

DD. Solar Energy Systems, Utility Scale. Utility Scale Solar Energy Systems with a total use area of twenty (20) acres or less are allowed as a primary use in the RE district, and are conditionally permitted in the A district. Utility scale solar energy systems with a total use area of greater than twenty (20) acres are allowed as primary uses in the RE district. All utility scale solar energy systems are subject to the following conditions regardless of use area size: ^{294, 295}

1. For the purposes of administering this section, the “use area” shall include all areas associated with the utility scale solar use including, but not limited to, the furthest extent of fences, structures, stormwater infrastructure, parking, landscape screening, or other areas used in association with the use as determined by the approving authority.²⁹⁶
 - a. At the discretion of the Zoning Administrator, non-adjacent use areas located within one-half (0.5) mile may be considered cumulatively when determining whether approval requires a Conditional Use Permit or rezoning approval.
 - b. At the discretion of the Zoning Administrator, non-adjacent use areas smaller than twenty (20) acres in size may be required to obtain approval through rezoning if they will be located within one-half (0.5) mile of an existing utility scale solar facility, regardless of ownership.
2. The applicant shall submit detailed drafts of all materials contained in this subsection at the time of application for either a Conditional Use Permit or Zoning Map Amendment.²⁹⁷
 - a. Documents must be of sufficient detail for the approving authority to adequately review the proposal for compliance with these regulations at the time of submittal, but may remain yet-to-be finalized at the time of approval.
 - b. Final plans shall be approved by the Zoning Administrator prior to commencement of any site disturbance or issuance of any grading or building permits for the site and shall substantially conform to the draft plans and material submitted at the time of review and approval by the approving authority.
 - c. The use(s) outlined in the application shall be established in accordance with the draft plans considered by the approving authority within five (5) years of approval. Any portion of the development plan not completed within five (5) years of approval by the approving authority shall not be installed until the development plan has been reauthorized by the approving authority. Reauthorization shall be subject to the regulations in effect at the time reauthorization is requested.
3. Setback Standards. All structures, including solar arrays, shall adhere to the primary structure setbacks for the district where the system is located. At the discretion of the

²⁹⁴ Ordinance 08-24-21-02 (added the Utility Scale Solar regulations of subsection DD).

²⁹⁵ Ordinance 05-19-22-01 (made specific changes to the language added in Ordinance 08-24-21-02. Specific changes from ordinance 05-19-22-01 are noted throughout by footnotes at the end of affected paragraphs).

²⁹⁶ Ordinance 05-19-22-01

²⁹⁷ Ordinance 05-19-22-01

approving authority, additional setbacks may be required as a condition of approval.²⁹⁸

4. Security Fencing. The solar energy system shall be fenced with a minimum seven (7) foot tall security fence. Warning/no trespassing signs shall be posted within sight of all points of fence line or no greater than fifty (50) feet apart.
 - a. Perimeter fencing for the site shall not include barbed wire nor chain-link and shall use wire woven or other wildlife-friendly fencing.
 - i. At the discretion of the approving authority, critical electrical and communications equipment may be fenced with chain-link fence topped with barbed wire when such measures are deemed necessary to ensure public safety and provide additional security for the equipment.²⁹⁹
5. Panel Clearance Height. The lowest edge of array panels (affixed or tracking) shall be at least eighteen (18) inches above the ground.
6. Roads. The applicant, owners, and their contractors are expected to avoid damaging public roads and shall be responsible for mitigation of damages to public roads. At the discretion of the approving authority, a Public Roads Damage Avoidance and Mitigation Plan may be required and shall be in accordance with the following standards:³⁰⁰
 - a. Identification of Potential Roads Usage. The applicant shall identify, with the approval of the Johnson County Engineer, all state and local public roads to be used within Johnson County to transport equipment, parts and material for construction, operation or maintenance of the solar energy system and related components.
 - b. Documentation of Road Conditions. Prior to construction, decommissioning, or implementation of a repowering plan, the Johnson County Engineer or a third party consultant selected by the Johnson County Engineer shall document the current conditions of the roads identified for use, with all associated costs paid for by the applicant or owners of the facility. The engineer shall document road conditions again thirty (30) days after construction is complete or as weather permits.³⁰¹
 - c. Road Preparation and Damage. Any road preparation or maintenance necessitated by the solar energy system as identified by the County Engineer or the third party consultant shall be promptly completed at the applicant's expense. Any damage caused by the applicant, owner of the facility, or its contractors during construction, decommissioning, or implementation of a repowering plan shall be promptly repaired at the applicant or owner's expense.³⁰²

²⁹⁸ Ordinance 05-19-22-01

²⁹⁹ Ordinance 05-19-22-01

³⁰⁰ Ordinance 05-19-22-01

³⁰¹ Ordinance 05-19-22-01

³⁰² Ordinance 05-19-22-01

- i. The applicant shall demonstrate that it has appropriate financial assurance to ensure the repair of damaged roads.
 - ii. At the discretion of the approving authority, the applicant or owners of the facility may also be required to provide a financial surety instrument to cover all costs of potential damage to roads at the time of permitting or rezoning consideration.
7. **Ground Cover Standards.** Ground under and around the solar array shall be planted with a perennial vegetated ground cover. All applications for which this subsection applies shall submit a ground cover plan for review and approval. The ground cover plan shall be developed in accordance with the following standards:
 - a. Top soils shall not be removed during development, unless part of a remediation effort.
 - b. The area shall be planted and maintained in perennial vegetation for the full operational life of the project to prevent erosion, manage runoff and build soil.
 - c. Vegetative cover should include a mix of perennial grasses and wildflowers that will preferably result in a short stature prairie with a diversity of forbs and flowering plants that bloom throughout the growing season. Perennial vegetation (grasses and forbs) used should preferably be native to Iowa, but where appropriate to the ground cover plan goals, may also include other naturalized and non-invasive species which provide habitat for pollinators and wildlife and/or other ecosystem services (i.e. clovers).
 - i. Plant materials for the ground cover area must not have been treated with systemic insecticides, particularly neonicotinoids.
 - ii. The application shall include the proposed seed mix specifications.
 - iii. Seeding zones and their selected seed mixes should be clearly mapped on a site plan.³⁰³
 - d. At the discretion of the approving authority, other practices, such as small-scale farming or grazing, may be allowed in the ground cover area as part of the conditions of approval for the project.³⁰⁴
 - e. Seed and/or planting mixes and maintenance practices should be consistent with recommendations made by qualified natural resource professionals, such as those from a state department of natural resources, county soil and water conservation services, or natural resource conservation service.
 - f. The ground cover plan must include management methods and schedules for how the vegetation will be managed on an annual basis, with particular attention given to the establishment period of approximately three (3) years. The plan must

³⁰³ Ordinance 05-19-22-01

³⁰⁴ Ordinance 05-19-22-01

include provisions for replacement of any required vegetative cover that fails to establish or dies during the life of the project.³⁰⁵

- g. Reporting to the County on ground cover management and maintenance activities shall be on an annual basis for a minimum of five (5) years, after which point reduced frequency can be requested, and approved at the discretion of the Zoning Administrator.³⁰⁶
8. Landscaping Buffer. In an effort to mitigate any potential negative effects and reduce the visual impact of the solar energy system, a landscaping buffer may be required to be installed and maintained during the life of the array operation. Determination of screening requirements will be made by the approving authority as part of the review and approval process and will be based on adjacent or nearby surrounding land uses and topography. Where the approving authority finds that a landscaping buffer is appropriate, landscaping shall be installed within a planting area around the portions of the site specified by the approving authority in accordance with the standards of this subsection. All applications for which this subsection applies shall submit a plan for review and approval. The landscaping buffer plan shall be in accordance with the following standards:³⁰⁷
 - a. The landscaping buffer shall preferably use trees, shrubs, grasses and forbs that are native to Iowa, or where appropriate may include naturalized and non-invasive species, or a combination thereof to provide a vegetative screen in all required areas. Screening shall have a minimum mature height equal to the height of any security fencing and shall achieve the required height within three (3) years of installation.
 - b. Where landscape screening is required adjoining a public or private road, plants shall be planted at a rate that provides no less than sixty-six (66) percent screening at a height equal to the height of any security fencing.
 - c. Where landscape screening is required as a buffer to nearby properties or uses, plants shall be planted at a rate that provides no less than one hundred (100) percent screening at a height equal to the height of any security fencing.
 - d. The planting area shall be located immediately outside and adjacent to - and shall extend no further than fifty (50) feet beyond - the furthest extent of the onsite infrastructure required or proposed with the development. Onsite infrastructure includes, but is not limited to, the solar arrays, security fence, required parking areas, and required stormwater infrastructure.³⁰⁸
 - e. Landscaping screening shall be evaluated under leaf-on conditions.
 - f. Planting and maintenance practices should be consistent with recommendations made by qualified natural resource professionals, such as those from a state

³⁰⁵ Ordinance 05-19-22-01

³⁰⁶ Ordinance 05-19-22-01

³⁰⁷ Ordinance 05-19-22-01

³⁰⁸ Ordinance 05-19-22-01

department of natural resources, county soil and water conservation services, or natural resource conservation service.

- g. The landscaping buffer plan must include management methods and schedules for how the vegetation will be managed on an annual basis, with particular attention given to the establishment period of approximately three (3) years. The plan must include provisions for replacement of any required landscaping that fails to establish or dies during the life of the project.³⁰⁹
- h. Reporting to the County on landscaping management and maintenance activities shall be on an annual basis for a minimum of five (5) years, after which point reduced frequency can be requested, and approved at the discretion of the Zoning Administrator.³¹⁰

9. Agricultural Impact Mitigation Plan. The applicant shall submit a plan detailing mitigation strategies that will be used to support agricultural use of the land at the end of the functional life of the project. The plan should include, but not be limited to, the following information:³¹¹

- a. Project Overview. Provide general background, list of project components, and construction timeline.
- b. Topsoil Protection and Preservation Plan. The plan should include the following components.
 - i. Describe best 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, and decompaction of otherwise undisturbed topsoil impacted by heavy equipment or storage of materials, and wet weather conditions.
 - ii. Prior to construction, provide results of a soil analysis conducted and assessed by a qualified professional to determine topsoil depths as well as identify any limitations for construction and mitigation that may require special consideration.
 - iii. Describe environmental monitoring that will be used during construction to ensure adherence to the best practices contained in the plan. The monitoring should be done by an environmental professional. The monitoring reports shall be submitted to the County every thirty (30) days during construction.
- c. Construction Best Management Practices. Describe best management practices to be used during construction to address, at a minimum, invasive species prevention, erosion and sediment control, and debris removal.

³⁰⁹ Ordinance 05-19-22-01

³¹⁰ Ordinance 05-19-22-01

³¹¹ Ordinance 05-19-22-01 (added the Ag Impact Mitigation Plan regulations of subsection DD.9).

- d. Drain Tile Identification, Avoidance and Repair. Describe the general procedures to be used for identification, avoidance, and repair of any underground drainage tile lines located within the project site before, during, and after construction.
- e. Sensitive Areas Protection. Describe the procedures to be used to monitor and adhere to Limits of Disturbance for limiting or preventing impacts to identified sensitive areas, in accordance with the approved Sensitive Areas Report and Sensitive Areas Exhibit.
- f. Vegetation Management. Incorporate or make reference to both the separately required Ground Cover Plan and Landscaping Buffer Plan. Seeding zones and their selected seed mixes should be clearly mapped on the site plan.
- g. Decommissioning and Site Reclamation. Incorporate or make reference to the separately required Decommissioning and Site Reclamation Plan.

10. Glare Minimization. All solar panels shall be constructed in a manner that minimizes the reflection or glare onto neighboring properties, does not interfere with traffic, and does not create a safety hazard.

- a. Utility scale solar energy systems shall also comply with all applicable airport zoning ordinances.

11. Site Plan. A site plan shall be submitted showing preliminary array details and location, fencing details and location, landscaping plan (if applicable), signage, location of underground and above ground transmission facilities, project development timeline, and any other pertinent information as required by the Zoning Administrator. Site plans shall be prepared by a Land Surveyor licensed in the State of Iowa, or be certified by a Professional Engineer licensed in the State of Iowa. After approval is issued, and prior to ground disturbance or issuance of building permit(s), the Zoning Administrator may approve minor modifications to the preliminary site plan to account for reasonable engineering optimization and final selection of equipment. The site plan application shall additionally include and conform to the following:^{312, 313}

- a. Power and Communications Lines.
 - i. On-site power and communications lines between rows or banks of arrays, or from arrays to buildings or other on-site structures, shall be placed underground to the extent feasible and as permitted by the serving utility. The main service connection at the utility company right-of-way, and any new interconnection equipment, may be located above ground.
 - ii. Power and communications lines running from the on-site system(s) to interconnections with structures off-site shall be buried underground to the extent feasible and as permitted by the serving utility.

³¹² Ordinance 05-19-22-01

³¹³ Ordinance 09-26-24-01

- iii. At the discretion of the approving authority, power and communications lines may be allowed to be unburied in the following cases:³¹⁴
 - a) Elements of the natural landscape, such as but not limited to shallow bedrock and water courses, interfere with the ability to bury lines;
 - b) Elements of existing infrastructure interfere with the ability to bury lines;
 - c) Or distance makes undergrounding infeasible.
- b. The site plan shall provide proposed land use and development information for the entirety of the property(ies) included in the conditional use permit or zoning map amendment request.³¹⁵
- c. At the discretion of the approving authority the development proposal may include a phasing plan. Where phasing is proposed, it shall be clearly indicated on the site plan. In no instance shall phasing be allowed to extend a development plan beyond five (5) years from the date of approval by the approving authority.³¹⁶

e.d. The applicant, owner, or site operator shall provide as-built plans for all required on-site infrastructure – including but not limited to fencing, signage, parking and drive areas, structures, panel clearance height, ground cover planting areas, landscape screening, etc. As-built shall be provided within sixty (60) days of completion of on-site infrastructure or the start of energy generation from the site, whichever occurs first. As-built plans shall be certified by a Professional Engineer licensed in the State of Iowa.³¹⁷

12. Operations and Maintenance Plan. The applicant shall submit a plan for the safe operation and maintenance of the solar energy system. The plan should include, but not be limited to, Emergency Operations Procedures describing the fire safety and response measures.

- a. A copy of the approved Emergency Operations Procedures shall be given to the system owner, the local fire department, and Johnson County Emergency Management. A permanent copy shall also be placed in an approved location to be accessible to facility personnel, fire code officials, and emergency responders.
- b. Signage at all locked entrances or in a prominent place on the fencing should provide the following information:
 - i. Name(s) and phone number(s) of the electricity utility;
 - ii. Name(s) and phone number(s) of the site operator(s); and
 - iii. The facility's 911 address and GPS coordinates.
- c. The site operator will coordinate with the local fire department and Emergency Management Agency (EMA) to offer or provide for training on an annual basis

³¹⁴ Ordinance 05-19-22-01

³¹⁵ Ordinance 05-19-22-01

³¹⁶ Ordinance 05-19-22-01

³¹⁷ Ordinance 11-25-25-01

for five (5) years following completion of construction. Thereafter, the site operator shall offer or provide for training if requested by the local Emergency Management Agency (EMA) on a basis not to exceed once annually.³¹⁸

13. 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.³¹⁹
 - 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 Administrator shall review and approve, conditionally approve, or deny the repowering plan.
14. Decommissioning and Site Reclamation Plan.
 - a. The application must include a decommissioning plan that describes the following items: 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.
 - b. The applicant shall provide estimates for the total cost for decommissioning the site as determined by a Licensed Engineer. Decommissioning costs shall not take salvage value into account.³²⁰
 - c. Restoration or reclamation activities shall include, but not be limited to, the following:
 - i. Restoration of the pre-construction surface grade and soil profile after removal of structures, equipment, graveled areas and access roads.
 - ii. Re-vegetation of restored soil areas with crops, native seed mixes and plant species suitable to the area, consistent with the County's weed control plan.
 - iii. For any part of the 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 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 utility scale solar installation. At the discretion of the Zoning Administrator, the continuous one-year period that triggers decommissioning may be extended if the applicant demonstrates ongoing

³¹⁸ Ordinance 05-19-22-01

³¹⁹ Ordinance 05-19-22-01

³²⁰ Ordinance 05-19-22-01

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 Administrator both when the project is discontinued and when decommissioning is complete.
- e. 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:³²¹
 - 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 cash, certificate of deposit, performance bond, escrow account, surety bond, letter of credit, or other form of financial assurance as agreed to by the approving authority. 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, fifty percent (50%) 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 of the date of initial approval, and the remaining twenty five percent (25%) of the total re-estimated decommissioning costs shall be provided within eleven (11) 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.
 - 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 ten (10) years, the facility owner or operator shall retain an independent Licensed Engineer 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.
 - a) 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

³²¹ Ordinance 05-19-22-01

cause the fund balance of the financial surety instrument to be adjusted to ensure that it matches the re-estimated decommissioning cost.

15. Onsite Battery Energy Storage Systems. Where an applicant proposes to include battery storage in conjunction with the solar energy system, they may be required to obtain a separate Conditional Use Permit in accordance with the underlying zoning district. In all cases, Battery Energy Storage Systems shall comply with the applicable standards in subsection 8:1.24.F of this ordinance.³²²
16. The application shall comply with all Environmental Standards in [Chapter 8.3](#).
 - a. Full stormwater management planning in accordance with [section 8:3.6](#) of this ordinance shall be provided for all connected impervious surfaces, which measure five thousand (5,000) square feet or greater, excluding internal access roads.³²³,
³²⁴,
 - i. The designation of a surface type as impervious or pervious shall be in accordance with the Iowa Stormwater Management Manual. At the discretion of the approving authority, stormwater management planning may also be required for some or all pervious surfaces.
 - ii. The applicant, owner, or site operator shall provide as-built plans for all required stormwater management infrastructure within thirty (30) days of completion of on-site infrastructure or the start of energy generation from the site, whichever occurs first. As-built plans shall be certified by a Professional Engineer licensed in the State of Iowa.
17. The application shall comply with all applicable federal, state, and local regulations.

³²² Ordinance 05-19-22-01

³²³ Ordinance 05-19-22-01

³²⁴ Ordinance 08-03-23-02