

Utility Solar – Floating Zoning District

6-5 Definitions

Edit Definition

Addition highlighted

20. **CORN SUITABILITY RATING (CSR):** The most current official index for ranking the productivity of soils and their suitability for row-crop production in Iowa. **The CSR2 index has replaced CSR as the system that** rates soils from five (5) to one hundred (100), with one hundred (100) reserved for those soils a) located in areas of the most favorable weather conditions in Iowa, b) that have high yield potential, and c) that can be continuously row cropped. (A detailed description of the CSR2 system, including methodology and CSR2 estimates for various soil types, may be found in publications of the Agricultural Extension Service, Iowa State University.)

Add Definitions

106. **SOLAR ACCESS EASEMENT:** A recorded easement which provides continued access to incident sunlight necessary to operate a solar collector.
107. **SOLAR ARRAY:** A group of solar panels connected together.
108. **SOLAR ENERGY GENERATION, CONSUMER-SCALE:** A solar energy system of interconnected solar panels/arrays for the primary purpose of meeting electrical demands at that location. These systems are typically intended to offset electrical demands for the owner and are not intended to be net annual generators of electricity.

Add Definitions

109. **SOLAR ENERGY GENERATION, UTILITY-SCALE:** A group of interconnected solar panels/arrays that convert sunlight into electricity for the primary purpose of wholesale or retail sales of generated electricity. This definition does not apply to consumer scale solar installations that are constructed primarily to provide power for use on-site.

110. **SOLAR GLARE:** The effect produced by light reflecting from a solar panel with intensity sufficient to cause annoyance, discomfort or loss in visual performance and visibility.

111. **SOLAR PANEL:** A device composed of groups of individual solar cells used to convert solar energy into electrical current.

6-21. “US-F” Utility Solar-Floating District

A. **General Intent:** The US-F Floating District is intended and designed to provide areas for utility-scale solar energy generation sites. The adopted Smart Planning Objectives of the Scott County Comprehensive Plan promote renewable energy use and increased energy efficiency. Prior to the establishment of any such district, adequate information shall be submitted regarding the effects of the proposed use upon the adjoining property and area, and other matters relating to habitat and natural resource conservation, preservation of prime agricultural land, public safety, public health, and general welfare. It is not the intent of this ordinance to allow utility-scale solar energy generation sites on prime agricultural land.

- B. Principal Permitted Uses:** Land, buildings, or other infrastructure may be used for any of the following, in so far as the regulations contained in Sections E, F, and G are met:
1. Any use permitted in the underlying (original) zoning district.
 2. Utility-scale solar energy generation sites.

C. Accessory Permitted Uses:

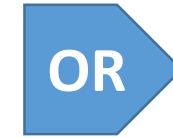
Accessory uses, structures, and other infrastructure customarily incidental to any permitted principal use.

D. Special Permitted Uses: None.

E. The Planning and Zoning Commission and Board of Supervisors shall consider the following characteristics of any land being petitioned for a rezoning to a “US-F” Floating District:

1. Present Use.

2. **Corn Suitability Rating (CSR2):** No land shall be rezoned to the “US-F” district with soil that scores an average CSR2 score of 50.0 or higher. Calculation of Iowa CSR2 ratings of a specific area of land is strictly limited to the following:



60.0 or higher

- a. Average CSR2 is to be calculated using current Soil Survey Geographic Database (SSURGO) data furnished by the United States Department of Agriculture Natural Resources Conservation Service (NRCS).
- b. Average CSR2 is to be calculated using the Decision Tool “Calculating a Weighted Average CSR2” available through Iowa State University Extension’s website (<https://www.extension.iastate.edu/agdm/wholefarm/html/c2-87.html>).

c. The Area of Interest (AOI) established in “Calculating a Weighted Average CSR2” must include all property that will be owned or leased by the applicant regardless of what portion(s) of the property will be developed.

OR

The Area of Interest (AOI) established in “Calculating a Weighted Average CSR2” must be delineated to reflect the precise, contiguous land area being developed with arrays, buildings, and utility and access infrastructure, and shall not include land area set aside for conservation or agriculture, or land otherwise undisturbed by development.

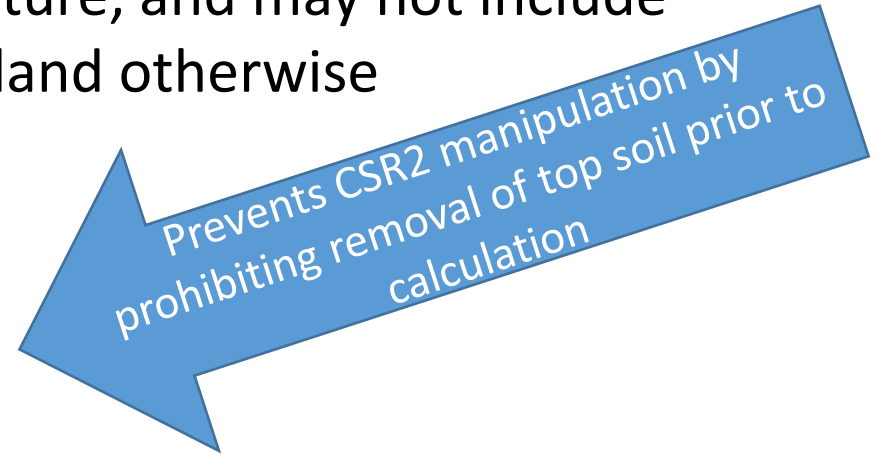
Prevents CSR2 manipulation by prohibiting the inclusion of undeveloped land in the AOI, which could possibly have low CSR2

Assuming we go with this language:

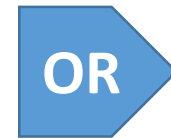
The Area of Interest (AOI) established in “Calculating a Weighted Average CSR2” must be delineated to reflect the precise, contiguous land area being developed with arrays, buildings, and utility and access infrastructure, and may not include land area set aside for conservation or agriculture, or land otherwise undisturbed by development.

additional clause to consider

...The AOI must be established and CSR2 must be calculated prior to the start of site preparation work, including grading or top soil removal or displacement. If site preparation work is completed prior to submitting an application for rezoning, historical CSR2 data may be utilized to reflect pre-development soil characteristics.



d. The Planning and Zoning Commission and Board of Supervisors shall consider any AOI with a Weighted Average CSR2 of 50.0 or greater as Prime Agricultural Land.



60.0 or
greater

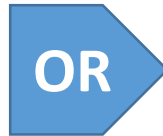
3. Access/proximity of existing utility infrastructure or other needed infrastructure, as well as the feasibility of extending such facilities, if necessary.
4. Particular suitability or adaptability of the land to accommodate the proposed use.

F. Site requirements for rezoning land to a “US-F” Floating District:

1. *Floodplain/Floodway*: No portion of the site proposed to be developed may be located in a mapped 100-year or 500-year floodplain.

Site requirements

2. *Habitat and Natural Resource Consideration:* The potential impact on any environmentally-sensitive areas such as lakes, ponds, streams, rivers, wetlands, steep slopes, aquifers and recharge areas, natural wooded areas, prairie and other wildlife habitats shall be identified and considered for reasonable mitigation. The Planning and Zoning Commission may recommend and the Board of Supervisors may approve off-site mitigation of environmentally-sensitive areas as opposed to their preservation.



2. *Habitat and Natural Resource Consideration:* The potential impact on any environmentally-sensitive areas such as lakes, ponds, streams, rivers, wetlands, steep slopes, aquifers and recharge areas, natural wooded areas, prairie and other wildlife habitats shall be identified and considered for reasonable mitigation. ~~The Planning and Zoning Commission may recommend and the Board of Supervisors may approve off-site mitigation of environmentally-sensitive areas as opposed to their preservation.~~

Site requirements

3. *Setbacks*: All buildings, accessory buildings, and other infrastructure shall be located at least five-hundred (500) feet from an “R-1,” “R-2,” or “CAD-R” District boundary and not less than one-hundred (100) feet from any other District except a “C-2” or “I” District. 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.

Setbacks Summarized

- Must meet normal setbacks from property lines AND all structures must meet the following setbacks from other zoning districts

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



Alternatives on next
slide

Setbacks Summarized

R-1	500 feet	OR	1,000 feet for all residential districts
R-2	500 feet		
CAD-R	500 feet	OR	500 feet for C-1, CAD-PVC districts
C-1	100 feet		
CAD-PVC	100 feet		
C-2	<i>n/a</i>		
I	<i>n/a</i>		
I-F	100 feet	OR	<i>n/a</i>
SW-F	100 feet		
A-P	100 feet	OR	500 feet for all agricultural districts
A-G	100 feet		

Site requirements

4. *Screening*: Adequate safeguards shall be taken to fence or screen any on-site hazards from the public. A landscape buffer may be required to be installed and maintained. The need for screening requirements will be evaluated as part of the review by Staff and the approval process, and will be based on the surroundings of the site.
5. *Utility connections*: All utility connections serving the site shall be placed underground unless topography, soil quality, or other conditions make this unfeasible.

Site requirements

6. *Glare minimization*: All solar panels must be constructed to diminish glare or reflection onto adjacent properties and adjacent roadways and must not interfere with traffic, including air traffic, or create a safety hazard.
7. *Compliance with local, state, and federal regulations*: Utility scale solar installations shall comply with applicable local, state and federal regulations.

Site requirements

8. *Accessory structures*: All accessory structures shall be subject to bulk and height regulations of structures in the underlying zoning district, unless specified differently in the rezoning ordinance.
9. *Signage*: No signs other than appropriate warning signs, or standard signs for operation or identification, shall be allowed.

Site requirements

10. *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 decommissioned.
11. *Disruption to Existing Agricultural Operations*: Any development plan must provide documentation that the project will not negatively affect the operation of existing agricultural drainage tiles on adjacent properties.

G. Procedure for Rezoning Land to “US-F” Floating

District: Developer/landowner must apply to the Planning and Zoning Commission for approval of a specific development plan involving one of the principal permitted uses listed in Section B. The development plan must include a site plan for the development in accordance with Section 6-29 (Site Plan Regulations). The standard rezoning procedures contained in Section 6-31 (Zoning Amendment Procedures) shall be followed, beginning with the Planning and Zoning Commission holding a public hearing for rezoning before making a recommendation to the Board of Supervisors.

1. Development Plan must include the following:
 - a. *Site plan*: Site plan shall show the location and spacing of every solar panel/array and all other facilities to be constructed
 - b. *Grading plan*: This plan shall include all proposed changes to the landscape of the site (e.g., clearing, grading, topographic changes, tree removal, etc.).
 - c. *Utility plan*: Planned location of all utilities, including underground or overhead electric lines.
 - d. *Project timeline*: Project timeline showing how the site will be developed from beginning to end, including how the applicant will inform adjacent property owners.

Development Plan

e. *Landscaping/Screening plan*: Planned location of all plants and screening.

f. *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.

g. *Interconnection agreement*: Provide the interconnection agreement with the utility company

Installation, operation, and maintenance plan

- h. ***Installation, operation, and maintenance plan:***
 - (1) *Maintenance, repair or replacement of facility:* Maintenance shall consist of, but not be limited to, repairs to structures or components, part replacement, painting, and maintenance of security measures. All applicable local, state and federal requirements should be followed when maintaining or conducting repairs to the site.
 - (2) *Access:* Show location of access easements. Site access shall be maintained to provide access for adequate maintenance and emergency responders.

Installation, operation, and maintenance plan

(3) *Soil erosion and sediment control considerations:* 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.

Installation, operation, and maintenance plan

(4) *Stormwater management*: The plan shall include details on stormwater rate and runoff management as well as pollutant removal and flood reduction. The applicant shall include a detailed analysis of pre- and post-development stormwater runoff rates for review. Such review will incorporate appropriate stormwater management practices as required by the County Engineer, the Scott County Code of Ordinances and any State of Iowa best practices. The plan shall include detention of specified rainfall events, and infiltration components consistent with practices as detailed in the state stormwater management manual.

Installation, operation, and maintenance plan

(5) Ground cover and buffer areas:

Ground around and under solar arrays and in project site buffer areas shall be planted and maintained in perennial vegetated ground cover, and meet the following standards:

- a. Top soils shall not be removed during development, unless part of a remediation effort.

Ground cover and buffer areas

b. Soils shall be planted and maintained in perennial vegetation for the full operational life of the project to prevent erosion, manage runoff and build soil. Seeds should include a mix of grasses and wildflowers native to the region of the project site that will result in a short stature prairie with a diversity of forbs or flowering plants that bloom throughout the growing season. Blooming shrubs may be used in buffer areas as appropriate for visual screening. Non-native or naturalized species may be selectively planted for maintenance purposes as part of an approved site plan.

Ground cover and buffer areas

- c. Seed mixes and maintenance practices should be consistent with recommendations made by qualified natural resource professionals such as those from the Department of Natural Resources, County Soil and Water Conservation Service, or Natural Resource Conservation Service.
- d. Plant material must not have been treated with systemic insecticides, particularly neonicotinoids.
- e. Other practices, such as small-scale farming or grazing, may be allowed in the project area as part of the conditions of approval for the project.

Installation, operation, and maintenance plan

(6) *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.

i. *Decommissioning plan:*

(1) The application must include a decommissioning plan that describes the anticipated life of the utility scale solar installation; the anticipated manner in which the project will be decommissioned, including plans to recycle components; the anticipated site restoration actions; the estimated decommissioning costs in current dollars; and the method for ensuring that funds will be available for decommissioning and restoration.

(2) The applicant shall provide the basis for estimates of net costs for decommissioning the site (decommissioning costs less salvage value). The cost basis shall include a mechanism for calculating adjusted costs over the life of the project.

Decommissioning plan

- (3) Restoration or reclamation activities shall include, but not be limited to, the following:
- a. Restoration of the pre-construction surface grade and soil profile after removal of structures, equipment, graveled areas and access roads.
 - b. Re-vegetation of restored soil areas with crops, native seed mixes, native tree species, plant species suitable to the area, consistent with the county's weed control plan.

Decommissioning 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. Following a continuous one-year period in which no electricity is generated, or if substantial action on the project is discontinued for a period of one year, the permit holder will have one year to complete decommissioning of the utility scale solar installation. Decommissioning shall be completed in accordance with the approved decommissioning plan. The land owner or tenant must notify the county when the project is discontinued.

G. Procedure for Rezoning Land to “US-F” Floating District

2. Developer/landowner must apply for all State, federal, and other required permits for the proposed development and provide copies of the applications for review.

G. Procedure for Rezoning Land to “US-F” Floating District

3. The Board of Supervisors will receive the Commission’s recommendation, as well as information received during the Commission’s public hearing process, and will hold a public hearing in accordance with Section 6-31 (Zoning Amendment Procedures). Based on the Commission’s recommendation, County staff comments, a review of the required State, federal, and other required permits, and comments from the applicant and the public, the Board may approve or deny the application. If approved, the site plan approval conditions (Section 6-29) will be included with the ordinance changing the zoning. Final County approval is contingent on State, Federal, or other permit approval as may be required.

G. Procedure for Rezoning Land to “US-F” Floating District

4. If the application is adopted by the Board of Supervisors, the department staff shall update the zoning map to show the specific location of the “US-F” District, including the required separation spacing to other zoning districts.

H. Minimum Lot Area, Lot Width, Setback, and Maximum Height Requirements: The lot area, building and structure setbacks and heights of buildings, structures, or other infrastructure will be determined and approved through the established site plan review procedures (Section 6-29).

- I. Consumer-Scale Solar Energy Generation:** Certain smaller-scale solar energy generation projects, such as roof-mounted arrays and small ground-mounted solar fields, are exempt from the regulations established in this section. Solar energy generation projects shall be considered “consumer-scale” and exempt from Section 6-21 when they meet *all* of the following criteria:
 1. The generation system produces 20kW or less of power.
 2. Building and structure setbacks and heights of buildings, structures, or other infrastructure meet the requirements established for accessory buildings in the applicable zoning district.
 3. The generation system is an accessory use to a permitted principal use in the applicable zoning district.

Average number of solar panels needed based on system size

Number of panels and roof space required based on system size			
System size	Estimated monthly energy production	Number of panels*	Roof space required
4 kW	480 - 600 kWh	13	220 sq. feet
6 kW	720 - 900 kWh	19	330 sq. feet
8 kW	960 - 1,200 kWh	25	439 sq. feet
10 kW	1,200 - 1,500 kWh	32	549 sq. feet
12 kW	1,440 - 1,800 kWh	38	659 sq. feet
14 kW	1,680 - 2,100 kWh	44	768 sq. feet

Comprehensive Plan Amendment

How do we steer utility-scale solar development to the incorporated cities?

Smart Planning Objectives

Objective 3. Clean, renewable, and efficient energy: Scott County encourages that planning, zoning, development, and resource management be undertaken in a manner that promotes clean and renewable energy use and increased energy efficiency.

OR

Objective 3. Clean, renewable, and efficient energy: Scott County encourages ~~that~~ planning, zoning, development, and resource management **to** be undertaken in a manner that promotes clean and renewable energy use **and production** and increased energy efficiency. **As with all non-farm development, Scott County intends for the majority of renewable energy production to occur within the boundaries of existing cities and not on productive agricultural soils and other agricultural areas when in conflict with efficient farming practices.**