

**CITY OF WEST DES MOINES
PLAN AND ZONING COMMISSION COMMUNICATION**

Meeting Date: February 29, 2016

Item: Ordinance Amendment - Amend Title 4 (Health and Safety Regulations) and Title 9 (Zoning) to establish regulations pertaining to solar energy systems - City Initiated – AO-002916-2015

Requested Action: Approval of an amendment to the City Code

Case Advisor: Linda Schemmel, AIA

Applicant's Request: Staff requests an amendment to City Code, Title 4, Nuisances and Title 9, Zoning, to establish regulations pertaining to solar energy systems.

City Council Subcommittee: This item was presented to the Development & Planning City Council Subcommittee on the following meeting dates: November 5 and November 19, 2015, January 11, 2016, and February 22, 2016. The discussion in the two November 2015 meetings were responding to specific applications for solar energy systems (currently not allowed as City code does not address these systems). The result of these discussions was direction to Staff to initiate an ordinance amendment to establish regulations for these systems. Discussions at the meeting on January 11, 2016, included review of the draft ordinance which resulted in the Subcommittee recommending that the ordinance be part of a Council Workshop for further discussion and review. The Council workshop was held on February 8th. The follow up on the February 8, 2016 Council workshop was discussed at the February 22, 2016, subcommittee meeting.

Staff Review and Comment: There are no outstanding issues. Staff drafted the ordinance based on the approach and regulations already established for small wind energy conversion systems, with modifications as needed to respond to the specifics of solar energy systems, as well as incorporating research on how other jurisdictions regulate these systems and the input provided at the Development and Planning Subcommittee meetings and the City Council workshop.

The proposed ordinance is intended to regulate photovoltaic and thermal solar energy systems that generate energy for use by just the property owner and covers both ground and building mounted systems. It does not address utility-scale systems. Systems will be regulated on height, size and location and will be required to meet all fire, electrical and building codes, and utility regulations. Potential nuisances such as glare, visual impact, lighting, signage as well as abandoned systems are addressed in the ordinance.

Staff would summarize the following key points of interest:

- **Building mounted systems:** **Staff recommendation:** Allowed in all zoning districts. **Rational:** To balance the desire for clean, renewable energy resources and the necessity to protect the general welfare of the community at large.

Requests for solar energy systems would be reviewed and approved via a building permit for single family residential and open space zoning districts and a site plan permit for all other districts. Mitigating visual impact as well as regulating the size and location of these system would be addressed by the following standards:

- Size limited to roof surface area minus required access pathways and setbacks from the roof edge (one foot setback for every one foot in height).
- Height limited to 1 foot above the roof surface for sloped roofs and 7 foot from the roof surface for flat roofs.

- System can be installed only on the roof of the primary or an accessory structure (including trellises, carports, sheds and detached garages).
- Systems that are visible from street or neighboring properties:
 - Are required to be arranged to match the shape and proportion of the roof area and be installed in a consistent manner without gaps.
 - The structure and equipment for flat roof installations are required to match the surrounding building materials to help mitigate their appearance. Wall and ground mounted mechanical equipment associated with these systems still will need to be screened per City code.
- **Ground mounted systems:** **Staff recommendation:** Allowed in all zoning districts. **Rational:** To balance the desire for clean, renewable energy resources and the necessity to protect the general welfare of the community at large. Although roof mounted systems may be more adept at mitigating the visual impact of a system, implementation of roof mounted systems may not be an option because of roof orientation, shading, condition of the existing roofing, or insufficient structural capacity of the existing building.

Requests for solar energy systems would be reviewed and approved via a building permit for single family residential and open space zoning districts and a site plan permit for all other districts. Mitigating visual impact as well as regulating the size and location of these systems would be addressed by the following standards:

- Size limited to 50% of allowable area for accessory structures in single family residential or open space zoning districts, (5% of lot size with a maximum of 500 square feet in RS, R-1, SF-VJ, and SF-CR districts) or a maximum of 15 kW capacity (approximately 1200 square feet of collector area) – whichever is more restrictive.
 - Size limited to the equivalent of 50% of primary structure footprint in the remaining districts.
 - Height limited to a maximum of 7 feet above grade.
 - Setback from the property line equal to the height of the system or the accessory structure setback – whichever is greater.
 - Systems that are visible from the public street or adjacent properties are required to be screened. (Frame and equipment will need to be enclosed with panels or hidden with a screen wall). Wall and ground mounted mechanical equipment associated with these systems still will need to be screened per City code.
- **Screening Options for Ground Mounted Systems:** As drafted, the ordinance requires screening for ground mounted systems that are visible at grade from any adjacent public thoroughfare or property. The methods noted for screening of the structural elements and equipment of these systems are an opaque screen wall or screen panels enclosing the visible portions of the structure. During the workshop, there was discussion on utilizing landscaping to soften the appearance of the structure and if it would be an acceptable method to mitigate the visual impact of the system. There was not a strong consensus in the workshop to incorporate the landscaping option, so it is not included in the draft ordinance. However, Staff would be supportive of allowing the option to install landscaping to lessen the visual impact of a ground mounted system. Should the Commission and Council agree, Staff would recommend incorporating the following language in the screening provision of the ordinance:

Landscape plantings that are composed of evergreen materials to provide year-round screening may be implemented in lieu of screen walls or panels to wholly screen views of the undesirable features of a system. Plantings may be used in conjunction with other screening methods to achieve adequate visual mitigation. Landscape material shall be of sufficient size at the time of installation to provide complete screening of the undesirable features of a system and be in general compliance with the provisions of Title 9, Chapter 19, Section 8 (Landscaping Provisions) of City Code.
 - **Visual Design Guidelines:** During discussions of this item at the Council workshop, it was noted that it would be helpful to have photos or illustrations depicting the different types of solar energy systems with the regulations include in the proposed ordinance. Staff has assembled a series of images into a visual design guideline document which is attached for use in reviewing the provisions of the ordinance.

Comprehensive Plan Consistency: The project has been reviewed for consistency with the Comprehensive Plan. Based upon that review, a finding has been made that the proposed project is consistent with the Comprehensive Plan in that the project is consistent with all of the goals and policies of the Comprehensive Plan and the land use map of the Comprehensive Plan.

Noticing Information: On November 27, 2015, notice of the December 7, 2015, Plan and Zoning Commission and December 14, 2015, City Council public hearings for this project was published in the *Des Moines Register*. Staff notes that the public hearings for this item were continued to the February 29, 2016, Plan and Zoning Commission and March 7, 2016, City Council meetings

Staff Recommendation and Conditions of Approval: Staff recommends the Plan & Zoning Commission approve a resolution recommending to the City Council approval of the ordinance amendment.

ATTACHMENTS:

- Attachment A - Plan and Zoning Commission Resolution
- Exhibit A - Proposed Ordinance
- Attachment B - Visual Design Guidelines
- Attachment C - Comments from Residents

RESOLUTION NO. PZC

A RESOLUTION OF THE PLAN AND ZONING COMMISSION OF THE CITY OF WEST DES MOINES, RECOMMENDING TO THE CITY COUNCIL THAT IT APPROVE AN ORDINANCE TO AMEND THE CITY CODE OF THE CITY OF WEST DES MOINES, IOWA 2014 BY AMENDING TITLE 4: HEALTH AND SAFETY REQUIREMENTS, CHAPTER 4: NUISANCES, SECTION 2: NUISANCES DECLARED AND TITLE 9: ZONING, CHAPTER 10: PERFORMANCE STANDARDS, SECTION 4: SPECIFIC USE REGULATIONS, AND CHAPTER 14: ACCESSORY STRUCTURES, SECTION 11: FENCES AND WALLS AND SECTION 14: VARIANCES TO ESTABLISH REGULATIONS PERTAINING TO SOLAR ENERGY SYSTEMS

WHEREAS, pursuant to the provisions of Title 9, Chapter 1 et seq, of the West Des Moines Municipal Code, staff has requested an amendment to Title 4 (*Health and Safety Regulations*), Chapter 4, (*Nuisances*), Section 2 (*Nuisances Declared*) and Title 9 (*Zoning*), Chapter 10 (*Performance Standards*), Section 4 (*Performance Standards*) and, Chapter 14 (*Accessory Structures*), Section 11 (*Fences and Walls*), and Section 14 (*Variances*) to establish regulations pertaining to solar energy systems.

WHEREAS, studies and investigations were made, and staff reports and recommendations were submitted which is made a part of this record and herein incorporated by reference;

WHEREAS, on February 29, 2016, this Commission held a duly-noticed public hearing to consider the application for an amendment to City Code;

NOW, THEREFORE, THE PLAN AND ZONING COMMISSION OF THE CITY OF WEST DES MOINES DOES RESOLVE AS FOLLOWS:

SECTION 1. The findings, for approval, in the staff report, dated February 29, 2016, or as amended orally at the Plan and Zoning Commission hearing of February 29, 2016, are adopted.

SECTION 2. The AMENDMENT TO ORDINANCE (AO-002916-2015) is recommended to the City Council for approval, as attached or as amended in Exhibit A.

PASSED AND ADOPTED on February 29, 2016.

Craig Erickson, Chair
Plan and Zoning Commission

ATTEST:

Recording Secretary

I HEREBY CERTIFY that the foregoing resolution was duly adopted by the Plan and Zoning Commission of the City of West Des Moines, Iowa, at a regular meeting held on February 29, 2016 by the following vote:

AYES:
NAYS:
ABSTENTIONS:
ABSENT:

ATTEST:

Recording Secretary

Prepared by: L. Schemmel, Development Services Development, PO Box 65320, West Des Moines, IA 50265, 515-222-3620
When Recorded, Return to: City Clerk, City of West Des Moines, PO Box 65320, West Des Moines, IA 50265-0320

ORDINANCE NO.

AN ORDINANCE AMENDING THE CITY CODE OF THE CITY OF WEST DES MOINES, IOWA 2014 BY AMENDING TITLE 4, NUISANCES, CHAPTER 2, NUISANCES DECLARED AND TITLE 9, ZONING, CHAPTER 10: PERFORMANCE STANDARDS, SECTION 4, SPECIFIC USE REGULATIONS, AND CHAPTER 14, ACCESSORY STRUCTURES, SECTION 11, FENCES AND WALLS AND SECTION 14, VARIANCES

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF WEST DES MOINES, IOWA:

Section 1. Amendment. Title 4, *Health and Safety Regulations, Chapter 4, Nuisances, Section 2, Nuisances Declared* is hereby modified by inserting the language indicated in italicized and bolded text below.

4-4-2: NUISANCES DECLARED

Whatever is injurious to the senses, or an obstruction to the free use of property, so as essentially to interfere with the comfortable enjoyment of life or property, is a nuisance. Nuisances shall include, but not be limited to, those activities and items hereafter set forth in this section:

- A. **Weeds:** Weeds or vegetation allowed to grow to a height greater than ten inches (10") on the average, or any accumulation of dead weeds, grass, brush, or trees on any occupied or unoccupied lot or land. Exceptions include:
 - 1. **Trees And Shrubs:** The use of trees and shrubs for landscaping purposes;
 - 2. **Erosion Control:** Areas planted to offset and control any soil loss problems, both occurring or predicted, including areas along waterways and edges of lakes, ponds, and stormwater retention/detention facilities;
 - 3. **Wooded Areas:** All areas that are predominately wooded and over one acre in size;
 - 4. **Educational Programs:** Any areas designated for educational studies;
 - 5. **Gardens:** Areas dedicated to growing fruits or vegetables for personal consumption or to growing flowers, native plants, ornamental grasses, ground covers, shrubs, and similar plants which are cultivated and/or mulched to remain free of weeds, grassy weeds, or volunteer plants. Vegetation in gardens shall not be allowed to grow onto adjacent property. Fruit and vegetable gardens are prohibited within the public right of way. Landscaping with flowers,

plants, and grasses may be allowed within the public right of way, but shall be limited to the immediate area surrounding a mailbox, shall not exceed eight (8) square feet in size, and shall not interfere with the vision triangle as provided in this code. There shall be no compensation by the city to the property owner for any damage to or removal of such items placed within the public right of way.

6. Streetscapes: Plantings within the public right of way that are part of a planned city streetscape or a landscape plan submitted and approved as part of a development permit;
7. Parks And Open Space: Any and all public parks and open space lands whether under the jurisdiction of federal, state, county, or local agencies, including private conservation/preservation organizations; and
8. Native Planting Areas: Areas of native plant species on any parcel, with the exception of individual single-family lots, that are part of a landscape plan submitted and approved as part of a development permit.

All vegetation, other than trees and shrubs, must be cut at least once annually to a height no greater than ten inches (10"). As an alternative to cutting, native planting areas (see exceptions at subsections A7 and A8 of this section) on both private and public property may be maintained by controlled burning with an approved permit from the city's fire department. Natural areas in public parks and greenways shall be exempt from annual maintenance requirements.

No exceptions will be granted that violate the Iowa noxious weeds and the Iowa weed law chapter 317, code of Iowa, 2009.

- B. Rubbish, Trash: Accumulation of rubbish, trash, refuse, junk, and other salvage materials, such as metals and lumber, that are allowed to accumulate to the prejudice of others or any material having lost its value for the original purpose for which it was created or manufactured.
- C. Debris On Right Of Way: Mud, dirt, gravel, snow, leaves, or other debris, substances, or objects deposited upon the public right of way, including, but not limited to, debris, substances, or objects that unnecessarily restrict the movement of vehicular or pedestrian traffic along the public streets and sidewalks.
- D. Dilapidated Buildings: Any building or other structure which is in such a dilapidated condition that it is unfit for human habitation, or kept in such an unsanitary condition that it is a menace to the health of people residing in the vicinity thereof, or any building or structure defined as a dangerous building in the uniform code for the abatement of dangerous buildings, 1988 edition, as adopted by the city.
- E. Abandoned Buildings: Abandoned buildings or other structures.
- F. Inoperable/Obsolete Vehicles: The storage, parking, leaving, or permitting the storage, parking, or leaving of an inoperable/obsolete vehicle upon private property within the city. This subsection shall not apply to any vehicle enclosed within a building on private property or to any vehicle held in connection with a junkyard, or auto and truck oriented use operated in the appropriate zone, pursuant to the zoning laws.
- G. Vehicles Parked On Unpaved Surfaces: Vehicles parked on private property with residential zoning on an unpaved surface or a surface that does not comply with subsections 9-15-4B and 9-15-6G of this code.
- H. Fences: Fences that are not in a structurally sound condition.

- I. Vermin Harborage: Conditions which are conducive to the harborage or breeding of vermin.
- J. Sanitary Sewer Facilities: Facilities for the storage or processing of sewage, such as privies, vaults, sewers, private drains, septic tanks, cesspools and drainfields, which have failed or do not function properly or which are overflowing, leaking or emanating odors. Septic tanks, cisterns, and cesspools which are abandoned or no longer in use unless they are emptied and filled with clean fill. Any vault, cesspool, or septic tank which does not comply with the Polk County or Dallas County department of health regulations.
- K. Overland Flowage Easements And Stormwater Flowage Easements: No alteration or modification shall be made nor any obstructions placed in the overland flowage easement or storm flowage easement which prevents, obstructs, or impedes the overland water flow or surface water flow from adjacent lands entering or draining into and through the easement without first obtaining the expressed written consent of the city.
- L. Other Nuisances: Any nuisance described as such by chapter 657 of the Iowa Code.
- M. Waste Disposal: The placing in a compost pile, yard, or garden, the burying or the burning of rubbish, trash, refuse, junk, used construction materials, or unprocessed animal waste, or any other inappropriate items which are generally offensive to the senses of the general public.
- N. Discharge Of Waters: Any discharge of waters which collect upon private real estate from subsurface or surface drainage to a point upon or adjacent to a public sidewalk, street, or property line as to permit the waters discharged to drain upon a public sidewalk, street, or onto adjoining real estate. The public works director or designee may require that any such discharge be connected to the public storm sewer system, if available, or be directed to a discharge point which eliminates or lessens the nuisance. (Ord. 1910, 2-22-2011)
- O. Dilapidated/Inoperable Mechanical Equipment: The storage, leaving, or permitting the storage, of dilapidated/inoperable mechanical equipment upon private property within the city including but not limited to: heating, ventilating and cooling equipment, pumps, generators and solar or wind generated energy systems.***

Section 2. Amendment. Title 9, Zoning, Chapter 10, Performance Standards, Section 4, *Specific Use Regulations* is hereby modified by inserting the language indicated in italicized and bolded text below.

9-10-4: SPECIFIC USE REGULATIONS

- A. The Following Standards Shall Apply To All Zoning Districts Unless Noted Otherwise In This Title:
 - 1. Fuel Supply Systems: All fuel supply systems shall be constructed and installed in accordance with all applicable requirements of this Title, the Uniform Building Code as adopted and amended by the City, the Uniform Fire Code as adopted and amended by the City, and any other applicable, local, County, State, or Federal regulations or requirements.
 - 2. Screening Of Mechanical Units: The following standards apply to the location and screening of mechanical equipment:
 - a. Screening Of Ground Mounted Mechanical Units: For all uses, except for single-family detached and bi-attached residential uses, all ground-mounted mechanical units, including but not limited to: air-conditioning condensers, heat pumps, ventilation units, computer cooling equipment, etc., and any related

utility structures and equipment, that are visible from any adjacent public thoroughfare shall be visibly screened from public view by the use of a screening wall built out of materials compatible and consistent with the architecture and materials of the principal building, landscape plantings of predominately evergreen materials to provide year-round screening, or a combination of the above. The type of screening to be used shall be identified as part of the site plan or permitted conditional use permit (Pc) submittal.

b. Screening Of Roof Mounted Mechanical Units: All roof-mounted mechanical units shall be screened from adjacent public thoroughfares by the use of an opaque screening material compatible with the architecture of the building or architecturally designed screening, such as a parapet wall. The screening of the roof-mounted units shall be designed to blend with the building and roof materials. Additional screening may be required due to topographic differences in the adjoining properties.

c. Location Of Meters In Single-Family And Bi-Attached Developments: Single-family and bi-attached residential developments shall be prohibited from locating the mechanical units and meters in the front yard of the property unless adequate screening is provided to visibly screen these elements from the public view. (Ord. 1190, 6-17-1996)

d. Screening of Solar Energy Systems: The structural elements, equipment and accessories related to ground mounted solar energy systems that are visible at grade from any adjacent public thoroughfare or adjacent properties shall be visibly screened from public view with an enclosure of an opaque screen wall or panels built out of materials consistent with the architecture and materials of the principal building. Landscape plantings may be implemented in addition to a screen enclosure or wall to soften the appearance of the installation. Building mounted systems do not require screening if they comply with the requirements as noted in Title 9 (Zoning), Chapter 14 (Accessory Structures), Section 14 (Solar Energy Systems) of the West Des Moines City Code. However the structural elements, equipment and accessories related to a system mounted on a flat roof that are visible from any adjacent public thoroughfare or adjacent property shall be a similar color to the roof surface or adjacent building materials to mitigate the visual impact of the system. Wall or ground mounted mechanical equipment related to any Solar Energy System as noted in subsection A2a of this Section will require screening.

Section 3. Amendment. Title 9, Zoning, Chapter 14, Accessory Structures, Section 11, Fences and Walls is hereby modified by inserting the language indicated in italicized and bolded text below.

9-14-11: FENCES AND WALLS

C. Fence Regulations:

1. Residential Estate And Agriculture/Open Space Districts: Unless otherwise specified herein, eight foot (8') fences shall be allowed within residential estate (RE) and open space districts (OS). All eight foot (8') fences shall be constructed of decorative metal and maintain a consistency of fifty percent (50%) open space for the full length of said fence, and the use of any chainlink fence, of any type, shall be prohibited. This calculation shall be provided at the time of a building permit application.

2. **Industrial Districts:** Unless otherwise specified herein, fences and walls not exceeding eight feet (8') in height are allowed within the limits of side and rear yards. Fences may be allowed within the limits of the front yard if approved by the city council through the site plan or permitted conditional use permit process. The use of barbed wire may be allowed, provided the barbed wire is not less than six feet (6') above the ground. (Ord. 1354, 3-22-1999)
3. **Warehouse Retail District:** Fences and screen walls not exceeding twelve feet (12') in height are allowed within the limits of the side and rear yards. Fences may be allowed within the limits of the front yard if approved by the city council or board of adjustment through the site plan or permitted conditional use permit process. (Ord. 1629, 4-25-2005)
4. **All Other Districts:** Unless otherwise specified herein, fences and walls not exceeding six feet (6') in height are allowed within the limits of side and rear yards. A fence or wall, not exceeding four feet (4') in height is allowed up to the property line provided the visual clearance is maintained.
5. **Decorative Features:** In all districts, decorative features such as individual posts, trellises, brick or stone columns, and similar features constructed as part of a fence or wall shall be allowed to exceed the maximum fence height by no more than twelve inches (12"). Decorative features shall not be counted towards the open space percentage of the fence. Pedestrian entry features which only include arbors, arched entries, arcades or finials may exceed the maximum allowable fence height in any yard subject to design review and approval of the director of community development. (Ord. 1354, 3-22-1999; amd. Ord. 1629, 4-25-2005)
6. **Single Faced Fences:** Single faced fences shall have their unfinished side (side with exposed posts) facing towards the property on which the fence is erected. Provisions for landscaping to soften the visual appearance of the fence or wall and provide additional buffering may be required and will be reviewed on a case by case basis. In addition, the following shall apply:
 - a. Safety rails or fencing may be required to satisfy building code requirements.
7. ***Screening of Mechanical Units: Unless otherwise specified herein, fences or walls installed as a method of screening mechanical equipment may exceed height limitations of the specific zoning districts in order to effectively screen the mechanical equipment. All screen fences or walls shall be opaque in design and be built out of materials consistent with the architecture and materials of the principal building. Any open area required for ventilation of the equipment shall be designed to prevent full view of the equipment. The design of the screen fence or wall and the height required for full screening shall be provided at the time of a building permit or site plan application.***

Section 4. Amendment. Title 9, Zoning, Chapter 14, *Accessory Structures*, is hereby modified by inserting *Solar Energy Systems* indicated by italicized and bolded language below as Section 14 and renumbering sections thereafter.

9-14-14: SOLAR ENERGY SYSTEMS

A. INTENT

The intent of this ordinance is to balance the need for clean, renewable energy resources and the necessity to protect the public health, safety and welfare of the community. The City finds these regulations are necessary to ensure that Solar Energy Systems are appropriately designed, sited and installed.

B. DEFINITIONS

COLLECTOR PANEL: *An equipment assembly used for gathering, concentrating or absorbing solar energy as useful thermal energy or to generate electric energy.*

HEIGHT, TOTAL GROUND MOUNT SYSTEM: *The height of the system from the ground to the highest point, including the supporting structure, related equipment and the collector panels. Adjustable angle systems will be measured from the highest point when the system is at its maximum vertical extension.*

HEIGHT, TOTAL BUILDING MOUNTED SYSTEM: *The height above the roof surface measured perpendicular to the roof specific to the installation on a sloped roof or the height above the roof surface specific to the installation on a flat roof.*

LARGE SOLAR ENERGY SYSTEM (LSES): *A solar energy system which has a nameplate rated capacity of over fifteen (15) kilowatts in electrical energy or fifty (50) KBTU of thermal energy for non-single family residential uses and districts and which is incidental and subordinate to a principal use on the same parcel. A system is considered a LSES only if it supplies electrical power or thermal energy solely for use by the owner on the site, except that when a parcel on which the system is installed also receives electrical power supplied by a utility company, excess electrical power generated and not presently needed by the owner for on-site use may be used by the utility company in accordance with section 199, chapter 15.11(5) of the Iowa Administrative Code, as amended from time to time.*

OFF GRID: *An electrical system that is not connected to a utility distribution grid.*

SMALL SOLAR ENERGY SYSTEM (SSES): *A solar energy system which has a nameplate rated capacity of up to fifteen (15) kilowatts in electrical energy or fifty (50) KBTU of thermal energy for residential uses and districts and which is incidental and subordinate to a principal use on the same parcel. A system is considered a SSES only if it supplies electrical power or thermal energy solely for use by the owner on the site, except that when a parcel on which the system is installed also receives electrical power supplied by a utility company, excess electrical power generated and not presently needed by the owner for on-site use may be used by the utility company in accordance with section 199, chapter 15.11(5) of the Iowa Administrative Code, as amended from time to time.*

SOLAR ACCESS: *A property owner's right to have sunlight shine on his land.*

SOLAR ENERGY: *Radiant energy received from the sun at wavelengths suitable for heat transfer, photosynthetic use or photovoltaic use.*

SOLAR ENERGY SYSTEM (SES): *An aggregation of parts including the base, supporting structure, photovoltaic or solar thermal panels, inverters and accessory equipment such as utility interconnect and battery banks, etc., in such configuration as necessary to convert radiant energy from the sun into mechanical or electrical energy.*

SOLAR ENERGY SYSTEM, BUILDING INTEGRATED : *A solar photovoltaic system that is constructed as an integral part of a principal or accessory building and where the collector component maintains a uniform profile or surface with the building's vertical walls, window openings, and roofing. Such a system is used in lieu of an architectural or structural component of the building. A building-integrated system may occur within vertical facades, replacing glazing or other facade material; into semitransparent skylight systems; into roofing systems, replacing traditional roofing materials; or other building or structure envelope systems. To be considered a building integrated solar energy system, the appearance of the collector components must be generally consistent with the surrounding materials.*

SOLAR ENERGY SYSTEM, BUILDING MOUNTED: *A SES which is securely fastened to any portion of a building roof, whether attached directly or secured by weighted ballast to the principal or accessory building.*

SOLAR ENERGY SYSTEM, GROUND MOUNTED: *A SES which is not located on a building and is ground mounted.*

UTILITY SCALE SOLAR ENERGY SYSTEM: *A solar energy system which supplies electrical power or thermal energy solely for use by off-site consumers.*

C. GENERAL REGULATIONS:

1. *A Solar Energy System (SES) shall be allowed only as:*
 - *A building integrated system*
 - *A building mounted system attached to the roof of an accessory or primary structure.*
 - *A ground mounted system as a detached accessory structure to a primary structure.*
2. *Large Solar Energy Systems (LSES) are not allowed in Open Space zoning district and single family residential used or zoned property.*
3. *Utility Scale Solar Energy Systems are not allowed*
4. *Permit Required:*
 - *It shall be unlawful to construct, erect, install, alter or locate any Solar Energy System (SES) within the City of West Des Moines, unless approved with:*
 1. *Building Permit in the following Zoning Districts: Open Space and single family residential zoned property.*
 2. *Site Plan, Major or Minor Modification to a Site Plan permit for all other zoning districts.*
 - *The owner/operator of the SES must also obtain any other permits required by other federal, state and local agencies/departments prior to erecting the system.*
5. *Installation: Installation must be done according to manufacturer's recommendations. All work must be completed according to the applicable building, fire and electric codes. All electrical components must meet code recognized test standards.*
6. *Engineer Certification: Applications for any SES shall be accompanied by standard drawings of the receiving structure if newly constructed, including the supporting frame and footings. For systems to be mounted on existing buildings, an engineering analysis showing sufficient structural capacity of the receiving structure to support the SES per the applicable code regulations, certified by an Iowa licensed professional engineer shall be submitted.*

20. **Screening:** *SES that are visible from the public thoroughfare or adjacent properties will require screening in accordance to regulations for screening of mechanical units noted in Chapter 4 (Specific Use Regulations) and in Chapter 10 (Performance Standards) of this title. The need for and type of screening to be used shall be identified as part of the Building Permit, Major or Minor Modification to a Site Plan or Site Plan Permit submittal.*

D. BULK REGULATIONS

1. Location:

- **Ground Mounted SES**

1. *No part of a SES shall be located within or over drainage, utility or other established easements, or on or over property lines.*
2. *The SES shall be located in accordance to the regulations for detached accessory structures in Chapter 14 (Accessory Structure) of this title or not less than one (1) foot from the property line for every one (1) foot of the system height measured at its maximum height, whichever is most restrictive. The SES cannot be located in front of the rear wall of the primary structure, even if it meets the front yard setback requirements.*
3. *A SES shall not be located in any required buffer.*
4. *The setback from underground electric distribution lines shall be at least five feet.*
5. *No SES shall be located which may obstruct vision between a height of thirty inches (30") and ten feet (10') on any corner lot within a vision triangle of twenty five feet (25') formed by intersecting street right of way lines*

- **Building Mounted SES**

1. *The solar energy system shall be setback not less than one (1) foot from the exterior perimeter of the roof for every one (1) foot the system extends above the parapet wall or roof surface.*
2. *Should the solar energy system be mounted on an existing structure that does not conform to current setback requirements, the solar energy system shall be installed to meet the current setback requirements applicable to the receiving structure.*
3. *Panels that are visible shall be arranged to match the shape and proportion of the subject roof area and be installed in a consistent manner without gaps.*
4. *Access pathways for the SES shall be provided in accordance to all applicable building, fire and safety codes.*
5. *Shall be located in such a manner that fall protection railings are not required or are not visible from the public thoroughfare.*

- **Building Integrated SES**

1. *No setback required*
 2. *Access pathways for the SES shall be provided in accordance to all applicable building, fire and safety codes.*
 3. *Shall be located in such a manner that fall protection railings are not required or are not visible from the public thoroughfare.*
- *No SES shall be constructed within 20 feet laterally of an overhead electrical power line (excluding secondary electrical service lines or service drops).*

2. Height:

- **Ground Mounted SES**

1. *The maximum height of the SES shall not exceed seven (7) feet in height as measured from existing grade.*

- **Building Mounted SES**

1. *The collector panel surface and mounting system shall not extend higher than one (1) foot above the roof surface of a sloped roof.*
2. *The collector panel surface and mounting system shall not extend higher than seven (7) feet above the roof surface of a flat roof.*

- **Building Integrated SES**

1. *The collector panel shall maintain a uniform profile or surface with the building's vertical walls, window openings, and roofing.*

3. **Size:**

- **Size of the SES is calculated by measuring the total surface area of the collector panels for the system.**
- **Ground Mounted SES:**
 1. **In single family residential used or zoned property the SES is restricted in size to no more than 50% of the allowed area for accessory structures on the specific property.**
 2. **In all other zoning districts the SES is restricted in size to no more than 50% of the area of the primary structure(s) footprint**
- **Building Mounted SES: System size will be determined by the available roof area subject to the installation minus the required setbacks or access pathways.**
- **Building Integrated SES: System size will be determined by the available building surface area subject to the installation minus the required setbacks or access pathways.**
- **In no case shall a SSES exceed the nameplate rated capacity of fifteen (15) kilowatts or fifty (50) KBTU.**

E. APPLICATION REQUIRED

1. **Application for SES shall be made on forms provided by the City of West Des Moines. No action may be taken regarding requests for SES until completed applications have been filed and fees paid.**

Section 5. Repealer. All ordinances or parts of ordinances in conflict with the provision of this ordinance are hereby repealed.

Section 6. Savings Clause. If any section, provision, sentences, clause, phrase or part of this Ordinance shall be adjudged invalid or unconstitutional, such adjudication shall not affect the validity of the ordinance as a whole or any provision, section, subsection, sentences, clause, phrase or part hereof not adjudged invalid or unconstitutional.

Section 7. Violations and Penalties. Any person who violates the provisions of this Ordinance upon conviction shall be punished as set forth in Section 1-4-1 of the City Code of the City of West Des Moines, Iowa.

Section 8. Other Remedies. In addition to the provisions set out in the Violations and Penalties Section herein, the City may proceed in law or equity against any person, firm or corporation for violation of any section or subsection of this Ordinance.

Section 9. Effective Date. This Ordinance shall be in full force and effect from and after its passage, approval and publication as provided by law.

Steven K. Gaer
Mayor

ATTEST:

Ryan T. Jacobson
City Clerk

Proposed Guidelines – Solar Energy Systems

General Guidelines

Building mounted systems can only be mounted on the roof surface of a structure.



Building Integrated Systems are allowed - Building Integrated means the collector component maintains a uniform profile or surface with the building's vertical walls, window openings or roofing and the appearance of the collector components is consistent with the surrounding materials.



Solar Energy Systems are limited to producing energy solely for use by the owner on site. Utility scale systems are not allowed.



Proposed Guidelines – Solar Energy Systems

Building Mounted – Slope Roof (Residential and Commercial)

Array size is limited to roof surface area minus setback from roof edge (setback equal to system height) and any code required access pathways. Height is limited to no more than one foot above roof surface.



Correct: Panels are setback from roof edge and have access aisles



Incorrect: Panels extend past the roof edge



Correct: Panels are within 1 foot of roof surface



Incorrect: Panels are mounted higher than 1 foot from roof surface

Proposed Guidelines – Solar Energy Systems

Building Mounted – Flat Roof (Primarily Commercial)

Size limited to roof surface area minus setback from roof edge (equal to system height) and any code required access pathways. Height is limited to no more than seven feet above roof surface. Panels are to be located in such a manner that fall protection railings are not required or are not visible.



Correct: Panels are set back from roof edge



Incorrect: Panels are too close to roof edge



Correct: System height less than 7' above roof



Incorrect: System height greater than 7' above roof



Correct: Panels are installed far from roof edge
no fall protection rail required



Incorrect: Panels are installed close to roof edge
requiring a fall protection railing

Proposed Guidelines – Solar Energy Systems

Visible Building Mounted System – Sloped Roof (Residential and Commercial)

When visible, panels shall be arranged to match the shape and proportion of the subject roof area and be installed in a consistent manner without gaps



Correct: Matches proportion and shape of the roof



Incorrect: Inconsistent arrangement, does not follow the shape of roof



Correct: Consistent arrangement and centered in the available roof area (does not need to match shape of roof)



Correct: Consistent arrangement, no gaps



Incorrect: Not consistent, gaps in arrangement

Proposed Guidelines – Solar Energy Systems

Visible Building Mounted System – Flat Roof (Primarily Commercial)

When visible, panels shall be arranged to match the shape and proportion of the subject roof area and be installed in a consistent manner without gaps. Framework and associated mechanical equipment shall be a similar color to the roof surface.



Correct: Consistent arrangement, no gaps matches roof proportions



Incorrect: Not consistent, gaps in arrangement



Correct: Frame and equipment match roof color



Incorrect: Frame and equipment do not match roof color

Proposed Guidelines – Solar Energy Systems

Visible Ground Mounted (Residential and Commercial)

When visible, the system framework and mechanical equipment shall be screened to mitigate the visual impact of the system. Screening methods include enclosing the framework with opaque panels or installing screen walls composed of materials compatible with the primary structure. If topography allows, system can be integrated into a hillside. Ground mounted systems are not allowed in the front yard.



Correct: Framework enclosed in materials compatible with primary structure



Incorrect: Framework is not fully enclosed



Correct: Framework hidden with screen wall



Incorrect: No screening of framework



Correct: array built into ground slope and surface colored to match surrounding landscape



Permissible? No screen but area around system landscaped to soften visual appearance

Proposed Guidelines – Solar Energy Systems

Building Mounted Systems - Accessory Structures

The following are examples of acceptable building mounted systems on accessory structures:



Attached structure – Covered porch



Detached structure – Garden shed



Detached structure -Trellis or pergola



Detached structure – Garage



Detached structure – Residential carport



Detached structure – Commercial carport

Schemmel, Linda

From: Jim Miller, HVJF Executive Director <director@valleyjunction.com>
Sent: Thursday, February 25, 2016 11:49 AM
To: Schemmel, Linda
Subject: Solar panels

Hello Linda,

I will be out of town on February 29, but wanted to send my thoughts before the P & Z meeting.

Thanks much,
 Jim

As a resident of West Des Moines, It is with great interest that I follow and read the concerns about solar panels in the City of West Des Moines.

As I consider the concerns that have been expressed, the phrase 'solution in search of a problem' is what comes to my mind. With all due respect, I have neighbors, and many of us have neighbors in West Des Moines, with sheds, swing sets, patio tents, pergolas, backyard art, junk and many other items on their private property. I think the idea that someone's solar panels would be an eyesore is simply not considering the full picture and the very positive environmental benefits. As stated in the Des Moines Register article, the projected benefits from the proposed Whitney solar project:

"Over the next 25 years, Scott Whitney's 7-kilowatt system is expected to reduce greenhouse gas emissions by 154 metric tons of carbon dioxide. That's equivalent to:"

- 3,949 trees planted and grown for 10 years
- 358 barrels of oil consumed
- 165,414 pounds of coal burned
- 366,667 miles driven in a car

To state the obvious, they are significant benefits. Solar power, and solar panels, aren't new. The use continues to grow, and quite honestly, I think needs to be encouraged at the highest level. It is interesting to consider the encouragement / lack of and regulations / lack of for other communities. The sheds, swing sets, patio tents, pergolas, backyard art, junk and other items in the community are often in plain view, without specific and costly barriers required for their installation. Personally, I would gladly look at solar panels in a neighbor's backyard and might just be impressed that they are that forward-thinking in their environmental concerns. Go for it!

West Des Moines is regularly cited as a leading community; in many capacities we are. Green energy, power reduction and sustainable development options should be at the forefront of future planning, both for public and private projects. I do not believe that any elected official is trying to eliminate solar panels. I do however, think that regulation should be at a reasonable level, one that provides basic guidance for these projects, without discouraging residents and without substantially increasing project costs.

Thank you,
 Jim Miller
 423 34th Street
 West Des Moines, IA 50265