenant Church
	  ○ Skien Lutheran Church
	  ○ Community Church of Christ

Lawton	**Smithland**

• American Legion
• FAMILY Group (Fathers And Mothers Interested in LB Youth)
• Churches:
  ○ Community Presbyterian Church
  ○ Bethel Lutheran Church
	• American Legion
	• Smithland Museum and Log Cabin
	• Churches:
	  ○ United Methodist Church

Table 6.8.

Survey Results Synopsis

In terms of community facilities and services, about a quarter of survey participants identified the county's public safety services (police, fire, and emergency medical services) as one of its greatest assets. Other responses that survey participants chose as the county's greatest assets were the abundance and access to open space and public lands (21%), the public education system (17%), recreational opportunities (16%), and historic character, culture, and amenities (12%).

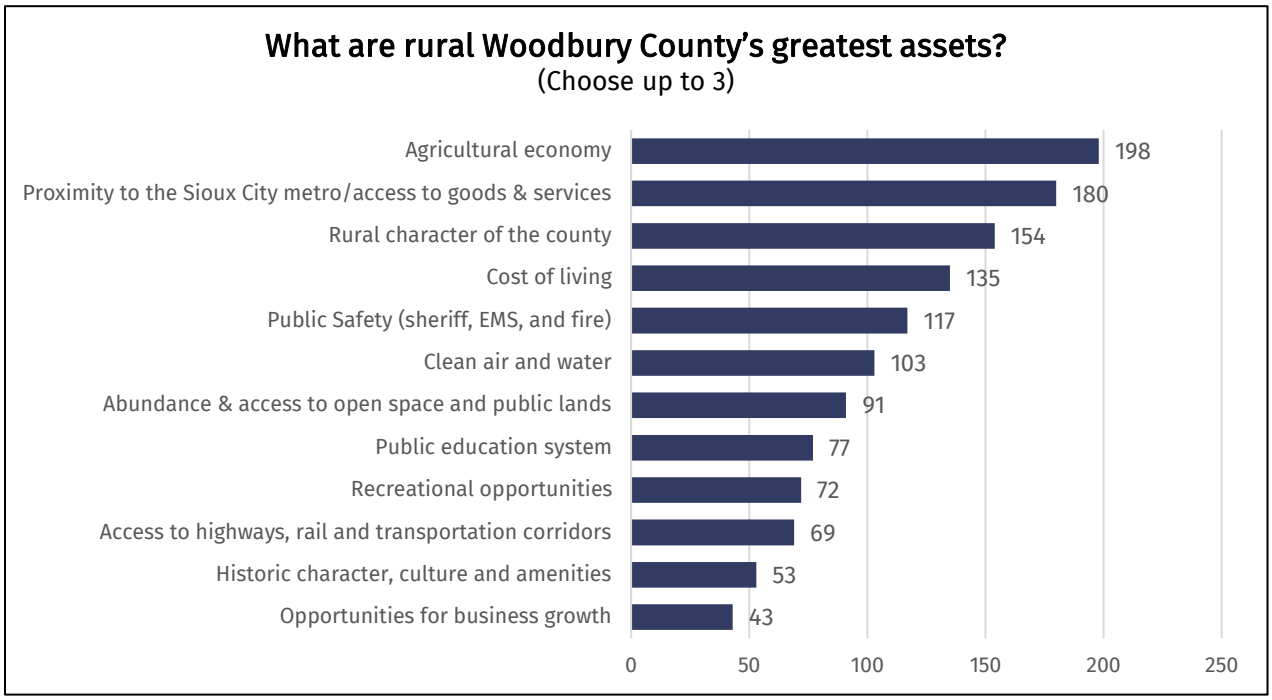


Figure 6.2.

Over one third of survey respondents chose "limited services in rural areas" as one of Woodbury County's top weaknesses (Figure 6.3). As shown in Figure 6.4, when asked to rank various county facilities and services qualitatively on a scale from excellent to poor, the most highly ranked were the county fairgrounds (73% excellent or good), conservation areas and parks (71%), fire and sheriff's departments (70%), educational facilities (67%), city parks (62%), county campgrounds (60%), public libraries (59%), and EMS services (57%). Those ranked the least favorably were museums and cultural resources (36% excellent or good), public health services (46% excellent or good), county campgrounds and shelters (48% excellent or good), county trails (48% excellent or good), and county fishing and other outdoor sport offerings (51% excellent or good).

About 35 open-ended comments described a desire for more recreational opportunities in the County that are suitable for kids and the whole family. Suggestions included more parks, biking and hiking trails, fishing areas, pools, water parks, a nature center, a shooting range, and more festivals. In addition, many respondents expressed a need for emergency health and medical care facilities in rural areas to provide quick access to urgent care services.

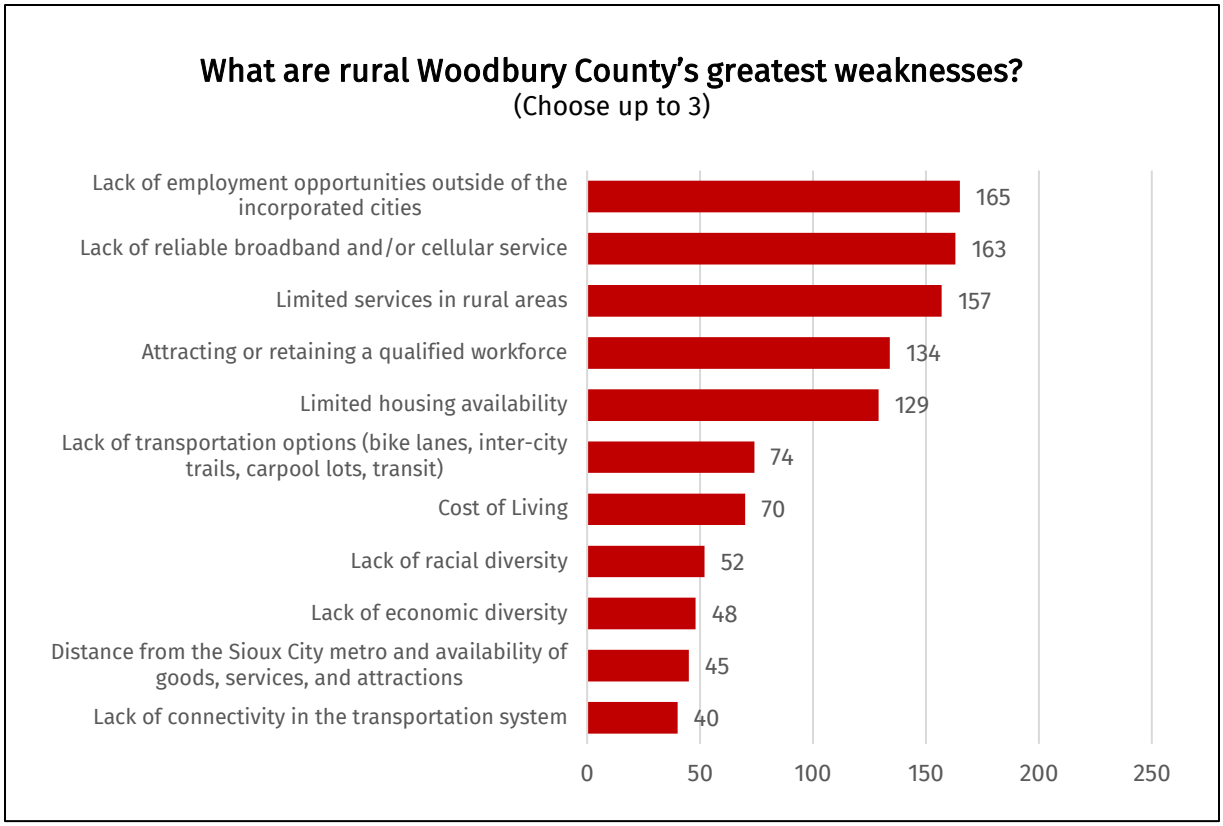


Figure 6.3.

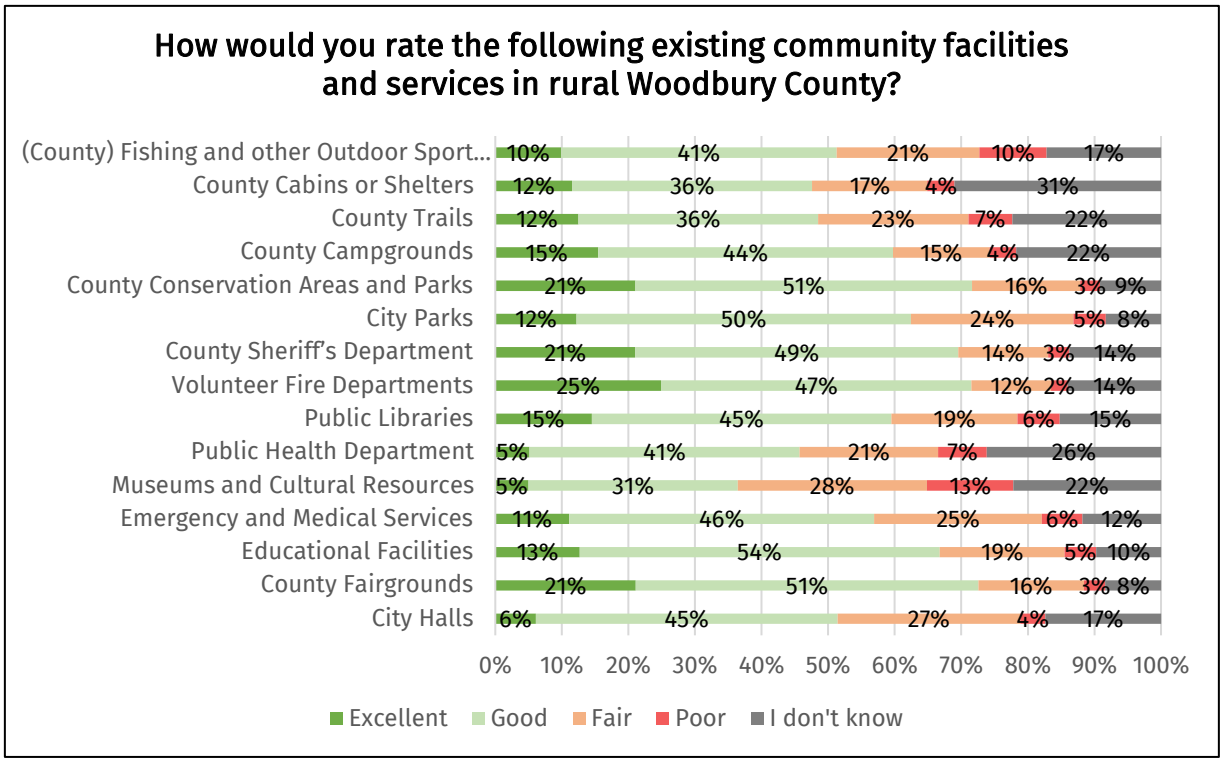


Figure 6.4.

Goals & Objectives

Health Services

- ***Goal:*** **Expand access to health services throughout rural Woodbury County.**
    - Work with the Siouxland District Health Department to expand access to preventative health care services in rural communities.
    - Continue to market the services of the Siouxland District Health Department widely across rural Woodbury County.
    - Evaluate emergency medical response times and outcomes for rural residents to identify how these services can be improved.
    - Continue partnering with the Rolling Hills Community Services Region for mental health, disabilities, and crisis care services.
    - Refer to the Siouxland District Health Department's Health Needs Assessment and Health Improvement Plan for guidance.

Parks & Recreation | Events & Culture

- ***Goal:*** **Provide more opportunities for outdoor recreation activities.**
    - Maintain the current activities of the Woodbury County Conservation Board and support the expansion of their programming and scope of work.
    - Improve the functionality and visibility of county-owned river access points.
    - Prioritize water quality and river restoration initiatives.
    - Pursue opportunities to develop water trails throughout the County.
    - Develop a countywide trail program connecting communities with one another and the County park network.
    - Evaluate the condition and availability of county-owned cabins and park shelters.

- ***Goal:*** **Increase access to family-friendly activities and cultural opportunities in rural Woodbury County.**
    - Encourage cooperation and resource sharing between nearby towns to create and expand upon parks and recreation opportunities for rural residents.
    - Expand community education opportunities for residents of rural Woodbury County that celebrate the region's historical, cultural, and natural resources.

Service Quality

- ***Goal:*** **Strive to offer the most efficient, cost-effective, and user-friendly community services as possible.**
    - Improve digital operations to maximize accessibility, and the availability of public information and data.
    - Streamline service delivery and operations.

- ***Goal:*** **Provide adequate police, fire, and emergency management services for all Woodbury County residents.**
    - Maintain cooperative agreements (28E) for emergency and public safety services.
    - Encourage frequent training opportunities for all emergency service providers.
    - Ensure adequate funding for emergency response activities.

Chapter 6: Land Use & Natural Resources

The Land Use and Natural Resources chapter provides an inventory of land use regulations and natural resources in Woodbury County. This chapter was developed with consideration of the information referenced in this plan, the 2005 Woodbury County Comprehensive Development Plan, and existing zoning and land use resources provided by Woodbury County.

Section	*Contents*
Iowa Smart Planning	Land Use; Agricultural and Natural Resources Elements
Zoning	Current zoning map & zoning ordinance summary
Land Use	Current and future land use maps
Agriculture	Sustainable agriculture
Natural Resources	Smart growth and invasive species
Water Resources	Groundwater and surface water quality
Soils	Soil classification
Air Quality	Air quality and monitoring
Renewable Energy Infrastructure	Renewable energy infrastructure planning
Survey Results Synopsis	Public Comment
Goals and Objectives	Goals and objectives

Iowa Smart Planning Principles

The Iowa Smart Planning document states the following about land use and natural resources:

> **Land Use Element:** Objectives, information, and programs that identify current land uses within the municipality and that guide the future development and redevelopment of property, consistent with the municipality's characteristics identified under the Issues and Opportunities Element. The comprehensive plan or land development regulations may include information on the amount, type, intensity, and density of existing land use, trends in the market price of land used for specific purposes, and plans for future land use throughout the municipality. The comprehensive plan or land development regulations may identify and include information on property that has the possibility for redevelopment, a map of existing and potential land use and land use conflicts, information and maps relating to the current and future provision of utilities within the municipality, information and maps that identify the current and future boundaries for areas reserved for soil conservation, water supply conservation, flood control, and surface water drainage and removal. Information provided under this paragraph may also include an analysis of the current and potential impacts on local watersheds and air quality.
>
> **Agricultural and Natural Resources Element:** Objectives, policies, and programs addressing preservation and protection of agricultural and natural resources.
>
> **Natural Resources and Agricultural Protection Principle:**
> Planning, zoning, development, and resource management should emphasize protection, preservation, and restoration of natural resources, agricultural land, and cultural and historic landscapes, and should increase the availability of open spaces and recreational facilities.

Revitalization Principle: Planning, zoning, development, and resource management should facilitate the revitalization of established town centers and neighborhoods by promoting development that conserves land, protects historic resources, promotes pedestrian accessibility, and integrates different uses of property. Remediation and reuse of existing sites, structures, and infrastructure is preferred over new construction in undeveloped areas.

Sustainable Design Principle: Planning, zoning, development, and resource management should promote developments, buildings, and infrastructure that utilize sustainable design and construction standards and conserve natural resources by reducing waste and pollution through efficient use of land, energy, water, air, and materials.

Current Zoning Map

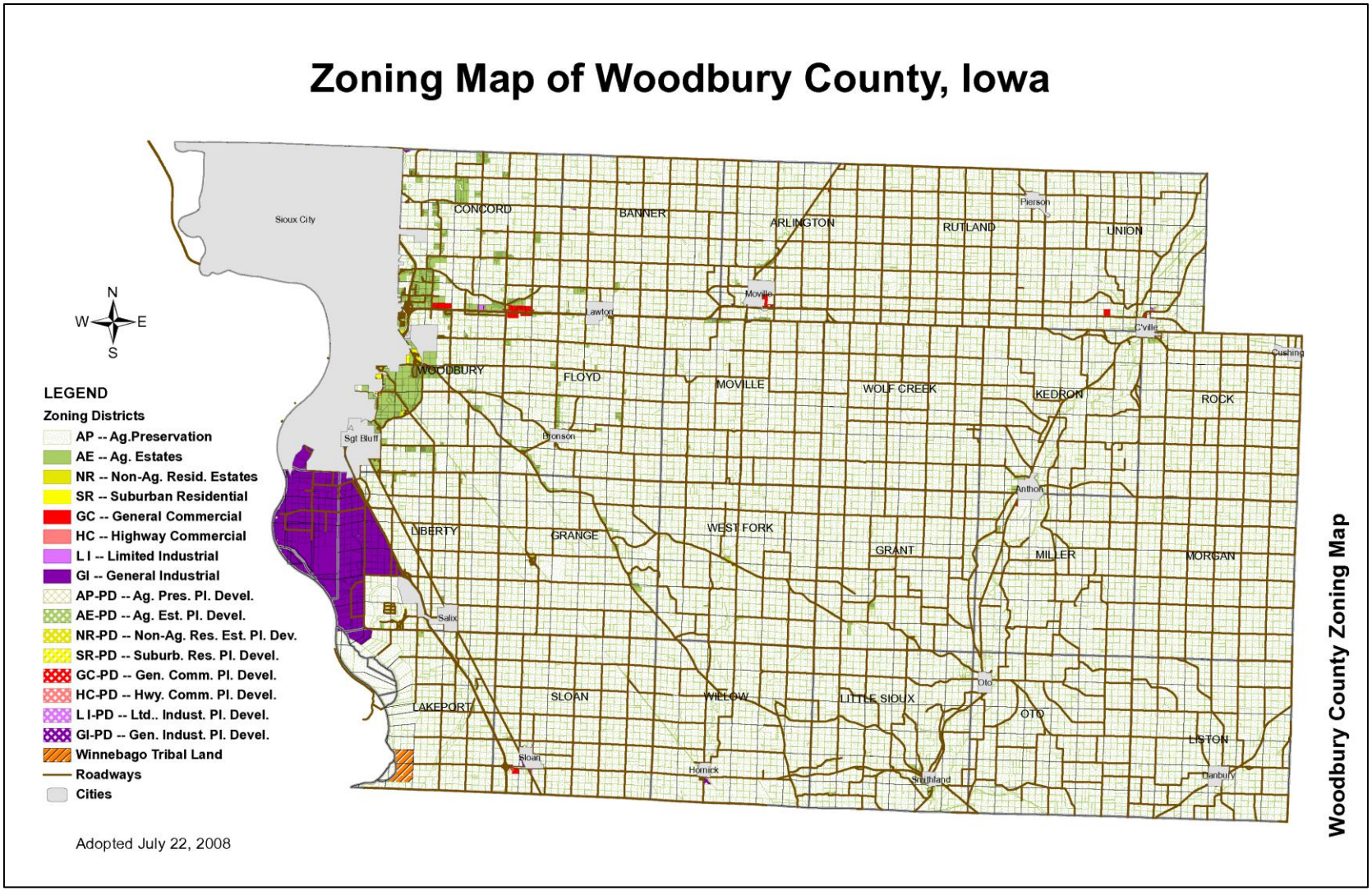


Figure 7.1. Woodbury County Zoning Map.

Zoning Ordinance Summary

Below is a summary of the allowed uses in each zoning district category. For a full list of allowable and conditional uses, please see the zoning information provided on the Community and Economic Development Department's page of Woodbury County's website.

AP – Agricultural Preservation Zoning District

The purpose of the AP is to encourage agricultural uses, preserving the County's rural character and primary economic sector. Soil and water conservation practices are encouraged.

- Allowed uses:
    - Agricultural and agri-business.
    - Limited single-family residences.
    - Trade, Entertainment, Hospitality, Recreation, etc.: animal grooming, bed and breakfast lodging.
    - Institutional: religious establishments, community centers, day camp and recreation, parks and public open space.
    - Transportation, Communication and Public Services: antennas on existing structures, utility substations.

AE – Agricultural Estates Zoning District

The purpose of the AE district is to provide for controlled expansion of small acreage developments that are compatible with agricultural uses. Single-family residential, agricultural, and related public uses are allowable.

- Allowed uses:
    - Agricultural and agri-business.
    - Residential dwellings (single-family).
    - Trade, Entertainment, Hospitality, Recreation, etc.: bed and breakfast lodging.
    - Institutional: cemeteries, mausoleums, columbaria; religious establishments; community centers; day camp and recreation; nursery, elementary & secondary schools; parks and public open space.
    - Transportation, Communication and Public Services: antennas on existing structures, utility substations.

SR – Suburban Residential Zoning District

The SR district provides for the orderly development of suburban density, single-family residential subdivisions where agricultural use is prohibited. Allowed uses include single-family and two-family residential and related public uses.

- Allowed uses:
    - Residential dwellings (single-family, two-family, and family homes).
    - Trade, Entertainment, Hospitality, Recreation, etc.: bed and breakfast lodging.
    - Institutional: religious establishments, community centers, nursery, elementary and secondary schools, parks and public open space.
    - Transportation, Communication and Public Services: antennas on existing structures.

GC – General Commercial

The purpose of the GC district is to provide for commercial uses that are compatible with and serve the agricultural sector.

- Allowed uses:

- Office Uses: finance, insurance, real estate; governmental; medical and dental clinics; general office uses; professional offices.
- Trade, Entertainment, Hospitality, Recreation, etc.: antiques, convenience stores, dry cleaning, furniture and home furnishings, groceries, laundry, locksmiths, and many others.
- Industrial: furniture stripping and refinishing; janitorial and building maintenance; machine and welding shops; printing and publishing; personal storage facilities.
- Institutional: community centers; blood bank; boarding schools; religious establishments; colleges, business, and trade schools; emergency care center; food banks; homeless shelters; hospice services; hospitals; libraries and museums; plasma centers; soup kitchens; substance abuse treatment.
- Transportation, Communication and Public Services: ambulance stations, bus garages, fire stations, police stations, utility substations.

LI – Limited Industrial Zoning District

The LI district provides for the orderly development of heavy commercial, warehousing, and limited industrial uses. Sites should have excellent infrastructure, especially transportation access via highways.

- Allowed uses:
  - Trade, Entertainment, Hospitality, Recreation, etc.: mail order houses, motor vehicle fuels, vehicle repair, wholesale businesses.
  - Industrial: air freight terminals, cold storage plants, construction contractor yard, grain terminals and elevators, mail processing center, sand and gravel storage, and many others.
  - Transportation, Communication and Public Services: antennas on existing structures, bus garage, public service garage.

GI – General Industrial Zoning District

The GI district provides for heavy commercial, warehousing, and limited industrial uses. Sites should have excellent infrastructure, especially transportation access via highways.

- Allowed uses:
  - Trade, Entertainment, Hospitality, Recreation, etc.: adult entertainment, adult products, motor vehicle fuels.
  - Industrial: air freight terminals, cold storage plants, construction contractor yard, grain terminals and elevators, mail processing centers, sand and gravel storage, and many others.
  - Transportation, Communication, and Public Services: antennas on existing structures, utility substations.

Land Use Designations

The maps and information on the following pages summarize Woodbury County's current land use patterns and changes in land cover in recent years. This is followed by a future land use map which is used to establish ideal land use patterns for the next 20 years and to facilitate the orderly development and preservation of land in the county. The designations below describe land use categories found in the key of the current and future land use maps.

Agriculture

Land designated as Agriculture is primarily used for farming, ranching, other agricultural businesses, and related operations. Residential density is typically limited to preserve large, continuous areas of workable land, uninterrupted by development.

Commercial

The Commercial land use designation describes corridors appropriate for commercial development, such as adjacent to similar or compatible developments within city limits and along state or county highways.

Industrial

The industrial land use designation is for county land that is primarily used for heavy and light industrial activities, such as warehousing, transportation, manufacturing, and the storage of construction materials. The activities taking place in these areas are typically not compatible with other uses due to potential air and noise pollution, use of hazardous materials, heavy machinery and traffic, and other nuisances.

Winnebago Reservation:

Land held and governed by the Winnebago, or Ho-Chunk, Tribe of Nebraska.

Open Space/Recreational

These areas include parks and natural areas maintained by the county or Iowa Department of Natural Resources. The purpose of inclusion of these areas in the future land use map is to ensure their protection into the future. Inclusion of these areas on the map also helps to visualize connections between parks and recreation areas when considering expansions to the county's green space network.

Rural Residential

The Rural Residential land use designation describes areas primarily devoted to residential uses outside of incorporated city limits. This includes rural housing developments where agricultural uses are not permitted, as well as larger lot residential estates and acreages where agricultural activities may take place.

Transitional Agriculture

Land in the Transitional Agriculture designation typically borders between traditional agricultural use and residential uses. This designation offers flexibility for the development of a variety of compatible uses based on the surrounding context and needs of the community.

Incorporated Areas:

Land under the jurisdiction of incorporated cities, not belonging to the county.

Current Land Use

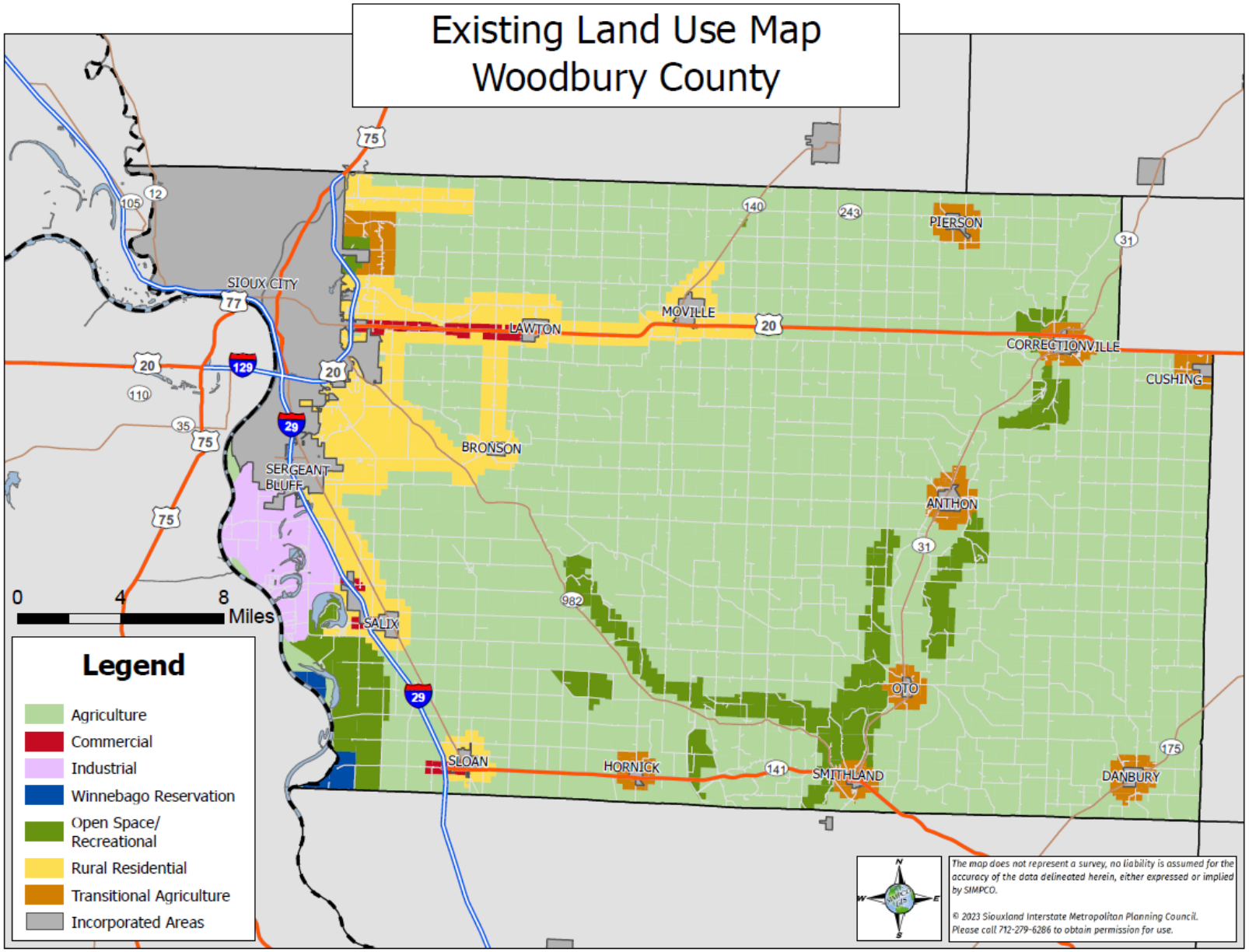


Figure 7.2. Existing Land Use Map, 2023.

Woodbury County Land Cover Summary 2001-2019						
Land Cover	2001 sq.mi	Lost sq.mi	Gained sq.mi	2019 sq.mi	Net Change sq.mi	Change %
High Intensity Development	4.49	0	2.01	6.5	**2**	44.6
Medium Intensity Development	9.73	-0.05	4.56	14.24	**4.51**	46.33
Low Intensity Development	22.52	-0.94	1.54	23.12	**0.6**	2.65
Developed, Open Space	35.89	-4.4	1	32.49	-3.4	-9.48
Cultivated Crops	623.03	-4	26.62	645.66	**22.63**	3.63
Pasture	52.52	-3.85	1	49.66	-2.86	-5.44
Grassland	79.86	-25.02	0.98	55.81	**-24.04**	-30.11
Deciduous Forest	31.47	-0.71	0.33	31.09	-0.38	-1.2
Evergreen Forest	0.37	-0.02	0.04	0.38	0.01	3.66
Mixed Forest	0.78	-0.02	0.02	0.78	0	-0.22
Shrub/scrub	0.22	-0.01	0.33	0.54	0.32	147.52
Woody Wetland	4.22	-0.21	0.18	4.19	-0.03	-0.65
Emergent Herbaceous Wetland	5.37	-0.68	1.06	5.75	0.38	7.11
Barren	0.42	-0.16	0.64	0.9	0.48	115.52
Water	6.85	-0.83	0.6	6.62	-0.23	-3.35

Table 7.1. Source: Multi-Resolution Land Characteristics (MRLC) Consortium, National Land Cover Dataset, 2001 and 2019.

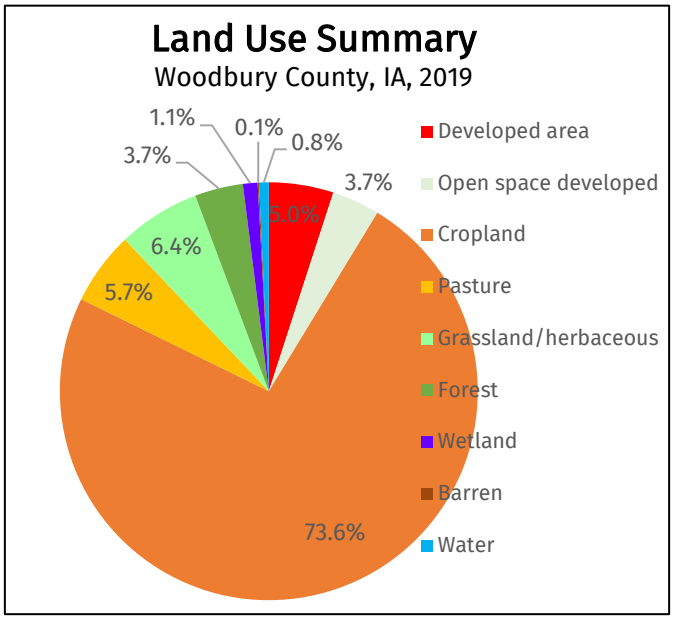


Figure 7.3. Source: MRLC Consortium, National Land Cover Dataset, 2019. 877.7 square miles in Woodbury County total.

In 2019, nearly 80% of Woodbury County's land cover was devoted to agriculture, with about 74% cropland and nearly 6% pasture. About 12% of the county's land area consisted of natural areas including grassland/herbaceous cover, forest, wetland, or water. Developed areas including developed open space occupied nearly 9% of the county's land. "Developed open space" describes areas within developed areas that are largely covered by lawns, including golf courses, large single-family lots, and recreational uses such as soccer fields and parks.

Between 2001 and 2019, the amount of medium and high intensity development in Woodbury County have increased slightly. Low intensity development also increased to a lesser degree. The most substantial shifts during this period were the increase in cultivated crop land by roughly 23 square miles and the decrease in grassland by about 24 square miles. This data, combined with maps from the Multi-Resolution Land Characteristics Consortium, suggest that grassland has gradually been converted into land used for cultivated crops during this period.

Future Land Use

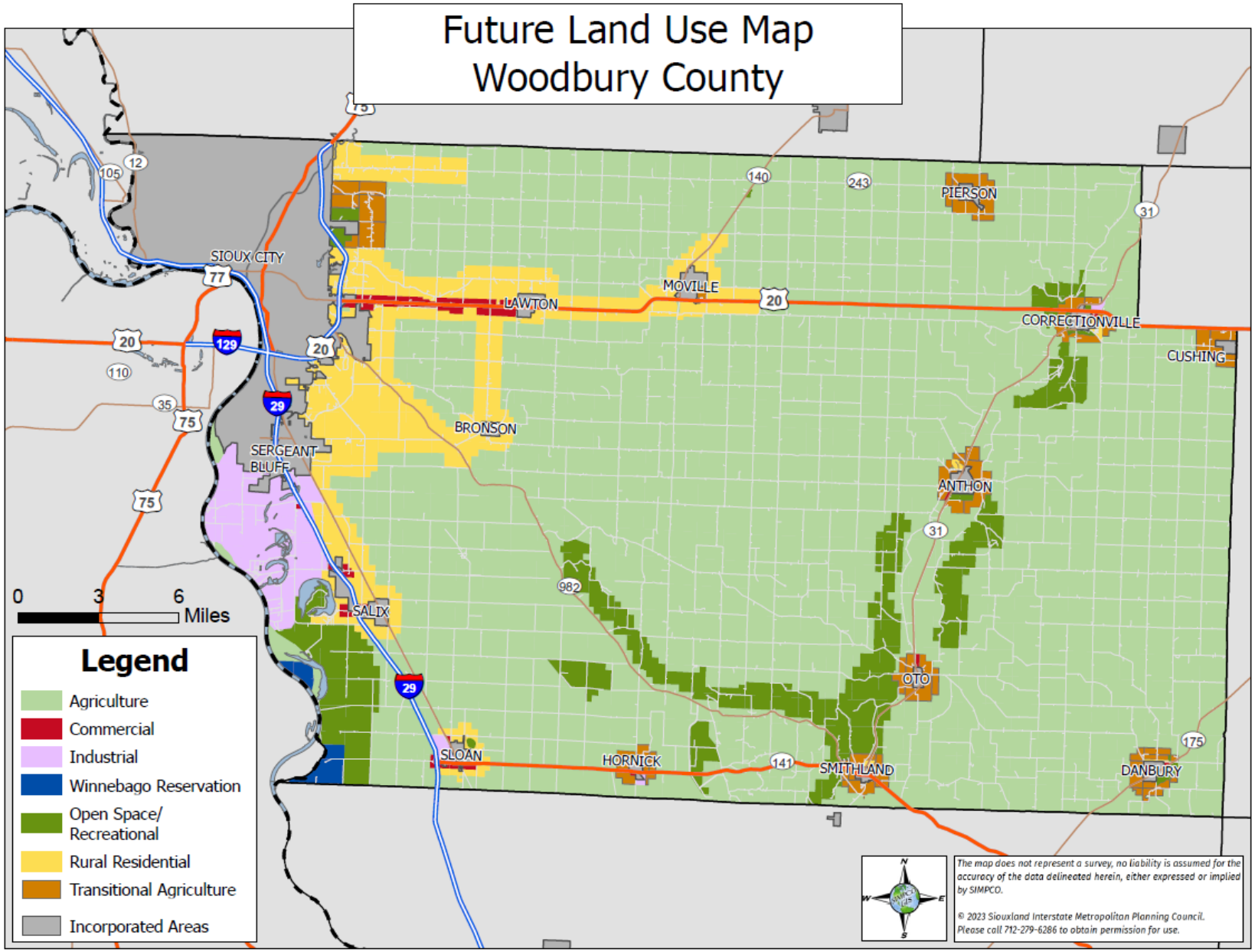


Figure 7.4 Future land use map

Description of expected changes

Agriculture

Agriculture is the heart of rural Woodbury County's culture and way of life, as the principal economic sector and comprising 79.2% of the county's land use (National Land Cover Database, 2019). Maintaining the rural character or the county, preventing the conversion of agricultural land, and strengthening the agricultural economy are important to Woodbury's residents, as expressed in the public input survey. To sustain Woodbury's agricultural economy and culture, it is necessary to strengthen protections of farmland, especially around the edges of urban areas where gradual expansion tends to encroach on agricultural uses. While Woodbury County has not seen a net loss of agricultural land, there has been conversion from development on the fringe of urban areas, which is a pattern that has the potential to accelerate with economic development in Sioux City, Sergeant Bluff, and surrounding urban areas.

The American Farmland Trust has projected the following farmland conversion scenarios for the year 2040 in Woodbury County, based on different land use decisions and the resulting development patterns. The current map of land use in Woodbury County is below, for comparison to the subsequent scenario maps.

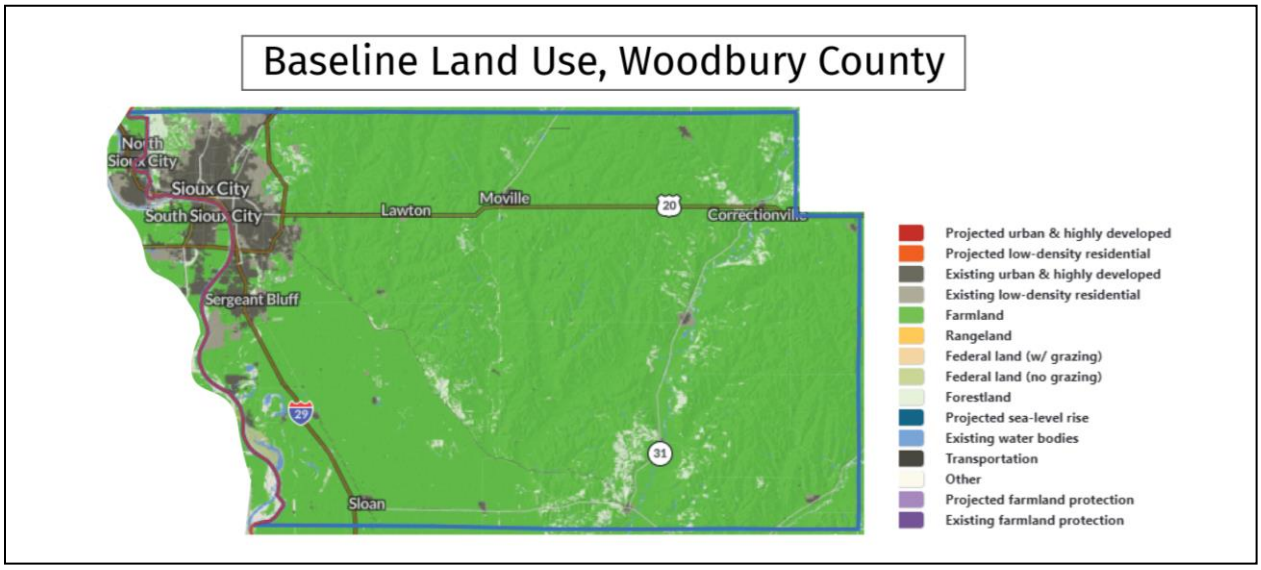


Figure 7.5. Source: American Farmland Trust, 2022

2040 Business as Usual

The map below represents where in the county farmland would likely be converted to urban development by 2040 if current patterns of land use continue. In this projection, 3,800 acres would be converted from cropland to "urban and highly developed" and "low-density residential" uses.

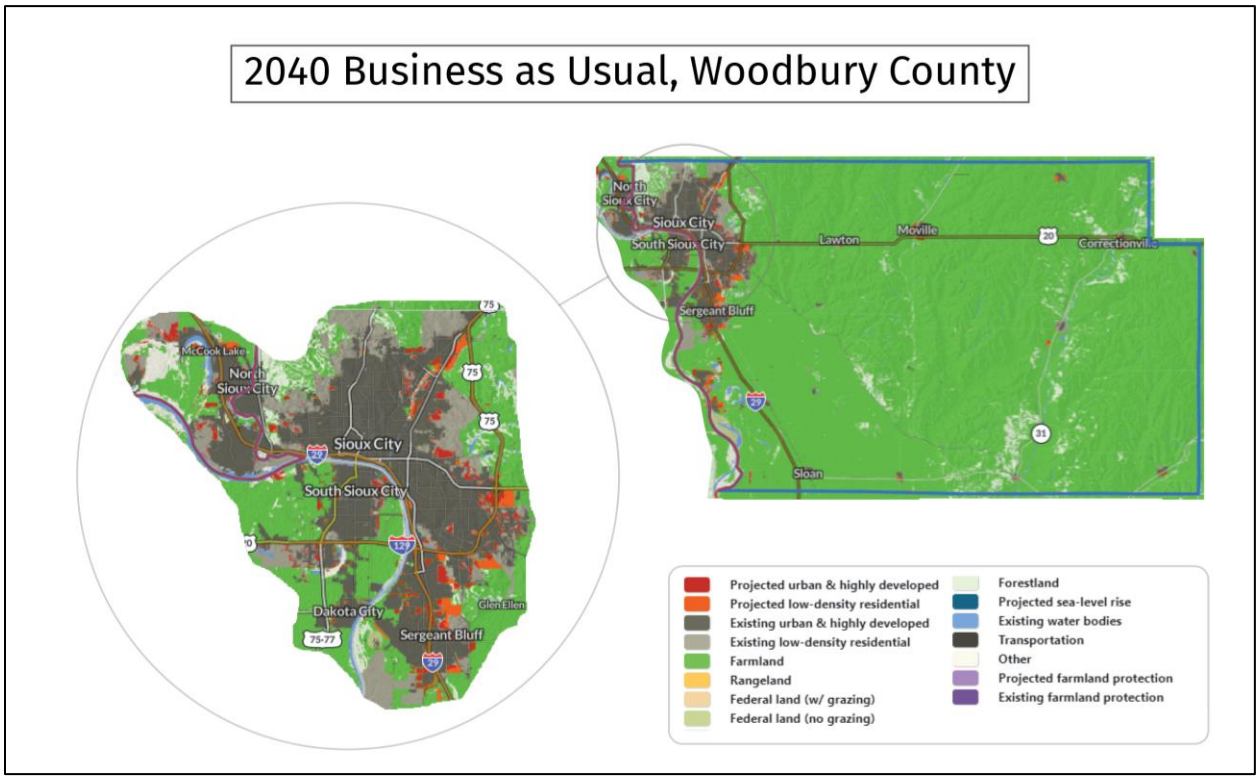


Figure 7.6. Source: American Farmland Trust.

2040 Better Built Cities

Figure 6.7 shows how farmland conversion could be curbed by 2040 with the implementation of various policies aimed at protecting agricultural land from conversion to other uses. In this scenario, the American Farmland Trust projects a marked reduction in converted acres compared to the "business as usual" sprawl: 2,500 acres of farmland converted to "urban and highly developed" and "low-density residential" uses.

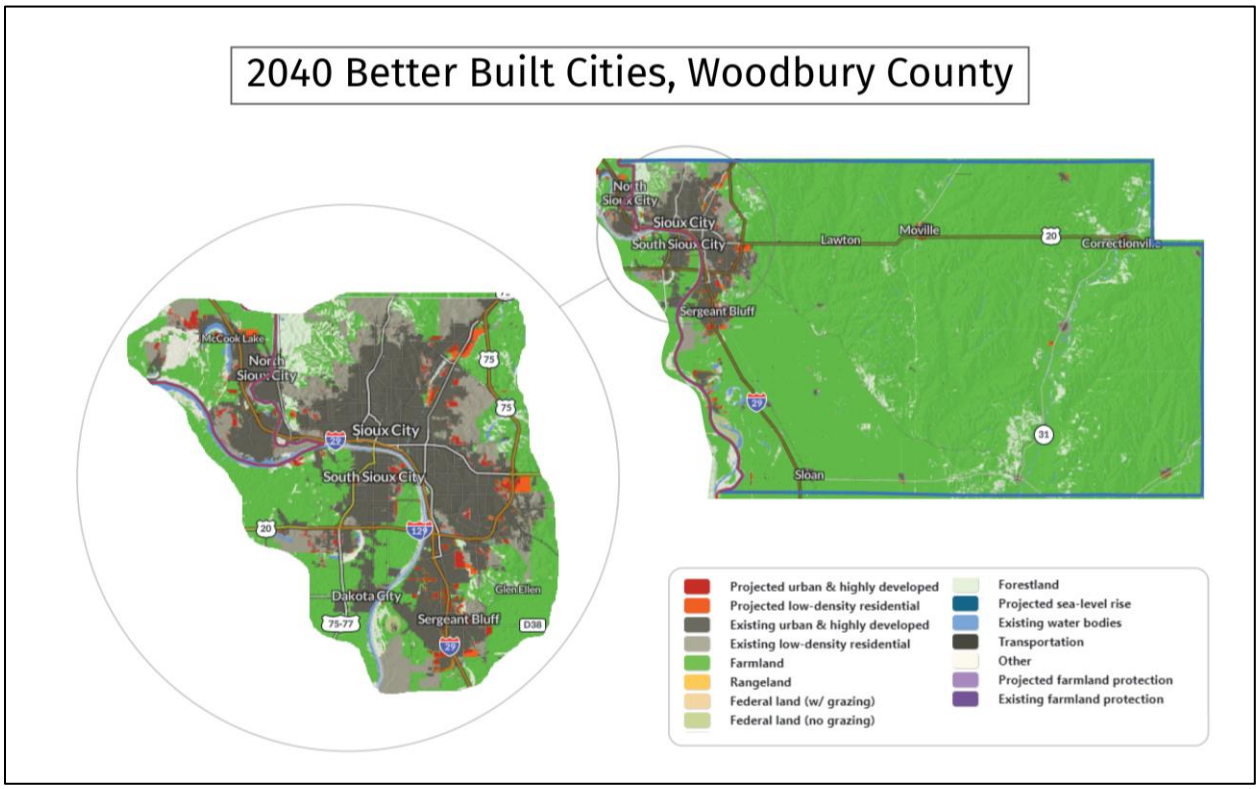


Figure 7.7. Source: American Farmland Trust.

Figure 6.8 summarizes these projections as well as a "runaway sprawl" scenario in which low-density development on the fringes of urban areas increase by 50%. This would result in even more conversion than "business as usual". These projection scenarios demonstrate the need to combine various land use policies to protect agricultural land. Such policies include using

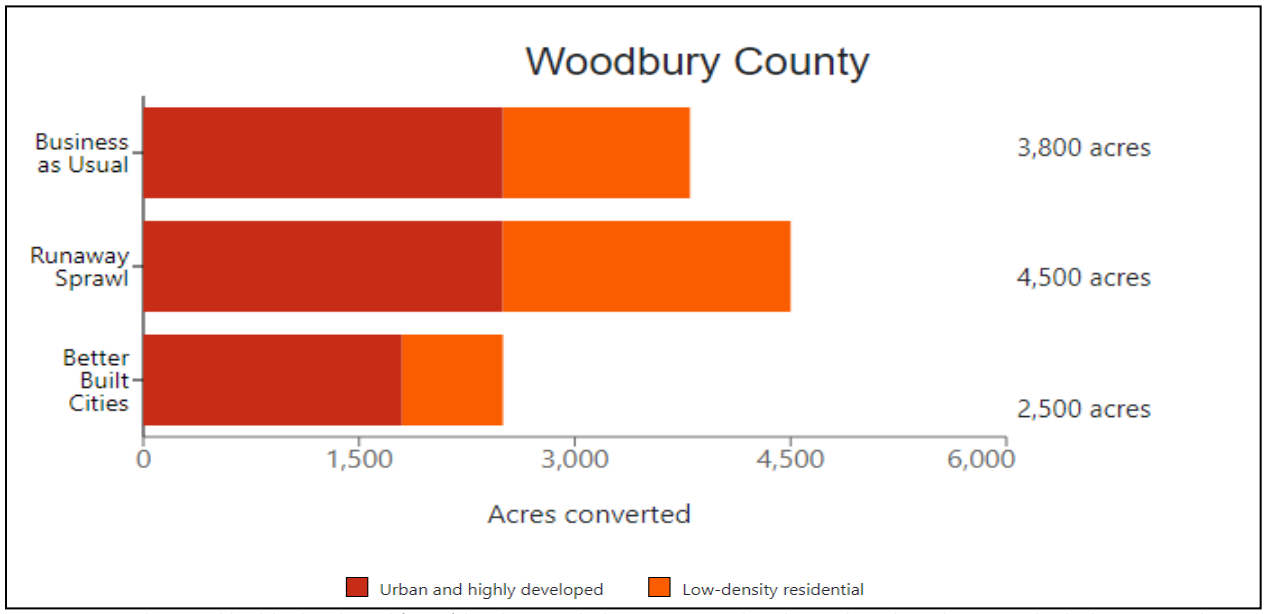


Figure 7.8. Urban and highly developed (UHD) land use includes commercial, industrial, and moderate-to-high density residential areas. Low-density residential (LDR) land use includes scattered subdivisions and large-lot housing, which fragment the agricultural land base and limit production. Source: American Farmland Trust, Farms Under Threat 2040.

conservation easements to permanently protect farmland, encouraging the use of existing urban infrastructure, prioritizing infill development and adaptive reuse, and limiting new low density residential developments on the fringe of urban areas that fragment and lead to the conversion of agricultural lands.

Providing for acreages and non-commercial agricultural activities

While low density residential development can lead to urban sprawl and eventual farmland conversion, there is a need to maintain limited amounts of large lot residential areas where residents can use the land for small-scale farming, animal husbandry, and homesteading activities. Non-commercial agricultural activities and hobby farming are important aspects of Woodbury County's rural culture. Residents have expressed a desire in the past for flexibility when it comes to determining what qualifies as a farm for the purposes of zoning. This flexibility is achieved by considering the farming activities taking place on the lot and not relying solely on lot size to determine this classification. This provision provides flexibility for hobbyists, community gardening, and other culturally enriching activities in areas where agriculture is not the primary use. Such flexibility should be balanced with preserving large tracts of agricultural land to prevent fragmentation and urban sprawl.

Preserving small and mid-sized farms

Woodbury County has not been immune to the national trend of farm consolidation. The number of small and mid-sized farms between ten and 999 acres decreased by 19% from 2002 to 2017, while farms with 1,000 acres or more increased by 14% in the same time frame. This trend demonstrates the need for additional protections and resources for smaller and mid-sized family farm businesses, such as succession planning assistance and technical assistance to adapt to changing trends or break into new markets. Local institutions such as schools, government buildings, and hospitals, as well as intermediate markets such as grocery stores, represent opportunities for procurement from small and mid-sized farms. Policies to encourage the purchase of food from smaller local farms could help combat this harmful trend and strengthen the local agricultural economy.

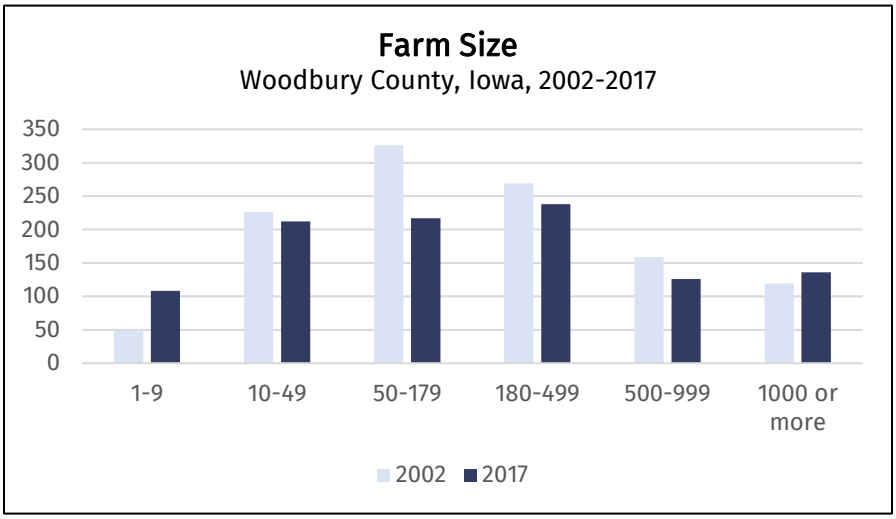


Figure 7.9. Source: USDA Census of Agriculture 2002, 2017

While these policies are a starting point, it is imperative for the county to learn directly from farmers to understand their most pressing needs and concerns for the future of their operations. The creation of a roundtable of farmers and other agricultural industry stakeholders would provide a platform for discussion of these concerns so that appropriate resources and assistance can be identified.

Natural Resources

In terms of natural habitat, Woodbury County contains a unique combination of rolling prairie grasses along the Loess Hills; riparian ecosystems and wetlands along the banks of the Missouri, Big Sioux, Little Sioux, Floyd, and Maple Rivers; and eastern deciduous forests. Supported by these ecosystems are dozens of native species, including 20 animal species and 24 plant species that are either endangered, threatened, or species of concern (*IDNR's Iowa Natural Areas Inventory*). About 3% of the county's land area, or 25.2 square miles, is comprised of park land, open space, and natural preserves.

Smart growth

Protecting these natural resources through the thoughtful location of new development has been identified by Woodbury residents as a priority when considering the future of their county. From 2001 to 2019, while the population of the county has remained relatively steady, the amount of developed land area has increased by about 19.4%, with growth primarily on the east side of the City of Sioux City and the City of Sergeant Bluff (NLCD). With this change in mind, care should be taken to make use of urban areas where infrastructure has already been constructed when building new housing and commercial developments. Policies to discourage sprawl and leapfrog development outside of incorporated towns, discourage the development of environmentally sensitive lands, and incentivize the preservation of natural habitat should be adopted.

Between 2001 and 2019, Woodbury County has seen a net gain of agricultural land of about 22.6 square miles. This gain in agricultural land represents the conversion of primarily grasslands, with a net loss of grasslands totaling 24 square miles. While agriculture is essential to Woodbury County's economy and culture, it is important to maintain a balance of this primary land use with natural habitat areas that support pollinators, wildlife, and other ecosystem services. To promote this balance, resources to help landowners benefit financially from protecting native landscapes can be shared through public outreach by the county and other relevant organizations.

Residents have also voiced the need for additional outdoor recreational opportunities in rural communities, such as parks and hiking/biking trails. These assets can serve the dual purpose of providing much-needed recreational opportunities while helping to safeguard the County's natural resources.

Controlling noxious weeds and invasive species

Woodbury County's Weed Commissioner, appointed by the Board of Supervisors, is responsible for the control of noxious weeds and invasive species throughout the county, including in city limits. Noxious and invasive species can harm the ecological health of the environment, present dangers to humans or animals, or present a threat to agricultural operations or land value. This department works to improve the integrity of habitat and protect agricultural and other privately owned land from becoming compromised by these harmful species. This ensures that land can continue operating under its intended use without ecological or public health disturbance.

Due to the diffuse nature of invasive species and noxious weeds, it is important to continue educating the public about effective identification, control, and disposal of these species. This way, residents and other private landowners can take action on their own property to curb the

spread to nearby properties. This department could also distribute information about proper disposal of woody debris and brush from private property, and how to handle woody debris that has been impacted by invasive species such as the Emerald Ash Borer. Such information would empower landowners to be a partner in combatting ecologically and economically harmful invasive species.

Water Resources

Woodbury County is located entirely within the Missouri River Watershed, with many smaller sub-watersheds that ultimately connect to the Missouri River via tributaries and streams. Woodbury County sources water for drinking, household and commercial use, and irrigation from groundwater sources. Incorporated cities within the county provide public water supplies, while many residents outside of these boundaries are served by private wells. Woodbury residents source groundwater from several types of aquifers, with varying levels of susceptibility to contamination. The Dakota sandstone or Cretaceous aquifer underlies the northwest region of the state. This is the deep, bedrock water source underlying several shallower aquifers closer to the surface.

Generally speaking, the bedrock aquifer in Woodbury County is protected from contamination due to large overlying deposits of loess and glacial drift that slow water penetration and provide protection from surface contamination. However, residents of the county also rely heavily on shallower aquifers that recharge much more quickly than the bedrock aquifer. Alluvial aquifers extending along the Missouri, Floyd, Big Sioux, and Little Sioux rivers are prevalent water sources in Woodbury County. These alluvial aquifers are highly susceptible to contamination from surface runoff, which impacts both the ecological health of surface waters such as rivers and streams, as well as the quality of drinking water sourced from the underlying aquifer. Sources of contamination include nitrate found in fertilizers and animal and human wastes; road salts; petroleum products; and underground seepage from landfills and storage tanks. Actions to limit this contamination should be prioritized through partnerships with overlapping jurisdictions and private landowners.

One potential threat to groundwater resources in Woodbury County are animal wastes from concentrated animal feeding operations. Due to the high volume of wastes accumulated in one location, these facilities are closely regulated by the Iowa Department of Natural Resources through EPA's National Pollutant Discharge Elimination System. To further safeguard water resources in Woodbury County, particular care should be taken to carefully locate these facilities away from residences, floodplains, surface waters, wetlands, and vulnerable aquifers.

Wetlands classification/map

Wetlands are important features of the natural landscape. They provide numerous beneficial functions, such as controlling storm waters to prevent floods, filtering contaminants and nutrients from runoff before it enters surface and ground water, storing carbon, and providing essential habitat for fish, birds and other wildlife. The map below shows the location and classification of wetlands in Woodbury County. Detailed information can be found from the Fish and Wildlife Service's National Wetlands Inventory. This includes data about historical wetlands that are no longer in existence, but may have the potential for restoration depending on current hydrological conditions.

Additional detailed wetlands information can be found in the 2006 USDA Soil Survey of Woodbury County, available online on the USDA Natural Resources Conservation Service's website. Information in this document includes the runoff potential of various soil groups and the duration and frequency of flooding. Such soil qualities are important considerations when determining the development potential of land or whether frequently inundated areas would be better suited to parkland or wildlife refuges.

Figure 6.10

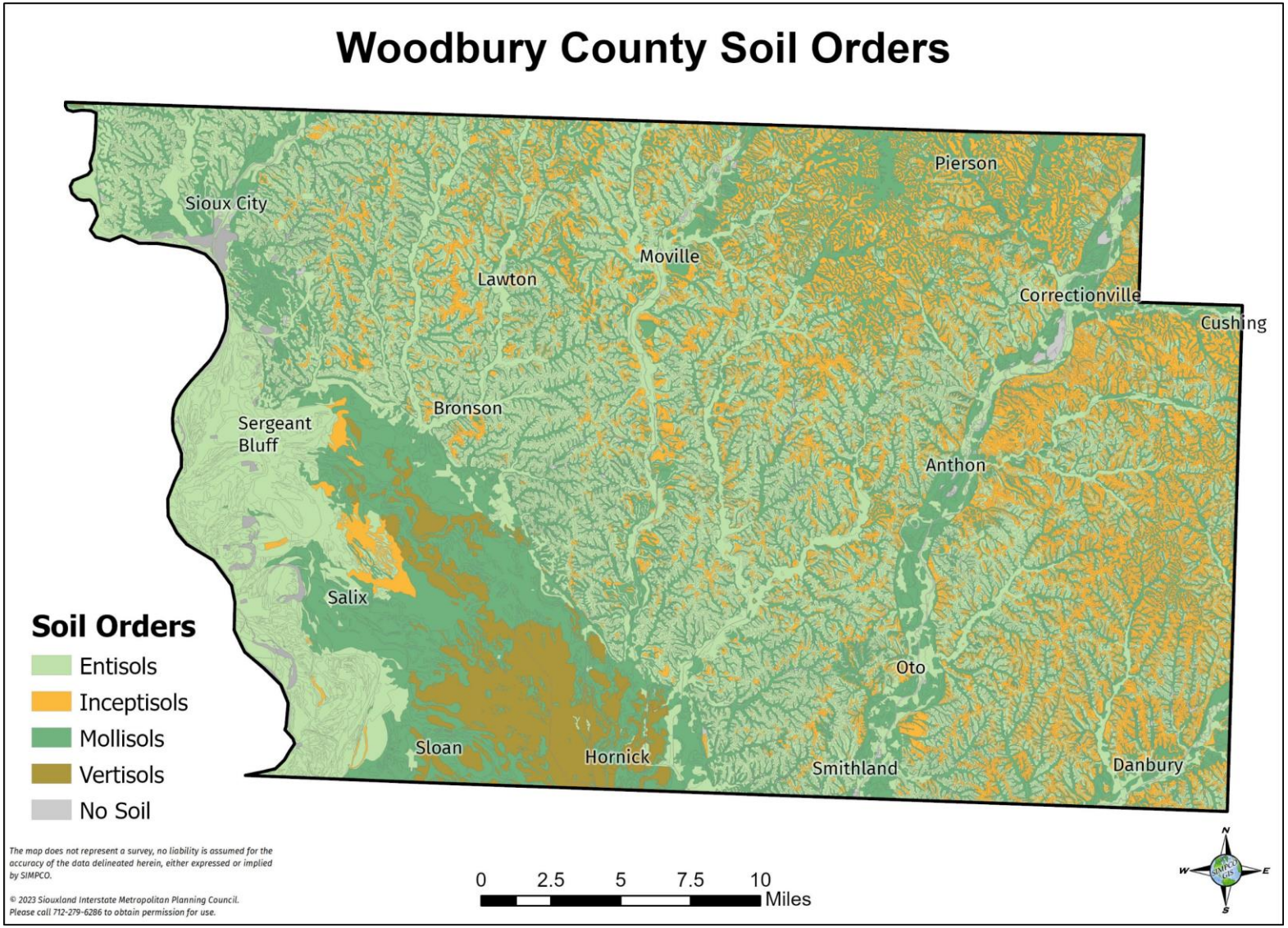


Figure 6.11. Data Source: Natural Resources Conservation Service of the U.S. Department of Agriculture, Soil Survey Geographic Database (SSURGO)

Soils

The soil map in Figure 6.11 illustrates the broad soil taxonomic classifications of Woodbury County. Complete data containing all soil hierarchies can be accessed from the USDA's Natural Resources Conservation Service Soil Survey Geographic Database. Additional local details about characteristics, suitability for various uses, and related ecological qualities can be found in the 2006 USDA Soil Survey of Woodbury County. This complete document is available from the USDA Natural Resources Conservation Service's archived soil surveys online.

Air Quality

Woodbury County is fortunate to have relatively few air quality concerns. There were 21 point source polluting entities located directly in Woodbury County according to reports by the EPA in 2017. These facilities are situated closer to the County's urban areas in Sioux City and Sergeant Bluff, as well as along the southwestern industrial corridors and airport complexes. As facilities on the national emissions inventory, these sites are regulated and monitored by the EPA. Furthermore, Woodbury County's weighted annual mean concentration of fine particulate matter ($PM_{2.5}$) was below the national ambient air quality standard in 2020.

That being said, because the County's population is less than 1,000,000, the EPA has not located high quality air sensors within the County to monitor ambient air quality. The fine particulate matter data is gathered from one monitor in the City of Sioux City operated by the University of Iowa. Rural residents could benefit from a small network of low-cost air quality sensors distributed around rural areas of the County to ensure a safe environment.

Renewable Energy Infrastructure

With the rapid progression of renewable energy technologies and the Department of Energy's prioritization of alternative energy sources, many localities across the country are beginning to think about how this infrastructure would fit into their community. Wind resources in particular are abundant in Iowa, providing the potential for the development of a new employment industry in the region. At the same time, residents in Woodbury County have been vocal about their opposition to this infrastructure due to the aesthetic impacts on the landscape, potential effects on wildlife, and disturbance to neighboring properties.

In anticipation of the potential location of wind turbines in the county, Woodbury County recently passed a commercial wind farm ordinance that provides restrictions for these developments to protect residents, private property, public conservation areas, and the Loess Hills. To continue balancing the protection of rural residents and the growth of this industry the ordinance language should continually be reviewed and updated to ensure it provides adequate safety protections and remains applicable to current technologies.

Survey Results Synopsis

Residents expressed their opinions about several land use- and natural resources-related topics through the public input survey distributed during the planning process. Input about the county's assets, weaknesses, and residents' values guided the creation of goals and objectives.

When asked about Woodbury County's greatest assets, "agricultural economy" (45%) and "rural character of the county" (35%) were among the most frequently chosen options. Nearly a quarter of survey respondents chose "clean air and water" (23%) and about one fifth selected

"abundance and access to open space and public lands" (21%). Residents' value for protecting agriculture was expressed by 87% of respondents responding "yes" to the question, "Do you agree that preserving existing agricultural land should be a priority for Woodbury County?" Furthermore, when asked which topics would be the most important to consider in the next 20 years, "agriculture" and "future land use" were amongst the most frequently chosen topics.

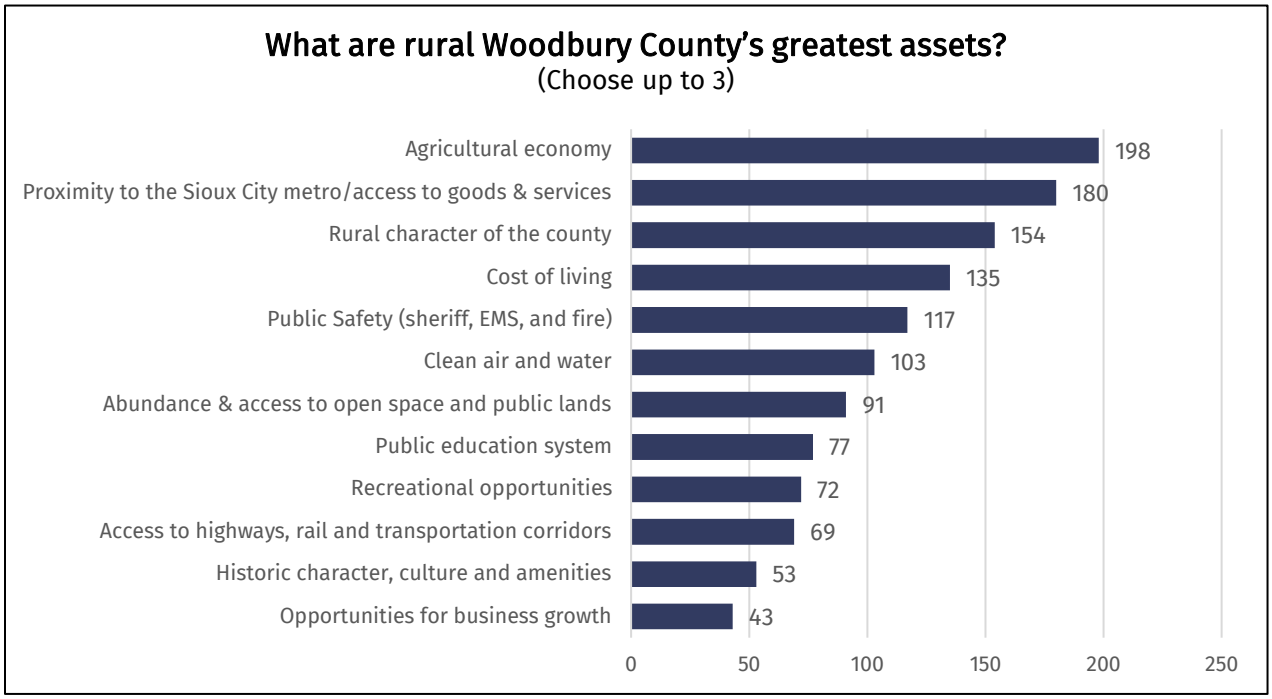


Figure 6.12.

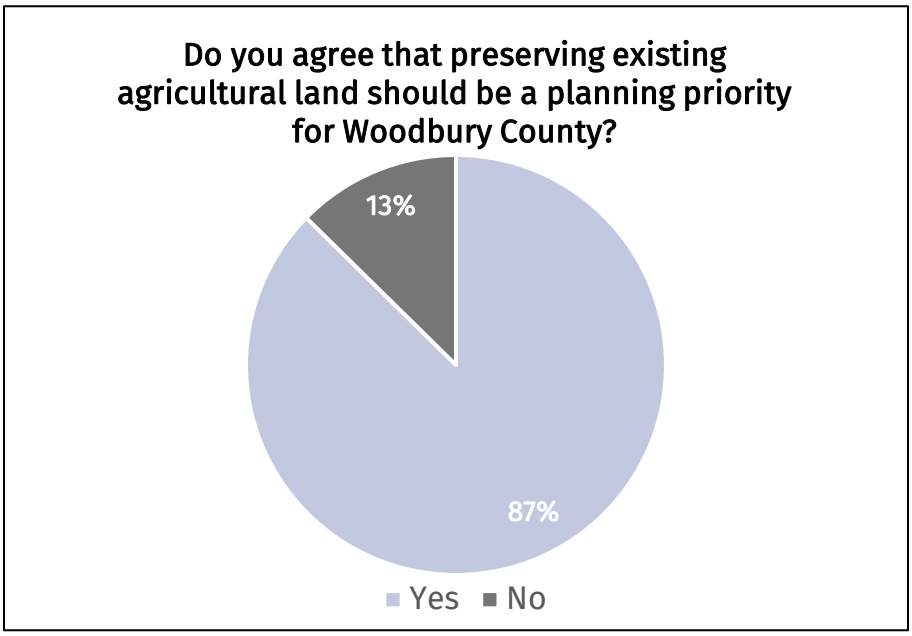


Figure 6.13.

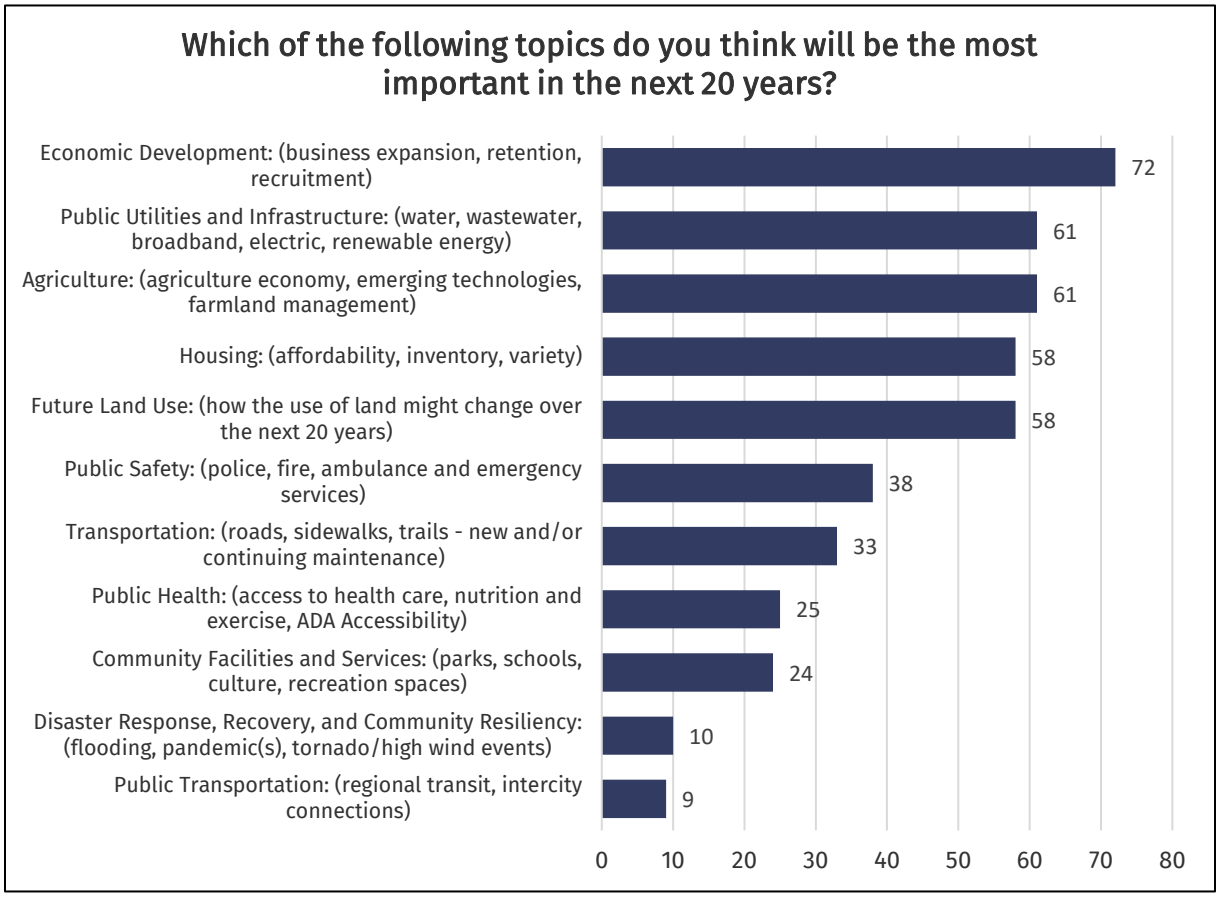


Figure 6.14.

Respondents were divided about the amount of land use and zoning regulation that they felt should be appropriate for Woodbury County. About one quarter of residents (25%) thought that land use and zoning policies and regulations should be more restrictive, nearly 20% thought they should not change, and about 28% thought they should be less restrictive. The rest of the respondents did not have an opinion on the matter. This sharp division in opinion demonstrates the need for officials to carefully balance land use policies that protect residents' safety and public interests with flexible policies regarding allowable uses of private property.

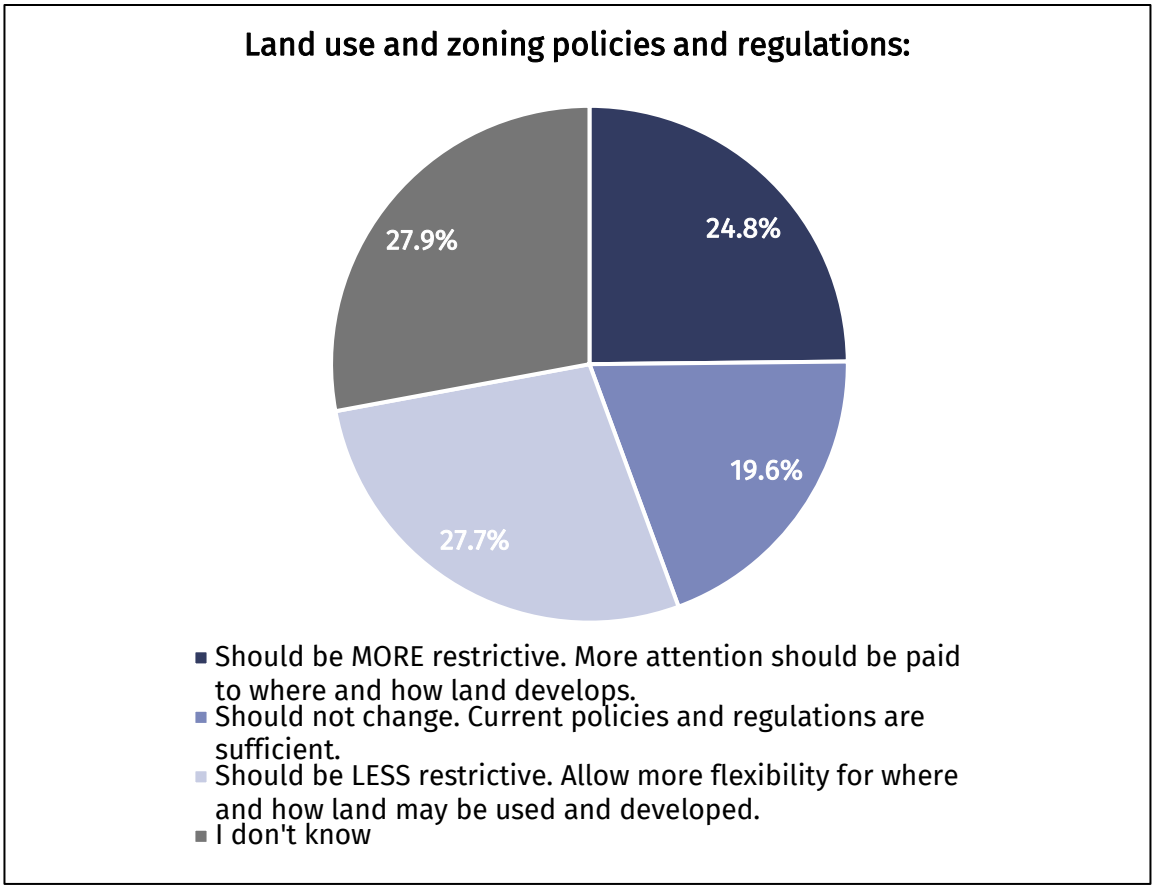

Land use and zoning policies and regulations:
24.8%
19.6%
27.7%
27.9%
Should be MORE restrictive. More attention should be paid to where and how land develops.
Should not change. Current policies and regulations are sufficient.
Should be LESS restrictive. Allow more flexibility for where and how land may be used and developed.
I don't know

Figure 6.15.

Goals & Objectives

Sustainable Agriculture

- ***Goal:*** **Support sustainable agricultural practices.**
    - Ensure compliance with Iowa state code provisions for agriculturally zoned property.
    - Promote the use of agricultural best management practices to reduce soil and fertilizer runoff, protect water quality, and manage animal waste.
    - Encourage participation in federal incentive programs that pay farmers and ranchers for the implementation of conservation best practices.
    - Consider the use of sliding scale zoning to prevent the fragmentation of large tracts of farmland.
    - Advocate for the preservation of agriculture in urban fringe areas not identified in the future land use map for urban growth.
    - Connect small and mid-sized farm businesses with succession planning resources and technical assistance.
    - Advocate for the adoption of local food purchasing policies that support public and institutional procurement from small and mid-sized local farmers.
    - Create a roundtable of farmers and local agricultural businesses to voice concerns and needed resources to maintain sustainable business operations.

Habitat Conservation

- ***Goal:*** **Preserve environmentally sensitive lands.**
    - Consider the manner in which environmentally sensitive lands are developed, including wetlands, floodplains, prime agriculture, wildlife habitat, and open space for recreation.
    - Encourage communication and cooperation between environmental advocates and landowners related to the development of sensitive lands.
    - Strengthen erosion control policies and grade and excavation limitations for development in the Loess Hills.
    - Encourage landowner participation in federal conservation easement programs that provide financial incentives for safeguarding natural resources on their property.
    - Continue adding to the county's network of parks, trails, and campgrounds.
    - Coordinate across jurisdictions to address litter and the dumping of waste.

- ***Goal:*** **Limit urban sprawl and maintain the rural character of Woodbury County.**
    - Prioritize the rehabilitation of existing housing stock and infill development before building on previously undeveloped land. Consider the lifetime costs of new infrastructure development.
    - Limit interstate development to interchanges or within city limits to preserve agricultural land and maintain scenic views of the Loess Hills.
    - Discourage leap-frog development outside of incorporated cities and limit density in unincorporated areas.
    - Guide future development of non-agricultural uses to a compact pattern by efficient and economical expansion of public infrastructure.

- ***Goal:*** **Empower landowners to be a partner in combatting ecologically and economically harmful invasive and noxious species.**

- Educate the public about effective identification, control, and disposal of invasive species.
- Distribute information about proper disposal of woody debris and brush from private property, and how to handle woody debris that has been impacted by invasive species such as the Emerald Ash Borer.

Water Resource Protection

- *Goal:* Reduce contaminants in surface water runoff.
  - Provide resources for farmers to adopt BMPs such as no-till methods, cover crops, crop rotation, vegetated buffers, and constructed wetlands to reduce nutrient loads entering waterways as non-point source pollution. Refer to the Iowa Nutrient Reduction Strategy, and programs of the USDA's National Resources Conservation Service for farmers in need of assistance.
  - Continue sensible salting policies.
  - Educate residents and business owners of proper lawn fertilizer and chemical use.
  - Limit the density of properties requiring individual septic systems, maintain stringent standards for system inspections, and provide resources for homeowners to assist in maintaining these systems.

- *Goal:* Safeguard groundwater by identifying and limiting sources of pollution.
  - Encourage landowners to take advantage of the Iowa DNR's wellhead protection program that provides cost-sharing and assistance for sealing unused wells, and planting nitrate-remediating plants near active wellheads.

Air Quality

- *Goal:* Identify potential sources of air quality hazards in Woodbury County.
  - Maintain a network of low-cost air quality monitors throughout rural Woodbury County.
- *Goal:* Maintain safe distances between industrial land use activities and residential, commercial, recreational, and institutional land uses.
  - Ensure that no residential communities are impacted or harmed by off-site industrial activities, such as trucking routes or railyard air hazards.

Renewable Energy Infrastructure

- *Goal:* Plan for the creation and use of alternative and renewable energy sources in Woodbury County.
  - Support landowners' individual choices to implement renewable energy infrastructure.
  - Continuously update policies that regulate renewable energy infrastructure to ensure that it does not present safety hazards and to minimize disruptions to surrounding land uses.
  - Seek federal and state funding for the expansion of electric vehicle charging infrastructure.

Chapter 7: Disaster Response, Recovery, & Resiliency

Section	Contents
Iowa Smart Planning	Hazards Element
Natural and Public Health Risks in Woodbury County	History of past disasters and trends over time
County and Regional Plans to Address Disasters	Regional Hazard Mitigation Plan, Woodbury County Joint Emergency Operations Plan, and Siouxland District Health Department activities
Response, Recovery, and Resiliency to Disasters	Lessons learned from the COVID-10 pandemic, Elements of resilience, and Tools/Resources for preparedness
Survey Results Synopsis	Public Comment
Goals and Objectives	Goals and objectives

Iowa Smart Planning Principles

The Iowa Smart Planning document states the following in regard to disaster response, recovery, and resiliency:

> **Hazards Element:** Objectives, policies, and programs that identify the natural and other hazards that have the greatest likelihood of impacting the municipality or that pose a risk of catastrophic damage as such hazards relate to land use and development decisions, as well as the steps necessary to mitigate risk after considering the local hazard mitigation plan approved by the Federal Emergency Management Agency.

Natural and Public Health Risks in Woodbury County

Natural Disasters in Woodbury County

Woodbury County has always had to contend with extreme weather conditions, from tornadoes and flooding to heat waves and frigid winter temperatures. Climate change is expected to make some weather events more frequent, others more extreme, and seasonal patterns less predictable overall.

Tornadoes and Severe Thunderstorms

According to the 2017 Climate Science Special Report from the Fourth National Climate Assessment, the frequency of tornado and severe thunderstorm events has increased the most significantly since the 1980's compared to other extreme weather. While climatologists are still learning about how climate change will impact the frequency of tornadoes and severe storms in the coming decades, many have concluded that an increase in the conditions necessary for tornadoes to form (warm air, humidity, and atmospheric instability) will lead to more frequent tornadoes and severe storms.

These storm events can cause significant damage to property, crop, livestock, and public infrastructure, and in severe cases threaten human lives. The Midwest is one of the regions that has been impacted the most by these changes, and this pattern of increasingly frequent severe storms is expected to continue throughout the century.

Temperature Trends

Iowa is expected to experience increasingly hotter and more humid summers throughout the rest of the century. The combination of heat and humidity can cause dangerous heat waves and public health threats from heat-related injuries. According to the Iowa DNR's Climate Impacts Report of 2010, extreme heat events are responsible for more deaths in the US than any other type of weather event. Extreme heat is particularly dangerous for the elderly, and those with asthma and other chronic illnesses. As is the trend across the country, Woodbury County has an increasing senior population as the Baby Boomer generation ages. For this reason, it is particularly important for the Couny to plan for more frequent heat emergencies.

According to the Environmental Protection Agency, in the Midwest region, the increase in winter temperatures has accelerated faster than temperatures for any other season. This change will likely lead to warmer and wetter winters, with more precipitation falling as rain and less snow accumulation. The Iowa DNR notes that without sustained frigid winter temperatures, it is more likely that conditions will be favorable for the survival and spread of agricultural pests and pathogens.

NCA Region	Change in Annual Average Temperature	Change in Annual Average Maximum Temperature	Change in Annual Average Minimum Temperature
Contiguous U.S.	1.23°F	1.06°F	1.41°F
Northeast	1.43°F	1.16°F	1.70°F
Southeast	0.46°F	0.16°F	0.76°F
Midwest	1.26°F	0.77°F	1.75°F
Great Plains North	1.69°F	1.66°F	1.72°F
Great Plains South	0.76°F	0.56°F	0.96°F
Southwest	1.61°F	1.61°F	1.61°F
Northwest	1.54°F	1.52°F	1.56°F
Alaska	1.67°F	1.43°F	1.91°F
Hawaii	1.26°F	1.01°F	1.49°F
Caribbean	1.35°F	1.08°F	1.60°F

Table 8.1. Observed changes in annual average temperature (°F) for each National Climate Assessment region. Changes are the difference between the average for present-day (1986–2016) and the average for the first half of the last century (1901–1960). Source: USGCRP, 2017: Climate Science Special Report: Fourth National Climate Assessment, Volume I.

Precipitation and Flooding

Projections for precipitation patterns in the Midwest indicate that the number of dry days will increase, while the number of days with the heaviest rainfall will increase greatly. This

inconsistent pattern of rainfall is likely to lead to challenges for the agricultural industry, combatting dual issues of dry soils for much of the growing season punctuated by potentially damaging heavy rains. It is anticipated that higher temperatures will lead to more frequent agricultural droughts, characterized by soil dryness, throughout the United States due to faster rates of evapotranspiration, or moisture uptake by plants. This pattern of increasing frequency and intensity of drought is expected to occur despite overall increases in rainfall, due to higher temperatures and inconsistent or "flashy" rainfall patterns.

Another projected consequence of this "flashy" rainfall pattern and overall increase in rainfall for the region is more frequent flooding. Riverine flooding is likely to be the most common in Woodbury County's communities. However, urban flooding also increases with intense rainfall events. Urban flooding is caused by runoff from impervious surfaces and inadequate absorption of water into the ground. Both types of flooding can cause property damage and put substantial strain on aging sewer infrastructure, while riverine floods are the most likely to cause damage to crops and livestock.

Public Health Disasters in WC

Preexisting chronic health conditions, such as obesity, high blood pressure, and diabetes, as well as health behaviors, such as tobacco use and excessive alcohol use, influence the population's resilience to public health disasters. The series of charts in Figure 8.1 display data on the prevalence of several conditions and behaviors over time in Woodbury County from the County Health Rankings & Roadmaps at the University of Wisconsin Population Health Institute. These charts provide a snapshot of some of the factors that contribute to the population's resilience to public health emergencies.

As experienced during the COVID-19 pandemic, those with preexisting medical conditions were at far greater risk of adverse outcomes from the virus when compared to those without such conditions. While many chronic diseases and disabilities cannot be prevented, behaviors that are known to increase the risk of poor health outcomes can be discouraged through education and other public health initiatives.

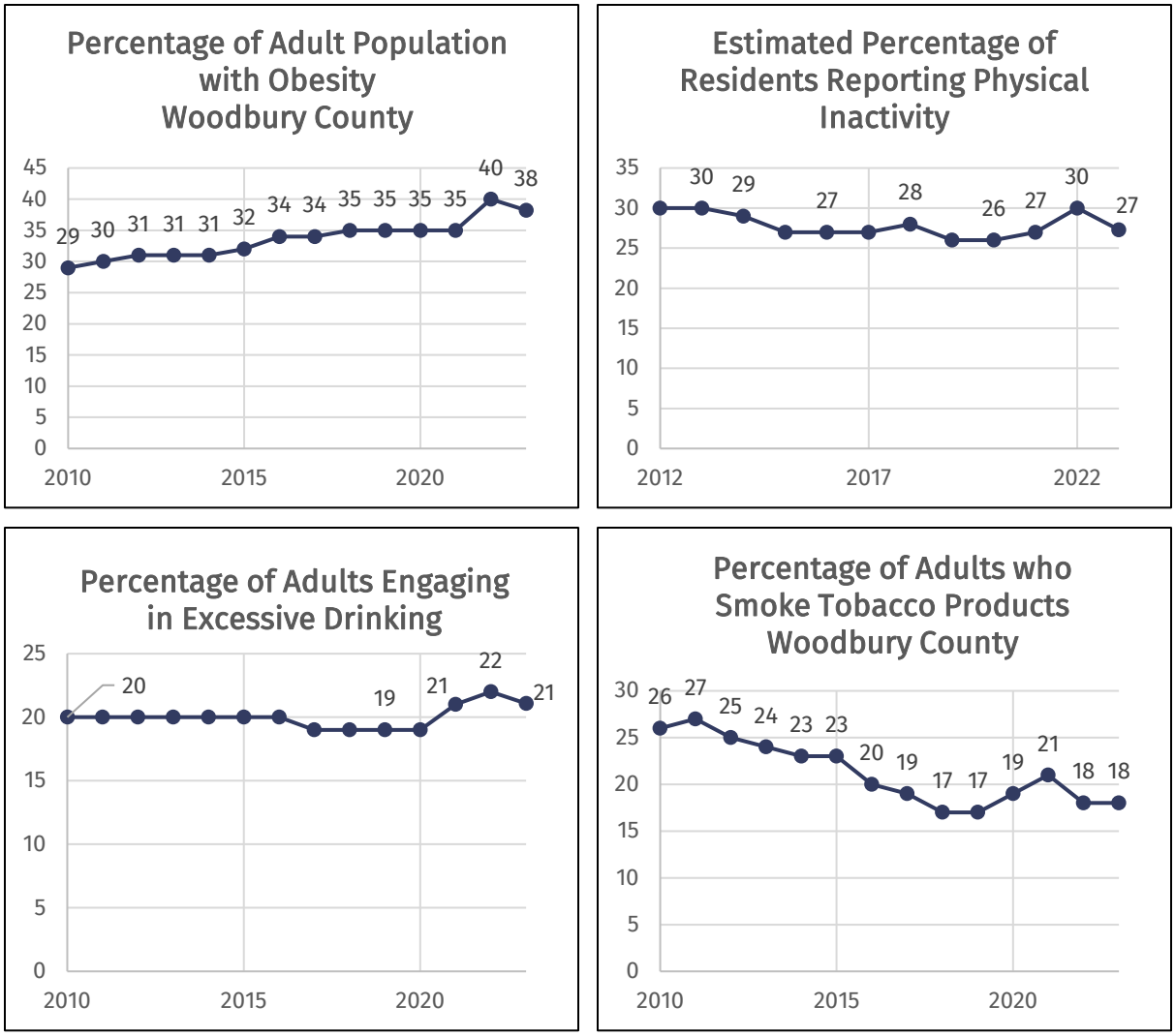


Figure 8.1. Source: County Health Rankings & Roadmaps at the University of Wisconsin Population Health Institute

In addition to health behaviors and preexisting conditions, the socioeconomic context and physical environment also influence the community's ability to adapt to and recover from public health emergencies. For example, the charts in Figure 8.2 display trends in Woodbury County related to the availability of fresh food, access to healthcare, and childhood poverty. These are examples of factors that also influence the extent to which a public health emergency will have a negative impact on the population. Communities where most residents have access to healthy food, have regular preventative healthcare, and have greater financial resources are generally better equipped to endure and bounce back from the effects of a public health emergency. This was evident during the COVID-19 pandemic, where economic and racial disparities in the number of adverse outcomes from the virus were observed in communities across the nation.

In Woodbury County, the food environment has improved substantially over the past decade, but there are still a significant number of residents struggling with food insecurity and access to healthy foods in particular. While the number of residents without medical insurance has

been cut in half over the past decade, the percentage of Woodbury County children in poverty has remained relatively steady since 2010.

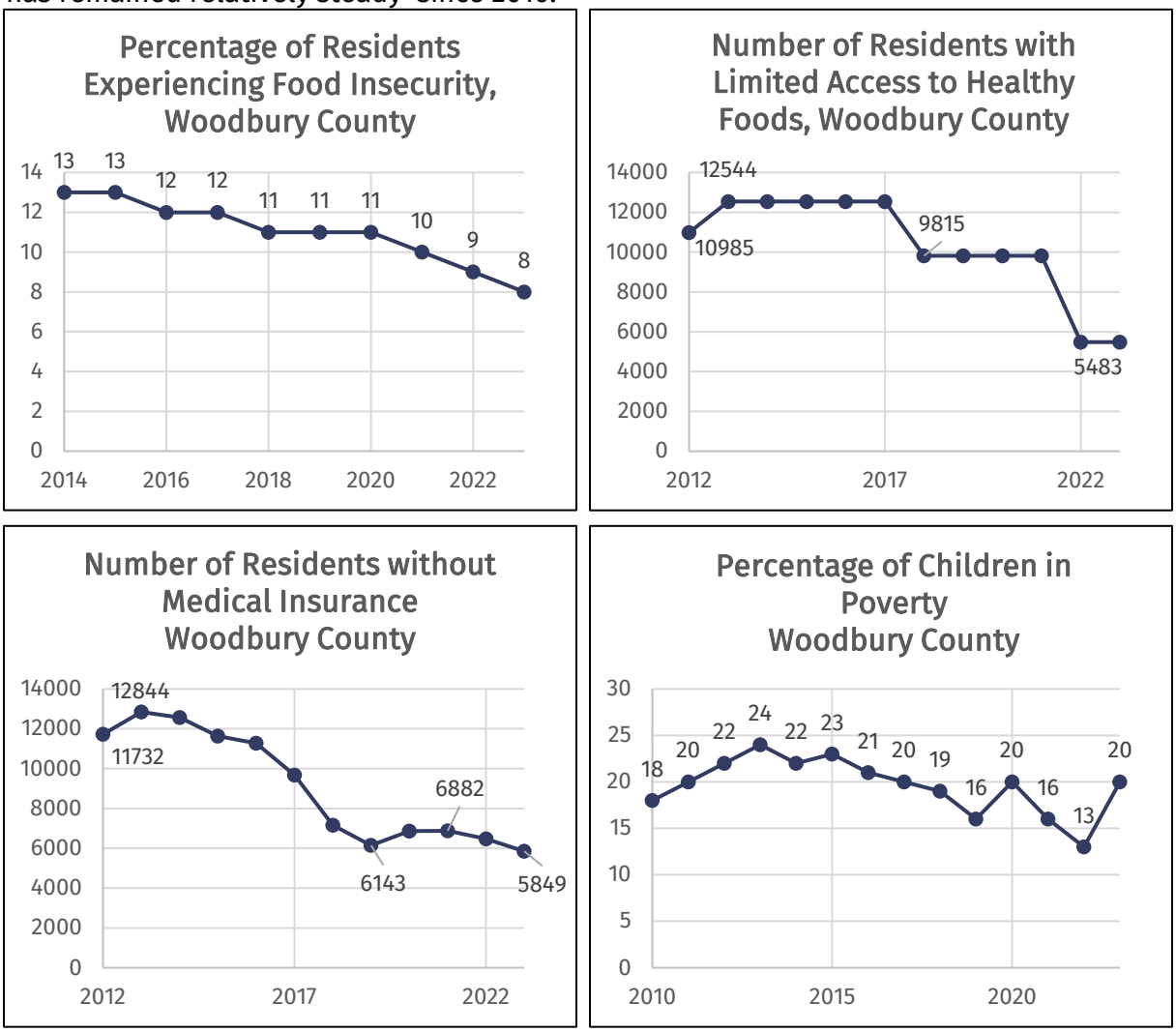


Figure 8.2. Source: County Health Rankings & Roadmaps at the University of Wisconsin Population Health Institute

County and Regional Plans to Address Disasters

Regional Hazard Mitigation Plan

The Regional Hazard Mitigation Plan of 2020 encompasses the five counties of Woodbury, Cherokee, Ida, Monona, and Plymouth. Guidance for the development of this plan is provided by the Iowa Department of Homeland Security, with requirements set forth by the Federal Emergency Management Agency (FEMA). For communities to access FEMA's Pre-Disaster Mitigation funding programs, a Hazard Mitigation Plan (HMP) must be adopted by resolution in participating communities. The focus of this plan is on preparation for natural, public health, security, and other community-wide disasters.

Figure 8.1. Risks identified by the Regional Hazard Mitigation Plan range from natural disasters to public health and security emergencies.

Figure 8.1 illustrates the risks that were identified as relevant to the five-county region that should be considered in mitigation planning. The top priorities identified by Woodbury County in particular were: flood (river and flash flooding), dam/levee failure (nine high hazard dams were identified that impact Woodbury County), and tornado/windstorm. In addition to these top three priorities, severe winter weather was reported by Woodbury County to have a large impact on county and city budgets. The freeze/thaw cycle broght on by winter weather accelerates deterioration of bridges and road infrastructure, while snow removal and urgent repairs are encountered each year. Water main breaks and sinkholes are not uncommon, especially in communities with aging underground infrastructure.

In addition to outlining the primary risks for the county, this plan also reviews mitigation goals that were set in 2014, and summarizes any actions taken toward accomplishing these. Goals that are still relevant but have not yet been addressed are identified. Hazard-specific mitigation goals as well as more general strategies are provided for the region overall, counties, individual cities, and school districts. The complete plan can be accessed from SIMPCO's website under the Community Development division, simpco.org/divisions/community-development.

Woodbury County Joint Emergency Operations Plan

The Woodbury County Joint Emergency Operations Plan encompasses both incorporated and unincorporated areas of the county and involves coordination between 15 municipal governments, townships, and the county government. This plan considers the many complex and ever-changing requirements to prepare for and respond to disasters, public safety threats,

and other emergencies. The full life cycle of disaster planning is considered in this plan: preparedness, response, recovery, and mitigation. The strategies and lines of coordination that make up the framework for response outlined in the plan are applicable despite the hazard type, size, or complexity. This framework is established through the National Incident Management System, which standardizes incident management for all hazards across all levels of government. Roles and responsibilities of elected officials, the emergency management coordinator, department and agency heads, the private sector, and nongovernmental organizations are made clear in this document. In addition, Emergency Support Functions (ESFs), or groupings of capabilities and resources based on the function they perform, are defined for the county. This modular approach simplifies response by activating only the appropriate ESFs that are applicable after an incident. A copy of the Emergency Operations Plan can be requested from the Woodbury County Emergency Management Department.

Siouxland District Health Department

The Siouxland District Health Department regularly participates in collaborative emergency preparation with local health care providers, hospitals, and emergency planners and responders. They are a member of the Serve Area 3 Regional Health Care Coalition made up of members Monona, Ida, Cherokee, Plymouth, Sioux, O'Brien, Lyon and Osceola counties Members include county public health departments, hospitals, emergency management agencies and county emergency medical services agencies. This level of ongoing coordination and communication is essential for effective response when emergencies arise., for the network to understand assigned roles, and avoid duplication of efforts when timely response is essential.

In addition to these collaborations, the Siouxland District Health Department also develops the Community Health Improvement Plan every three years. This document is based on analysis of health trends in the six-county, tri-state area gathered in the Community Health Assessment. The priority health issues identified in the plan for 2022-2024 were access to mental health care, utilization of preventative care services, rates of sexually transmitted infections, substance abuse, obesity, and food insecurity. By addressing these issues, the strategies in the Health Improvement Plan increase the county's resilience to public health emergencies. A healthier community in which residents have their basic needs met is better equipped to recover from such events.

Response, Recovery and Resiliency to Disasters

During emergencies, whether natural disasters, public health emergencies, or economic downturns, the strengths of a region can soften the blow, buoying the economy and encouraging rapid recovery. At the same time, weaknesses can exacerbate the impacts of an emergency and complicate recovery. When the Comprehensive Economic Development Strategy (CEDS) was developed for SIMPCO's Economic Development District, the steering committee analyzed the region's strengths, weaknesses, opportunities, and threats (also known as a SWOT analysis). The results of this inventory are summarized in the table below.

Strengths	Weaknesses
Strong agricultural economy • Interconnected transportation network (rail, interstate, river, air) • Tradition of strong work ethic • Low energy costs; dependable energy • Leadership committed to economic growth • Strong educational system and resources (including public, private, and non-degree programs) • Strong technical education for trade skills • Workforce development agency • Readily available water • High air quality • Low commute time • Low cost of living for a high quality of life • Low housing costs • Cultural diversity • Proximity to markets due to central location • Legacy of manufacturing and embracing latest manufacturing technology • Recent growth of skilled workforce with apprenticeships, internships, and career development center • Career Academy developed with local school districts	Lack of housing (both in terms of quantity and variety); shortage of affordable housing • Decline in working-age population • Limited entrepreneurial opportunities • Limited ability to attract and retain young workers, especially college graduates, skilled workers, and local talent (brain drain) • Shortage of skilled labor • Aging infrastructure (pipes, sewers, electrical, housing) • Limited apprenticeship opportunities • Lack of adequate air transportation service • Lack of distance learning plan (in regards to consolidated school districts) • Lack of a land grant university • Inadequate broadband coverage and access, especially in rural areas • Lack of childcare facilities (both in terms of quantity and distribution) • Presence of food deserts
Opportunities	**Threats**
Aggressive workforce development • Regional business retention • Infrastructure Improvements (roads, bridges, broadband, rail, airport, etc.) • Promote low cost of living • Attract art and entertainment options • Promote the consolidated, high-quality job website • Market our regional successes more aggressively • Build upon family amenities • Attract new residents, while also retaining current population • Embrace technological advances such as automation, particularly in the manufacturing industry • Attract young workers and former residents (Return to roots campaign) • Immigrants and international workers can bolster economic outputs • Diversification of Siouxland employers • Grow healthcare systems & providers • Investment in downtowns • Ag/tech job growth • Build upon housing growth & rehabilitation • Upskilling untapped workforce • Airport & Aviation School/Industry • Embrace recently invested in and growing industries, such as barge and freight carrier • Innovating and expanding public transportation	Worker retention • Effective training in local colleges and trade schools to keep up with industry needs and demands • Lack of business succession planning • Loss of available funds as population declines • Adverse natural and environmental impacts • Lack of qualified and eligible workers; labor shortage • Young people moving out of region • Cost of construction; lack of contractors • Lack of elderly/senior care & housing • Declining population can result in loss of available funds

Lessons learned from the COVID-19 Pandemic

After the COVID-19 pandemic, SIMPCO staff revisited this SWOT analysis to determine which factors were relevant to resilience and recovery from the pandemic. They used these factors in the development of the Disaster Recovery & Resiliency (DRR) Plan, an addendum to the CEDS document. This reevaluation of the region's strengths and weaknesses after the public health emergency is an exercise in gathering lessons learned from the pandemic, and developing targeted goals to improve future response to such disasters.

One of the strengths of the region's recovery from the pandemic was the fast adaptation to the risks of in-person events and meetings. Businesses, employers, and educators rapidly adopted online platforms to enable remote learning and commerce. They took advantage of technological solutions that had been available but not widely utilized prior to the pandemic to continue operations remotely.

The region's low unemployment rate cushioned the blow of lay-offs immediately following the pandemic's onset, allowing a faster recovery to pre-pandemic unemployment rates. The strong agricultural and food-manufacturing economy was also a major strength. The demand for food and agricultural products remained strong even as supply chains were disrupted, allowing the backbone of the region's economy to support a rapid recovery.

While these strengths provided momentum for economic recovery after the initial shock of the pandemic, several regional weaknesses became apparent. The availability of childcare was a major barrier for the workforce. The quantity of daycares as well as their uneven distribution became apparent as the pandemic forced daycare owners to reduce the number of children in their facilities for safety. Working parents were then left to take on childcare duties, often having to make the tough decision to leave the workforce temporarily. Those with flexible work arrangements had to juggle full time work and full time parenting, sacrificing productivity.

Another weakness that the pandemic uncovered was the precariousness of many residents' housing accommodations. Many residents faced lay-offs in the months following the pandemic's onset, which led quite rapidly to the loss of housing. This was due to very high rent costs in proportion to wages for many workers. High rent takes away from the amount that households can save each month in case of emergencies such as job loss. Without an adequate cushion of savings, many households defaulted on rent payments.

Opportunities identified in the wake of the pandemic included an influx of new housing developments. In 2020, there were 521 new housing construction permits issued to develop a variety of housing types in Sioux City. Increasing the supply of new housing will be key to reducing rents and purchase costs.

Another opportunity identified by the team was the expansion of broadband infrastructure. While work places and schools quickly adopted technological tools for online interaction, rural areas without robust internet infrastructure struggled with this transition. Going forward, improvments in equitable broadband access is an opportunity to strengthen communication for the entire region.

There were several threats that were brought to light by the unique economic impacts of the pandemic. Across the country, businesses struggled with a labor shortage, so recruitment and

the retention of employees caused issues ranging from a reduction in operating hours, reduced services, overworked staff, and closures. In this region, the historically low unemployment rate makes recruitment even more difficult for businesses that are pulling from a smaller pool of available workers. In addition, this region has struggled with a ”brain drain” of young adults who move away for education and career opportunities. This further limits the labor pool, especially of employees with specialized skills and higher education. These existing conditions were exacerbated by the “Great Resignation” and labor shortages caused by the pandemic in the national economy.

Lastly, brick and mortar retailers that had already been struggling to keep up with online commerce saw a major increase in the amount of goods purchased online during and following the pandemic. This has threatened the availability of retail job opportunities in the region.

The Building Blocks of Resiliency

Mitigation	Preparedness
• Identify actions or policies that will eliminate or reduce the threat of a risk or its severity.	• Identify strengths and weaknesses. • Create plans to address these. • Assign roles to all actors in the plan. • Establish a system of continuous communication.
Response	**Recovery**
• Immediate actions taken after a disaster. • Carry out emergency response plans at all organizational levels (from individual businesses to local government departments, county departments, and regional).	• Return to normalcy after the immediate response. • Includes the consideration of vulnerabilities and determining how these can be addressed in the future.

Planning documents as a tool for resiliency

The information above provides an overview of some conclusions included in the Disaster Recovery and Resiliency Plan for SIMPCO’s Economic Development District. This shows how disaster planning documents can be used as tools for resiliency, aiding in the cycle between recovery and mitigation. These plans identify strengths of the County to build upon, and weaknesses that can be improved in preparation for various disasters. These plans also include prioritized improvements and action steps to take based on the specific disaster risks for the geographic location of the County.

Funding sources

While funding sources greatly depend on the specifics of a project, there are several agencies that reliably provide resiliency-related funding and other resources. Below is a list of these potential sources.

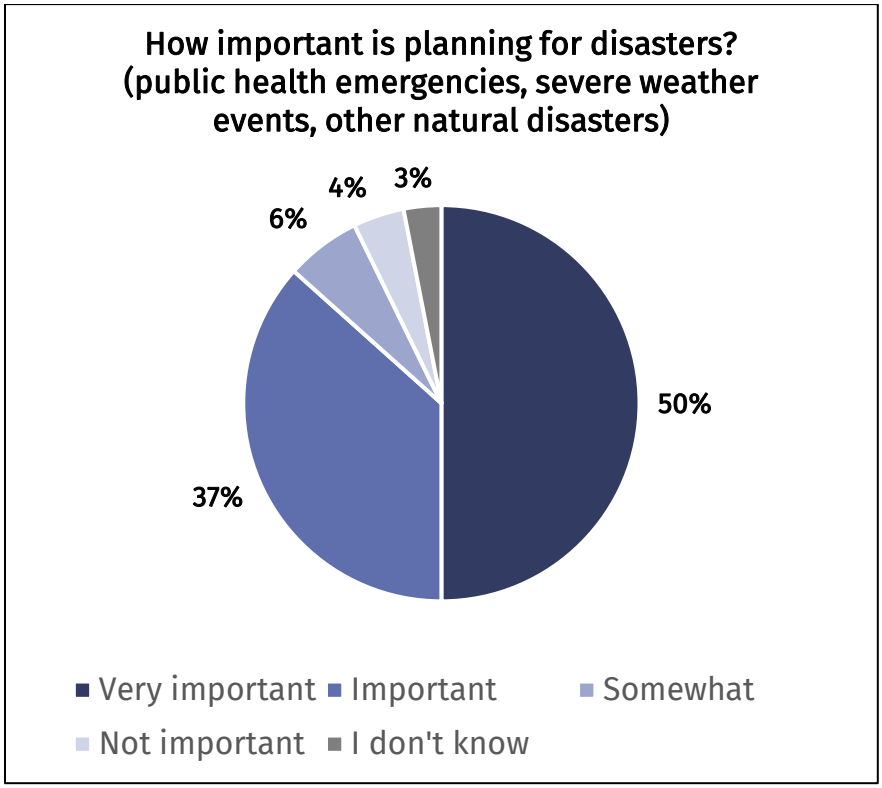
- Federal Emergency Management Agency (FEMA)
    - Preparedness Grants
    - Hazard Mitigation Assistance Grants
        - Building Resilient Infrastructure and Communities grant (BRIC)

        - Hazard Mitigation Assistance Program (HMGP)
        - Flood Mitigation Assistance (FMA)
    - Resilience Grants
    - Emergency Food and Shelter Program
- U.S. Department of Agriculture (USDA)
    - Community Facilities Programs
    - Water & Environmental Programs
    - Telecommunications Programs
- U.S. Department of Homeland Security
- Army Corps of Engineers
    - Water Resources Programs
- Health & Human Service Agencies (both Federal and State)
- Iowa Economic Development Authority (Iowa EDA)
    - Community Development Block Grant (CDBG)
- Iowa Department of Transportation (Iowa DOT)
    - Hazardous Materials Emergency Preparedness Grant (HMEP)
- Iowa Department of Natural Resources (Iowa DNR)
    - Stream Maintenance Program
    - Engineering Studies for Streams
    - Floodplain Development Management
    - State Revolving Loan Fund (SRF)
- Gilchrist Foundation
- Missouri River Historical Development (MRHD)

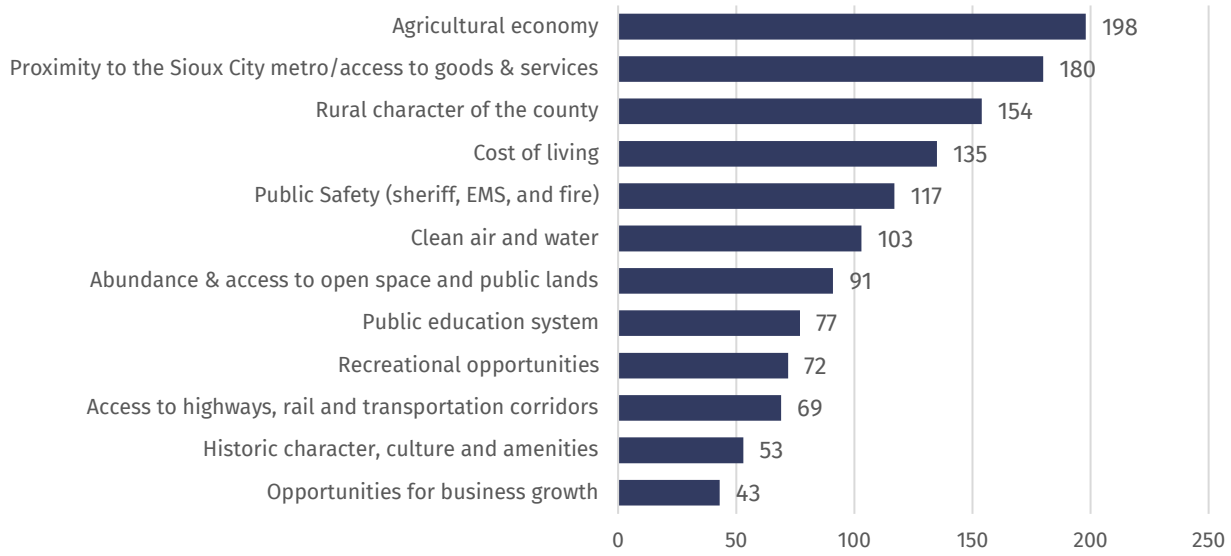
Survey Results Synopsis

When asked how important it is to plan for disasters in Woodbury County, nearly 90% of survey participants responded that it is either “important” or “very important” to prepare for such events. The public safety services in Woodbury County were also frequently identified in the survey as one the county’s greatest assets. It is clear that residents value the quality of the emergency response teams and recognize the importance of responding to natural and public health disasters.

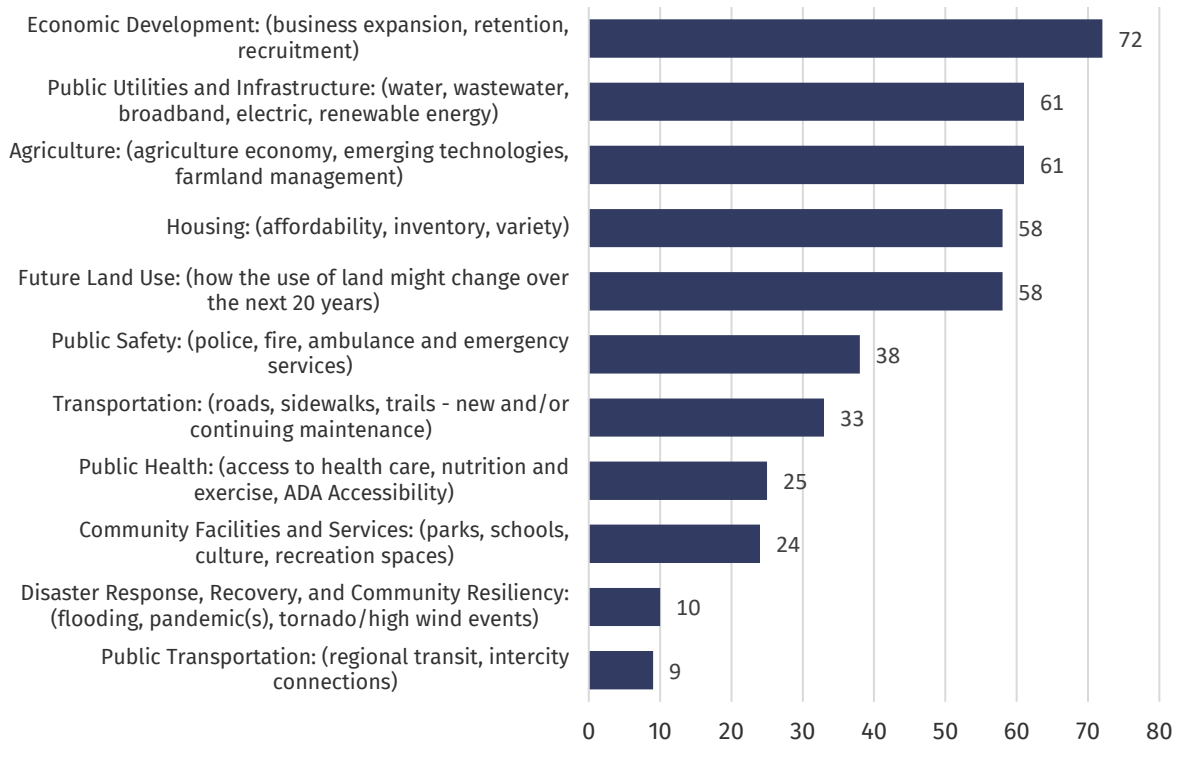
However, when asked what topics were likely to be the most important over the next 20 years, only 10 residents chose “disaster response, recovery, and resiliency: (flooding, pandemics, tornado/high wind events)”. By nature, disasters are unpredictable events, striking only on occasion. It is difficult to compare the importance of preparing for such events with everyday concerns that impact livelihoods and daily life. Perhaps residents prioritized these concrete, everyday concerns above planning for unforeseeable disasters. Despite this ranking, it is clear that overall, residents of Woodbury County value public safety and disaster preparedness.



What are rural Woodbury County's greatest assets?
(Choose up to 3)



Which of the following topics do you think will be the most important in the next 20 years?



Goals & Objectives

- ***Goal:*** **Ensure residents' access to safe, healthy, and efficient homes that are prepared to withstand increasingly frequent severe and unpredictable weather.**
    - Promote the use of healthy and safe building materials, high indoor air quality, and environments free of pests, radon, mold, and other health hazards.
    - Encourage energy- and water- efficiency in home retrofit projects and new construction and the use of onsite renewable energy systems.
    - Provide information about how to protect homes from flooding in preparation for increasingly frequent heavy rain events.

- ***Goal:*** **Coordinate disaster response, recovery and resiliency efforts among jurisdictions, county, state, and federal agencies.**
    - Foster interagency agreements to bolster response and recovery to emergency and disaster events and encourage resource sharing.
    - Keep open lines of communication between County departments and surrounding jurisdictions and counties.
    - Work with State and Federal officials in preparation of and response to disaster declarations and subsequent disaster relief efforts.

- ***Goal:*** **Encourage passive development within 100-yr floodplain areas.**
    - Work to ensure that developed areas within floodplains are safe and secure.
    - Take advantage of state and federal programs designed to aid, relocate, or demolish properties within high-risk flood areas when necessary.
    - Consider site plan design, best building practices, and federal standards when development within a floodplain occurs.

- ***Goal:*** **Support the County Emergency Management and Emergency Services Departments' missions to provide the most efficient services to Woodbury County and to mitigate against, prepare for, respond to, and recover from all disasters.**
    - Work to complete the Woodbury County action items identified in the 2020 Regional Hazard Mitigation Plan, and future approved plans.
    - Coordinate and participate in training exercises within the region to strengthen response to and recovery from emergencies.
    - Work to educate the public on disaster preparedness, recovery, and resiliency
    - Continue participation in the Local Emergency Management Commission for the region.
    - Employ and update the Woodbury County Joint Emergency Operations Basic Plan as required by Iowa State Code 29c.
    - Ensure adequate funding to maintain a high level of emergency operations within the County.

- ***Goal:*** **Continue supporting the Siouxland District Health Department in their mission to lead a "collaborative effort to build a healthier community through improved access to health services, education and disease prevention."**
    - Continue Woodbury County Emergency Management and Emergency Services Departments' partnership and participation in the Service Area 3 Healthcare coalition.
    - Support the implementation of the Siouxland District Health Department's Community Health Improvement Plan for the Siouxland Community developed

from the three-year Community Health Needs Assessment for the Siouxland Community.
    - Coordinate with and support the Siouxland District Health Department in responses to public health emergencies.

- *Goal:* **Support the recovery and resiliency of industries, businesses, and homes in the event of a natural or public health disaster.**
    - Ensure reliable internet and telecommunications services to keep physical and home-based businesses' web operations in place in natural or public health disaster situations
    - Prioritize funding any economic relief programs put in place after disaster situations for entities with the highest need
    - Promote available local, state, and federal resources for economic recovery from disasters
    - Allow for flexibility in ordinances to encourage the continuity of business operations which may be disrupted due to public health directives during public health emergencies.

Chapter 8: Implementation and Administration

Woodbury County will strive to implement the vision, goals, and objectives developed in this Comprehensive Plan. The vision statement stated below encompasses the overarching image of the county's future. Goals and objectives were developed throughout the plan in the following categories: Housing, Economic Development, Transportation, Public Infrastructure and Utilities, Community Facilities and Services, Land Use and Natural Resources, and Disaster Response, Recovery, and Resiliency.

Woodbury County is a place where:

- ***rural character** and a **strong sense of community** are shared;*
- ***land development** is managed in a way that complements and **enhances the County's character** and **upholds residents' ideals;***
- *economic development is rooted in a **diverse, agriculture-based economy**, focused on opportunities to grow and **enhance existing businesses and industry**, provide a supportive environment for **new enterprises**, and develop a **robust workforce**;*
- *conservation and **stewardship of natural resources** is a matter of pride and shared ownership;*
- *demand for a **quality and affordable standard of living** is met;*
- *government exists to **serve people and to protect the public health, safety, and welfare to ensure a prosperous and resilient future.***

Implementation Tips

1. Read and review the goals and objectives in the implementation action plan.
2. Form a group of dedicated stakeholders or topic area stakeholder groups and meet regularly to discuss the status and implementation of goals and objectives.
3. Assign the following to each goal and objective: Priority, timeframe or deadline, milestones, cost estimate, responsible party(ies), specific funding or in-kind sources, and performance measures for success.

Implementation Action Plan

The table below (Table 8.1) is an action plan to reach the county's vision and goals developed within this Comprehensive Plan. It is recommended that the county staff use this table as a tool to regularly review and revise the implementation plan and to identify priorities, timelines and measure progress. Suggested timelines have been included as a starting point for priority setting. Objectives marked for a timescale of "0-5 years" represent immediate needs and/or relatively low-complexity action items. Those marked for a timescale of both "0-5 years" and "5-10 years" are not immediate needs and tend to be action items of higher complexity requiring greater levels of financial resources and coordination. Lastly, objectives marked for "0-5 years", "5-10 years", and "10-20 years" represent actions that are recommendations for ongoing initiatives, collaborations, policies, or considerations as well as policy changes of the highest complexity. While these timelines are provided as a starting point, they are intended to remain flexible so that county leadership can take advantage of new funding opportunities that may arise, respond to new or intensifying community needs, or coordinate complementary projects to save resources. It is recommended that staff tasked with periodically reviewing the comprehensive plan also revisit the timescale designated for each objective to ensure that it remains appropriate for current priorities.

Implementation Funding Sources

Included below is a list of institutions offering potential funding opportunities related to the goals and objectives within this plan. Individual grant programs change frequently, however, these agencies consistently offer various opportunities for federal and state funding.

General Funding Resources: Local Infrastructure Hub federal grant search database; Grants.gov; Iowa League of Cities; SIMPCO

Housing: Iowa EDA, SIMPCO, USDA Rural Development, U.S. HUD, Iowa DOT (Thriving Communities), U.S. Department of Energy Office of Energy Efficiency and Renewable Energy

Economic Development: Iowa EDA, USDA Rural Development, Iowa Arts Council, Union Pacific Foundation, Iowa Foundation for Microenterprise & Community Vitality, Small Business Administration, Wellmark Foundation, Missouri River Historical Development, National Endowment for the Arts, U.S. EPA (Brownfield Redevelopment), National Parks Service (Historic property rehab), Iowa DOT (Thriving Communities)

Transportation: Iowa DOT, Federal Transit Administration, SIMPCO, Iowa EDA (Career Link Employment Transportation program), USDA Rural Development, U.S. DOT National Aging and Disability Transportation Center

Public Infrastructure and Utilities: Iowa EDA, U.S. EDA, IDNR, USDA Rural Development, U.S. Department of Energy

Community Facilities and Services: Iowa EDA, FEMA, USDA Rural Development, Iowa Arts Council, Fund for Siouxland, Union Pacific Foundation, Wellmark Foundation, Missouri River Historic Development, Iowa Governor's Office of Drug Control Policy

Land Use and Natural Resources: Iowa DNR, USDA Farm Service Agency, Beginning Farmer and Rancher Development Program, Iowa Finance Authority's Beginning Farmer Programs, USDA National Institute of Food and Agriculture, USDA Office of Partnerships and Public Engagement, USDA Natural Resources Conservation Service, U.S. EPA

Disaster Response, Recovery, and Resiliency: U.S. Department of Homeland Security FEMA, Iowa EDA, Union Pacific Foundation, U.S. HUD, USDA Natural Resources Conservation Service, USDA Rural Development

Table 8.1 - Implementation Tool

Housing	Lead	Partners	Cost	Measures of progress
Goal H1: Quality. Improve the condition of existing housing stock to ensure homes are safe, efficient, and resilient.				
H1.1 Provide rehabilitation assistance resources for homeowners living in historic or outdated structures. **0-5 years** 5-10 years 10-20 years	Siouxland District Health Department	SIMPCO	$	• Utilize existing avenues of communication such as social media pages, newsletters, and mailing lists to distribute information
H1.2 Target outreach to minority and under-resourced communities to ensure that information and resources are equitably distributed. **0-5 years** 5-10 years 10-20 years	Siouxland District Health Department	SIMPCO	$	• Determine avenues of communication that would reach the target population
H1.3 Target outreach to homeowners that may be impacted by disasters, in need of septic system updates, lead abatement, or other immediate safety concerns. **0-5 years** 5-10 years 10-20 years	Siouxland District Health Department	SIMPCO	$	• Determine avenues of communication that would reach the target population
Goal H2: Affordability. Increase the variety of housing options to maximize affordability and availability for residents of all income levels.				
H2.1 Encourage flexibility in residential zoning to allow residents to meet housing needs with the construction of accessory dwelling units or home additions that can provide additional rental units and supplemental income, housing for extended family, or homecare arrangements for caretakers. **0-5 years** **5-10 years** **10-20 years**	Community & Economic Development	Incorporated cities	$	• Collaborate with incorporated cities
H2.2 Increase the quantity of high quality, affordable rental units by encouraging the development of a variety of multi-family housing options within incorporated cities that meet the diverse needs of residents of all ages. **0-5 years** **5-10 years** **10-20 years**	Community & Economic Development	Incorporated cities	$$	• Collaborate with incorporated cities • Increase in the number of new or redeveloped multi-unit housing developments affordable units available

H2.3 Increase the number of affordable housing units in Woodbury County. **0-5 years** | **5-10 years** | **10-20 years**	Community & Economic Development	Incorporated cities	$	• Collaborate with incorporated cities • Increase in the number of new or redeveloped affordable units available
H2.4 Encourage the development of upper story units above downtown store fronts to introduce additional housing variety in small towns. **0-5 years** | **5-10 years** | **10-20 years**	Community & Economic Development, Board of Supervisors	Incorporated cities	$	• Collaborate with incorporated cities • Increase in the number of upper story units available
Goal H3: Rural character. Preserve the rural character of the county.				
H3.1 Limit density in rural areas outside of incorporated cities. **0-5 years** | **5-10 years** | **10-20 years**	Community & Economic Development		$	• Consider agricultural preservation and rural character in rural zoning decisions
H3.2 Protect agricultural land, wildlife habitat, and outdoor recreational land. **0-5 years** | **5-10 years** | **10-20 years**	Board of Supervisors, Community & Economic Development	Conservation Department, Conservation organizations	$	• Collaborate with conservation organizations to determine ideal lands for protection
H3.3 Prioritize new development to locate adjacent to existing town limits, and prioritize the rehabilitation of existing structures, infill development, and brownfield redevelopment. **0-5 years** | **5-10 years** | **10-20 years**	Community & Economic Development	Incorporated cities	$	• Collaborate with incorporated cities
Goal H4: Access to housing. Expand access to safe, high-quality housing for all residents in Woodbury County.				
H4.1 Direct funding toward the provision of high-quality, affordable housing options for vulnerable populations: low-income residents, seniors, and residents with disabilities. **0-5 years** | **5-10 years** | 10-20 years	Community & Economic Development	Incorporated cities, Social Services Department	$$$	• Increase in the number of new or redeveloped affordable units available for target populations

H4.2 Direct funding toward emergency shelters, housing, and social work services for homeless individuals living in the county. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors, Social Services Department	Local community organizations	$$	• Partner with and support community organizations that address housing needs
H4.3 Connect residents with funding opportunities that provide financial assistance for housing rehab. **0-5 years** | 5-10 years | 10-20 years	Siouxland District Health Department	SIMPCO	$	• Determine avenues of communication that would reach the target population
Goal H5: Homeownership. Assist residents in the path from renting to becoming homeowners.				
H5.1 Connect residents with information and resources that aid in the purchase of homes, such as down payment assistance grants for first time or low-income residents, and low-cost financial counseling. Particular care should be taken to reach out to residents of color and immigrant communities with these opportunities; providing resources, information, and support in residents' native language when applicable. **0-5 years** | 5-10 years | 10-20 years	Siouxland District Health Department	Local community organizations	$	• Determine avenues of communication that would reach the target populations

Economic Development	Lead	Partners	Cost	Measures of progress
Goal ED1: Regional alignment. Coordinate economic development initiatives with regional priorities.				
ED1.1 Coordinate economic development initiatives with the Comprehensive Economic Development Strategy (CEDS) Committee and refer to the CEDS document to ensure alignment with the goals and strategies therein. **0-5 years** | **5-10 years** | **10-20 years**	Community & Economic Development	SIMPCO, Regional jurisdictions	$	• Establish a system of coordination and a pattern of referral
Goal ED2: Industry and workforce. Maintain core industries that are the backbone of Woodbury County's economy by marketing Siouxland as a regional center for food production and related agricultural industries.				

ED2.1 Maintain Woodbury County's ACT® Work Ready Community status. **0-5 years** | **5-10 years** | **10-20 years**	Board of Supervisors		$	• Complete requirements for maintaining status
ED2.2 Continually communicate with industry leaders to identify emerging in-demand skills and qualifications. **0-5 years** | **5-10 years** | **10-20 years**	Board of Supervisors	Regional industry leaders	$	• Facilitate communication between industry leaders and academic institutions
ED2.3 Work with local colleges and high schools to continually improve training opportunities for students to learn in-demand skills necessary to support the region's industry clusters. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	Local academic institutions	$	• Facilitate communication between industry leaders and academic institutions
ED2.4 Coordinate across jurisdictions to assist in the marketing and promotion of the county's Certified Sites. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	Iowa EDA, Regional jurisdictions	$	• Identify potential occupants
Goal ED3: Industry and workforce. Encourage diversification of Woodbury County's economy, in support of small businesses which generate nearly half of all economic activity nationwide, as well as larger enterprises.				
ED3.1. Coordinate with city jurisdictions of Woodbury County to offer access to supportive resources, networking opportunities, and financial information for residents interested in starting a small business. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	City jurisdictions	$	• Determine avenues of communication that would reach the target population
ED3.2 Maintain partnership with Iowa's West Coast Initiative to develop economic opportunities in the Siouxland region. **0-5 years** | **5-10 years** | **10-20 years**	Board of Supervisors	Iowa's West Coast Initiative	$	• Continue collaborative activities in support of regional entrepreneurial activity and small business growth

ED3.3 Consider the development of alternative energy industry partnerships. **0-5 years** | **5-10 years** | **10-20 years**	Board of Supervisors	Industry leaders	$	• Stay aloft of the latest alternative energy technology and industry innovations
ED3.4 Provide language supports for non-English speaking business owners, prospective business owners, and employees where necessary. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	Local community organizations	$$	• Identify residents in need of support • Develop relationships with organizations offering language support resources
Goal ED4: Quality of life. Work to enhance Woodbury County's quality of life to draw and retain families, employees, and residents of all ages in the region.				
ED4.1 Continue to invest in innovative improvements such as recreation and entertainment opportunities. **0-5 years** | **5-10 years** | 10-20 years	Board of Supervisors	Conservation department, Local community organizations	$$$	• Identify recreation and entertainment improvement opportunities • Apply to relevant funding sources
ED4.2 Build upon unique assets of the county, such as natural features and historical resources to create enriching cultural experiences for residents. **0-5 years** | **5-10 years** | 10-20 years	Board of Supervisors	Conservation department, Local community organizations	$$$	• Identify cultural, historical, and natural assets presenting enrichment opportunities • Apply to relevant funding sources
ED4.3 Improve access to internet connectivity by investing in broadband infrastructure. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	Internet service providers, State and Federal agencies	$$	• Apply to relevant funding sources
Goal ED5: Quality of life. Encourage healthy lifestyles to maximize residents' quality of life.				
ED5.1 Support the expansion of health services such as clinics and exercise facilities in rural areas. **0-5 years** | **5-10 years** | 10-20 years	Board of Supervisors	Siouxland District Health, Social Services Departments	$	• Identify service gaps and needs through resident outreach and collaboration with healthcare providers

ED5.2 Refer to the Siouxland District Health Department's Health Needs Assessment and Health Improvement Plan for guidance and consider the health and wellness impacts of all county activities, programs, and policies. **0-5 years** | **5-10 years** | **10-20 years**	All County departments	Siouxland District Health Department	$	• Establish a system of coordination and a pattern of referral
ED5.3 Support education for regular wellness exams to increase early detection of serious illness. **0-5 years** | 5-10 years | 10-20 years	Siouxland District Health Department	Educational institutions, Local community organizations	$	• Reach out to residents through community organizations such as educational institutions, social service providers, churches, and non-profits
Goal ED6: Equity. Ensure that educational and economic opportunities are accessible to all residents, regardless of race, age, sex, religion, or ability.				
ED6.1 Continue to identify and facilitate access to appropriate supports and resources for residents struggling with poverty. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors, Social Services Department	Local community organizations	$	• Identify service gaps and needs • Determine avenues of communication that would reach the target population
ED6.2 Work across jurisdictions and with underrepresented populations, such as people of color, low-income residents, and those with disabilities, to identify barriers to educational access and provide appropriate services and support. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	Local community organization, Social Services Department	$$	• Identify barriers to educational access and needed supports • Determine avenues of communication that would reach the target population
ED6.3 Actively market educational and job opportunities to underrepresented communities. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	Local academic institutions, Local community organizations	$	• Reach out and partner with local employers to expand recruitment strategies • Determine avenues of communication that would reach the target population

Transportation	Lead	Partners	Cost	Measures of progress
Goal T1: Safety. Prioritize user safety across all transportation modes in Woodbury County.				
T1.1 Continually seek to improve safety for all transportation users. **0-5 years** | **5-10 years** | **10-20 years**	Secondary Roads Department	Iowa DOT, Emergency Services	$	• Analyze road designs associated with frequent and/or severe crashes • Collaborate with Iowa DOT to determine safety modifications
T1.2 Continue to rehabilitate or replace bridges rated as poor. **0-5 years** | **5-10 years** | **10-20 years**	Secondary Roads Department	Iowa DOT	$$$	• Continue annual evaluation of bridges
T1.3 Continue to work with Iowa DOT and the public to identify areas of the state and county highway system in need of maintenance or resurfacing. **0-5 years** | **5-10 years** | **10-20 years**	Secondary Roads Department	Iowa DOT	$	• Continue annual evaluation and programming of maintenance
T1.4 Work with municipal and state jurisdictions to address sources of frequent traffic incidents. **0-5 years** | 5-10 years | 10-20 years	Secondary Roads Department	Iowa DOT, Regional jurisdictions, Emerg. Services	$$$	• Analyze road designs associated with frequent and/or severe crashes • Collaborate with Iowa DOT and municipalities to determine safety modifications
T1.5 Provide safety-enhancing infrastructure dedicated to bicyclists and pedestrians to reduce conflicts between these users and vehicles. **0-5 years** | **5-10 years** | 10-20 years	Secondary Roads Department	Regional jurisdictions, local bike & pedestrian groups	$$$	• Identify corridors that would benefit from such infrastructure.
T1.6 Seek funding for railroad crossing safety improvements. **0-5 years** | **5-10 years** | 10-20 years	Secondary Roads Department	State & Federal DOT's	$	• Determine needed railroad crossing improvements • Identify funding opportunities
T1.7 Incorporate principles of the Federal Highway Administration's Safe System Approach into roadway design to reduce crash frequency and severity.	Secondary Roads Department	Iowa DOT	$$$	• Analyze road designs associated with frequent and/or severe crashes

0-5 years	5-10 years	10-20 years				• Collaborate with Iowa DOT and municipalities to determine safety modifications
T1.8 Support safety improvements to Sioux Gateway Airport facilities to maintain adequate, essential air services to the region. 0-5 years 5-10 years 10-20 years			Secondary Roads Department	Sioux City Airport Department	$	• Collaborate and offer expertise in planning for safety improvements and efficient service
Goal T2: Accessibility. Ensure equitable access to Woodbury County's transportation system for all residents.						
T2.1 Promote the Siouxland Regional Transit System (SRTS) throughout the county, making information available in Spanish and other frequently spoken languages. 0-5 years 5-10 years 10-20 years			Social Services Department	SRTS, local medical and social service providers, SDHD	$	• Identify organizational partnerships for promotion
T2.2 Consider the needs of all transportation users, especially those who have mobility limitations due to physical, intellectual, or developmental disability; age; income; or language barriers. 0-5 years 5-10 years 10-20 years			Siouxland District Health Department (SDHD)	SRTS, local medical and social service providers, Social Services Department	$	• Continue determining service gaps and barriers for residents with mobility limitations • Identify collaborations with regional organizations to address gaps
T2.3 Support the use of alternative modes of transportation with the installation of infrastructure such as bicycle facilities, sidewalks, trails, and greenways. 0-5 years 5-10 years 10-20 years			Board of Supervisors	Secondary Roads Department, Regional jurisdictions	$$$	• Identify corridors that would provide regional connections to existing trail systems.
Goal T3: Environment. Mitigate the environmental impacts of transportation projects while proactively seeking opportunities for long-term transportation sustainability investments.						
T3.1 Take advantage of federal and state funding to expand infrastructure for electric vehicles throughout the county, including rural areas. 0-5 years 5-10 years 10-20 years			Board of Supervisors	Federal and State funding agencies, Regional jurisdictions	$$	• Select routes that would benefit from such infrastructure.
T3.2 Preserve scenic views, open space, and historic or cultural features along the Loess Hills National Scenic Byway.			Board of Supervisors	Conservation Department,	$	• Identify features, open spaces, and corridors in need of preservation.

0-5 years	5-10 years	10-20 years		Regional jurisdictions		
T3.3 Refer to the Environmental Mitigation Activities of the SRTPA Long Range Transportation Plan before and throughout all transportation planning and development activities. 0-5 years	5-10 years	10-20 years	Secondary Roads Department	Community & Economic Development, SIMPCO	$	• Establish a process for plan review
T3.4 Collaborate with the Woodbury County Conservation Board, Iowa Department of Natural Resources, Iowa Environmental Protection Agency, and other environmental stewardship organizations to determine the potential consequences of transportation projects to water, air, habitat, land use, cultural and historical resources, other natural resource, and residents' health. Care should be taken to avoid or minimize negative impacts. 0-5 years	5-10 years	10-20 years	Secondary Roads Department	Conservation Department, Iowa DNR, Iowa EPA, and other environmental organizations	$	• Establish a system of coordination and consultation with environmental agencies and organizations
T3.5 Work with the Siouxland Regional Transit System (SRTS) to promote public and shared transit opportunities to employers, such as vanpooling. 0-5 years	5-10 years	10-20 years	Board of Supervisors	SRTS, local medical & social service providers	$	• Build partnerships to assist in promotion of services
T3.6 Partner with municipalities to develop carpooling lots where residents can leave vehicles during work hours. 0-5 years	5-10 years	10-20 years	Board of Supervisors	Regional jurisdictions, Secondary Roads Department	$$	• Identify appropriate sites • Seek municipal partnerships
Goal T4: Environment. Expand the network of multi-use trails in Woodbury County.						
T4.1 Collaborate with the Woodbury County Conservation Board to maintain and expand the county trail system. 0-5 years	5-10 years	10-20 years	Board of Supervisors	Secondary Roads, Conservation department	$$$	• Identify corridors that would provide regional connections to existing trail systems.

T4.2 Strive to make regional trail connections between the trail systems of county and municipal parks. **0-5 years** | **5-10 years** | 10-20 years	Board of Supervisors	Municipalities, Conservation department, Secondary Roads Department	$$$	• Identify corridors that would provide regional connections to existing trail systems.
T4.3 Align County trail plans with the vision, goals, strategies, and recommendations of the Iowa Department of Transportation's Bicycle and Pedestrian Long Range Plan. **0-5 years** | **5-10 years** | **10-20 years**	Board of Supervisors	Secondary Roads Department, Conservation Department	$	• Establish a process for plan review
Goal: Economy. Maintain the quality and efficiency of high priority roadways, railways, water, and air services that are essential to the regional economy.				
T5.1 Prioritize higher-volume roadways and those that are used to transport goods, such as farm to market routes, roadways along industrial and commercial corridors, and roadways connecting to intermodal facilities for rehabilitation and repair. **0-5 years** | **5-10 years** | **10-20 years**	Secondary Roads Department	Community & Economic Development	$$	• Continue annual evaluation and programming of maintenance
T5.2 Encourage projects that increase efficiency, minimize congestion, and reduce energy expenditure. **0-5 years** | **5-10 years** | **10-20 years**	Secondary Roads Department	Iowa DOT, SIMPCO	$$	• Evaluate potential projects according to energy efficiency
T5.3 Consider life cycle costs in decision-making, taking into account the cost of maintaining infrastructure in the long-term. **0-5 years** | **5-10 years** | **10-20 years**	Secondary Roads Department	Community & Economic Development	$	• Provide expertise in maintenance cost projections
T5.4 Where possible, prioritize improvement of existing systems over expansion of new infrastructure. **0-5 years** | **5-10 years** | **10-20 years**	Secondary Roads Department	Community & Economic Development	$	• Provide expertise in maintenance cost projections
T5.5 Support the maintenance and expansion of commercial airline service in Sioux Gateway Airport.	Secondary Roads Department	Sioux City Airport Department	$	• Collaborate and offer expertise in planning for safety improvements and efficient service

0-5 years	5-10 years	10-20 years				
T5.6 Support the establishment of additional barge terminals on the Missouri River where river conditions allow.			Secondary Roads Department	Board of Supervisors, Community & Economic Development	$	• Collaborate and offer engineering expertise in planning for barge access.
0-5 years	5-10 years	10-20 years				
T5.7 Support efficient development of commercial and industrial operations in the Southbridge Interchange region.			Secondary Roads Department	Board of Supervisors, Community & Economic Development	$	• Provide expertise in planning for roadway connections for commercial vehicles
0-5 years	5-10 years	10-20 years				

Public Infrastructure & Utilities			Lead	Partners	Cost	Measures of progress
Goal IU1: Communication. Expand upon publicly available information on the Woodbury County website.						
IU1.1 Electronically publish up-to-date planning documents, meeting information, and maps for all county departments.			All County departments		$	• Establish process of regular review of needed updates
0-5 years	5-10 years	10-20 years				
IU1.2 Share County data in a downloadable, practical format.			All County departments		$	• Establish process of regular review of needed updates
0-5 years	5-10 years	10-20 years				
Goal IU2: Energy. Encourage energy efficiency for residential, commercial, and industrial consumers in Woodbury County.						
IU2.1 Bring awareness to energy efficiency incentive and assessment programs available through MidAmerican Energy and Woodbury County REC.			Conservation Department		$	• Share information with residents via established communication channels
0-5 years	5-10 years	10-20 years				
Goal IU3: Energy. Support technological advances in energy production.						

IU3.1 Work with energy providers to diversify and expand energy sources. **0-5 years** | **5-10 years** | **10-20 years**	Board of Supervisors	Utility companies	$$	• Discuss current energy portfolio and goals for future diversification
Goal IU4: Water and sewer. Ensure safe drinking water for all rural Woodbury County residents.				
IU4.1 Provide educational materials about the importance of regular well inspections and bring awareness to free well inspections offered by the County. **0-5 years** | 5-10 years | 10-20 years	Siouxland District Health Department		$	• Identify effective communication channels to target outreach to rural residents
IU4.2 Maintain compliance with state and federal standards for community water systems. **0-5 years** | **5-10 years** | **10-20 years**	Regional jurisdictions		$	• Continue to stay aloft of state and federal requirements
Goal IU5: Water and sewer. Protect ground and surface water from contamination.				
IU5.1 Seal and inspect sealed wellheads that are no longer in use. **0-5 years** | 5-10 years | 10-20 years	Siouxland District Health Department		$$	• Locate and evaluate wellheads that are no longer in use • Communicate the importance of sealing unused wellheads to residents
IU5.2 Provide resources and information to rural residents about septic system maintenance. **0-5 years** | 5-10 years | 10-20 years	Siouxland District Health Department		$	• Identify effective communication channels to target outreach to rural residents
IU5.3 Provide information to realtors about the time of transfer process for septic system inspection when selling properties. **0-5 years** | 5-10 years | 10-20 years	Siouxland District Health Department	Real estate business community	$	• Initiate ongoing communication with the real estate community
IU5.4 Connect farmers and ranchers with technical assistance and resources for preventing fertilizer and animal waste runoff. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	ISU County Extension Office	$	• Target outreach to farmers and ranchers who have not worked with the County Extension Office previously

IU5.5 Encourage the use of green infrastructure for stormwater management where water carrying concentrated contaminants is likely to be intercepted. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	Conservation Department, Iowa DNR	$$	• Determine locations where concentrated contaminants are entering the watershed
IU5.6 Align County Conservation Board actions with the goals and strategies outlined in Iowa's Nonpoint Source Management Plan and collaborate with the Iowa Department of Natural Resources to mitigate nonpoint source water pollution. **0-5 years** | **5-10 years** | **10-20 years**	Conservation Department	Iowa DNR	$	• Determine which goals and strategies of the state plan can be acted upon at the county level • Seek technical assistance from the Iowa DNR
Goal IU6: Water and sewer. Encourage practices that increase water efficiency amongst County residents, commercial establishments, institutions, and municipal utilities.				
IU6.1 Encourage the use of strategies and best practices outlined in the Iowa Association of Municipal Utilities' efficiency planning and conservation workbook, WaterWise. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	Water utility providers	$	• Collaborate with water utilities in the county to complete the 5-step water conservation planning process provided in the workbook
IU6.2 Adopt water saving practices in County buildings. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	All departments	$$	• When needed, replace fixtures with water saving alternatives. • Set goals for building-wide water use reduction
Goal IU7: Broadband and cellular service. Improve internet access for rural Woodbury County residents.				
IU7.1 Take advantage of federal and state sources of funding to improve broadband infrastructure in rural areas. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	State and Federal funding agencies	$$	• Identify funding sources included in the Infrastructure Investment and Jobs Act (IIJA)
Goal IU8: Broadband and cellular service. Expand cellular service in rural Woodbury County.				

IU8.1 Coordinate with telecommunications companies to address areas of the County where cellular service is poor. **0-5 years** | **5-10 years** | 10-20 years	Board of supervisors	Internet Service Providers, State and Federal funding agencies	$$	• Identify funding sources included in the Infrastructure Investment and Jobs Act (IIJA)
Goal IU9: Waste management. Promote waste reduction and recycling practices.				
IU9.1 Encourage and educate on innovative initiatives such as community composting, yard waste disposal, institution-level waste reduction plans (government, schools, festivals, event spaces), and repurposing/repairing/borrowing/trading used items. **0-5 years** | **5-10 years** | 10-20 years	Conservation Department	Regional jurisdictions, institutions, waste management companies	$	• Consider the addition of waste-reduction educational events • Encourage citizen-led waste-reduction initiatives at the institution level
IU9.2 Reduce and enforce illegal dumping in rural Woodbury County. **0-5 years** | 5-10 years | 10-20 years	Sheriff's Office	Board of Supervisors	$$	• Work with residents to identify areas of frequent illegal dumping and encourage reporting of such activities
IU9.3 Provide education on handling and disposal of trees and brush. **0-5 years** | 5-10 years | 10-20 years	Solid Waste Board	Conservation department, waste management companies, residents	$	• Collaborate with waste management companies and Conservation to provide educational materials to residents
IU9.4 Coordinate across jurisdictions to address waste management gaps identified in the 2020 Municipal Solid Waste (MSW) Satisfaction Survey that was distributed in development of the Woodbury County Area Solid Waste Agency's Comprehensive Plan. **0-5 years** | 5-10 years | 10-20 years	Solid Waste Board	Regional jurisdictions, waste management companies, regional institutions	$$	• Review gaps and needs identified by public survey participants
IU9.5 Participate in the State of Iowa's Solid Waste Environmental Management Systems (EMS) program. **0-5 years** | **5-10 years** | **10-20 years**	Solid Waste Board	Iowa DNR	$	• Apply for participation in the EMS program with the DNR

IU9.6 Coordinate across regional jurisdictions to improve access to recycling services in rural areas. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	Solid Waste Board, waste management companies, cities	$$	• Facilitate communications between the county, cities, and waste management companies to encourage resource sharing to improve recycling access
IU9.7 Implement and encourage the utilization of programs and best practices provided by the Iowa Department of Natural Resources' Financial and Business Assistance (FABA) department. **0-5 years** | **5-10 years** | **10-20 years**	Solid Waste Board	Iowa DNR	$	• Distribute educational materials provided by the Iowa DNR's FABA department to county residents
IU9.8 Consider results of the Iowa Statewide Waste Characterization Study in goal setting and when planning the creation or expansion of waste management services and programs. **0-5 years** | **5-10 years** | 10-20 years	Solid Waste Board	Board of Supervisors	$	• Utilize information from the study to identify which materials the waste stream is primarily comprised of • Create strategies for waste reduction and management using this information
IU10: Electric vehicles. Expand the network of public electric vehicle charging stations to rural Woodbury County.				
IU10.1 Continue work with other local, regional, and state leaders to develop an electric vehicle infrastructure plan. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	Regional jurisdictions, Iowa DOT	$	• Offer expertise about frequently traveled county routes and needs of the rural transportation network
IU10.2 Apply for federal and state funding sources set aside for rural electric vehicle infrastructure. **0-5 years** | **5-10 years** | 10-20 years	Board of Supervisors	Iowa DOT	$	• Collaborate with the Iowa DOT to identify funding sources

Community Facilities and Services	Lead	Partners	Cost	Measures of progress
Goal CF1: Health services. Expand access to health services throughout rural Woodbury County.				
CF1.1 Work with the Siouxland District Health Department to expand access to preventative health care services in rural communities.	Board of Supervisors	SDHD, Regional jurisdictions	$$	• Identify communities with the most need for health care access

0-5 years **5-10 years** 10-20 years					
CF1.2 Continue to market the services of the Siouxland District Health Department widely across rural Woodbury County. **0-5 years** **5-10 years** **10-20 years**	Board of Supervisors	SDHD, Regional jurisdictions	$	• Distribute information via existing channels and consider new ways of reaching rural residents	
CF1.3 Evaluate emergency medical response times and outcomes for rural residents to identify how these services can be improved. **0-5 years** 5-10 years 10-20 years	Emergency Services	Emergency Management, Board of Supervisors	$$	• Identify the data necessary to evaluate potential service needs or improvements	
CF1.4 Continue partnering with the Rolling Hills Community Services Region for mental health, disabilities, and crisis care services. **0-5 years** **5-10 years** **10-20 years**	Board of Supervisors	Social Services/Rolling Hills	$	• Continue directing funds to this partnership	
CF1.5 Refer to the Siouxland District Health Department's Health Needs Assessment and Health Improvement Plan for guidance. **0-5 years** **5-10 years** **10-20 years**	Board of Supervisors	SDHD	$	• Establish process for regular review of the plan • Collaborate with SDHD to determine where services are most needed	
Goal CF2: Events and culture. Provide more opportunities for outdoor recreation activities.					
CF2.1 Maintain the current activities of the Woodbury County Conservation Board and support the expansion of their programming and scope of work. **0-5 years** 5-10 years 10-20 years	Board of Supervisors	Conservation department	$$	• Support new environmental programming and initiatives in addition to current services	
CF2.2 Improve the functionality and visibility of county-owned river access points. **0-5 years** 5-10 years 10-20 years	Conservation department	Iowa DNR	$$	• Continue to collaborate with Iowa DNR, National Parks Service, landowners, and other county residents	
CF2.3 Prioritize water quality and river restoration initiatives. **0-5 years** **5-10 years** 10-20 years	Conservation department	Iowa DNR	$$	• Identify funding opportunities for water quality improvement projects	

CF2.4 Pursue opportunities to develop water trails throughout the county. **0-5 years** 5-10 years 10-20 years	Conservation department	Iowa DNR	$$	• Continue to collaborate with Iowa DNR, National Parks Service, landowners, and other county residents
CF2.5 Develop a countywide trail program connecting communities with one another and the county park network. **0-5 years** **5-10 years** **10-20 years**	Conservation department	Secondary Roads, Incorporated cities	$$$	• Identify priority trail connections
CF2.6 Evaluate the condition and availability of county-owned cabins and park shelters. **0-5 years** 5-10 years 10-20 years	Conservation department		$	• Identify essential improvements and priority maintenance needs
Goal CF3: Events and culture. Increase access to family-friendly activities and cultural opportunities in rural Woodbury County.				
CF3.1 Encourage cooperation and resource sharing between nearby towns to create and expand upon parks and recreation opportunities for rural residents. **0-5 years** **5-10 years** 10-20 years	Board of Supervisors	Conservation department	$	• Maintain communication and collaboration between county and city parks and recreation staff
CF3.2 Expand community education opportunities for residents of rural Woodbury County that celebrate the region's historical, cultural, and natural resources. **0-5 years** **5-10 years** 10-20 years	Board of Supervisors	Conservation department	$$	• Seek opportunities for new educational programs
Goal CF4: Service quality. Strive to offer the most efficient, cost-effective, and user-friendly community services as possible.				
CF4.1 Improve digital operations to maximize accessibility, and the availability of public information and data. **0-5 years** 5-10 years 10-20 years	All county departments		$	• Increase the amount of information accessible to the public from the county website
CF4.2 Streamline service delivery and operations. **0-5 years** **5-10 years** 10-20 years	All county departments		$	• Regularly review processes to identify opportunities for increased efficiency

CF5: Service quality. Provide adequate police, fire, and emergency management services for all Woodbury County residents.					
CF5.1 Maintain cooperative agreements (28E) for emergency and public safety services. **0-5 years** | 5-10 years | 10-20 years		Board of Supervisors		$	• Continue to regularly review and renew these agreements
CF5.2 Encourage frequent training opportunities for all emergency service providers. **0-5 years** | 5-10 years | 10-20 years		Emergency Services	Emergency Management	$	• Consult staff for needed training, and refer to other jurisdictions for new training opportunities
CF5.3 Ensure adequate funding for emergency response activities. **0-5 years** | 5-10 years | 10-20 years		Board of Supervisors	Emergency Services, Emergency Management	$	• Continue directing sufficient funds to these departments

Land Use	Lead	Partners	Cost	Measures of progress
Goal LU1: Sustainable agriculture. Support sustainable agricultural practices.				
LU1.1 Ensure compliance with Iowa state code provisions for agriculturally zoned property. **0-5 years** | 5-10 years | 10-20 years	Community & Economic Development		$	• Continue to stay aloft of Iowa state code provisions
LU1.2 Promote the use of agricultural best management practices to reduce soil and fertilizer runoff, protect water quality, and manage animal waste. **0-5 years** | 5-10 years | 10-20 years	Conservation department	Soil & Water Conservation District, ISU County Extension Office, Iowa DNR	$	• Collaborate with relevant partner agencies to share information and resources with farmers.
LU1.3 Encourage participation in federal incentive programs that pay farmers and ranchers for the implementation of conservation best practices. **0-5 years** | 5-10 years | 10-20 years	Conservation department	Soil & Water Conservation District, ISU County Extension Office, Iowa DNR	$	• Collaborate with relevant partner agencies to share information and resources with farmers.

LU1.4 Consider the use of sliding scale zoning to prevent the fragmentation of large tracts of farmland. **0-5 years** | **5-10 years** | 10-20 years	Community & Economic Development		$	• Evaluate where this practice may be appropriate in the county
LU1.5 Advocate for the preservation of agriculture in urban fringe areas not identified in the future land use map for urban growth. **0-5 years** | **5-10 years** | **10-20 years**	Community & Economic Development	Cities	$	• Collaborate with cities to create a shared vision of areas ideal for agricultural preservation versus urban development
LU1.6 Connect small and mid-sized farm businesses with succession planning resources and technical assistance. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	ISU County Extension Office	$	• Work with the ISU County Extension Office and other relevant organizations to share resources with farmers
LU1.7 Advocate for the adoption of local food purchasing policies that support public and institutional procurement from small and mid-sized local farmers. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	ISU County Extension Office	$	• Consult the ISU County Extension Office for expertise on local food purchasing policies
LU1.8 Create a roundtable of farmers and local agricultural businesses to voice concerns and needed resources to maintain sustainable business operations. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	ISU County Extension Office	$	• Collaborate with the ISU County Extension Office to reach out to farmers for participation
Goal LU2: Habitat conservation. Preserve environmentally sensitive lands.				
LU2.1 Consider the manner in which environmentally sensitive lands are developed, including wetlands, floodplains, prime agriculture, wildlife habitat, and open space for recreation. **0-5 years** | **5-10 years** | **10-20 years**	Community & Economic Development	Conservation department, Iowa DNR	$	• Consult the Conservation department and Iowa DNR for best practices
LU2.2 Encourage communication and cooperation between environmental advocates and landowners related to the development of sensitive lands.	Board of Supervisors	Environmental advocacy organizations, Landowners	$	• Facilitate consultation between landowners and environmental advocates

0-5 years	5-10 years	10-20 years				
LU2.3 Strengthen erosion control policies and grade and excavation limitations for development in the Loess Hills.			Community & Economic Development	Iowa DNR	$	• Refer to guidance from Iowa DNR for best practices
0-5 years	5-10 years	10-20 years				
LU2.4 Encourage landowner participation in federal conservation easement programs that provide financial incentives for safeguarding natural resources on their property.			Board of Supervisors	Soil & Water Conservation District, ISU County Extension Office	$	• Collaborate with relevant partner agencies to share information and resources with landowners.
0-5 years	5-10 years	10-20 years				
LU2.5 Continue adding to the County's network of parks, trails, and campgrounds.			Conservation department	Board of Supervisors, Secondary Roads	$$$	• Identify ideal locations for additional outdoor amenities
0-5 years	**5-10 years**	**10-20 years**				
LU2.6 Coordinate across jurisdictions to address litter and the dumping of waste.			Sheriff's Department	Regional jurisdictions	$$	• Encourage resident reporting of incidents
0-5 years	5-10 years	10-20 years				
Goal LU3: Habitat conservation. Limit urban sprawl and maintain the rural character of Woodbury County.						
LU3.1 Prioritize the rehabilitation of existing housing stock and infill development before building on previously undeveloped land. Consider the lifetime costs of new infrastructure development.			Community & Economic Development	Incorporated cities	$	• Collaborate with cities to create a shared vision of areas ideal for agricultural preservation versus urban development
0-5 years	**5-10 years**	**10-20 years**				
LU3.2 Limit interstate development to interchanges or within city limits to preserve agricultural land and maintain scenic views of the Loess Hills.			Community & Economic Development	Incorporated cities	$	• Collaborate with cities to create a shared vision of areas ideal for agricultural preservation versus urban development
0-5 years	**5-10 years**	**10-20 years**				

LU3.3 Discourage leap-frog development outside of incorporated cities and limit density in unincorporated areas. **0-5 years** | 5-10 years | 10-20 years	Community & Economic Development	Incorporated cities	$	• Collaborate with cities to create a shared vision of areas ideal for agricultural preservation versus urban development
LU3.4 Guide future development of non-agricultural uses to a compact pattern by efficient and economical expansion of public infrastructure. **0-5 years** | 5-10 years | 10-20 years	Community & Economic Development	Incorporated cities	$	• Collaborate with cities to create a shared vision of areas ideal for agricultural preservation versus urban development
Goal LU4: Habitat conservation. Empower landowners to be a partner in combatting ecologically and economically harmful invasive and noxious species.				
LU4.1 Educate the public about effective identification, control, and disposal of invasive species. **0-5 years** | 5-10 years | 10-20 years	Weed commissioner	Conservation department	$	• Develop visual guide to invasive species management for residents
LU 4.2 Distribute information about proper disposal of woody debris and brush from private property, and how to handle woody debris that has been impacted by invasive species such as the Emerald Ash Borer. **0-5 years** | 5-10 years | 10-20 years	Solid Waste Board	Weed commissioner, Conservation department	$	• Utilize existing avenues of communication such as social media pages, newsletters, and mailing lists
Goal LU5: Water resource protection. Reduce contaminants in surface water runoff.				
LU5.1 Provide resources for farmers to adopt BMPs such as no-till methods, cover crops, crop rotation, vegetated buffers, and constructed wetlands to reduce nutrient loads entering waterways as non-point source pollution. Refer to the Iowa Nutrient Reduction Strategy, and programs of the USDA's National Resources Conservation Service (NRCS) for farmers in need of assistance. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	Soil & Water Conservation District, ISU County Extension Office, USDA NRCS	$	• Collaborate with relevant partner agencies to share information and resources with farmers.

LU5.2 Continue sensible salting policies. **0-5 years** | **5-10 years** | **10-20 years**	Secondary Roads		$	• Regularly review road salting policies to balance road safety, cost effectiveness, and pollution reduction
LU5.3 Educate residents and business owners of proper lawn fertilizer and chemical use. **0-5 years** | 5-10 years | 10-20 years	Board of Supervisors	Conservation department	$	• Utilize existing avenues of communication such as social media pages, newsletters, and mailing lists • Consider the delivery of educational workshops about ecologically friendly approaches to landscape management
LU5.4 Limit the density of properties requiring individual septic systems, maintain stringent standards for system inspections, and provide resources for homeowners to assist in maintaining these systems. **0-5 years** | **5-10 years** | **10-20 years**	Community & Economic Development	Siouxland District Health Department	$	• Utilize existing avenues of communication such as social media pages, newsletters, and mailing lists to distribute resources
Goal LU6: Water resource protection. Safeguard groundwater by identifying and limiting sources of pollution.				
LU6.1 Encourage landowners to take advantage of the Iowa DNR's wellhead protection program that provides cost-sharing and assistance for sealing unused wells, and planting nitrate-remediating plants near active wellheads. **0-5 years** | **5-10 years** | 10-20 years	Siouxland District Health Department	Iowa DNR	$	• Utilize existing avenues of communication such as social media pages, newsletters, and mailing lists to inform residents of this program
Goal LU7: Air quality. Identify potential sources of air quality hazards in Woodbury County.				
LU7.1 Maintain a network of low-cost air quality monitors throughout rural Woodbury County. **0-5 years** | **5-10 years** | 10-20 years	Board of Supervisors	Siouxland District Health Department	$$	• Identify ideal locations for rural air quality monitors
Goal LU8: Air quality. Maintain safe distances between industrial land use activities and residential, commercial, recreational, and institutional land uses.				

LU8.1 Ensure that no residential communities are impacted or harmed by off-site industrial activities, such as trucking routes or railyard air hazards. **0-5 years** | **5-10 years** | **10-20 years**	Community & Economic Development		$	• Consider the use of buffers between residential and industrial uses
Goal LU9: Renewable energy infrastructure. Plan for the creation and use of alternative and renewable energy sources in Woodbury County.				
LU9.1 Support landowners' individual choices to implement renewable energy infrastructure. **0-5 years** | 5-10 years | 10-20 years	Community & Economic Development	Board of Supervisors	$	• Provide guidance for landowners seeking to install renewable energy infrastructure
LU9.2 Continuously update policies that regulate renewable energy infrastructure to ensure that it does not present safety hazards and to minimize disruptions to surrounding land uses. **0-5 years** | **5-10 years** | 10-20 years	Community & Economic Development	Board of Supervisors	$	• Regularly review policies with safety as the highest priority consideration
LU9.3 Seek federal and state funding for the expansion of electric vehicle charging infrastructure. **0-5 years** | **5-10 years** | 10-20 years	Board of Supervisors	Secondary Roads	$	• Identify appropriate funding opportunities

Disaster Response, Recovery, and Resiliency	Lead	Partners	Cost	Measures of progress
Goal DR1: Ensure residents' access to safe, healthy, and efficient homes that are prepared to withstand increasingly frequent severe and unpredictable weather.				
DR1.1 Promote the use of healthy and safe building materials, high indoor air quality, and environments free of pests, radon mold, and other health hazards. **0-5 years** | **5-10 years** | 10-20 years	Siouxland District Health Department	SIMPCO	$	• Provide educational materials online and distributed to households
DR1.2 Encourage energy- and water- efficiency in home retrofit projects and new construction and the use of onsite renewable energy systems.	Emergency Management		$	• Communicate the benefits of such installations

0-5 years	**5-10 years**	10-20 years			
DR1.3 Provide information about how to protect homes from flooding in preparation for increasingly frequent heavy rain events.		Emergency Management		$	• Provide educational materials online and distributed to households
0-5 years	5-10 years	10-20 years			
Goal DR2: Coordinate disaster response, recovery, and resiliency efforts among jurisdictions, county, state, and federal agencies.					
DR2.1 Foster interagency agreements to bolster response and recovery to emergency and disaster events and encourage resource sharing.		Emergency Management, Emergency Services	Regional jurisdictions	$	• Coordinate services with and between neighboring jursidictions
0-5 years	**5-10 years**	**10-20 years**			
DR2.2 Keep open lines of communication between county departments and surrounding jurisdictions and counties.		All departments	Regional jurisdictions	$	• Maintain continuous collaboration
0-5 years	**5-10 years**	**10-20 years**			
DR2.3 Work with State and Federal officials in preparation of and response to disaster declarations and subsequent disaster relief efforts.		Emergency Management		$	• Prepare for prompt contact with the appropriate state and federal officials post-disaster
0-5 years	**5-10 years**	**10-20 years**			
Goal DR3: Encourage resilient and passive development within 100-year floodplain areas.					
DR3.1 Work to ensure that developed areas within floodplains are safe and secure.		Community & Economic Development Department	Emergency Management	$	• Regularly inspect floodplain developments to determine if flood mitigation measures are required
0-5 years	5-10 years	10-20 years			
DR3.2 Take advantage of state and federal programs designed to aid, relocate, or demolish properties within high-risk flood areas.		Community & Economic Development Department	State and Federal agencies	$	• Identify relevant funding sources
0-5 years	**5-10 years**	10-20 years			
DR3.3 Consider site plan design, best building practices, and federal standards when development within a floodplain occurs.		Community & Economic Development Department	Emergency Management	$	• Stay aloft of best practices and standards for floodplain development
0-5 years	**5-10 years**	**10-20 years**			

Goal DR4: Support the County Emergency Management and Emergency Services Departments' missions to provide the most efficient services to Woodbury County and to mitigate against, prepare for, respond to, and recover from all disasters.				
DR4.1 Work to complete the Woodbury County action items identified in the 2020 Regional Hazard Mitigation Plan, and future approved plans. **0-5 years** | **5-10 years** | **10-20 years**	Emergency Management	SIMPCO	$	• Establish a process of routine review of the plan to evaluate progress toward goals and coordinate next steps
DR4.2 Coordinate and participate in training exercises within the region to strengthen response to and recovery from emergencies. **0-5 years** | 5-10 years | 10-20 years	Emergency Management	Emergency Services	$$	• Coordinate regional drills to test components of the emergency response system
DR4.3 Work to educate the public on disaster preparedness, recovery, and resiliency. **0-5 years** | 5-10 years | 10-20 years	Emergency Management	Emergency Services	$	• Share relevant educational information with residents via multiple channels
DR4.4 Continue participation in the Local Emergency Management Commission for the region. **0-5 years** | **5-10 years** | **10-20 years**	Emergency Management	Emergency Services	$	• Maintain continuous collaboration
DR4.5 Employ and update the Woodbury County Joint Emergency Operations Basic Plan as required by Iowa State Code 29c. **0-5 years** | 5-10 years | 10-20 years	Emergency Management	Emergency Services	$	• Continue to reevaluate and improve upon the plan with each update
DR4.6 Ensure adequate funding to maintain a high level of emergency operations within the County. **0-5 years** | **5-10 years** | **10-20 years**	Board of Supervisors		$	• Continue to direct funding toward emergency operations departments
Goal DR5: Continue supporting the Siouxland District Health Department in their mission to lead a "collaborative effort to build a healthier community through improved access to health services, education and disease prevention."				
DR5.1 Continue Woodbury County Emergency Management and Emergency Services Departments' partnership and participation in the Service Area 3 Healthcare coalition.	Emergency Management, Emergency Services		$	• Maintain continuous collaboration

0-5 years	5-10 years	10-20 years			
DR5.2 Support the implementation of the Siouxland District Health Department's Community Health Improvement Plan for the Siouxland Community developed from the three-year Community Health Needs Assessment for the Siouxland Community. 0-5 years 5-10 years 10-20 years			Emergency Management	Emergency Services	$	• Consult the Health Improvement Plan and consider the goals therein when planning departmental activities
DR5.3 Coordinate with and support the Siouxland District Health Department in responses to public health emergencies. 0-5 years 5-10 years 10-20 years			Emergency Management		$	• Maintain continuous inter-departmental communication
Goal DR6: Support the recovery and resiliency of industries, businesses, and homes in the event of a natural or public health disaster.						
DR6.1 Encourage the expansion of reliable internet and telecommunications services to keep physical and home-based businesses' web operations in place in natural or public health disaster situations. 0-5 years 5-10 years 10-20 years			Emergency Management	Internet service providers, State & Fed. funding agencies	$	• Collaborate with regional Internet Service Providers • Take advantage of state and federal funding opportunities
DR6.2 Prioritize funding any economic relief programs put in place after disaster situations for entities with the highest need. 0-5 years 5-10 years 10-20 years			Emergency Management		$$	• Evaluate system for determining highest need post-disaster
DR6.3 Promote available local, state, and federal resources for economic recovery from disasters. 0-5 years 5-10 years 10-20 years			Emergency Management		$	• Continue to stay aloft of relevant funding sources
DR6.4 Allow for flexibility in ordinances to encourage continuity of business operations which may be disrupted due to public health directives during public health emergencies. 0-5 years 5-10 years 10-20 years			Community & Economic Development Department	Emergency Management	$	• Evaluate where the county benefited or would have benefited from flexibility during the COVID-19 pandemic

Appendix

Economic Development

Sioux City Metropolitan Area, Major Employers 2021		
Employer	**Industry**	**Number of Employees**
MercyOne	Healthcare	Over 1000
Seaboard Triumph Foods	Food manufacturing, processing and distribution	Over 1000
Sioux City Community Schools	Education	Over 1000
Tyson Fresh Meats	Food manufacturing, processing and distribution	Over 1000
Unity Point Health-St. Luke's	Healthcare	Over 1000
Wells Enterprises	Food manufacturing, processing and distribution	Over 1000
185th Air Refueling Wing IANG	Government, public administration, and military	500-999
City of Sioux City	Government, public administration, and military	500-999
Curly's Foods	Food manufacturing, processing and distribution	500-999
Empirical Foods	Food manufacturing, processing and distribution	500-999
Ho-Chunk, Inc.	Real estate and economic development	500-999
HyVee Food Stores	Food manufacturing, processing and distribution	500-999
Interbake Foods	Food manufacturing, processing and distribution	500-999
MidAmerican Energy Company	Utility and telecom	500-999
Sabre Industries	Utility and telecom	500-999
Tur-Pak Foods	Food manufacturing, processing and distribution	500-999
Western Iowa Tech Comm College	Education	500-999

1st Financial Bank USA/Credit Card	Financial services	250-499
Access Systems	Information technology	250-499
Americold Logistics	Transportation and logistics	250-499
Boys & Girls Home/Family Services	Social and human services	250-499
CF Industries	Manufacturing and distribution	250-499
FIMCO Industries	Manufacturing and distribution	250-499
GELITA USA Inc	Manufacturing and distribution	250-499
Goodwill of the Great Plains	Social and human services	250-499
Great West Casualty Co.	Insurance services	250-499
Hard Rock Hotel & Casino Sioux City	Arts/entertainment/recreation and Accommodation/food service	250-499
K & B Transportation Inc.	Transportation and logistics	250-499
Mid-Step Services Inc	Social and human services	250-499
Morningside University	Education	250-499
Northeast Community College	Education	250-499
Northwest Area Education Agency	Education	250-499
PREMIER Bankcard	Financial services	250-499
WestRock	Manufacturing and distribution	250-499
Wilson Trailer Company	Manufacturing and distribution	250-499
WinnaVegas Casino Resort	Arts/entertainment/recreation and Accommodation/food service	250-499
Woodbury County	Government, public administration, and military	250-499
A&B Business Solutions	Business services	100-249
Allied Solutions	Insurance services	100-249
Bellevue University	Education	100-249
Bishop Heelan Catholic Schools	Education	100-249
Bomgaars	Retail	100-249
Briar Cliff University	Education	100-249
Burger King Restaurants	Arts/entertainment/recreation and Accommodation/food service	100-249
C W Suter Services	HVAC services	100-249
Chesterman Co.	Manufacturing and distribution	100-249
CNOS PC	Healthcare	100-249
Community Action Agency	Social and human services	100-249
Countryside Health Care Center	Healthcare	100-249
DAKOTACARE	Insurance services	100-249
Dunes Surgical Hospital	Healthcare	100-249
Family Healthcare Siouxland	Healthcare	100-249
Fareway Stores	Retail	100-249
Fleet Farm	Retail	100-249
Gerkin Windows & Doors	Manufacturing and distribution	100-249
Gill Hauling	Waste management services	100-249

Great Southern Bank	Financial services	100-249
Holy Spirit Retirement Home	Social and human services	100-249
Hospice of Siouxland	Healthcare	100-249
Interstates Companies	Manufacturing and distribution	100-249
Jolly Time/American Pop Corn	Food manufacturing, processing, and distribution	100-249
June E Nylen Cancer Center	Healthcare	100-249
Klinger Companies Inc.	Construction services	100-249
Knife River Midwest	Construction services	100-249
LifeServe Blood Center	Social and human services	100-249
Long Lines, LLC	Utility and telecom	100-249
Lowe's Home Improvement	Retail	100-249
McDonalds Restaurants of Siouxland	Arts/entertainment/recreation and Accommodation/food service	100-249
Opportunities Unlimited	Social and human services	100-249
Palmer Candy Company	Food manufacturing, processing and distribution	100-249
Plains Area Mental Health Center	Healthcare	100-249
Prince Manufacturing Corp.	Manufacturing and distribution	100-249
Riverside Technologies Inc.	Information technology	100-249
Rosecrance Jackson Centers	Social and human services	100-249
Royal Canin USA	Food manufacturing, processing and distribution	100-249
Scheels All Sports	Retail	100-249
Seasons Center for Behavioral Health	Healthcare	100-249
Security National Bank	Financial services	100-249
Sergeant Bluff-Luton Schools	Education	100-249
Sioux City Journal	Journalism	100-249
Siouxland Community Health Center	Healthcare	100-249
Siouxland Federal Credit Union	Financial services	100-249
Sxlnd Human Investment Partnership	Social and human services	100-249
SmithCo Manufacturing	Manufacturing and distribution	100-249
South Sioux City Marriott Riverfront	Arts/entertainment/recreation and Accommodation/food service	100-249
Sunrise Retirement Community	Social and human services	100-249
The Andersons	Manufacturing and distribution	100-249
Touchstone Healthcare Community	Healthcare	100-249
Verschoor Meats	Food manufacturing, processing, and distribution	100-249
XPO Logistics	Transportation and logistics	100-249
Ag Processing Inc.	Manufacturing and distribution	50-99
All Power Inc.	Manufacturing and distribution	50-99
American Natural Processors	Food manufacturing, processing, and distribution	50-99
BankFirst	Financial services	50-99
Burger King Restaurants	Arts/entertainment/recreation and Accommodation/food service	50-99

Cargill Incorporated	Manufacturing and distribution	50-99
Casa de Paz	Healthcare	50-99
Child Care Resource & Referral of NW IA	Social and human services	50-99
City of South Sioux City	Government, public administration, and military	50-99
Consumers Supply Distributing	Manufacturing and distribution	50-99
Crittenton Center	Social and human services	50-99
Family Medicine Center	Healthcare	50-99
FLSmidth USA-Sioux City	Manufacturing and distribution	50-99
HCI Construction	Construction services	50-99
Holiday Inn Express Hotel	Arts/entertainment/recreation and Accommodation/food service	50-99
Interstate Mechanical Corp	HVAC services	50-99
IState Truck Center	Commercial vehicle repair	50-99
Jebro Inc	Waste management services	50-99
Knoepfler Chevrolet	Car dealer	50-99
L & L Builders	Construction services	50-99
Liberty National Bank	Financial services	50-99
Midlands Clinic PC	Healthcare	50-99
Murphy Insulation	Construction services	50-99
Nelson Industrial Construction & Eng	Construction services	50-99
Norm Waitt Sr YMCA	Social and human services	50-99
Outback Steakhouse	Arts/entertainment/recreation and Accommodation/food service	50-99
PC Matic	Information technology	50-99
Pepsi Cola of Siouxland	Food manufacturing, processing and distribution	50-99
Pizza Ranch-Sioux City	Arts/entertainment/recreation and Accommodation/food service	50-99
Queen of Peace	Social and human services	50-99
Richardson Milling Inc.	Food manufacturing, processing and distribution	50-99
Sam's Club	Retail	50-99
Sioux City Convention Center	Arts/entertainment/recreation and Accommodation/food service	50-99
Sioux City Country Club	Arts/entertainment/recreation and Accommodation/food service	50-99
Sioux City Ford-Lincoln	Car dealer	50-99
Sioux Honey Association	Food manufacturing, processing, and distribution	50-99
Siouxland District Health Dept.	Government, public administration, and military	50-99
Siouxland Mental Health	Healthcare	50-99
Sparklight	Utility and telecom	50-99
State Steel Supply	Manufacturing and distribution	50-99
Thompson	Construction services	50-99
United Real Estate Solutions	Real estate and economic development	50-99
Wells Fargo Bank	Financial services	50-99

Westwood Nursing & Rehab Center	Healthcare	50-99
Woodhouse Chrysler Dodge Jeep	Car dealer	50-99

Transportation

Woodbury County traffic data from the Iowa DOT's 2020 Traffic Book:

COUNTY	ROUTE	DESCRIPTION	DESCRIPTION	RURAL MUNICIPAL	SECTION LENGTH	AADT	MOTORCYCLE	Passenger Cars, Vans, Pickups	Total Trucks and Buses	BUS	SU2AXLE	SU3AXLE	SU4AXLE	CT4AXLE	CT5AXLE	CT6AXLE	CT Multiple Trailer	ALL VEHICLES VMT	TRUCKS AND BUSES VMT
97	12		IA 376 INTERCHANGE	M	0.0324	20,600	90	19,955	555	37	233	51	6	27	178	10	13	668	18
97	12		EAST-NORTH EAST-SOUTH RAMP	M	0.1127	900	4	837	59	2	15	3	0	5	29	2	3	101	7
97	12		NORTH-WEST SOUTH-WEST LOOP	M	0.0972	2,990	13	2,909	68	5	28	6	1	3	23	1	1	291	7
97	12		WEST-NORTH LOOP	M	0.1933	540	2	503	35	2	11	2	0	2	16	1	1	104	7
97	12		WEST-NORTH RAMP CONNECTOR	M	0.0413	970	4	893	73	4	25	6	1	4	28	2	3	40	3
97	12		N-E S-E CONNECTOR	M	0.0600	2,020	8	1,880	132	8	53	12	1	7	44	3	4	121	8
97	12		SOUTH-EAST RAMP	M	0.0511	990	4	910	76	4	28	6	1	4	28	2	3	51	4
97	12		WEST-SOUTH RAMP	M	0.2242	2,920	13	2,865	42	4	24	6	1	1	6	0	0	655	9
97	12		SOUTHBOUND RAMP TO LEECH	M	0.1993	620	2	536	82	5	34	8	1	4	28	1	1	124	16
97	12		INTERSECTION COURT STREET	M	0.6955	22,200	98	21,604	498	36	226	50	6	21	140	8	11	15,441	346
97	12		INTERSECTION VIRGINIA ST *	M	0.0425	20,900	92	20,319	489	35	220	49	6	21	139	8	11	888	21
97	12		EAST INNERLEG*	M	0.0284	20,900	92	20,319	489	35	220	49	6	21	139	8	11	594	14
97	12		*	M	0.0071	20,900	92	20,319	489	35	220	49	6	21	139	8	11	148	3
97	12		NORTH-WEST RAMP *	M	0.0416	380	2	337	41	2	15	3	0	2	17	1	1	16	2
97	12		NORTH-WEST EAST-WEST RAMP *	M	0.2591	3,030	12	2,649	369	13	84	18	2	30	196	11	15	785	96
97	12		EAST-NORTH RAMP *	M	0.3461	3,240	13	2,943	284	12	79	17	2	21	134	8	11	1,121	98
97	12	I 29 WEST INTERCHANGE TO	JUNCTION PAUL AVE & W 19TH ST *	M	1.5483	8,100	35	7,699	366	18	110	25	3	25	164	9	12	12,541	567
97	12		JCT MILITARY RD & PACQUETTE AVE	M	0.3997	7,500	32	7,102	366	18	110	25	3	25	164	9	12	2,998	146
97	12		SOUTH LINE OF PLYMOUTH COUNTY	M	2.8902	1,640	6	1,365	269	7	42	9	1	25	164	9	12	4,740	777
97	20	I 29 & I 129/US75 INTERCHANGE TO	LAKEPORT STREET INTERCHANGE	M	0.4447	32,400	131	28,922	3,347	102	645	143	17	290	1,900	106	144	14,409	1,488
97	20		WEST-NORTH WEST-SOUTH RAMP	M	0.0610	3,490	15	3,410	65	6	38	8	1	1	9	1	1	213	4
97	20		WEST-NORTH WEST-SOUTH RAMP	M	0.3719	6,900	31	6,752	117	10	66	14	2	3	20	1	1	2,566	44
97	20		NORTH-EAST SOUTH-EAST RAMP	M	0.1219	3,660	16	3,571	73	6	35	8	1	3	18	1	1	446	9
97	20		NORTH-EAST SOUTH-EAST RAMP	R	0.2883	3,660	16	3,571	73	6	35	8	1	3	18	1	1	1,055	21
97	20		NORTH-EAST SOUTH-EAST RAMP	M	0.0729	3,660	16	3,571	73	6	35	8	1	3	18	1	1	267	5
97	20		EAST-NORTH EAST-SOUTH RAMP	M	0.0620	3,480	15	3,386	79	7	41	9	1	2	17	1	1	216	5
97	20		EAST-NORTH EAST-SOUTH RAMP	R	0.1061	3,480	15	3,386	79	7	41	9	1	2	17	1	1	369	8
97	20		EAST-NORTH EAST-SOUTH RAMP	M	0.1890	3,480	15	3,386	79	7	41	9	1	2	17	1	1	658	15
97	20		NORTH-WEST SOUTH-WEST RAMP	M	0.2722	7,200	32	7,055	113	10	66	15	2	2	16	1	1	1,960	31
97	20		SUNNYBROOK DRIVE INTERCHANGE	M	0.3014	25,400	100	22,031	3,269	94	589	131	16	290	1,899	106	144	7,657	985
97	20		EAST-SOUTH WEST-SOUTH RAMP	M	0.3863	1,960	9	1,918	33	2	15	3	0	2	9	1	1	757	13
97	20		SOUTH-EAST SOUTH-WEST RAMP	M	0.2919	2,360	10	2,307	43	3	21	5	1	2	9	1	1	689	13
97	20		EAST-NORTH WEST-NORTH RAMP	M	0.2555	3,620	16	3,552	52	5	30	7	1	1	8	0	0	925	13
97	20		NORTH-EAST NORTH-WEST RAMP	M	0.3126	3,470	15	3,412	43	4	23	5	1	1	9	0	0	1,085	13
97	20		EAST-SOUTH WEST-SOUTH RAMP	M	0.2724	2,610	12	2,562	36	3	21	5	1	1	5	0	0	711	10
97	20		SOUTH-EAST SOUTH-WEST RAMP	M	0.2795	2,480	11	2,430	39	4	24	5	1	1	4	0	0	693	11
97	20		SOUTH INNERLEG	M	0.2436	23,100	90	19,800	3,210	89	561	124	15	288	1,885	105	143	5,626	782
97	20		EAST-NORTH WEST-NORTH RAMP	M	0.3113	950	4	917	29	2	16	3	0	1	7	0	0	296	9
97	20		NORTH-EAST NORTH-WEST RAMP	M	0.3641	1,090	5	1,059	26	2	10	2	0	1	9	1	1	397	9
97	20		EAST LIMITS OF SIOUX CITY	M	0.1095	25,100	98	21,737	3,265	93	585	130	16	290	1,901	106	144	2,748	357
97	20		US 75 & IA 12 INTERCHANGE	R	0.1455	25,100	98	21,737	3,265	93	585	130	16	290	1,901	106	144	3,653	475
97	20		SOUTH-EAST RAMP	R	0.7984	3,160	13	2,553	594	11	59	11	1	54	413	18	27	2,523	474
97	20		EAST-NORTH WEST-NORTH RAMP	R	0.6097	1,860	9	1,785	67	5	25	5	1	3	26	1	1	1,134	41
97	20		NORTH-EAST NORTH-WEST RAMP	R	0.4704	1,800	8	1,684	108	5	27	5	1	7	58	2	3	847	51
97	20		WEST-SOUTH RAMP	R	0.5276	2,710	13	2,611	86	6	33	6	1	4	33	1	2	1,430	45
97	20		SOUTH-WEST LOOP	R	0.3835	2,050	10	1,990	50	3	19	4	0	3	19	1	1	786	19
97	20		INTERSECTION CHARLES AVENUE	R	3.1199	11,700	50	10,240	1,409	37	202	38	4	119	911	40	58	36,503	4,396
97	20		EAST JUNCTION CO RD K42	R	2.0016	10,000	42	8,548	1,409	37	202	38	4	119	911	40	58	20,016	2,820
97	20		WEST LIMITS OF LAWTON	R	1.3794	9,400	39	7,951	1,409	37	202	38	4	119	911	40	58	12,966	1,944
97	20		JUNCTION CEDAR STREET	R	0.0024	9,400	36	7,940	1,424	30	188	42	5	138	903	50	68	23	3
97	20		JUNCTION CEDAR STREET	R	0.1383	9,400	36	7,940	1,424	30	188	42	5	138	903	50	68	1,300	197
97	20		JUNCTION CEDAR STREET	M	0.0019	9,400	36	7,940	1,424	30	188	42	5	138	903	50	68	18	3
97	20		EAST LIMITS OF LAWTON	M	0.2504	8,200	30	6,746	1,424	30	188	42	5	138	903	50	68	2,053	357
97	20		EAST LIMITS OF LAWTON	R	0.0967	8,200	30	6,746	1,424	30	188	42	5	138	903	50	68	793	138
97	20		EAST LIMITS OF LAWTON	R	0.0979	8,200	30	6,746	1,424	30	188	42	5	138	903	50	68	803	139
97	20		JUNCTION IA 140 & CO RD K64	R	5.3406	8,300	34	6,856	1,409	37	202	38	4	119	911	40	58	44,327	7,525
97	20		WEST INNERLEG	R	0.0213	6,800	27	5,472	1,301	35	189	36	4	109	837	37	54	145	28
97	20		JUNCTION CO RD D22	R	2.9817	5,900	23	4,592	1,286	34	182	35	4	108	834	36	53	17,592	3,834
97	20		WEST JCT IA 31 & OSCEOLA AVENUE	R	11.5412	5,800	21	4,234	1,545	22	121	23	3	145	1,113	48	70	66,939	17,831
97	20		WEST JCT IA 31 & OSCEOLA AVENUE	R	11.5911	5,800	21	4,234	1,545	22	121	23	3	145	1,113	48	70	67,228	17,908
97	20		WEST LIMITS OF CORRECTIONVILLE	R	0.2453	5,400	17	3,661	1,722	27	170	38	5	176	1,155	64	87	1,325	422

COUNTY	ROUTE	DESCRIPTION	DESCRIPTION	RURAL MUNICIPAL	SECTION LENGTH	AADT	MOTORCYCLE	Passenger Cars, Vans, Pickups	Total Trucks and Buses	BUS	SU2AXLE	SU3AXLE	SU4AXLE	CT4AXLE	CT5AXLE	CT6AXLE	CT Multiple Trailer	ALL VEHICLES VMT	TRUCKS AND BUSES VMT
97	20		EAST JCT IA 31 & DRIFTWOOD ST	M	0.0024	5,400	17	3,661	1,722	27	170	38	5	176	1,155	64	87	13	4
97	20		EAST LIMITS OF CORRECTIONVILLE	M	0.2486	4,770	14	3,124	1,632	38	237	53	6	154	1,012	56	76	1,186	406
97	20		EAST JUNCTION CO RD L43	R	0.7124	4,450	14	2,816	1,619	47	255	49	5	133	1,021	44	65	3,170	1,153
97	20		EAST JUNCTION CO RD L43	R	5.6522	4,450	14	2,816	1,619	47	255	49	5	133	1,021	44	65	25,152	9,151
97	20		WEST LINE IDA COUNTY	R	0.2199	4,630	15	2,995	1,619	47	255	49	5	133	1,021	44	65	1,018	356
97	29		IA 141 & CO RD K42 INTERCHANGE	R	0.7139	14,100	40	9,457	4,603	150	622	102	7	273	3,280	49	120	10,067	3,286
97	29		CO RD K25 INTERCHANGE	R	5.8254	16,000	48	11,347	4,605	152	629	103	7	273	3,272	49	120	93,207	26,826
97	29		SOUTH-EAST SOUTH-WEST RAMP	R	0.2880	510	2	373	135	9	37	6	0	6	74	1	2	147	39
97	29		EAST-NORTH WEST-NORTH RAMP	R	0.2875	1,570	6	1,403	161	10	42	7	0	7	91	1	3	451	46
97	29		WEST-NORTH RAMP	R	0.0569	370	2	356	12	2	6	1	0	0	3	0	0	21	1
97	29		EAST-NORTH RAMP	R	0.1112	1,020	4	851	165	8	33	5	0	9	104	2	4	113	18
97	29		NORTH-EAST NORTH-WEST RAMP	R	0.2931	1,460	5	1,294	161	10	42	7	0	7	91	1	3	428	47
97	29		EAST-SOUTH WEST-SOUTH RAMP	R	0.2956	530	1	344	185	10	40	6	0	9	114	2	4	157	55
97	29		EAST-SOUTH RAMP	R	0.0357	330	1	221	108	6	24	4	0	5	66	1	2	12	4
97	29		WEST-SOUTH RAMP	R	0.1035	120	0	112	8	1	4	1	0	0	2	0	0	12	1
97	29		CO RD D51 INTERCHANGE	R	0.9955	16,600	50	11,933	4,617	153	635	104	7	273	3,276	49	120	16,525	4,596
97	29		WEST-SOUTH RAMP	R	0.2668	100	0	51	49	0	1	0	0	4	41	1	2	27	13
97	29		SOUTH-EAST SOUTH-WEST RAMP	R	0.3546	190	0	94	96	0	1	0	0	7	84	1	3	67	34
97	29		EAST-NORTH WEST-NORTH RAMP	R	0.5238	760	1	343	416	4	15	2	0	29	348	5	13	398	218
97	29		NORTH-EAST NORTH-WEST RAMP	R	0.4860	790	1	330	459	7	27	5	0	31	369	6	14	384	223
97	29		EAST-SOUTH WEST-SOUTH RAMP	R	0.2446	140	0	90	50	0	2	0	0	4	41	1	2	34	12
97	29		EAST-SOUTH RAMP	R	0.1432	35	0	34	1	0	1	0	0	0	0	0	0	5	0
97	29		SOUTH LIMITS OF SERGEANT BLUFFS	R	2.6722	17,500	22	12,087	5,391	146	661	117	13	475	3,649	131	199	46,764	14,406
97	29		NORTH LIMITS OF SERGEANT BLUFFS	M	0.8860	17,500	22	12,087	5,391	146	661	117	13	475	3,649	131	199	15,505	4,777
97	29	1ST STREET INTERCHANGE AT	SOUTH LIMITS OF SERGEANT BLUFF	R	1.0788	17,800	52	12,402	5,346	163	676	110	7	322	3,869	58	141	19,202	5,767
97	29		SOUTH INNERLEG SOUTH PART	R	0.0128	17,400	51	12,073	5,276	161	669	109	7	318	3,817	57	138	223	68
97	29		SOUTH-EAST SOUTH-WEST RAMP	M	0.0735	510	1	428	81	3	15	3	0	6	49	2	3	37	6
97	29		SOUTH-EAST SOUTH-WEST RAMP	R	0.2356	520	2	437	81	4	15	3	0	4	52	1	2	123	19
97	29		EAST-NORTH WEST-NORTH RAMP	M	0.2595	4,120	7	3,723	390	15	68	12	1	31	241	9	13	1,069	101
97	29		NORTH-EAST NORTH-WEST RAMP	M	0.3151	3,920	6	3,514	400	14	65	12	1	33	252	9	14	1,235	126
97	29		EAST-SOUTH WEST-SOUTH RAMP	R	0.2480	460	1	388	71	2	7	1	0	7	49	2	3	114	18
97	29		EAST-SOUTH WEST-SOUTH RAMP	M	0.1012	460	1	388	71	2	7	1	0	7	49	2	3	47	7
97	29		NORTH LIMITS OF SERGEANT BLUFF	M	0.1628	24,600	33	18,536	6,031	170	772	137	16	527	4,044	145	220	4,004	982
97	29		SOUTH LIMITS OF SIOUX CITY	R	0.0125	24,600	33	18,536	6,031	170	772	137	16	527	4,044	145	220	306	75
97	29		NORTH LIMITS OF SIOUX CITY	M	0.1085	24,600	33	18,536	6,031	170	772	137	16	527	4,044	145	220	2,670	654
97	29		SOUTH LIMITS OF SIOUX CITY	R	0.1410	24,600	33	18,536	6,031	170	772	137	16	527	4,044	145	220	3,469	850
97	29		IA 376 INTERCHANGE	M	1.3206	24,600	33	18,536	6,031	170	772	137	16	527	4,044	145	220	32,487	7,965
97	29		SOUTH-EAST SOUTH-WEST RAMP	M	0.3612	2,000	3	1,465	532	11	50	9	1	49	377	14	21	722	192
97	29		EAST-NORTH WEST-NORTH RAMP	M	0.3757	8,000	12	6,448	1,540	69	313	55	6	117	899	32	49	3,006	579
97	29		NORTH-EAST NORTH-WEST RAMP	M	0.4440	8,300	12	6,702	1,586	68	310	55	6	122	939	34	52	3,685	704
97	29		EAST-SOUTH WEST-SOUTH RAMP	M	0.4079	1,880	2	1,294	584	9	39	7	1	56	432	16	24	767	238
97	29		SOUTH-EAST RAMP	M	0.4862	5,300	8	4,400	892	40	180	32	4	68	520	19	29	2,577	434
97	29		EAST-SOUTH WEST-SOUTH RAMP	M	0.1729	8,400	12	6,865	1,523	75	342	61	7	111	849	31	47	1,453	263
97	29		I 129/US 75 & US 20 INTERCHANGE	M	0.0488	23,400	32	17,807	5,561	179	814	144	17	470	3,610	130	197	1,141	271
97	29		NORTH-EAST SOUTH-EAST RAMP	M	0.2360	9,300	15	8,057	1,228	65	293	52	6	87	664	24	37	2,195	290
97	29		EAST-NORTH RAMP	M	0.4969	4,940	8	4,676	256	18	80	14	2	15	117	4	6	2,455	127
97	29		EAST-NORTH EAST-SOUTH RAMP	M	0.4229	9,400	15	8,142	1,243	58	262	46	5	93	714	26	39	3,976	526
97	29		WEST-NORTH LOOP	M	0.4081	710	1	380	329	29	131	23	3	15	118	4	6	290	134
97	29		SOUTH-WEST LOOP	M	0.4573	3,600	5	2,865	730	50	225	40	5	44	336	12	18	1,646	334
97	29		NORTH-EAST NORTH-WEST RAMP	M	0.2672	5,400	9	4,775	616	56	252	45	5	28	210	8	12	1,443	165
97	29		NORTH-WEST RAMP	M	0.3613	1,320	2	1,039	279	31	139	25	3	9	67	2	3	477	101
97	29		WEST-SOUTH RAMP	M	0.3912	3,980	6	3,438	536	35	161	29	3	33	252	9	14	1,557	210
97	29		WALL ST & DACE AVE INTERCHANGE	M	2.1800	30,600	44	24,462	6,094	225	1,018	181	21	496	3,808	137	208	66,707	13,285
97	29		NEBRASKA/PIERCE INTERCHANGE	M	0.0506	25,000	36	19,976	4,988	173	787	140	16	413	3,172	114	173	1,265	252
97	29		SOUTH-EAST SOUTH-WEST RAMP	M	0.3516	2,690	4	2,097	589	29	131	23	3	43	330	12	18	946	207
97	29		EAST-WEST RAMP CONNECTION*	M	0.0301	2,510	4	2,177	329	16	71	13	1	24	186	7	11	75	10
97	29		RAMP CONN TO VIRGINIA ST*	M	0.0060	2,870												17	
97	29		EAST-SOUTH WEST-SOUTH RAMP *	M	0.2878	2,990	4	2,468	518	22	102	18	2	40	307	11	16	860	149
97	29		OFF RAMP TO NEBRASKA STREET*	M	0.4306	2,960	5	2,826	129	10	45	8	1	7	53	2	3	1,275	56
97	29		OFF RAMP TO NEBRASKA STREET*	M	0.0230	2,960	5	2,826	129	10	45	8	1	7	53	2	3	68	3
97	29		EAST INNERLEG*	M	0.0323	17,600												568	
97	29	EASTBOUND OFF RAMP TO	CONN VIRGINIA ST	M	0.1249	8,200												1,024	
97	29		RAMP CONNECTION TO IA 12	M	0.1238	3,700												458	
97	29		WB OFF RAMP CONN VIRGINIA ST	M	0.2364	4,130												976	
97	29		INTERSECTION PIERCE STREET *	M	0.0758	13,900												1,054	
97	29		US 77 INTERCHANGE	M	0.0514	29,700	44	24,370	5,286	205	933	165	19	423	3,247	117	177	1,526	272
97	29		WB OFF RAMP TO US 77 *	M	0.2106	2,620	5	2,503	112	10	45	8	1	5	40	1	2	552	24
97	29		E-N, E-S, E-W RAMP *	M	0.1622	6,900	12	6,667	221	23	107	19	2	7	58	2	3	1,119	36
97	29		EAST-WEST SOUTH-WEST RAMP *	M	0.0131	5,000	9	4,802	189	16	75	13	2	9	69	2	3	65	2
97	29		WB OFF RAMP TO HAMILTON BLVD*	M	0.2612	1,770	3	1,673	94	2	12	2	0	8	65	2	3	462	25
97	29		S-E, W-E, N-E RAMP *	M	0.2803	4,270	7	4,127	136	13	61	11	1	5	42	1	2	1,197	38
97	29		N-W, E-W, S-W RAMP *	M	0.2236	6,900	12	6,627	261	25	114	20	2	11	82	3	4	1,543	58

COUNTY	ROUTE	DESCRIPTION	DESCRIPTION	RURAL MUNICIPAL	SECTION LENGTH	AADT	MOTORCYCLE	Passenger Cars, Vans, Pickups	Total Trucks and Buses	BUS	SU2AXLE	SU3AXLE	SU4AXLE	CT4AXLE	CT5AXLE	CT6AXLE	CT Multiple Trailer	ALL VEHICLES VMT	TRUCKS AND BUSES VMT
97	29		HAMILTON BLVD INTERCHANGE	M	0.2850	21,100	29	16,127	4,944	179	815	144	17	404	3,105	111	169	6,013	1,409
97	29		W-N, W-E, W-S RAMP *	M	0.5015	6,600	11	6,328	261	24	109	19	2	11	89	3	4	3,310	131
97	29	WB OFF RAMP TO HAMILTON BLVD	& WB ON FROM US 77 *	M	0.0822	8,600	15	8,230	355	28	124	22	3	19	146	5	8	707	29
97	29		WB ON FROM US 77	M	0.1803	4,850	8	4,647	195	18	84	15	2	8	63	2	3	874	35
97	29		WB OFF RAMP TO HAMILTON BLVD*	M	0.2831	3,760	6	3,594	160	9	41	7	1	11	84	3	4	1,064	45
97	29		NORTH-EAST SOUTH-EAST RAMP *	M	0.2351	2,870	5	2,742	123	11	51	9	1	5	43	1	2	675	29
97	29		N-E S-E W-E RAMP *	M	0.0708	9,500	16	9,100	384	35	160	28	3	17	128	5	8	673	27
97	29		EAST-WEST SOUTH-WEST CONN	M	0.0078	1,770	3	1,733	34	2	9	2	0	2	17	1	1	14	0
97	29		NORTH-WEST SOUTH-WEST RAMP	M	0.2568	1,770	3	1,733	34	2	9	2	0	2	17	1	1	455	9
97	29		W-E W-N W-S RAMP *	M	0.2815	5,700	10	5,444	246	24	110	19	2	10	74	3	4	1,604	69
97	29		WEST JUNCTION IA 12 INTERCHANGE	M	1.5862	30,500	45	25,159	5,296	213	965	171	20	419	3,219	115	174	48,378	8,400
97	29		NORTH-WEST RAMP *	M	0.3012	1,460	2	1,382	76	9	42	8	1	2	14	0	0	440	23
97	29		WEST-NORTH RAMP *	M	0.3366	1,170	2	1,092	76	9	42	8	1	2	14	0	0	394	26
97	29		NORTH-EAST RAMP *	M	0.2378	2,860												680	
97	29		WEST LIMITS OF SIOUX CITY	M	0.1983	27,400	41	22,467	4,892	193	877	155	18	389	2,991	107	162	5,433	970
97	29		SOUTH DAKOTA STATE LINE	R	0.0047	27,400	41	22,467	4,892	193	877	155	18	389	2,991	107	162	128	23
97	29		RAMP CONN TO VIRGINIA ST*	M	0.1841	2,870												528	
97	29		JUNCTION PEARL STREET *	M	0.1699	8,100												1,376	
97	29		NORTH-EAST RAMP	M	0.6730	4,010												2,699	
97	29		EAST-SOUTH RAMP	M	0.5305	4,440												2,355	
97	29		CONN TO FLYOD BLVD	M	0.1547	4,270												661	
97	31	JUNCTION IA 141 & HICKORY ST TO	NORTH LIMITS OF SMITHLAND	M	0.2939	760	2	547	211	10	62	14	2	15	96	5	7	223	62
97	31		SOUTH LIMITS OF OTO	R	3.8861	770	3	553	213	12	67	13	1	13	97	4	6	2,992	828
97	31		SOUTH JCT CO RD D54 & WALL ST	M	0.5527	760	2	547	211	10	62	14	2	15	96	5	7	420	117
97	31		NORTH LIMITS OF OTO	M	0.2928	930	3	716	211	10	62	14	2	15	96	5	7	272	62
97	31		SOUTH LIMITS OF ANTHON	R	6.7359	930	4	712	213	12	67	13	1	13	97	4	6	6,264	1,435
97	31		SOUTH JUNCTION CO RD D38	M	0.2890	930	3	716	211	10	62	14	2	15	96	5	7	269	61
97	31		INTERSECTION MAIN STREET	M	0.2164	1,180	4	982	194	8	51	11	1	15	96	5	7	255	42
97	31		INTERSECTION 2ND AVENUE	M	0.3100	960	3	763	194	8	51	11	1	15	96	5	7	298	60
97	31		NORTH LIMITS OF ANTHON	M	0.1157	990	4	792	194	8	51	11	1	15	96	5	7	115	22
97	31		JUNCTION CO RD D80	R	0.2650	1,000	4	801	195	10	54	10	1	13	97	4	6	265	52
97	31		JUNCTION CO RD D22	R	6.0793	970	4	771	195	10	54	10	1	13	97	4	6	5,897	1,185
97	31		JUNCTION 160TH STREET	R	0.6221	1,010	4	811	195	10	54	10	1	13	97	4	6	628	121
97	31		WEST LIMITS OF CORRECTIONVILLE	R	0.6783	620	2	476	142	3	16	3	0	13	97	4	6	421	96
97	31		WEST JCT US 20 & OSCEOLA AVENUE	M	0.0821	620	2	475	143	2	15	3	0	15	96	5	7	20	5
97	31		NORTH LIMITS OF CORRECTIONVILLE	M	0.0135	1,430	5	1,179	246	11	69	15	2	18	117	6	8	19	3
97	31	EAST JCT US 20 & DRIFWOOD ST TO	WEST LINE OF IDA COUNTY	R	4.0445	1,440	6	1,186	249	14	74	14	2	15	118	5	7	5,824	1,007
97	75	US 20 & IA 12 INTERCHANGE TO	SOUTH LIMITS OF SIOUX CITY	R	0.4134	18,200	79	15,978	2,142	97	524	100	11	148	1,140	50	72	7,524	885
97	75		NORTH LIMITS OF SOUIX CITY	M	0.5107	18,000	71	15,793	2,136	78	488	108	13	172	1,128	63	86	9,192	1,091
97	75		EAST LIMITS OF SOUIX CITY	R	1.2504	18,000	71	15,793	2,136	78	488	108	13	172	1,128	63	86	22,507	2,671
97	75		28TH STREET INTERCHANGE	M	0.2001	18,000	71	15,793	2,136	78	488	108	13	172	1,128	63	86	3,602	427
97	75		SOUTH-EAST SOUTH-WEST RAMP	M	0.3237	4,000	17	3,727	256	12	72	16	2	18	120	7	9	1,295	83
97	75		EAST-NORTH WEST-NORTH RAMP	M	0.3752	70	0	64	6	0	1	0	0	1	4	0	0	26	2
97	75		NORTH-EAST NORTH-WEST RAMP	M	0.4084	80	0	74	6	0	2	0	0	0	4	0	0	33	2
97	75		EAST-SOUTH WEST-SOUTH RAMP	M	0.3922	3,920	16	3,641	263	12	78	17	2	18	120	7	9	1,537	103
97	75		46TH STREET INTERCHANGE	M	1.5134	10,300	39	8,631	1,630	54	340	75	9	137	897	50	68	15,588	2,467
97	75		SOUTH-EAST SOUTH-WEST LOOP	M	0.3452	320	1	294	25	1	9	2	0	2	9	1	1	110	9
97	75		EAST-SOUTH WEST-SOUTH LOOP	M	0.2333	400	2	369	29	2	10	2	0	2	11	1	1	93	7
97	75		IA 376 INERCHANGE	M	0.3972	9,500	36	7,889	1,575	51	321	71	9	134	874	49	66	3,774	626
97	75		EAST-NORTH WEST-NORTH RAMP	M	0.3122	1,420	6	1,397	17	2	11	2	0	0	2	0	0	443	5
97	75		SOUTH LINE OF PLYMOUTH COUNTY	M	0.2038	16,600	64	14,089	2,447	52	325	72	9	237	1,549	86	117	3,383	499
97	77	SOUTH LIMITS OF SIOUX CITY TO	I 29 & IA 12 INTERCHANGE *	M	0.2617	24,400	105	23,297	998	66	416	92	11	49	322	18	24	6,385	261
97	129	I 29 & US 20 INTERCHANGE	WEST INNERLEG WEST PART	M	0.1487	17,700	28	15,446	2,226	133	607	107	12	146	1,120	40	61	2,632	331
97	140	SOUTH JCT US 20 & CO RD K64 TO	SOUTH LIMITS OF MOVILLE	R	0.0288	4,070	18	3,741	311	21	112	21	2	16	127	5	7	117	9
97	140	SOUTH JCT US 20 & CO RD K64 TO	SOUTH LIMITS OF MOVILLE	R	0.0441	4,070	18	3,741	311	21	112	21	2	16	127	5	7	179	14
97	140		INTERSECTION MAIN STREET	M	0.4090	2,930	12	2,689	229	8	49	11	1	19	125	7	9	1,198	94
97	140		NORTH LIMITS OF MOVILLE	M	0.5713	2,250	9	2,012	229	8	49	11	1	19	125	7	9	1,285	131
97	140		NORTH JUNCTION CO RD K64	R	0.1562	2,270	10	2,094	166	10	52	10	1	10	76	3	4	355	26
97	140		INTERSECTION CO RD D12	R	4.1709	1,740	8	1,566	166	10	52	10	1	10	76	3	4	7,257	692
97	140		SOUTH LINE OF PLYMOUTH COUNTY*	R	1.1407	1,630	7	1,457	166	10	52	10	1	10	76	3	4	1,859	189
97	141		EAST INNERLEG WEST PART	R	0.0716	2,480	10	2,115	355	17	91	17	2	24	184	8	12	177	25
97	141		WEST LIMITS OF SLOAN	R	0.6036	2,970	13	2,709	248	15	81	15	2	14	109	5	7	1,793	150
97	141		EAST LIMITS OF SLOAN	M	0.0053	2,950	12	2,693	245	12	75	17	2	17	108	6	8	16	1
97	141		JCT CO RD K64 & MAIN ST(HORNICK)	R	6.5531	1,920	8	1,664	248	15	81	15	2	14	109	5	7	12,582	1,625
97	141		WEST LIMITS OF SMITHLAND	R	8.3272	1,340	5	1,087	248	15	81	15	2	14	109	5	7	11,159	2,065
97	141		JUNCTION LOCAL STREET	M	0.0602	1,330	5	1,080	245	12	75	17	2	17	108	6	8	80	15
97	141		JUNCTION IA 31 & HICKORY STREET	M	0.3323	1,470	6	1,219	245	12	75	17	2	17	108	6	8	488	81
97	141		EAST LIMITS OF SMITHLAND	M	0.4058	1,490	6	1,259	225	10	63	14	2	16	106	6	8	605	91
97	141		NORTH LINE OF MONONA COUNTY	R	1.7486	1,510	6	1,251	253	12	63	12	1	17	134	6	8	2,640	442

COUNTY	ROUTE	DESCRIPTION	DESCRIPTION	RURAL MUNICIPAL	SECTION LENGTH	AADT	MOTORCYCLE	Passenger Cars, Vans, Pickups	Total Trucks and Buses	BUS	SU2AXLE	SU3AXLE	SU4AXLE	CT4AXLE	CT5AXLE	CT6AXLE	CT Multiple Trailer	ALL VEHICLES VMT	TRUCKS AND BUSES VMT
97	175		WEST LIMITS OF DANBURY	R	2.3629	1,170	5	927	237	11	60	11	1	16	126	5	7	2,765	560
97	175		JUNCTION THOMAS STREET	M	0.3493	1,170	4	929	237	9	56	12	1	19	124	7	9	409	83
97	175		INTERSECTION EAST STREET	M	0.2106	950	3	710	237	9	56	12	1	19	124	7	9	200	50
97	175		EAST LIMITS OF DANBURY	M	0.3006	850	3	610	237	9	56	12	1	19	124	7	9	256	71
97	376	I 29 INTERCHANGE TO	JUNCTION LEWIS BLVD	M	0.2144	14,200	56	12,478	1,666	65	413	91	11	129	846	47	64	3,044	357
97	376		JUNCTION LINCOLN WAY	M	1.6990	10,600	45	9,991	564	32	202	45	5	33	219	12	16	18,010	958
97	376		JUNCTION GLENN AVENUE	M	0.4242	13,300	57	12,622	621	38	242	54	7	33	219	12	16	5,642	263
97	376		VINE AVENUE INTERCHANGE	M	0.6074	13,200	57	12,522	621	38	242	54	7	33	219	12	16	8,017	377
97	376		IA 12 INTERCHANGE	M	0.3109	15,100	65	14,412	623	46	288	64	8	26	170	9	12	4,695	194
97	376		INTERSECTION 6TH STREET	M	0.3784	10,700	45	9,866	789	44	280	62	8	47	308	17	23	4,049	299
97	376		INTERSECTION 18TH STREET	M	0.1031	12,600	53	11,667	880	55	345	76	9	47	308	17	23	1,299	91
97	376		INTERSECTION 18TH STREET	M	0.2321	12,600	53	11,667	880	55	345	76	9	47	308	17	23	2,924	204
97	376		INTERSECTION 18TH STREET	M	0.3399	12,600	53	11,667	880	55	345	76	9	47	308	17	23	4,283	299
97	376		INTERSECTION 18TH STREET	M	0.5829	12,600	53	11,667	880	55	345	76	9	47	308	17	23	7,345	513
97	376		INTERSECTION 18TH STREET	M	0.4260	12,600	53	11,667	880	55	345	76	9	47	308	17	23	5,368	375
97	376		JUNCTION 28TH STREET	M	0.0989	10,600	44	9,760	796	45	285	63	8	47	308	17	23	1,049	79
97	376		JUNCTION 28TH STREET	M	0.7756	10,600	44	9,760	796	45	285	63	8	47	308	17	23	8,222	617
97	376		JUNCTION 28TH STREET	M	0.7172	10,600	44	9,760	796	45	285	63	8	47	308	17	23	7,602	571
97	376		INTERSECTION 41ST STREET	M	0.1353	8,400	35	7,673	692	34	210	47	6	47	308	17	23	1,137	94
97	376		INTERSECTION 41ST STREET	M	0.6655	8,400	35	7,673	692	34	210	47	6	47	308	17	23	5,590	461
97	376		INTERSECTION 41ST STREET	M	0.9996	8,400	35	7,673	692	34	210	47	6	47	308	17	23	8,396	692
97	376		INTERSECTION 41ST STREET	M	0.9937	8,400	35	7,673	692	34	210	47	6	47	308	17	23	8,347	688
97	376		LEEDS INTERCHANGE	M	0.4875	5,600	23	5,012	565	19	121	27	3	47	308	17	23	2,730	275
97	376		SOUTH-EAST SOUTH-WEST LOOP	M	0.1528	200	1	177	22	1	8	2	0	1	10	0	0	31	3
97	376		NORTH-EAST NORTH-WEST RAMP	M	0.2221	1,920	9	1,882	29	3	19	4	0	0	3	0	0	426	6
97	376		EAST-SOUTH WEST-SOUTH RAMP	M	0.0373	200	1	185	14	1	7	1	0	1	4	0	0	7	1
97	376		US 75 INTERCHANGE *	M	0.2571	7,100	30	6,558	512	17	108	24	3	43	280	16	21	1,826	132

Public Infrastructure & Utilities

The Environmental Protection Agency defines three types of water systems, based on characteristics of the population it serves. A Community Water System supplies water to the same population year-round and includes municipal systems while Non-Transient Non-Community Water Systems supply water to at least 25 of the same people at least six months out of the year. This includes institutions such as schools, hospitals, and office buildings. Lastly, Transient Non-Community Water Systems supply water for places where people frequently come and go, only staying for a short period of time, such as campgrounds. The table below provides details on the 30 public water systems of Woodbury County.

Community Water System	CWS Number	System Type	Source Watershed	Source Type	Population Served
Sioux City Water Supply	IA9778054	Community water system	Bacon Creek-Missouri River	Surface water	85,797
Sergeant Bluff Water Supply	IA9774033	Community water system	Headwaters Farmers Ditch Watershed	Ground water	5,015
Moville Water Supply	IA9753022	Community water system	McElhaney Creek Watershed	Ground water	1,687
Sloan Water Supply	IA9780059	Community water system	Farmers Ditch Watershed	Ground water	1,042
Lawton Water Supply	IA9743065	Community water system	Elliott Creek Watershed	Ground water	943
Correctionville Water Supply	IA9721076	Community water system	Bacon Creek Watershed	Ground water	766
Anthon Water Supply	IA9704060	Community water system	Threemile Creek-Little Sioux River Watershed	Ground water	545
Pierson Water Supply	IA9766041	Community water system	Village of Pierson Watershed	Ground water	337
Danbury Water Supply	IA9729099	Community water system	Koker Creek-Maple River Watershed	Ground water	320
Lofted View Events	IA9778202	Transient non-community system	Garretson Ditch Watershed	Ground Water	314
Salix Water Supply	IA9770024	Community water system	West Laterals-Farmers Ditch Watershed	Ground water	295
Bronson Water Supply	IA9709046	Community water system	Elliott Creek Watershed	Ground water	294
Hornick Water Supply	IA9738057	Community water system	West Fork Ditch Watershed	Ground water	255
Cushing Water Supply	IA9725094	Community water system	Bacon Creek Watershed	Ground water	230
Dorothy Pecaut Nature Center	IA9778401	Transient non-community system	Big Sioux River Watershed	Ground water	208
Smithland Water Supply	IA9783060	Community water system	Parnell Creek-Little Sioux River Watershed	Ground water	181
Green Valley Golf Course	IA9778201	Transient non-community system	Bacon Creek-Missouri River Watershed	Ground water	180
Stone State Park	IA9778966	Transient non-community system	Big Sioux River Watershed	Ground water	150
MidAmerican Energy Co. Neal North	IA9778105	Non-Transient non-community system	Bacon Creek-Missouri River Watershed	Ground water	137
Global Foods Processing Inc.	IA9778110	Community water system	Bacon Creek-Missouri River Watershed	Ground water	120
Ag Processing – Soy Plant	IA9774002	Non-Transient non-community system	Bacon Creek-Missouri River Watershed	Ground water	110

MidAmerican Energy Co – Neal South	IA9778106	Non-Transient non-community system	Bacon Creek-Missouri River Watershed	Ground water	107
Oto Water Supply	IA9758023	Community water system	Fern Creek-Little Sioux River Watershed	Ground water	72
East Side Acres	IA9700630	Community water system	Village of Climbing Hill-West Fork Little Sioux River Watershed	Ground water	64
Ag Processing - Refinery	IA9774003	Non-Transient non-community system	Bacon Creek-Missouri River Watershed	Ground water	50
Berea Heights Inc.	IA9778301	Community water system	Headwaters Farmers Ditch Watershed	Ground water	38
Salem Lutheran Church Correctionville	IA9721883	Transient non-community system	Headwaters Wolf Creek Watershed	Ground water	35
Whiskey Creek (Feedlot)	IA9778111	Transient non-community system	Big Whisky Creek Watershed	Ground water	34
Koch Fertilizer LLC	IA9774102	Transient non-community system	Bacon Creek-Missouri River Watershed	Ground water	30
Oscar Carl Vineyard	IA9778203	Transient non-community system	Bacon Creek-Missouri River Watershed	Ground water	25

Data sources: United States Environmental Protection Agency, MyWaterway.epa.gov.
United States Environmental Protection Agency, Drinking Water Map Application (geopub.epa.gov/DWWidgetApp).

Utility Providers	
Anthon	**Bronson**
Electric: Anthon Municipal Utilities & NIPCO/WIMECA Water: Anthon Municipal Water System Wastewater: Anthon Municipal Wastewater Treatment Facility Telephone/Internet/Cable: CenturyLink, Evertek, Long Lines, Wiatel, and RuralWaves Solid Waste: Sanitary Services Recycling: Gill Hauling	Electric: MidAmerican Energy Water: Bronson Water Supply Wastewater: City of Bronson Wastewater Treatment Facility Telephone/Internet/Cable: Wiatel Solid Waste: CHN Garbage Service Recycling: Gill Hauling
Correctionville	**Cushing**
Electric: MidAmerican Energy Water: Correctionville Water Supply Wastewater: City of Correctionville Wastewater Treatment Facility Telephone/Internet/Cable: Schaller, CenturyLink, Ruralwaves, Nextlink Solid Waste: Sanitary Services Recycling: Gill Hauling	Electric: MidAmerican Energy Water: Cushing Water Supply Wastewater: City of Cushing Wastewater Treatment Facility Telephone/Internet/Cable: Schaller Telephone, Nextlink Solid Waste: Sanitary Services Recycling: Gill Hauling
Danbury	**Hornick**
Electric and gas: MidAmerican Energy Water: Danbury Water Supply Wastewater: City of Danbury Wastewater Treatment Facility Telephone/Internet/Cable: Long Lines Solid Waste: CHN Garbage Service Recycling: Gill Hauling	Electric: MidAmerican Energy Water: Hornick Water Supply Wastewater: City of Hornick Wastewater Treatment Facility Telephone/Internet/Cable: Wiatel Solid Waste: CHN Garbage Service Recycling: Monona County Landfill
Lawton	**Moville**
Electric and gas: MidAmerican Energy Water: Lawton Water Supply Wastewater: City of Lawton Wastewater Treatment Facility Telephone/Internet/Cable: Wiatel Solid Waste: Gill Hauling	Electric and gas: MidAmerican Energy Water: Moville Water Supply Wastewater: City of Moville Wastewater Treatment Facility Telephone/Internet/Cable: Wiatel Solid Waste:

Recycling: Gill Hauling	
Oto	**Pierson**
Electric: MidAmerican Energy Water: Oto Water Supply Wastewater: City of Oto Wastewater Treatment Facility Telephone/Internet/Cable: Wiatel Solid Waste: CHN Garbage Service Recycling: LP Gill Landfill	Electric: MidAmerican Energy Water: Pierson Water Supply Wastewater: City of Pierson Wastewater Treatment Facility Telephone/Internet/Cable: Frontier, Wiatel (coming soon) Solid Waste: Sanitary Services Recycling: Woodbury County Solid Waste Agency
Salix	**Sergeant Bluff**
Electric and gas: MidAmerican Energy Water: Salix Water Supply Wastewater: City of Salix Wastewater Treatment Facility Telephone/Internet/Cable: Longlines, Nextlink Solid Waste: CHN Garbage Service Recycling: LP Gill Landfill	Gas: MidAmerican Energy Electric: Sergeant Bluff Municipal Water: Sergeant Bluff Water Supply Wastewater: City of Sergeant Bluff Water Treatment Plant Telephone/Internet/Cable: Long Lines, Sparklight Solid Waste: Waste Connections Recycling: Gill Hauling
Sioux City	**Sloan**
Electric and gas: MidAmerican Energy Water: Sioux City Water Supply Wastewater: City of Sioux City Wastewater Treatment Facility Telephone/Internet/Cable: Solid Waste:	Electric and gas: MidAmerican Energy Water: Sloan Water Supply Wastewater: City of Sloan Wastewater Treatment Facility Telephone/Internet/Cable: Solid Waste:
Smithland	**Unincorporated**
Electric: MidAmerican Energy Water: Smithland Water Supply Wastewater: City of Smithland Wastewater Treatment Facility Telephone/Internet/Cable: Wiatel Solid Waste:	Electric: Woodbury County Rural Electric Cooperative, Western Iowa Power Cooperative, or North West Rural Electric Cooperative Water: Individual well systems Wastewater: Septic systems and/or lagoons Telephone/Internet/Cable: varies Solid Waste: Individual private contracts with waste management services

Collectors/Recyclers Partnering with the Woodbury County Transfer Station	
Household Appliances	Demanufactured in house by Certified staff Steel from appliances: Compressed Steel CO 2600 Boulevard of Champions, Sioux City, IA 51111, 712-277-4100
E-Waste	A-Tech Recycling Inc. 5745 NE 17th St, Des Moines, IA, 50313, 515-263-3707
Recyclable Material (cardboard, metal, glass, paper, plastic)	Van's Sanitation & Recycling 1553 18th St. SW, Le Mars, IA, 51031, 712-548-4644
Scrap Metal	Compressed Steel CO 2600 Boulevard of Champions, Sioux City, IA, 51111, 712-277-4100

Woodbury County Transfer Station's Annual Tonnage:

Table 5 – Association Annual Tonnage

Fiscal Year	Total Tons Accepted	Percent Difference
FY2013	4,800	
FY2014	4,860	1.23%
FY2015	4,770	-1.88%
FY2016	5,199	8.25%
FY2017	5,403	3.77%
FY2018	5,738	5.80%
FY2019	5,180	-10.70%

Woodbury County Area Solid Waste Agency, Comprehensive Plan Update, 2021

Financial and Business Assistance

IOWA DEPARTMENT OF NATURAL RESOURCES

The Financial and Business Assistance (FABA) team at the Iowa Department of Natural Resources is committed to enhancing Iowa's Environment in ways that positively impact our economy and society.

Comprehensive Planning & Environmental Management Systems (EMS)

Each community in Iowa is part of a Solid Waste Planning Area. Every five years most Planning Areas solicit input and file Comprehensive Plan Updates (IAC 567-101) with the department for review. The plans describe the state of the 3Rs (Reduce, Reuse, Recycle) along with disposal information, programs and goals. DNR staff is available to help local officials with tools to assist in preparation to make important waste reduction and integrated solid waste management decisions.

www.iowadnr.gov/compplan

EMS is a voluntary alternative program to Comprehensive Planning. Solid Waste Planning Areas and Facility Service Areas who are successful program applicants receive training and technical assistance to implement the ten elements of EMS, keying on six environmental areas beyond waste reduction. Participants receive benefits specific to the program and submit annual reports detailing objectives and progress. Applications are accepted annually for new program participants.

Laurie Rasmus | Laurie.Rasmus@dnr.iowa.gov

www.iowadnr.gov/swems

Iowa Waste Exchange (IWE)

With a non-regulatory network of representatives around the state, the IWE works to match up businesses, schools, hospitals, communities, and individuals that have waste recycling and/or disposal needs with resources to help meet those needs. Thousands of available and wanted materials are in the IWE's confidential, free-access database.

Bill Blum | Bill.Blum@dnr.iowa.gov

www.iowadnr.gov/iwe

Pollution Prevention (P2) Services

Pollution Prevention engineers provide confidential, non-regulatory environmental technical assistance at no cost to Iowa businesses, industries, institutions and government agencies. Pollution Prevention Services offers opportunity assessments, the nationally-recognized Pollution Prevention Intern Program, Environmental Management Systems assistance, workshops and educational training. Since 2001, the Pollution Prevention Intern Program has saved Iowa businesses over $91 million in implemented environmental improvement projects.

Jeff Fiagle | Jeff.Fiagle@dnr.iowa.gov

www.iowap2services.com

Regional Collection Center Program

Regional Collection Centers (RCCs) are permanent collection facilities designed to properly manage and dispose of hazardous waste from households and conditionally exempt small quantity generator (CESQG) businesses. RCCs accept specific types of hazardous materials that display the following types of characteristics: toxic, flammable, corrosive and reactive. These characteristics can be found in items like cleaners, stains, polish and oils. Many RCCs provide a material exchange (Swap Shop) for usable products. Grants are available to establish a new RCC or improve/expand existing RCC facilities and services. Ongoing support is also provided to RCCs through reimbursement payments to help offset operating expenses.

Kathleen Hennings | Kathleen.Hennings@dnr.iowa.gov

www.iowadnr.gov/hhm

Toxics In Packaging

Iowa law prohibits the sale or distribution of packaging containing heavy metals such as cadmium, lead, mercury, and hexavalent chromium (if intentionally introduced) and sets limits on the incidental presence of these heavy metals in packaging materials. The purpose of the law is to prevent these toxic heavy metals from entering the environment, recycling stream, landfills and waste incinerators. Iowa's Toxic in Packaging Program conducts both education outreach and random testing to assure packaging compliance in the manufacturing and package distribution industries.

Kathleen Hennings | Kathleen.Hennings@dnr.iowa.gov

www.iowadnr.gov/hhm

FABA Environmental Education Services

Household Hazardous Materials Education

In an effort to assist all ages in understanding the concerns and risks associated with household hazardous materials (HHM), several education materials have been developed. Age-specific short videos and interactive computer games are available to help identify HHMs and discuss proper purchase, use, storage and disposal.

Kathleen Hennings | Kathleen.Hennings@dnr.iowa.gov
www.iowadnr.gov/hhm

Mobile Education Exhibit:

The "How You Live Has an Impact" exhibit is an interactive way to learn about the natural resources used in our daily lives, the effects this has on our environment and simple steps that can be taken to minimize the waste of these resources. The exhibit showcases topics such as sustainability, recycling, household hazardous materials and water and energy conservation. Transportation is provided at no cost. The exhibit is also handicapped accessible, heated and air conditioned and available for use year-round.

Amy Wilken | Amy.Wilken@dnr.iowa.gov
www.iowadnr.gov/mobileexhibit

Retailer Consumer Education Program

It is the policy of the state of Iowa to educate Iowans regarding the hazardous nature of certain household products including proper use, storage and disposal to protect public health and safety and the environment. Iowa law requires retailers that sell HHMs to obtain an annual permit and they may participate in a consumer information program by providing DNR-supplied education materials to consumers. Iowa law also requires retailers that sell certain HHMs (motor oil, oil filters and lead acid batteries) to accept these used materials for recycling and reuse or to post the nearest collection location for recycling and reuse.

Kathleen Hennings | Kathleen.Hennings@dnr.iowa.gov
www.iowadnr.gov/hhm

FABA Grants Programs

Derelict Building Grant Program

The Derelict Building Grant Program works with communities with populations of 5,000 or fewer people who need assistance with addressing abandoned commercial or public buildings, all while diverting construction and demolition materials from the landfill. The Program works with applicants to address any environmental, heath and safety challenges these buildings pose and limits the amount of construction and demolition debris headed to area landfills.

Reid Bermel | Reid.Bermel@dnr.iowa.gov
www.iowadnr.gov/derelictbuilding

Solid Waste Alternatives Program (SWAP)

SWAP provides financial and technical assistance to businesses, government agencies, public and private groups and individuals to assist with development and implementation of solid waste management projects to improve environmental performance and the bottom line. By recovering, reusing, and reducing the use of Iowa's valuable resources, SWAP projects save money, create jobs, increase revenue and protect and preserve natural resources by promoting resource management that eases the burden on landfills, reduces greenhouse gas emissions and improves Iowa's water, air and land quality.

Tom Anderson | Tom.Anderson@dnr.iowa.gov
www.iowadnr.gov/swap

Professional Development Assistance Grant Program

The PDA Program provides grants to assist with the development and delivery of technical assistance, public awareness, and professional development opportunities for Iowa's solid waste management professionals. Program funds are available to local governments, public and private groups, and individuals.

Tom Anderson | Tom.Anderson@dnr.iowa.gov

For more information on any of the FABA programs, go to

www.iowadnr.gov/faba

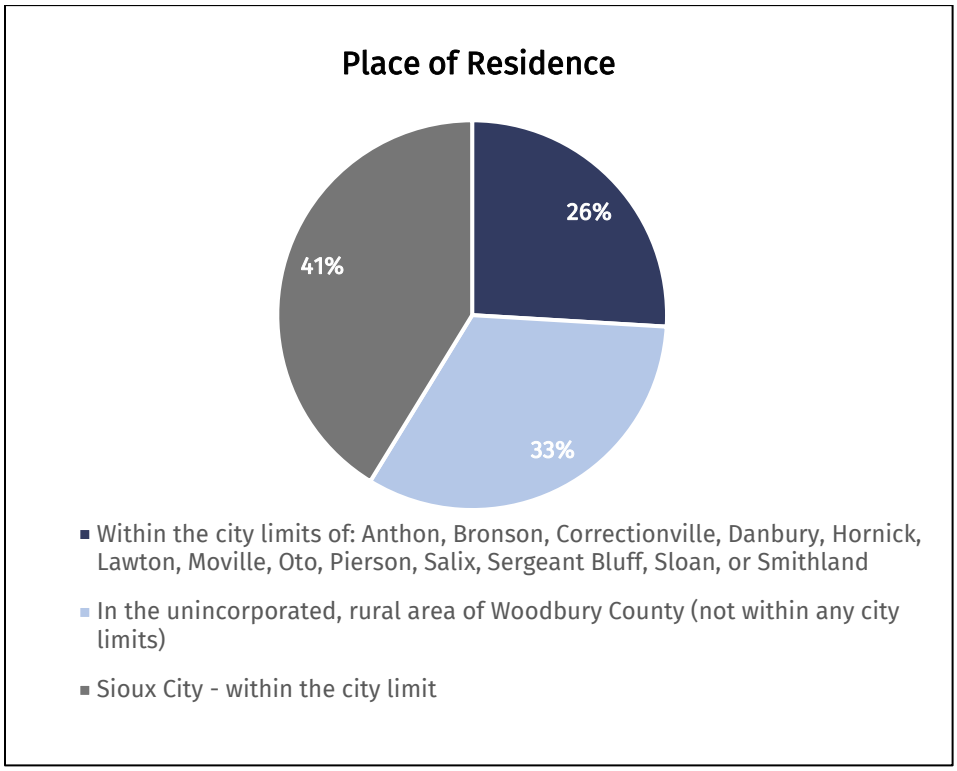
FABA SECTION SUPERVISOR

JENNIFER WRIGHT
(515) 452.1794
Jennifer.Wright@dnr.iowa.gov

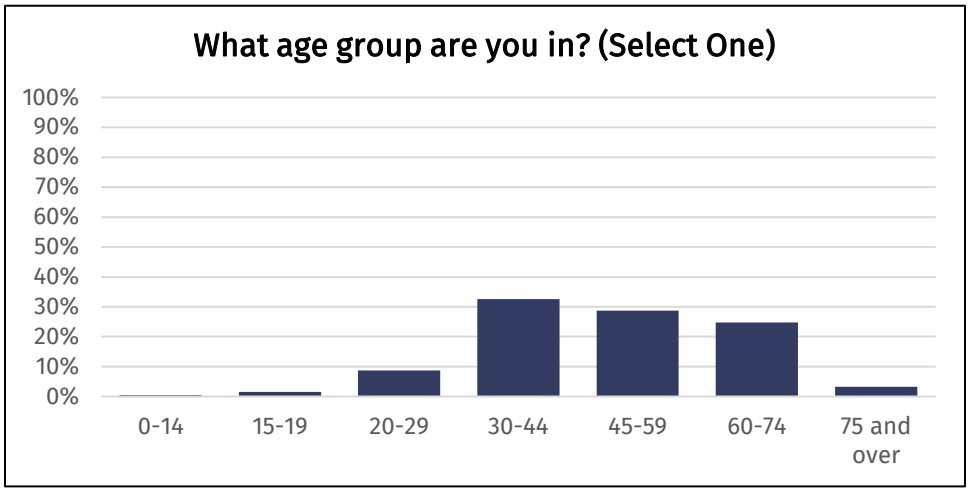
Survey Results & Public Engagement

Results from the Woodbury County Comprehensive Plan 2040 Public Input Survey, Summer 2021

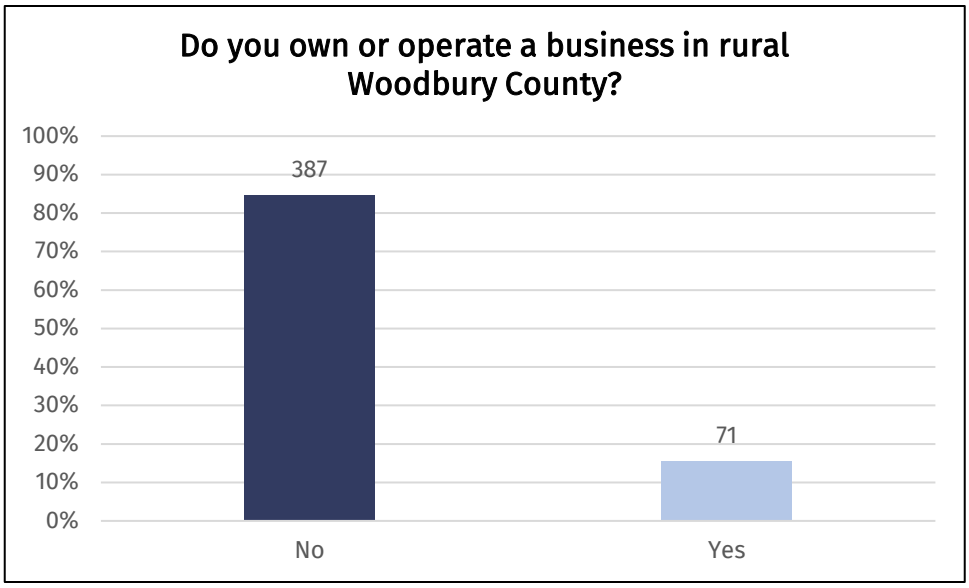
Question #1: Where do you live?



Question #2



Question #3

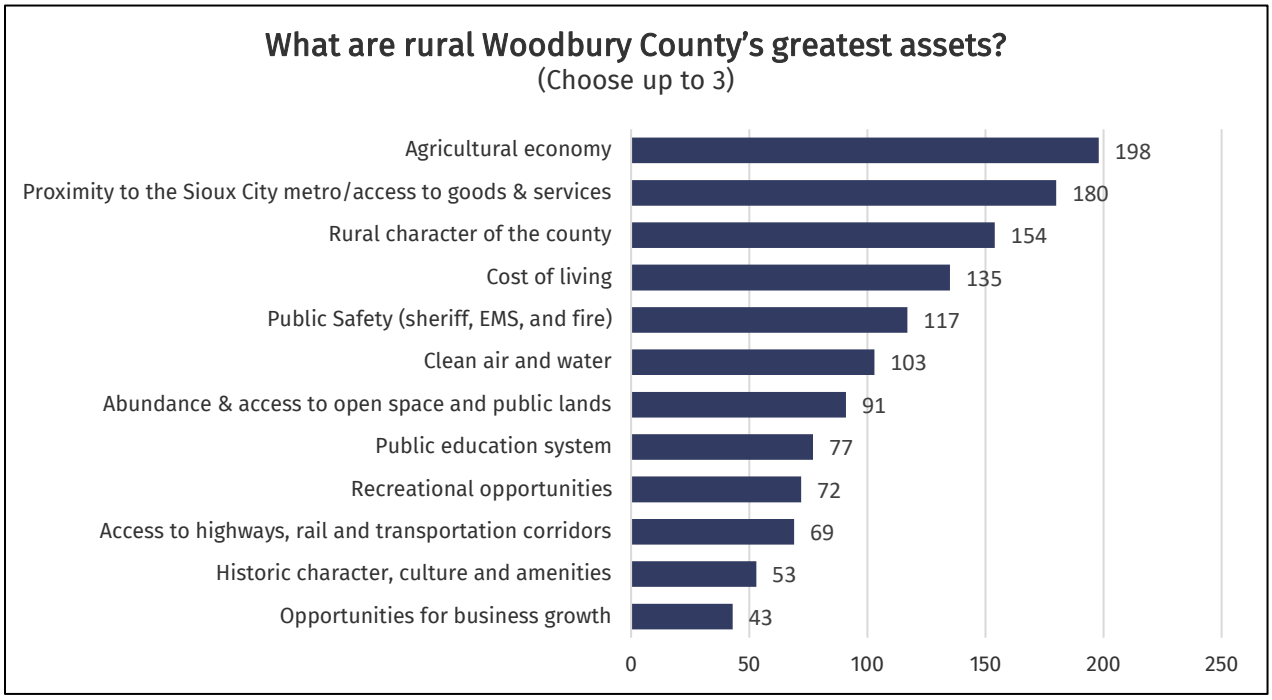


If your answer in #3 is yes, what type of business do you own and how many employees do you have?

Rental
farm, 0
Farming no employee
Law Firm - 11 employees
Rural Highway department/50
Construction
Farming
Diesel mechanic, 1
Farm Ranch 3
2
Farm/ feedyard
Livestock
Restaurant. Meet market. Commodity brokerage business. Farming.
Church - 1 employee
Insurance Co
Woodshop and farm 0 employees
Emma's Lunch Box and 2
No business
Daycare
Construction - rendering maintenance - 5 full time employees
3
Independent sales

Farming.. no employees
Pest control. 2 employees
Farm
Family farm
In home daycare and 2 people
Self employed cleaning. Independent Contractor
Farmer
Farm and construction
Triple C Farms, 1
Farmer - 4 seasonal help
Concessions
Medical uniforms, 2 employees
Operate Electician - 15
Farmer
Na
Contractor-1
Farm. 3
Healthcare and Education, 2 employees
Farm, 4 employees
Farm, seed 3
Paint sales 4 employees
Attorney no employees
Photography none
Ag. 2
Farm and house flipping- selves (2)
Property management/ rentals. 4
Cattle feed lot 5
Nonprofit 7 staff 67 volunteers
Crop Production Retail & Services - 3 employees
Farm
Bar - 3
Farmer
3
Farm 2
row crop farm - 4 employees
Direct Sales - 1
Farming
Real Estate
Farmer
Farm
Food Truck - 4

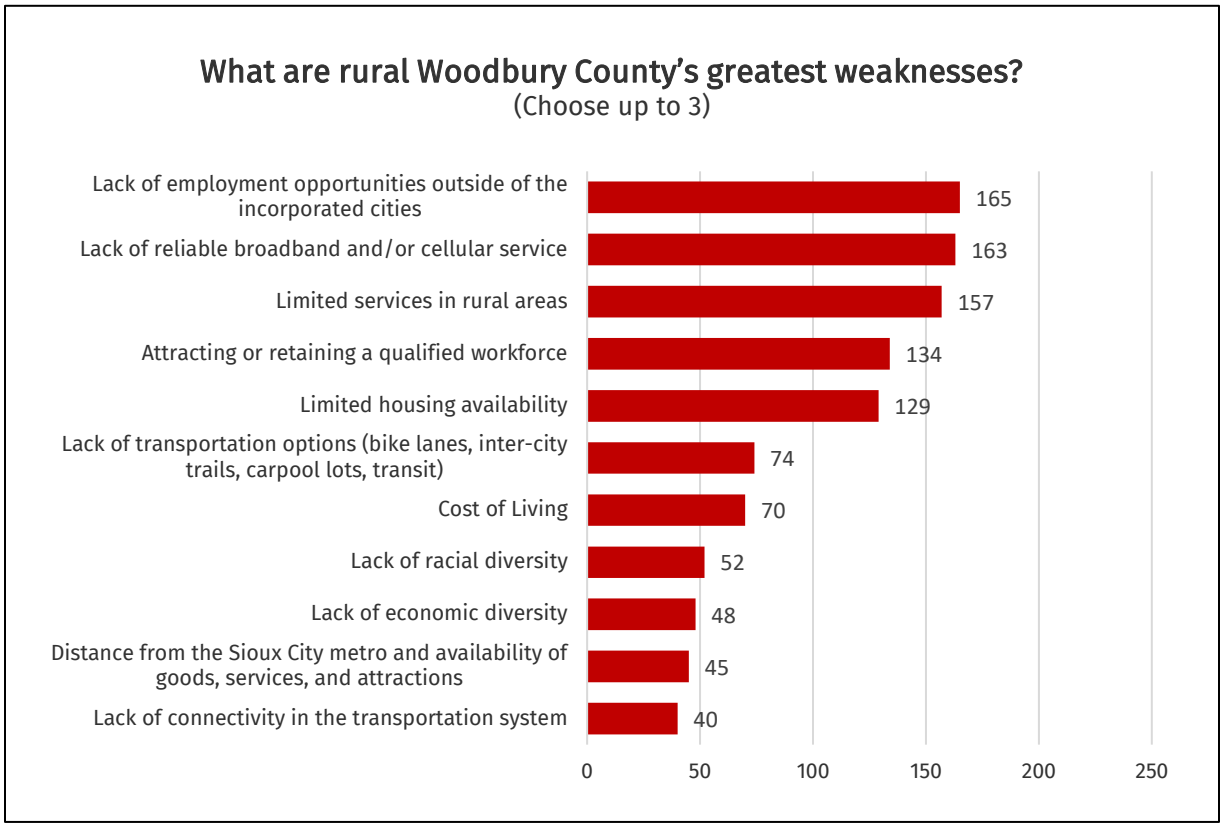
Question #4



Other or Comments (please specify):

There isn't any great assets. This area needs help.
Taxes are lost than City limits. A plus.
Access to WiaTel Fiber and Access to Reliable Electricity
sense of family or community
Roads are rough and dangerous
Need to limit expansions of feed lots!
We have no great assets because Woodbury county is not taken care of dirt roads are crap. There is very little recreational opportunities the rural character of the county is a absolute joke.
Conservative rural values
Quiet
General high character of people in the region
No windmills!

Question #5

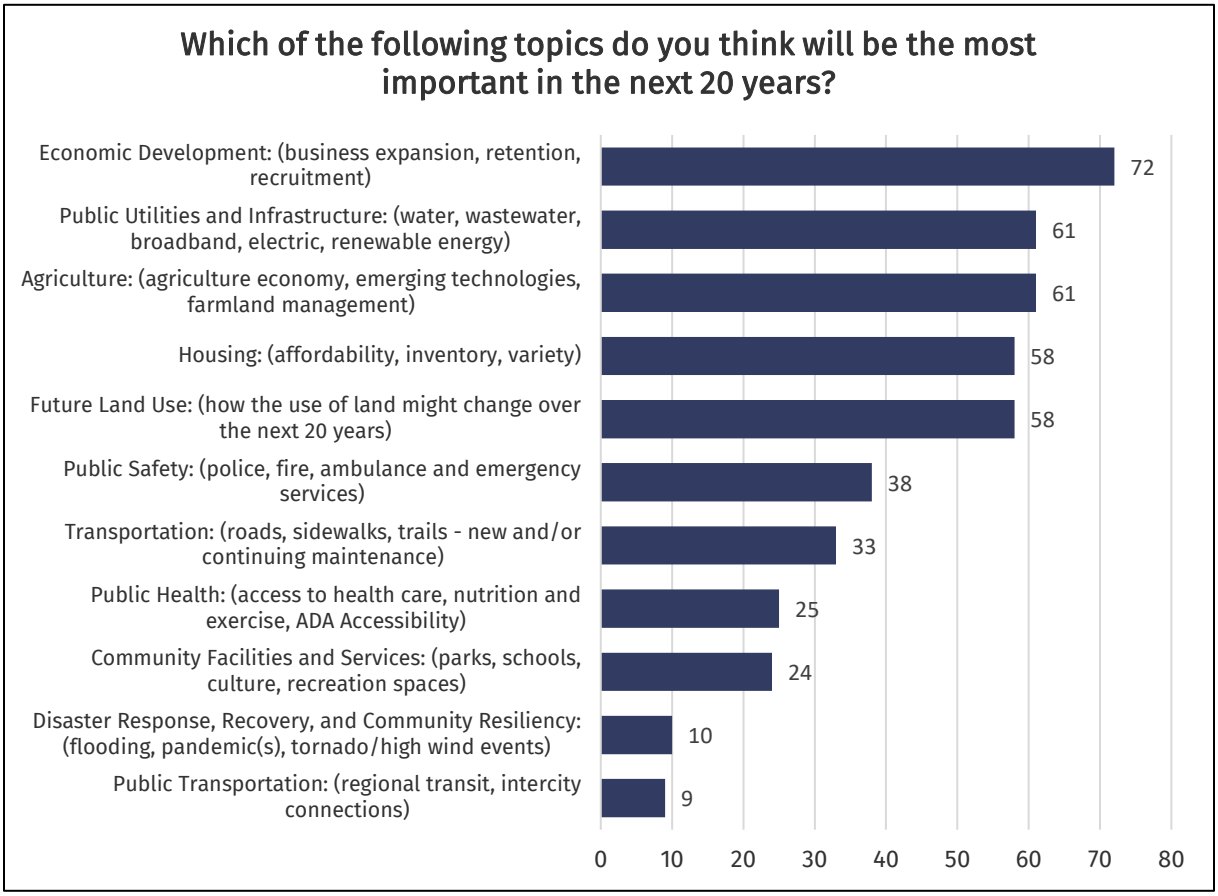


Other or Comments (please specify):

large urban area with the political power. rural residents underrepresented although still asked to pay $$$ in property taxes
County gravel road maintenance and service is extremely poor. Road beds need improvement, snow removal needs to be more timely to allow rural residents that ability to get to work in a reasonable manner. We live 3 miles from Sioux City yet need to take a day vacation on any snow over an inch with wind because the road isn't cleared until late the afternoon following the end of the storm.
There is no clean water in Iowa. We need stricter regulations on manure and fertilizer runoff.
none
We wifi thru our "Old" phone lines. Suppose to get new for high speed in 2 years, but SchallerTelephoneCo has been telling me 2 years for at least 2 years. Kids have a hard time doing school work on this internet service
Don't know
can't think of any
Business growth
Senior Citizen Centers (meals, activities, education,nurse access,group tours etc.)
Poor maintenance of gravel roads
Lack of access to waterways.
Mother Nature -- it would be nice if we could order the rain when we needed it!
A HUGE problem is internet and cell service

Rural economic development, secondary roads
Lack of police presence.
Deteoriating infrastructure
Cost of housing
Appearance is typically run down and there is no accountability for people to clean up their property
None
Money is not spent wisely by the Board County
Poor upkeep of rural roads
Poor gravel roads (mostly sand and not rock being applied)
Lack of recreational options
Lack of reliable Cell Service and Lack of Rural Water
Lack of rural grocery stores
Dangerous roads/intersections
Property taxes are ridiculously expensive
Lack of businesses in town also that pay a decent wage
Property taxes
cell service and traffice in Singing Hills area is horrific
Wishing..... Especially Now. With So much more traffic on 141/ Morningside Ave There was a Walking/ Biking Lane!!!
quality of gravel roads
Agricultural land surveyed as Industrial
Bridges and roads. We are seeing improvement, but the have been neglected for a long time
Taxes
Gravel roads need work
Proximity to Sioux City
Disconnect of county government with rural communities
No voice, very long way. For jury duty, kind of feel forgotten
There is no choose three everything for this question is Woodbury county's weakness we should be able to check every box.
Anti livestock production sentiment
Housing is ASOLUTLEY RIDICULOUS! I could have a house on a lake in many other states for the price of a house here. You put lack of racial diversity, you forgot to put "importing immigrants daiky to ruin the place where you grew up". I grew up here, lived lots of other places. Probably not staying here.
Trend to more government control
Gravel roads lack proper maintenance and a proper gravel base
Few cities large enough to offer services the further one gets from Sioux City
Poor county road maintenance
High taxes compared to neighbors. Bad gravel roads.
Broadband in the rural areas
None of these bother me enough to mark them.

Question #6

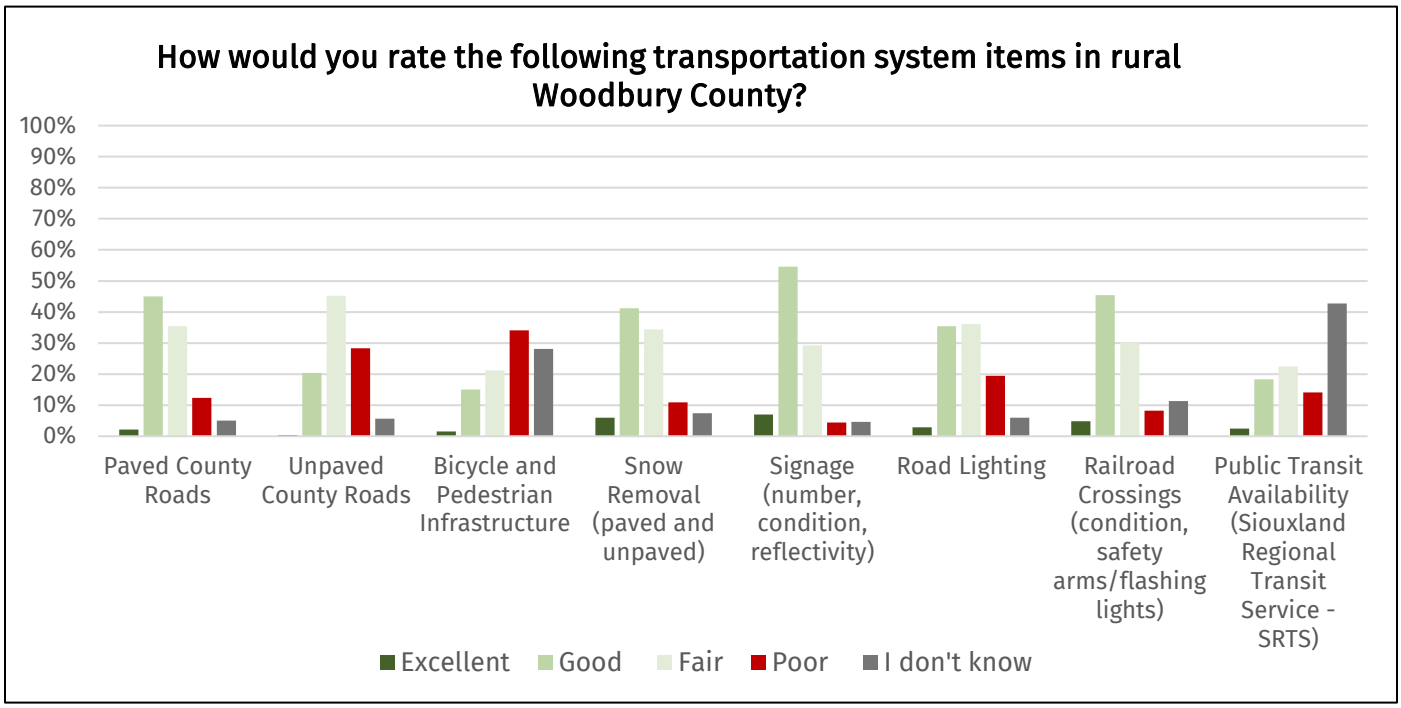


Other (Please Specify)

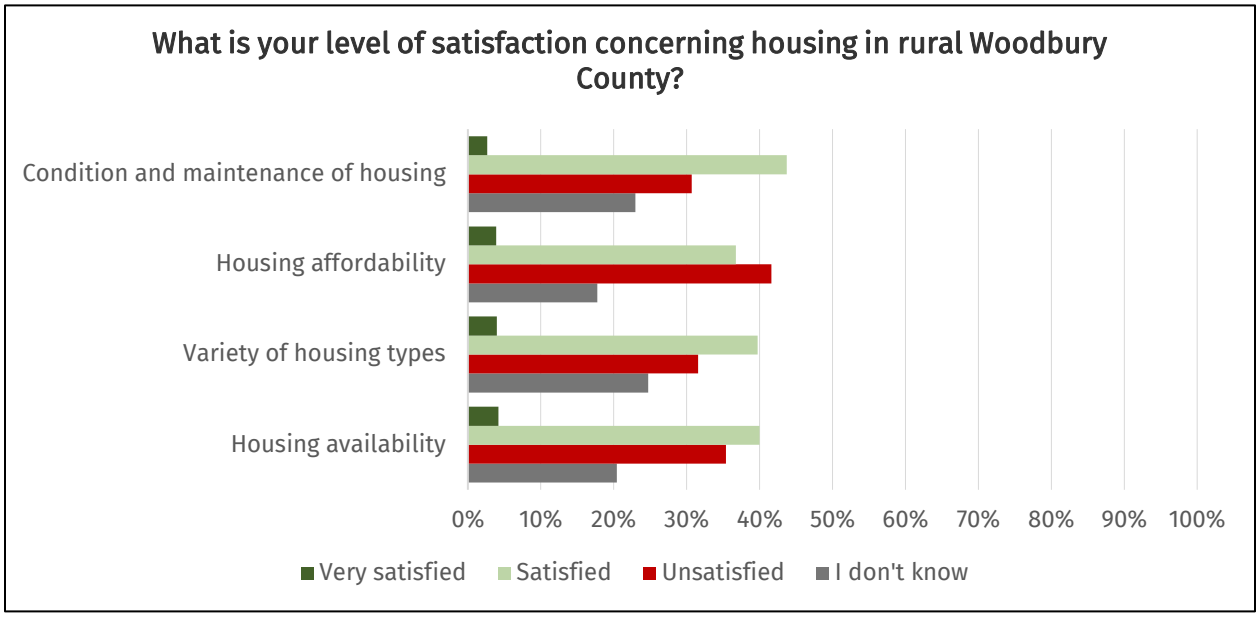
protect private property rights - including from unneighborly actions of another
Agricultural land use (combination of last two item). Sioux City sprawl is hurting ag in WoCo.
control sprawl. no windmills
Small towns have a lack of housing
keep rural areas rural
spread of Sioux City into rural areas
too much suburban sprawl from Sioux City into rural areas
Economic development, community facilities and services, public health, future land uses
Public infrastructure, economic development, transportation infrastructure
Public safety, future land use, agriculture
Economic development, housing, future land use
Housing, public health, public safety
Community facilities and services, public health, agriculture
public infrastructure, transportation infrastructure, public safety
economic development, public infrastructure and utilities, future land use
Internet
Lower Taxes.

Need to plan and lay out an entire sqr mile instead of single business or housing development.
None of the above matters if we're overtaxed. The City/County should stop trying to do things. It's wasteful.
We need affordable housing in Sioux city 1000 to up to 1500 is not affordable
City forcing unwanted and unwarranted policy changes on rural areas, such as bike trails
Wildlife Conservation
Lifestyle amentities
Very sad to see wind generators in our county. Not enough of them to satisfy our energy needs.
Farmers taxed to the max to cover Sioux City area
Broadband connectivity to all areas
Renewable energy/solar farms
Growth is not always good. Until you have attracted some good paying jobs, NOT BUTCHERING ANIMALS JOBS, but good paying jobs where legal citizens actually want to work. For example Trinity Rail, that you all ran out of town. DUMB!
Maintaining independence from government control
Expanding wind farms

Question #7



Question #8



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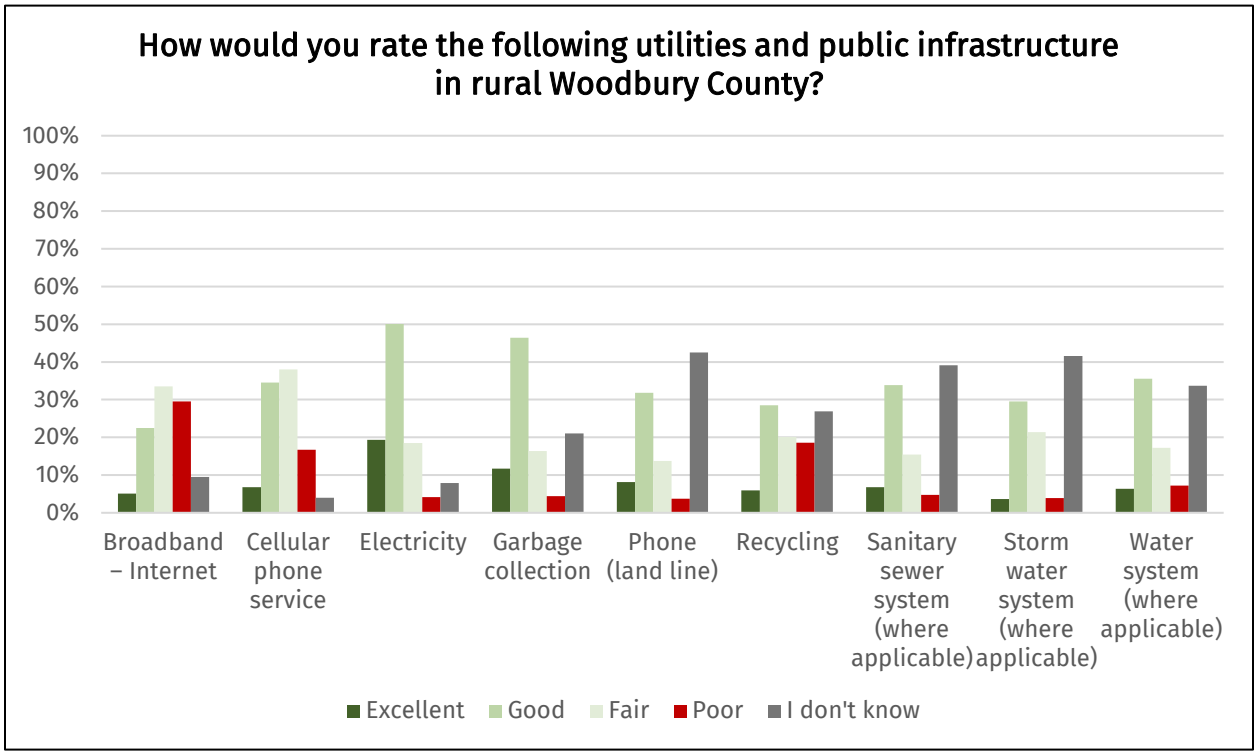
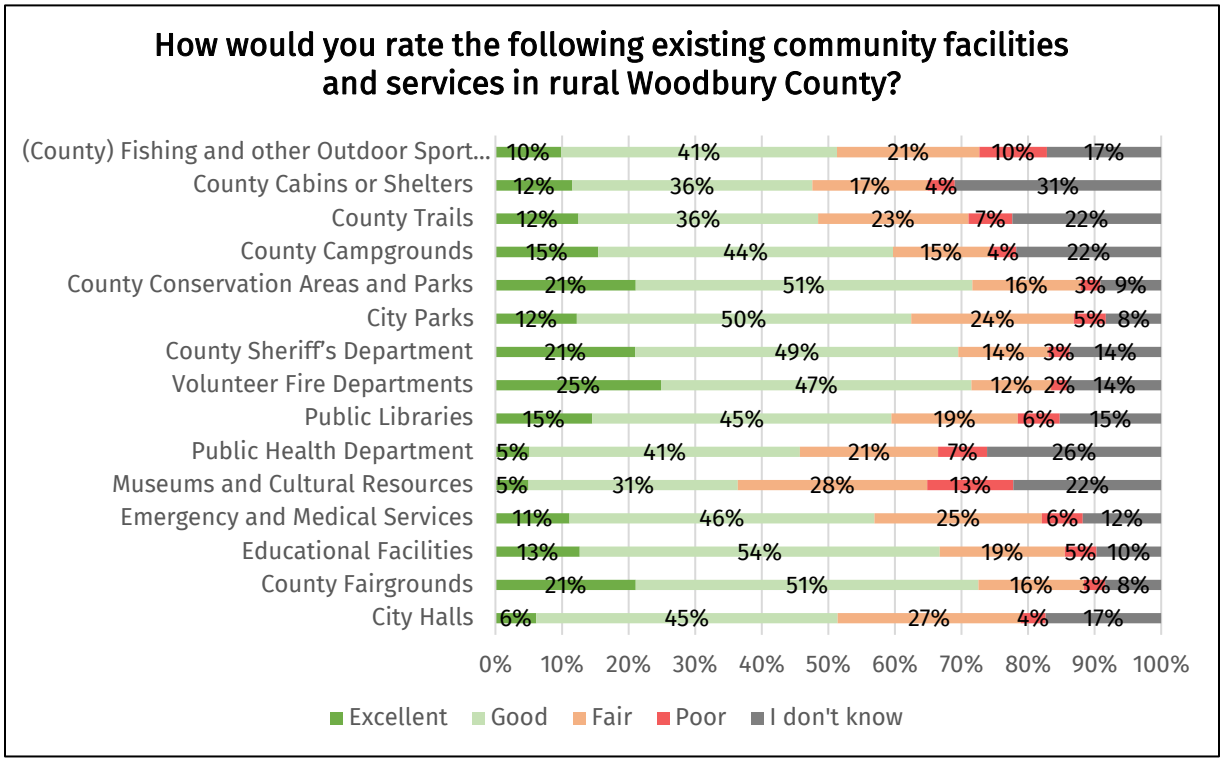


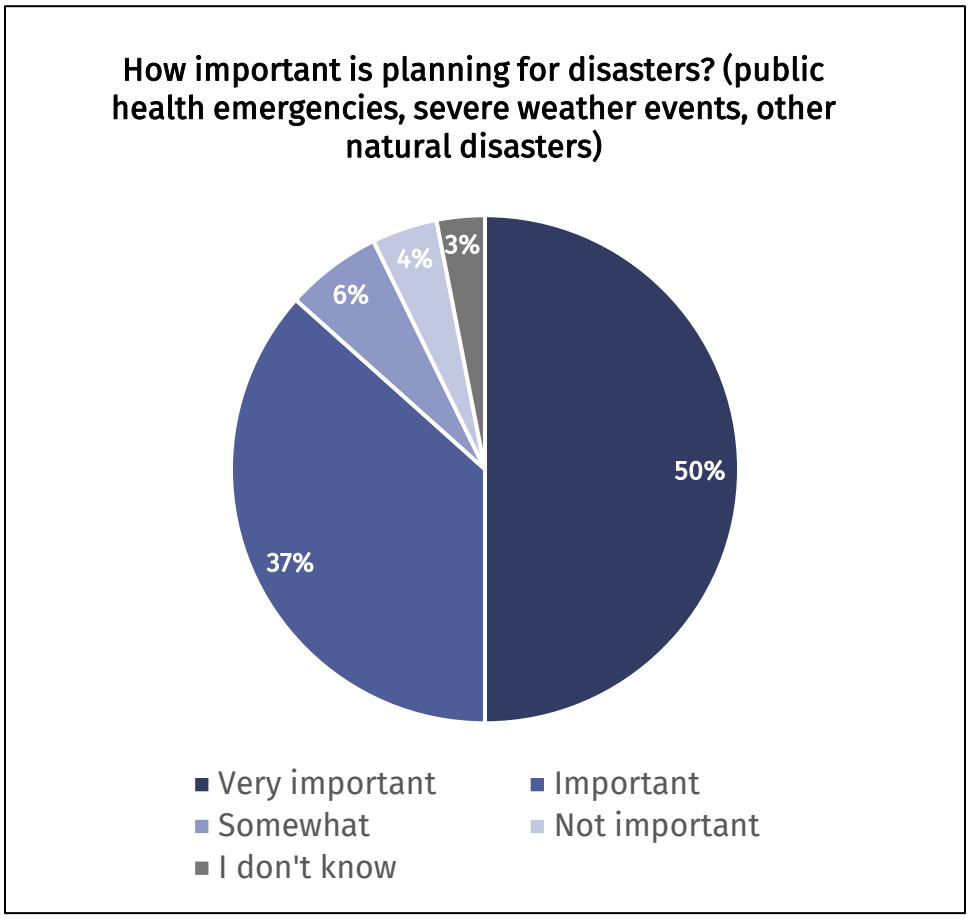
Question #10



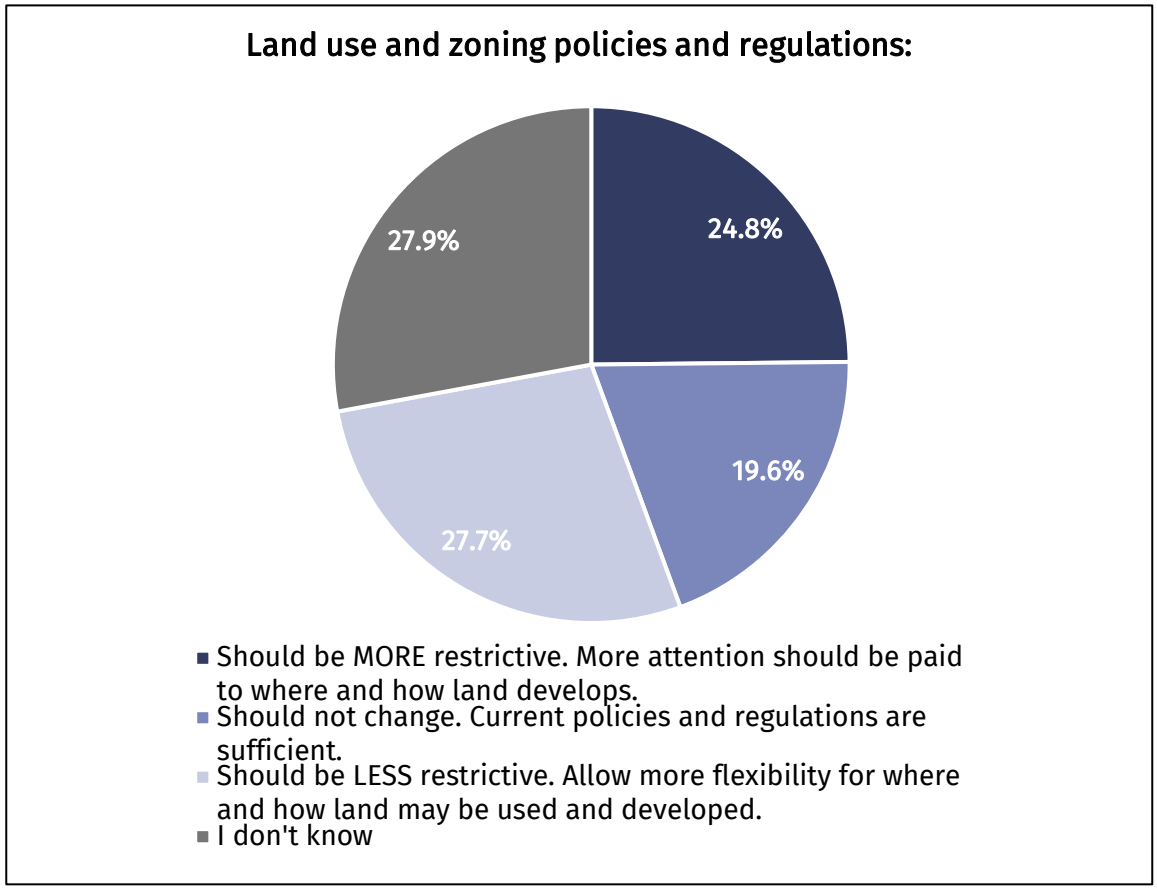
Other (please specify)

Wish there was a reservation system for camping.
Cabins @little sioux need bathrooms, shower building is to far away and causing folks use the woods behind at night
Not enough places to go fishing /hunting/ shooting range
Wishing. Recycling pick was available for the County!
Definitely need acces to more fishing areas-ponds, streams
More river access spots along rivers for fishing.
Resilience
Need to work on fish conservation
Inadequate publicity of any above amentities!
Please provide recycling options for county residents!
Not many camping opportunities in Woodbury County

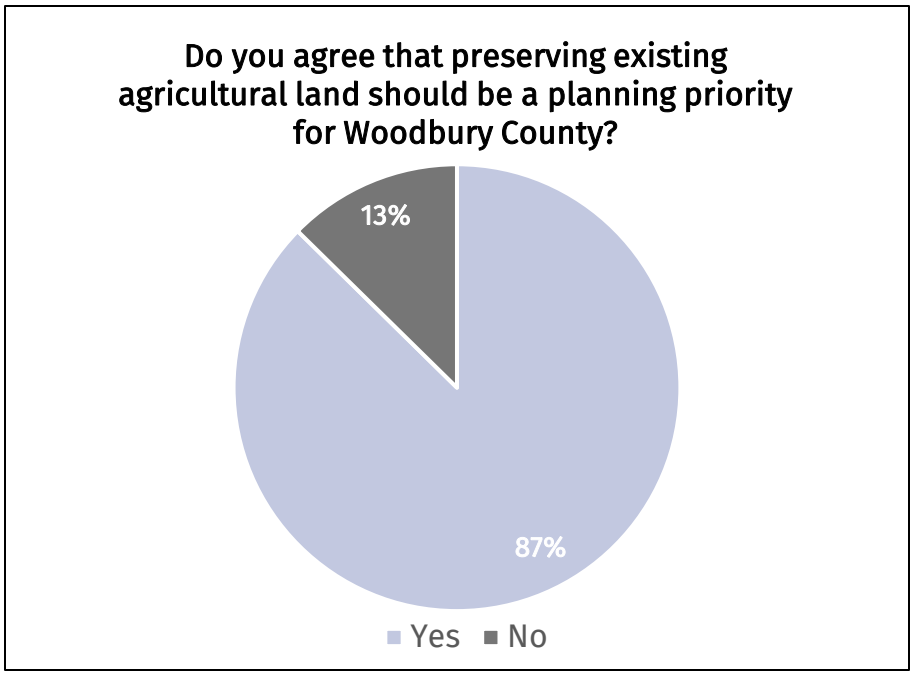
Question #11


How important is planning for disasters? (public health emergencies, severe weather events, other natural disasters)
50%
37%
6%
4%
3%
Very important
Important
Somewhat
Not important
I don't know

Question #12



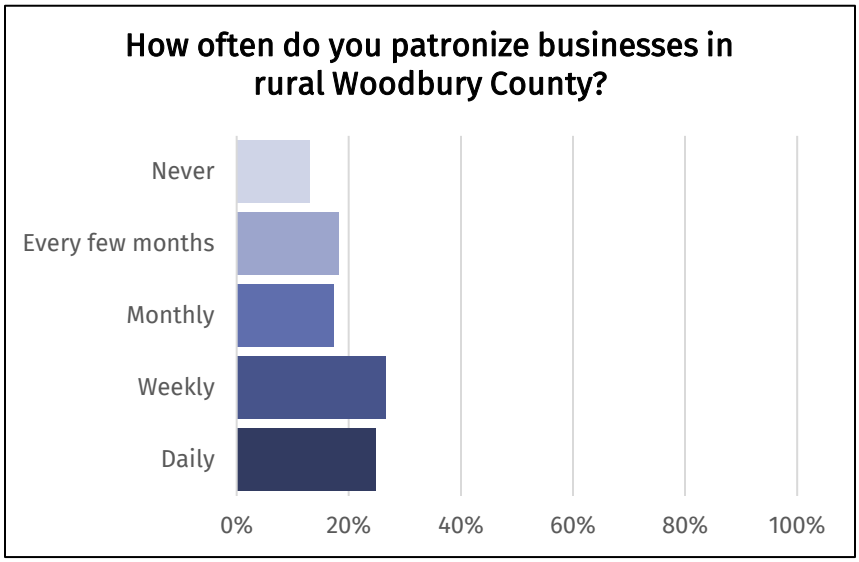
Question #13



Comments:

what is meant by "preserving" if it means allowing farming (not requiring public use), then yes.
More care needs to be brought to preserving the land of local Native Americans as well.
too much suburban sprawl from Sioux City into ag areas
?
In certain areas.
Keep Iowa based on agriculture instead of developing cities. Leave the cities for the big states on the east and west coast.
Outside say a 15 mile radius from a city, to allow for future expansion.
A planned expansion of should include larger tracks and not single business or housing development.
I depends on context. If the land isn't producing well, and it could be turned into something more useful, go for it.
We live on ag land that is zoned industrial, ridiculous!
I don’t think mayor bob Scott should get financial gain by owning land that the city buys from him needs to be checked out
Stop allowing county roads to turn into city streets. If people want acreages in the country only allow them on gravel roads. If people want to live on hard surfaced roads stay in the city
Let the market/economy and landowner determine what the best use of the land is.
Preservation does restrict the acquisition of l azad nds for both rural non agricultural business, recreational development, and rural affordability of housing
For farming. Not feed lots!
We have tons of empty buildings, and more buildings are being built at the cost of farm land. Less farm land= less food to feed the world.
Not private property
While I can’t think of specific examples, it should be a priority to reuse existing developed land. We should offer incentives to redevelop and encourage using existing infrastructure outside of historical preservation.
Ag use for livestock,grain,vegetables for farmers markets,solar farm energy and wind turbines
We cant build housing everywhere and expect to eat. We DO NOT need more people from out of state. Crime has grown exponentially! My generations kids are going to leave here and never come back unless their family owns a farm, they can get a good job, etc that keeps them here. With the crime, housing costs, higj taxes...there are better places to live than here.
Farming has to be stable and profitable for young families for this to be a priority
Outside of natural growth corridors or industrial opportunities
No windmills

Question #14



Question #15: What types of businesses do you patronize in rural Woodbury County?

small businesses
small businesses
bank, hair, groceries, shopping
coffee shop, garden centers, groceries
Restaurants, gas, grocery, PO, bank, retail, Hair salon, Doctor, etc.
gas station, bank
grocery, clothing store, bar, bank
c store
bar, gas, bank, store
eating out
Seed sales. Custom pesticide application.
Convenience store, bank
Grocery store, gas station
restaurants, church, library
Convenience Stores
Service stations, feed stores, car maintenance, propane and electrical utilities.
Bars, restaurants, gas stations, vinyard
gas, antique/second hand stores, farmer's market, pre-COVID - restaurants
Fireside in Anthon, Dollar Store in Correctionville - not much else for us to pick from
small businesses
Restaurants
Ag equipment. Pet sitting/doggy day care.
grocery, pharmacy, doctor
restaurant, barber, gas, bank, insurance

convenience stores, banks, bars
Grocery stores and gas stations
Fuel stations. Grocery
gas stations, restaurants
Gas stations, dollar general, restaurants
not sure
Gas station, convenience store,
shopping
farms, stores, coops
Farmers Markets, Local farms for produce
We do businesses closest, 10 miles away from Mapleton Monona County
Shops, farmers
Restaurants, convenient stores and family health
Gas Stations
grocery, restaurants, gas stations
I don't know
stores, banks, restaurants
restaurants & cafes, bars
Healing centers, community groups (rek)
Restaurant
Grocery, medical, general merchandise, restaurants
I would like more diners in the country
NONE
Drug store, newspaper, library, variety, gas station
Agricultural
bank, Dr., restaurants
Country store Smithland
Restaurants
Agricultural
ag business
Casey's
Bout all
Restaurant, library, home goods .
Agriculture Food store
groceries, gas stations, pharmacy, post office, hardware, liquor, restaurant, auto repair, auto sales, bank, insurance agency.
Gas stations, grocery stores, food establishments.
Restaurants.
Restaurants
Have not
All types
Farmer

grocery stores, gasoline stations, car washes, church, school, Woodbury County Fair, stores like Walmart, etc.
Gas stations
Small town gas stations, coffee shops, hair dresser
Local
Dollar General, gas stations
Stores, museums, eateries
Gas stations. Convenience Stores, and restaurants
Small business owner stores
Ones offering jobs k
Restaurant
All of them
food
restaurants, bars
Eatery gas
Eating establishments..thrift stores..gas stations
None
Gas station. Postal service Little Woodbury county treasury
The corn industry
Food
Coffee shops, gas stations, consignment shops/boutiques
Gas station
Grocery, gas, hair salon, restaurants
Grocery
Gas. Restaurants. Convenience stores.
Gas station Restaurants
Restaurant
Building materials, retail
Grocery store .... Flower shop .. pharmacy
Any really that benefit within our county.
Casey's. Dollar General. Local restraints
Restaurant
Casey's, library, hair salon, 2nd hand. Store restaurants
Casey's, Dollar General
GAS STATIONS
Gas, grocery, dining, drive inn
Restaurants and retail shops
Gas, cafes, convenience stores, steakhouse, pharmacy, beauty salon
ag and small businesses
Restaurants
Grocery store, pharmacy, hardware store, dentist, hair shop, flower shop
Craft and clothing

gas , convenience items, restaurants
Gas, Dollar General, Automotive, Casey's, Restaurants, Post Office
N/a
Restaurants
Restaurants, shopping centers,etc
Restaurants, convenient stores, gas
Locally owned restaurants and businesses
Convenience stores restaurants gift shops
Fuel
Retail and resteraunts
I don't know
Daycare
Grocery, dress, liquor, restaurants, post office, dry goods, eye doctor
Small shops
Clothing store
Ag
Na
Restaurants, gas stations, dollar general
Na
Restaurants places who fix mowers.
Farm/food
Gas stations grocery stores
Store
Gas stations, beauty salon, dollar general, bar/restaurant
restaurants
Boutiques. Restaurants
Coffee shops, green houses, candle and furniture company
The gas's stations
Coop, locally owned places to eat, locally owned gas stations
Restaurants
Boutiques, flea markets
Local
Casey's- Dollar General- grocery Store- Subway- post office
Grocery, fuel, restaurant
Convenience atores
Stores
All of them
Convenience stores, grocery stores, restaurants, theaters, medical, etc
All services if available. Hard to compete with big box stores but availability is also important.
Gas stations and Dollar General
Gas,food, dollar store
Food fuel ag supply

Decor/flea markets or any unique shops.
Retail, service
Implement
Convenient stores. Restaurants Auto shops Flower shops Barber/Beauty shops 2nd hand stores
Groceries and gas station
Construction. Fuel. Restaurants. Co-op.
Gas station. Post office.
I have to drive to Plymouth county or Sioux City to get to a grocery store-that should not be the case. I patronize fuel stations, post office, boutiques, J&J Motors and unfortunately dollar general when absolutely necessary. Moville needs a grocery store
Gas station, grocery
Small local shops, restaurants, camping,
Conv stores Grocery
Hair salon, convenience store, DG,
Restaurants, retail
Restaurants
Food
Food
More “mom and pop” business to support local business growth.
Unique store (craft, decor) Restaurants
Coop elevator AGP John Deere dealership
Restaurants, convenience stores, Culligan water, auto repair, lawn service, bakery
Farmers Markets, restaurants and bars, gas stations
Church farmers market in Moville
I usually don't
Gas station
Restaurants
As many or as much as possible
Hair dresser, clothing boutique, restaurants
small shops, gas stations and bars
Oscar Carl Vinyrd
Gas stations, grocery stores
Gas stations convenience stores
Food
suppliers and hardware stores as well as servicing those businessed
Restaurant/ Bar Boutique Homemade goods and services
Restaurants
gas stations, restaurants, coffee/antique shops
Food venues
Parks
Restaurants
convenience stores/gas stations, winery, restaurants
All kinds

Restaurants, agriculture, crafting and sewing
Gas station restaurant
Ag
Dining, bars, convenience stores
Gas station
Retail
Stores and gas stations
Na
Retail
Retail
Restaurants
Restaurant, gas station, convenience stores, thrift stores
Restaurants, gas station,
Restaurants
Gas stations, restaurants, and retailers.
Restaurants. Gas stations
Grocery stores, convenience stores, restaurants.
My lack of mobility and other disabilities interfere with me visiting rural businesses.
Restaurant
Clothing.
Restaurant or gas stations
Convenience store Dollar general
Bar restaurants shops
Restaurants, gas stations, post office, medical clinics, general store(DG),flower shop,
Dining, fuel
There are none.
Gas stations- boutiques
Scarecrow farm
Service stations, ag equipment businesses
Family fun businesses
Gas stations, restaurants and bars.
Gas station restaurant
Local food establishments
Service and restaurants
Fast Food and gas stations
Fuel
Restaurants, plant nurseries, secondhand stores
Eating places
Food, drink, gas, retail,
Retail
Gas/convenience stores
Local bars and restaurants

Restaurants, gas stations, Dollar General store
Gas station, restaurants
Food
Gas stations, cafes, restaurants, bars, accountants, realtors, machinists, Ag retailers, mechanics
Restaurant
Nothing is within 7 miles of us other than Pronto in Lawton
Gas station, groceries, feed store, restaurants, drug store, implements
Farm dealerships
Restaurants
Restaurants
Local businesses in the small town in which I live
Gas station, Cafe
Restaurants
Restaurants
Convenience store, restaurant, bar, gas station
Grocery. Library, gas, banking,restaurants
Convenience stores, gas
Grocery, gas, farm store, clothing
Gas stations Grocery store Restaurant
Convenience stores and cafes.
Local businesses
Grocery Store. Barber/Hair. Restaurants. Ag business
Groceries, home goods, gas stations, coffee shops/restaraunts
Gas Stations Healthcare facilities
Dining
All
main street in small town
Groceries - gas - Furnature - clothing Botique’s - all kinds of great stores
Fuel,restaurants tire and auto repair, dentist,pharmacy,grocery store,bank
Restaruant in Lawton and Bronson. Gas station in Lawton
Golf, Restaurants, Gas Stations.
Service businesses
Convenience stores
Gas, food
small town dining and gas stations.
Auto shops, restaurants, gas stations,
Restaurants, fuel,
Restaurants, gas stations, stores
Restaurants, repair services
Restaurant s. Gas station
Restaurants, grocery, convenience stores.
Restaurants

Restaurants/Bars, beauty shops, automobile repair shops, retail/coffee shops.
Fuel, Banking, Groceries
Convivence Stores, Bank, Barber, Restaurants, Local Shops & Photographers, Medical, Vision. I personally believe in keeping my money out in my community-it is our small towns we are wanting to maintain or improve.
Restaurants, gas stations/convenience stations
Restaurants
Bank, post office, gas station, restaurant
Grocery
Doller General
Restaurant, automotive services, hair salons, hardware, lumberyard, consignment shops, medical
Agriculture
Restaurant, gas, pharmacy
Grocery Store, Convienence Store, Library
Small town businesses.
Restaurants, gas stations, shops
Restaurants
We don’t have many in Lawton and Bronson, but we eat at their restaurants occasionally.
I live in Lawton. Get my gas and do my banking and go to our restaurant but that is about all that is available that I use. So close to Sioux City, so I shop there.
Restaurant
Bar/restaurant
Convenience stores, restaurants

Question #16: What businesses or services would you like to have in rural Woodbury County?

Attract and strengthen ag-related businesses
more local groceries - not just dollar general
Can't think of any
more transportation for the rural elderly for doctor appts. , dental, etc.
butcher
bookstore
small manufacturing
festivals, brewery, agritourism (e.g. cheese making, locovore meats and vegetables, etc.)
Emergency health services, sheriff's department, gas/convenience stores, antique and secondhand stores
Outlet Mall, water park, more camping locations. Something to draw people from Omaha and Sioux Falls.
Fuel station/convenience stores.
same
what I have now
just whats there
Access to more health care options and other professional services.
Local businesses, more love and respect for Native American sites and land, large playgrounds, parks, splash pads, pools

not sure
same
More LBGTQ inclusive/safe spaces
Oakridge conservation area is totally underused. Nobody out of the immediate area knows it is there! Another nature center could be there. A developer to create a resort of campground similar to AKOA would bring tourists. Hiking trails for a starter would be good. This area needs to be publicized and used, locals could be contacted to provide guide services for out of state people to hunt the deer and turkey.
keep what is
keep ones we have now
In Sioux City - not rural - better, much better streets to drive on!
Grocery stores
Locally owned restaurants, ones to attract professional college graduates
more retail opportunities
Grocery store, medical clinic
More general stores in small towns
Fun zones for kids
don't know
Any
Any new businesses .
Auto repair
Transportation to and from air ports, amtrak stations Electric vehicle charging stations Fiber optic based broadband in all communities Home health care provision availability Senior Citizen centers More fully developed television service (over the air=no cost)
More small town grocery stores rather than big chain businesses.
Shooting ranges of all types
Parks and bike trails
Not sure
Pizza places, consignment shops and a bakery.
Na
I wish the small towns had more grocery stores. Corporate DOLLAR STORES pushed them out of towns
Grocery store in Moville
More medical access.
Food health and other basic need services and items
Service businesses. Repair shops.
Bars
Better cell and internet services
Not sure
More insurance
More food or touris attractions
Motels
Grocery store

Variety of new start up businesses to open up additional employment opportunities for high school kids.
Local meat lockers
Amusement park
More business who have standards that fit our Midwest lifestyle
Grocery stires
More diversity and more options. Things that other bigger cities have. Indoor activity places for families.
More fast food places
More food:/dining
More variety of eating places ,Fire dept that are paid by state taxes, daily rural to city bus service,
More restaurants
I DO NOT FREQUENT RURAL BUSINESSES OFTEN.
Better internet options Better cell reception
recreational
Restaurants, convenience store
Not sure
A grocery store
N/a
grocery stores
Fast food, grocery stores, extracurricular activities for children
I don’t know
Grocery and hardware stores
Grocery
More second hand shops. Wider variety of food
Keep post offices open!!!
Grocery store
Farm and animal related family activities
Bakery, gyms
Kid friendly options that are worth the money.
Na
More options for food
Nothing
Groceriies
Entertainment
Greater access to phone/internet/local & cable/satellite tv
More kid friendly
Restraints stores
Pretty satisfied with what is available in rural areas
don't know
Shopping center
Grocery store’s, employment opportunities,
Local

More restaurants
Recreational Familybiwned
A vet
More restaurant options. Better retail
Manufacturing and services of all types. Rural areas can have everything SC does. May need some assistance with infrastructure and planning.
Grocery store.
Internet
I'd like to see more reputable businesses in Sioux City aside from car shops, car washes, and part stores.
country store
Grocery
Grocery stores Fast food
Krispy Kreme More kid friendly things to do. Geared for like ages 7 and up.
Ag industries.
Grocery store. Lumber yard. Doctors office. Restaurant
Grocery stores with healthy options Lumber yard Hardware/variety stores Furniture stores
Grocery stores
The County should not be deciding what businesses are in the county. Let the market decide.
Local stores
More affordable housing
Retail, hardware stores
An artists enclave or similar creative endeavor would be a draw. Otherwise, living in the city, I have shopping and services available close to me.
Dunkin donuts
More local grocery stores
Transportation assistance, providers for services, and better housing options.
Recreational activities for families (low cost)
Manufacturing
Craft stores, clothing stores, eco-friendly bulk grocery shopping stores. Anything really
Better internet options for when kids need home schooled due to covid or shut downs.
Truck stops
As many as possible
Better access to mental health services and resources.
convience stores and post offices
More farmers markets
Hardware Auto
Restaurants
Groceries
Not sure
Better campgrounds and some attractions
Grocery, hardware
All kinds

All sorts
Businesses that create jobs more retailers and grocery stores
More livestock facilities. We need to add value to our crops and create opportunity for our children to stay and farm
Hotel
More gas stations
More variety
Na
Food
More commercial/retail and industrial/manufacturing businesses.
I like rural Woodbury county like it is.
Venues
I can't think of any other businesses or services that I would like in rural Woodbury County.
Department store, fast food options, community health center, gym.
Affordable housing for all. Affordable housing for disabled and elderly. Increased Public transportation and affordability to rural areas, small cities, and businesses. Increased a availability to rural medical services including Doctors and Clinics.
Grocery
Hardware Affordable groceries
Grocery store
Better internet out of WiaTel territory
Breweries, bed and breakfast stops, wineries. You have to have something unique to get City people to travel that far.
Broadband
More family fun year round
ATV/UTV use areas; off highway/road bike trails.
Grocery store
Transportation options
Library, gas, groceries
Sewing, canning, cooking, growing classes and retail storefronts
More eclectic small shops
Groceries store, pharmacy, chiropractpr
?
Small engine repair, more grocery stores or at least smaller locations to grab a few fresh groceries without having to drive all the way to town
Grocery
Targets
I would like a library, and delivery options. While I still drive, if I didn't, I would have limited resources to travel to Sioux CIty for goods.
We need better cell service ineastern woodbury county!! The tower in Anthon is ridiculous it doesn't reach 4 miles out of town
Need more options for Ural electric and telephone. The rural telephone company now should NOT also be engaged in purchasing ag land and building housing developments like they are doing now. That is a conflict of interest and using member money that should be used for maintaining phone lines and keeping expenses lower, not raising expenses. The rural electric coop is not trying to lower rates, but rather raise rates. They should merge with the neighboring rural electric coop.

More shopping stores
Public safety in the town in which I live, county wide bike trail system, hotel or Air BNB
Broadband Work from home
Grocery
We should be able to fill our jury duty responsibilities in a county closest to us.
Entertainment
Family activities and food
Specialists outside of the city- (Occupational Therapy, speech, therapy, etc…) Childcare Centers/Preschools
Hardware, implement dealership
Better internet ;)
Medical, repair shops/service stations, grocery delivery service
Agricultural and Construction Material Manufacturing
Massive lake dug out and filled by missouri river to fish and boat. Restaurants, tackle and bait shops etc. on lake
Something to do during the Winter.
More service businesses
Better Internet options. Better educational options.
Pave the gravel roads
More recreational and family centered activities
Economic initiatives in rural county towns
Groceries, etc.
Woodbury County Shopping is terrible - have to go to Sioux Falls or Omaha. More boutiques and unique offerings is what will bring people out to shop vs. amazon.
More attention needs to be paid to the rural Fire and EMS Depts. These selfless people do this dangerous work for Free. Giving up countless hours to serve their Communities.
I would like to see more mental health services for rural citizens, and businesses that create jobs that people can earn honest wage with benefits-for example manufacturing, construction, processing
not sure
More camping/water recreation
Fresh foods and meats,
Technically
NA
More restaurants and grocery options in small towns
Lawton is struggling to find businesses.
Bigger park or splash pad in Lawton
Recreational

Please leave any additional comments below. Thank you for participating!

Make quality of life improvements - connect to younger families with ties to the area to live here
Gravel roads are in terrible shape. Spend some money on roads.
It is a shame the Supervisors earmarked the Covid-19 funds for jail construction. A portion of those funds could have been used as kickstarter $$ toward county/rural economic development projects, tourism attractions (e.g. Plywood Trail), etc.

I think my biggest gripe is the poor internet service proved in the Cushing area
The unpaved roads in Woodbury County are abysmal at best. I hope the new "gravel" you are purchasing has more gravel in it than fines/dirt. By the way, where did the tax revenues for unpaved roads from the last 15-20 years get spent??? Obviously not on the roads.
Thanks
"Stop" the spread of Dollar Generals
Happy to live in Woodbury County .
The small courthouse in Anthon is a wonderful service for us out in the eastern part of the county.
Woodbury County is very nice--but at times when calling the Sioux City Post Office to get information on a Passport, they would say to leave a message but they never called back. And it seems a little unsettling to have to call a Des Moines Office to get an appointment at the Driver's License Bureau.
995
We love the Woodbury county fairgrounds. The current fair management is incompetent, hard to work with, and very dishonest. When you have a husband and wife serving as the fair manager and secretary it is a great opportunity for things to go wrong. The fairboard in general needs some oversight from the county.
I believe that Sioux city doesn't offer much for entertainment for our youth. Mainly drinking and gambling. Seeing something that attracts tourists and younger age groups would benefit our community.
na
Facebook has been a way for me to connect to business in rural Woodbury county.
N/a
Pierson, Iowa specifically has been run down and several of the homeowners/renters do not take care of their property. There are minimal sidewalks for pedestrian usage and they are often not taken care of or maintained so people have to walk and bike on the roadways and fear getting hit by cars, which many of the roadways could also use some maintenance. The city also has a poor water/sewer infrastructure and they cannot seem to locate where all of the watermains and shutoffs are even located and are not confident that the shutoffs are even in proper working condition because they are so old. This town needs some serious upkeeping.
Thank you for taking the time to look into agriculture and land use.
Highway 175 East of Danbury needs replacement—only about 3 miles until Ida county—it is extremely rough.
Na
Leave rural in in Woodbury County not an is them into the City. Spend the money more wisely rather pet projects. Leave health care alone. Qiut spending money set aside for pandemic for pet projects . and use the money the pandemic only
Nick Kerr 712-420-3364
The hodgepod way of expanding within the City and County needs to improve. Invest in a square mile, invest in the infrastucture and promote the area.
We need to have tax breaks like Sioux Falls so we can have a more healthy, thriving economy. Our mall is dead with high rent prices. Why? We have tons of restaurants and no shops to buy at anymore. We have way too many Dollar Stores!
Need to encourage ag ventures more. Look north to Sioux, Lyon and etc counties. Those counties embrace ag, and their communities and small towns thrive as a direct result.
Thank you for putting out this survey!
I hope the government would shrink itself but you’re all drunk on power so you’ll keep expanding.
We need a more stable and quality medical community. Doctors keep leaving, offices don't take new clients, those who do take new clients aren't quality providers.

Housing is my be issue rent is extremely expensive in Sioux city no one can afford 1,400 for rent and still have to pay electric and gas etc.
Appreciate the chance to help
Roads close to Sioux City should be paved. I was told 40years ago that Glen Ellen rd would be paved
Preserve the Loess Hills
Things need to change here new people and our form of government needs to change why can't we be progressive like Sioux Falls our population never grows
We need to look at Sioux and Carroll counties to see how wealthy we could make our county with livestock production and smaller farms.
Na
The I-29 and Hwy. 20 corridors need to be primed for economic development opportunities, i.e. zoning and infrastructure. Areas outside of city limits need to be primed for residential developments and the rural cities need to start annexing and investing in themselves.
Keep wind turbines and turbine farms OUT OF HERE!!!!
I think we have seen great improvements in many areas in Woodbury County the past 20 years. Rural areas need more affordable public housing transportation options. We need more availability of recreational facilities Including parks, modern camping areas, a park and trails for recreational motor vehicles including off quads, side by side, and motorcycles. Increased knowledge and visibility or rural services, parks, entertainment venues, and public areas. The continued increase in availability of public water recreational areas such as Browns Lake and Snyders Bend. These public recreational water areas need to be saved and increased all water recreations of public swimming, fishing, and recreational boating. Increased tourism opportunities to all communities both rural and metro Sioux City.
So much money is being spent in Sioux City while the small towns fall apart. Sioux City is a dangerous dump anymore the streets there are awful fund the fixing of streets and the forgotten neighborhood and police dept so the crime will stop
Rural areas are falling apart due to underfunding from constant Republican policies. As they continue to cut education, school districts will have to consolidate more. When these small towns lose their school they are as good as dead.
Fix the potholes. Tell the garbage men to actually pick up the trash bins so they can stop breaking them every other week. Make there be more family fun events and areas that are year round. I travel great lengths to take my children somewhere to have fun. Water parks etc. We need those type of facilities in our area to continue bringing revenue and tourist to our community.
N/a
Hog confinement, poultry confinement, and dairy locations should be more carefully considered for approval.Ramifications to neighbors, air and water quality, and people traveling on primary roads should be taken into consideration. But free strips in between cropland atnd water sources should be encouraged to protect water quality.Providing reliable internet to rural Woodbury residents needs to be a priority to provide a valuable resource for residents, businesses and schools.
More funding for cleanup would be great. There's always so much trash all over the place and graffiti/vandalism at the city parks. Maybe hold businesses more accountable for keeping their property clean?
Less government interference with private property. Mind the public land. It needs the attention.
Better than Monona, not as good as Sioux
We absolutely must maintain good county EMS services. Prehospital care and emergency rescue services are vital to rural residents and small town/city residents to save life and limb!!! Time to tertiary care in Sioux City is too great and Paramedics can start that care in transit to save lives and family tragedies
The beauty of Iowa is it's open space. I see Sioux City try to grab areas at the edge, and weep. Upgrade existing homes and clean up areas before you rob the farm land

I understand the board of supervisors do not consider woodbury county ems essential..what is wrong with them?? We need ems out in rural woodbury county!!
Rural woodbury county under the current leadership makes it harder for young entrepreneurs to start instead of easier. The current leadership only wants to help their little circle of friends instead of everyone. Very dissatisfied!!!!
Need better choices fir good jobs. Packing houses are jobs but nothing the type of jobs most people want. Let's get good businesses that most people are proud to work for, not smelly packing houses. Go to Sioux Falls and Minehaha county and take notes. They are doing more than one thing right. We also need more newer housing developments. Not like whispering creek, developments there average person can afford to buy a new house in. Again go to Sioux Falls and find our what they are doing, there are lots of developments like that up there. We need to plan ahead. Building one if countries largest pork plants and then doing nothing about the traffic issues going to it is terrible. Instead get the roads and infrastructure in place then build the business or development. Again Sioux Falls is great at this. Roads and stop lights are in place sometimes several years before it's needed, but they are ready for the growth.
Building a bike trail from browns lake to Snyder's bend should happen as well as finishing the beach at browns lake it's been two years with out beach get it together
Library needs larger budget so can attract and keep qualified personnel. Better communication with rural residents. Not just Sioux City!!
Too many bicycles on our hilly rural roads that seem to think they are cars! It is very hard to slow down or stop a semi when you pop up over a hill & there are cyclists in the middle of your lane. If they want to ride the rural hills they need to stay to the right side more. Surprised there are not more accidents
Less regs - don't raise taxes - Love living outside of Sioux City - don't want to loose all Those things that make Woodbury great !
Limit selling land for an acreage. Have a minimum of 20 or 40 acres per residence. As a general rule city people are not good neighbors in an agricultural community.
Why do we have CONSTANT road construction going on? It has been going on the same roads for 20 years. Why were curbs put on the bypass? What other highway has curbs? Who made the deal on that project? Why were useless, dangerous curbs put in, but NOT MUCH NEEDED GUARD RAILS? Especially on the entrance ramp from the mall to the bypass (behind Target), SHORT RAMP, BUILT INCORRECTLY, with a steep hill drop off at the end of the short ramp. The ramp should come close to the highway WAY sooner so you can see to merge easier and have more time to merge as longer ramp. MANY places on the highway NEED guard rails, we didnt need curbs to launch people into the air if they leave the road. Who got paid on that deal? You also have a RIDICULOUS 45 mph speed sign with a forward arrow pointing at the entrance ramp from highway 20 to the bypass.....they mean 45 mph ahead, but the sign is in front of and pointing at the ramp. This ramp is a TIGHT circle, 25 mph ramp. Feel sorry for people from out of town that do not know and think that ramp is 45 mph. Why is recreation not a priority in S.C.?Stop wasting money on highway curbs that is going to kill people and add some things to do. BTW looks like the mall is on the way out, stores closing daily. You might want to look into that. Sioux City recreation needs.... A Lake some where close. Over by the mall needs a skateboard park, ice hockey rink(winter)/ roller blade hockey rink(summer). Look at Sioux Falls (lots to do, no state income tax). Young people are not staying here, and I dont blame them, no reason to stay here....
We need more housing of all types.
We spent 9 years in a small community and family needs and resources were scarce. Had to drive to Sioux City most times.
County gravels are extremely poor once you get away from Sioux City. Well maintained only around the city
Housing would develop faster if we hard surfaces more roads especially close to Sioux City- I know many who will not drive our rural roads at night due to road striping not being painted enough - even busy corridors like Lakeport. To Sgt bluff is at times horrible with paint lines hard to see 3)

Rural turns off highways are hard to find with no signage or lights 4) more city people would explore rural Woodbury with better signage
The gravel roads are terrible & mostly sand
Roads are atrocious. Please add gravel!!!!
Please provide recycling options for county residents.
Better bike trails.
NA
Gravel roads-they've focused on making them wider which just brought in more dirt, the need for even more gravel, and more space for people to feel comfortable speeding on the roads. Gravel roads has been a big issue recently and definitely should be.

Comments Received on Draft Goals and Objectives, Fall 2022
Comments Received on Draft Document, Spring 2023

Public Communications

simpco
Siouxland Interstate Metropolitan Planning Council

1122 PIERCE STREET • SIOUX CITY IOWA • 51105 • PHONE 712.279.6286 • FAX 712.279.6920 • EMAIL SIMPCO@SIMPCO.ORG

For Immediate Release
September 19th, 2022

Woodbury County Comprehensive Plan Open Houses
In Sergeant Bluff and Anthon

The Siouxland Interstate Metropolitan Planning Council (SIMPCO) is working with Woodbury County to update the Woodbury County Comprehensive Plan, a planning document that outlines goals, objectives, and implementation items to work toward over the next 20 years. The planning area technically applies only the unincorporated rural areas of Woodbury County, but still takes into consideration trends and plans in incorporated areas.

Open houses are being held in Woodbury County communities to provide an opportunity for residents and business owners to review draft goals and objectives of the plan and provide input on topics such as economic development, community services, housing, utilities, and infrastructure. Public input will be incorporated into the plan as it continues to be drafted.

Woodbury County Comprehensive Plan Open Houses will be held in:

- Sergeant Bluff on Thursday, September 22nd at the Sergeant Bluff Community Center Fireside Room, 903 Topaz Dr, from 5-6:30pm
- Anthon on Thursday, September 29th at the Stahl Park Shelter House, 510 State Street, from 5-6:30pm

The draft goals and objectives and open house information can be found on the SIMPCO website, www.simpco.org, under the Current Projects tab and on the Woodbury County Comprehensive Plan Facebook page, www.facebook.com/WoodburyCoCompPlan2040. Stay tuned for more public input opportunities as the Comprehensive Plan is refined and completed.

Questions and comments about the Woodbury County Comprehensive Plan can be directed to erinb@simpco.org or corinne@simpco.org or by calling the SIMPCO Office at (712) 279-6286.

Press release about upcoming open houses, September 19, 2022.

Woodbury County Comprehensive Plan 2040

Public Input

Open House

We need your feedback!

Join SIMPCO staff to learn about the update of the Woodbury County Comprehensive Plan for 2040. You will have a chance to provide comments about each topic that the plan covers:

- Land Use and Natural Resources
- Economic Development
- Transportation
- Community Facilities and Services
- Housing
- Disaster Response, Recovery and Resiliency

Sept. 8th, 5:00 - 6:30 PM,
Town Hall, 419 Main St,
Hornick

Sept. 15th, 5:00 - 6:30 PM,
Community Center, 815 Main St,
Moville

Sept. 22nd, 5:00 - 6:30 PM,
Fireside Room, Community Center, 903 Topaz Drive
Sergeant Bluff

Sept. 29th, 5:00 - 6:30 PM,
Shelter House, Stahl Park,
510 State St,
Anthon

For more information, contact Corinne Erickson, Regional Planner at corinne@simpco.org

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Siouxland Interstate Metropolitan Planning Council

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For Immediate Release
April 13th, 2023

Woodbury County Comprehensive Plan Open House in Sioux City

The Siouxland Interstate Metropolitan Planning Council (SIMPCO) is working with Woodbury County to update the Woodbury County Comprehensive Plan, a planning document that outlines goals, objectives, and implementation items to work toward over the next 20 years. The planning area technically applies to only the unincorporated rural areas of Woodbury County, but also takes into consideration trends and plans in incorporated areas.

A public open house will be held at the Woodbury County Courthouse in Sioux City to provide an opportunity for residents and business owners to review the complete draft of the plan and provide input on topics such as economic development, community services, housing, utilities, and infrastructure. Public input will be incorporated into the plan prior to the approval and adoption process.

The Woodbury County Comprehensive Plan Open House will take place at the time and location below.

Wednesday, April 26th
5:00 PM – 6:30 PM
Basement of the Woodbury County Courthouse,
620 Douglas Street,
Sioux City, IA 51101

The draft of the document, a summary of goals and objectives, and the open house information can be found at simpco.org/woodbury-county-comprehensive-plan and on the Woodbury County Comprehensive Plan Facebook page, facebook.com/WoodburyCoCompPlan2040.

Questions and comments about the Woodbury County Comprehensive Plan can be directed to erinb@simpco.org or corinne@simpco.org or by calling the SIMPCO Office at (712) 279-6286.

Press release about upcoming open house, April 13th, 2023.

Woodbury County Comprehensive Plan 2040

OPEN HOUSE

WE NEED YOUR INPUT!

Learn about the update to the Woodbury County Comprehensive Plan for 2040 and provide input on the draft plan.

Your comments will inform the development of the plan and the future of the County.

Wednesday,
April 26th, 2023
5:00 PM - 6:30 PM

Basement of the Woodbury County Courthouse
620 Douglas St,
Sioux City, IA

For more information, visit the Plan website or Facebook page below.

facebook.com/WoodburyCoCompPlan2040
simpco.org/woodbury-county-comprehensive-plan

If you are unable to attend the event, please use the QR code or the link below to provide comments.

surveymonkey.com/r/9R39NCN

Screenshots from the project website:

Woodbury County Comprehensive Plan

Home » Woodbury County Comprehensive Plan

Woodbury County Comprehensive Plan 2040

SIMPCO is currently working to deliver a new Woodbury County Comprehensive Plan 2040 to help guide the county forward through the next 20 years. The goal of the project is to develop a 20-year policy-guiding comprehensive plan that will help ensure that future plans for residential, commercial, and industrial growth, county services, facilities, and amenities remain consistent with the visions and desires of Woodbury County residents and businesses. In light of the COVID-19 pandemic and how it has affected the County and resident's daily life, the Plan will also address public health, safety, and disaster response, recovery, and resiliency planning. This project is partially funded by a U.S. EDA CARES Act grant.

SIMPCO is excited to work with Woodbury County to develop the Plan and will be conducting several opportunities for public input throughout its development, both virtually and in-person. Surveys and events will be publicized on this page, through Woodbury County's information outlets, City Halls, and various social media outlets.

Please contact Erin Berzina for more information on this exciting project. See below for more information on meetings, surveys, and plan development!

DRAFT Goals and Objectives Public Input

- Review the DRAFT Goals and Objectives for the Woodbury County Comprehensive Plan Update linked **here.**
- Review the working DRAFT of the updated plan **here**
- Submit any comments, questions, or input at this link: **surveymonkey.com/r/9R39NCN**

Public Input Open-Houses

On April 26th, Woodbury County will host a public input open house to receive comments on the final draft of the Comprehensive Plan. See below for the event details, or view the event flyer **here.**

Wednesday, April 26, 2023

5:00 PM – 6:30 PM

The basement of the Woodbury County Courthouse

620 Douglas St, Sioux City, IA

Steering Committee Meeting Agendas:

- February 11, 2021: N:\Planning\Planning Group\Community and Economic Development\Iowa\Woodbury\Woodbury County\Woodbury County Comp Plan\Steering Committee\2021_February 11\2.11.2021 Steering Committee Agenda.pdf
- April 15, 2021:N:\Planning\Planning Group\Community and Economic Development\Iowa\Woodbury\Woodbury County\Woodbury County Comp Plan – CARES\Steering Committee\2021_4.15\4.1.2021 Steering Committee Agenda.pdf
- August 19, 2021: N:\Planning\Planning Group\Community and Economic Development\Iowa\Woodbury\Woodbury County\Woodbury County Comp Plan – CARES\Steering Committee\2021_8.19\8.19.2021 Steering Committee Agenda_Comprehensive Plan.pdf
- October 26, 2022: N:\Planning\Planning Group\Community and Economic Development\Iowa\Woodbury\Woodbury County\Woodbury County Comp Plan – CARES\Steering Committee\2022_10.26\10.26.2022 Steering Committee Agenda_Comprehensive Plan.pdf

Steering Committee Meeting Summaries:

- February 11, 2021: N:\Planning\Planning Group\Community and Economic Development\Iowa\Woodbury\Woodbury County\Woodbury County Comp Plan\Steering Committee\2021_February 11\2.11.21 Steering Committee Meeting Summary.pdf
- April 15, 2021:N:\Planning\Planning Group\Community and Economic Development\Iowa\Woodbury\Woodbury County\Woodbury County Comp Plan – CARES\Steering Committee\2021_4.15\4.15.2021 Steering Committee Meeting Summary.pdf

Screenshot of project website.

Steering Committee Meeting Slides:

- February 11, 2021: N:\Planning\Planning Group\Community and Economic Development\Iowa\Woodbury\Woodbury County\Woodbury County Comp Plan\Steering Committee\2021_February 11\2.11.21 Steering Committee Meeting slides.pdf
- April 15, 2021: N:\Planning\Planning Group\Community and Economic Development\Iowa\Woodbury\Woodbury County\Woodbury County Comp Plan – CARES\Steering Committee\2021_4.15\4.15.21 Steering Committee Meeting Slides.pdf
- August 19, 2021: N:\Planning\Planning Group\Community and Economic Development\Iowa\Woodbury\Woodbury County\Woodbury County Comp Plan – CARES\Steering Committee\2021_8.19\8.19.21 Steering Committee Meeting slides.pdf
- October 26, 2022: N:\Planning\Planning Group\Community and Economic Development\Iowa\Woodbury\Woodbury County\Woodbury County Comp Plan – CARES\Steering Committee\2022_10.26\10.26.22 Steering Committee Meeting Slides_Updated.pdf
- February 13, 2023: https://simpco.org/wp-content/uploads/2023/04/2.13.2023-Steering-Committee-Meeting-slides-1.pdf

simpco

Erin Berzina, Regional Planning Director

erinb@simpco.org

712-224-8906

Screenshot of project website.

Examples of Facebook communications:

Woodbury County Comprehensive Plan 2040
23 Jul 2021 ·

Woodbury County Residents and Business Owners: SIMPCO and Woodbury County need your input on the future direction of Woodbury County! Please click this survey link **https://tinyurl.com/Woodbury-County-2040** and let your voice be heard! The Woodbury County Comprehensive Plan 2040 serves as the basis for economic development, residential development, and infrastructure improvements over the next 20 years. Spread the word and don't miss your chance to be heard!

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Woodbury County Comprehensive Plan 2040
3 Aug 2021 ·

Come and see us at the Woodbury County Fair this week to fill out your Woodbury County Comprehensive Plan 2040 survey and enter a drawing to win a **45-qt YETI COOLER**! (only Woodbury County residents/business owners eligible to win the prize)
Don't want to wait? Take the survey and enter the drawing today! **https://tinyurl.com/Woodbury-County-2040**

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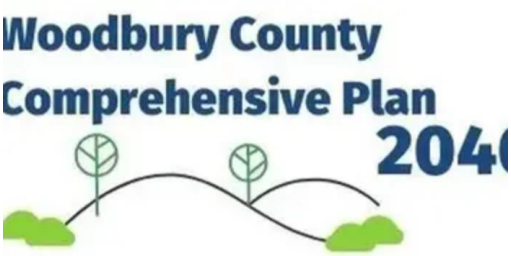
Woodbury County Comprehensive Plan 2040
19 Sep 2022 ·

We have two open houses left this month in Sergeant Bluff and Anthon! Click below for details. If you can't make it to the meeting, check out the draft goals and objectives link on our website, and make sure to click the comment button to leave us your input! **www.simpco.org/woodbury-county-comp**...see more



KTIV.COM
Planning sessions for the future to be held in Sgt. Bluff, Anthon
Two community open houses will be held in ...

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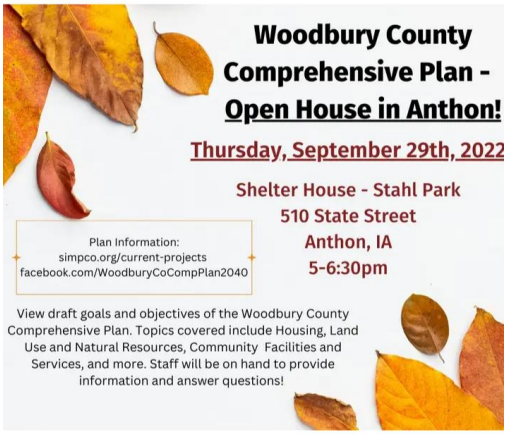
Woodbury County Comprehensive Plan 2040
27 Sep 2022 ·

Join us this Thursday in Anthon for the fourth stop in the Woodbury County Comprehensive Plan open house tour! If you can't make it, click the draft goals and objectives link on the plan website and make sure to click the comment button to leave comments! **www.simpco.org/woodbury-county-comprehensive-plan/**



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Woodbury County Comprehensive Plan 2040
4 Nov 2022 ·

Enter to win a Scheels gift card! View the Woodbury County Comprehensive Plan - DRAFT Goals and Objectives Public Input information on the Plan's webpage below and click on the comment link to enter a raffle to win one of two $75 Scheels gift cards! Comments will be collected until December 5th and winners announced December 7th, 2022. We value your input as we finalize the 20-year plan for the future of Woodbury County and hope to hear from you! Visit **www.simpco.org/woodbury-county-comprehensive-plan** for details.

Woodbury County Comprehensive Plan 2040
29 Nov 2022 ·

Time is running out to WIN a Scheels gift card! View the Woodbury County Comprehensive Plan - DRAFT Goals and Objectives information on the Plan's webpage below and click on the comment link to enter a raffle to win one of two $75 Scheels gift cards! Comments will be collected until Monday, December 5th and winners announced December 7th, 2022. **www.simpco.org/woodbury-county-comprehensive-plan/**