ITEM # 37
DATE: 10-13-09

COUNCIL ACTION FORM

SUBJECT: SOLAR ENERGY SYSTEM USES TEXT AMENDMENTS

BACKGROUND:

Over the past year, public interest in installing small scale solar energy systems has been expressed. However, current City codes only allow such systems in industrial zoning districts. The City Council responded by directing staff to work with the Planning & Zoning Commission to develop code provisions that more fully address solar energy in all zones.

In fall of 2008, staff began researching this issue along with small scale wind systems and presented its findings to the Planning and Zoning Commission in February of 2009. The Commission found that one of the primary concerns is visual impact. Because of the visual concerns, staff focused on ways to solicit public sentiment on the aesthetic aspect of solar energy, and organized public meetings and workshops that used graphical models and displays to illustrate what these systems may look like in different settings. These meetings generated helpful information and feedback, which was used in developing potential code changes pertaining to both solar and wind power.

The City Council reviewed the proposed concepts at a work session on August 18. The Council determined that provisions for solar power were likely less complex or controversial than wind power, and directed staff to bring forward a solar energy system ordinance in advance of wind energy. The wind energy system ordinance will likely be back to the City Council by late 2009 or early 2010.

At its meeting of September 16, the Planning and Zoning Commission made some last minute changes to the ordinance. The only substantive change was the elimination of the provisions for "Neighborhood Solar Energy Systems". This provision was intended to facilitate a system on a vacant lot that would service surrounding developed lots. However, the criteria in the proposed regulations focus on solar energy as an accessory to a principal use when a principal building exists on a lot. It was therefore determined that a stand-alone "neighborhood" system was inconsistent with these criteria and would need further work. The Commission believed that this could be addressed at some point in the future if the demand for such a system becomes more apparent.

Staff informed the Commission at its September 16th meeting that the staff may make some stylistic and format changes before sending this to the City Council to make sure the document was consistent with the standard zoning code format. The Commission agreed to this. Upon closer review, staff also identified some issues that resulted in minor substantive changes, as follows:

- Eliminate provision that double-frontage and through lots would be afforded at least one “rear yard” for setback purposes.
    - *Removed because the provision would be contrary to the intent of avoiding views of systems from abutting streets.*
- Eliminate requirement for an engineer to “wet-stamp” plans for roof mounted systems.
    - *Removed because it was found that the City Building Official can determine if engineered plans are needed through the standard building permit process.*
- Eliminate requirement for the applicant to certify that there are no subdivision covenants preventing solar energy systems.
    - *Removed because these are private agreements not enforced by the city.*
- Revise regulation of the type of signage that might occur on solar panels to instead regulate the size of signage, now limited to one square foot per sign.
    - *Changed to ensure that the provision is content-neutral to avoid free speech challenges.*
- Eliminate regulations requiring non-reflective finish and subtle paint colors.
    - *Removed due to subjective nature of regulation. Color and finish might still be addressed as part of a Special Use Permit. Staff approvals will not regulate paint or surface textures.*
- Clarify applicability in Old Town District.
    - *The proposed standards apply generally to all zoning districts of the City. However, the Old Town District currently has restrictions within Chapter 31 on solar energy systems which require a Certificate of Appropriateness for these systems. The standards were therefore changed to reflect this requirement.*

The proposed amendments are included in the attached draft ordinance. As drafted, the proposed amendments will accomplish the following:

1. Add solar energy conversion as a permitted accessory use in all zoning districts. This includes solar electric (Photovoltaic-“PV”), as well as solar thermal (water heating). Both will be regulated with the placement standards.

2. Require that roof-mounted panels be mounted flush on homes, if visible from the street.

3. Allow unlimited roof coverage in any zoning district if height standards are met.

4. Allow ground mounted solar panels to exceed square footage limits if not visible from the street, or to be located in front yards only as approved through a Special Use Permit.

5. Limit height of freestanding systems to four feet in front yards and six feet in rear and side yards.

6. Provide limited flexibility for roof or wall mounted systems to encroach into required side or rear setbacks.

7. Protect neighborhood character using dimensional standards and existing historic preservation provisions.

8. Allow the potential for small scale systems to produce surplus electricity if an Interconnection Agreement is signed by the property owner and the electric utility.

9. Maintain existing building and fire safety standard requirements for trade permits and licensed installation, when applicable.

The proposed amendments are consistent with and help to implement the following goals in the City's Land Use Policy Plan:

- Goal 3 of "Goals for a New Vision," regarding "Environmental-Friendliness" is supportive of this text amendment because the proposed amendments facilitate property owners' desires to conserve traditional energy sources by installing solar equipment on their property.

- Goal 4 of "Goals for a New Vision," regarding a "greater sense of place and connectivity" and "assuring a more healthy, safe, and attractive environment" is supportive of this text amendment because the proposal seeks to maintain the attractiveness of the built physical environment. These amendments propose to allow solar energy equipment in a way that is balanced with the character of the surrounding built environment.

ALTERNATIVES:

1. The City Council can adopt the zoning code text amendments to Section 29.201, Section 29.501(4)-4, Section 29.501(4)-7, and Section 29.1309, as described above and contained within the attached ordinance document.

2. The City Council can adopt the zoning code text amendments to Section 29.201, Section 29.501(4)-4, Section 29.501(4)-7, and Section 29.1309, as described above, but with modifications.

3. The City Council can refer the minor substantive amendments made by staff back to the Planning & Zoning Commission.

4. The City Council can choose not to adopt the proposed zoning code text amendments.

5. The City Council can refer this issue to staff for further information.

MANAGER'S RECOMMENDED ACTION:

The proposed ordinance advances the Council's goal of going green and making Ames a more sustainable community. In response to citizens wishing to install solar energy equipment, the ordinance will provide clear standards for allowing these systems while protecting surrounding properties. If interest grows in this field, the regulations may later be amended as public awareness and acceptance of these systems in non-traditional applications grows.

Therefore, it is the recommendation of the City Manager that the City Council accept Alternative #1 and adopt the zoning code text amendments to Section 29.201(116), Section 29.501(4)-4, Section 29.501(4)-7, and Section 29.1309, as described above and contained within the attached ordinance document.

ORDINANCE NO. _____

AN ORDINANCE TO AMEND THE MUNICIPAL CODE OF THE CITY OF AMES, IOWA, BY ADOPTING TEXT AMENDMENTS TO SECTIONS 29.501(4)-4, 29.501(4)-7 AND REPEALING SECTION 29.201(116) AND ADOPTING NEW SECTIONS 29.201(116), (213), (214), (215), (216), (217) AND (218). ENACTING A NEW SECTION 29.1309 THEREOF, FOR THE PURPOSE OF SOLAR ENERGY SYSTEMS AND USE; REPEALING ANY AND ALL ORDINANCES OR PARTS OF ORDINANCES IN CONFLICT TO THE EXTENT OF SUCH CONFLICT; AND ESTABLISHING AN EFFECTIVE DATE.

BE IT ENACTED, by the City Council for the City of Ames, Iowa, that:

Section One. The Municipal Code of the City of Ames, Iowa shall be and the same is hereby amended by repealing Section 29.201 (116) and adopting a new Sections 29.201 (116), (213), (214), (215), (216), (217), and (218) as follows:

"**Sec. 29.201. DEFINITIONS.**

(116) **Mechanical Unit** means a climate control device and/or a piece of hardware used for the delivery or measurement of utilities, that is located above ground and is clearly visible, not including solar energy systems as defined in Section 29.1309

. . .

(213) **Solar Energy System** – All exterior and above ground parts of a panel or other solar energy device including legs/braces and/or supporting devices, the primary purpose of which is to provide for the collection, inversion,

(214) **Solar Energy System, Attached** – A Solar Energy System which requires support by another structure, whether roof or otherwise, and does not connect directly to the ground. An attached system is not a minor projection, as defined in Section 29.402.

(215) **Solar Energy System**, **Commercial** – A Solar Energy System which is intended to produce electricity for sale to a rate regulated or non-regulated utility or for use off site.

(216) **Solar Energy System**, **Freestanding** – A Solar Energy System which is completely self-supported. A freestanding system is not an accessory structure, as defined in Section 29.402, and is therefore regulated by the setback and height requirements within this section.

(217) **Solar Energy System**, **Interconnected**– A Solar Energy System which produces electricity and is capable of distributing surplus electricity to the public or other properties outside the control of the system's owner, even if the system is temporarily or automatically disconnected by a switch or other mechanical device.

(218) **Solar Energy System**, **Passive** – A Solar Energy System that does not produce electricity and does not use active mechanical systems for energy transfer.

Section Two. Table 29.501(4)-4, of the Ames Municipal Code is hereby amended to remove "energy production" from the Manufacturing and Processing uses, to read as follows:

Sec. 29.501. CLASSIFICATION OF USES

. . .

Table 29.501(4)-4
INDUSTRIAL USE CATEGORIES

. . .

Manufacturing and Processing

Definition. Uses that involve the manufacturing, processing, fabrication, packaging or assembly of goods. Products may be finished or semi-finished and are generally made for the wholesale market, for transfer to other

plants, or to order for firms or consumers. Goods are generally not displayed or sold on-site, but if so, they are a subordinate part of sales.
Exceptions: Manufacture of consumer goods to be sold primarily on-site and to the general public is classified as Retail Sales and Services. Manufacture and production of products from composting organic material are classified as Waste Processing and Transfer.
Uses Included
Apparel and textiles manufacturing
Artwork, jewelry and toy production
Chemicals, rubber, leather, clay, bone, plastic, stone, and glass materials manufacturing
Concrete batching and asphalt mixing
Food and related products manufacturing
Furniture and fixtures manufacturing
Lumber and wood product manufacturing
Metal and metal products manufacturing, including enameling and galvanizing
Machinery and electrical equipment manufacturing
Manufactured homes and prefabricated structures manufacturing
Movie production facilities
Printing and publishing
Rock crushing and screening
Woodworking, including cabinetry
. . .

Section Three. Table 29.501(4)-7, of the Ames Municipal Code is hereby amended to include a definition for the accessory use "Solar Energy System" to read as follows:

Table 29.501(4)-7
MISCELLANEOUS USE CATEGORIES

. . .

Solar Energy Conversion
Definition. The use of Solar Energy Systems for the collection, inversion, storage, and distribution of solar energy for electricity generation, space heating, space cooling or water heating; primarily for use on-site as an accessory use to the principal use pursuant to Section 29.1309.

Section Four. A new Section 29.1309 of the Ames Municipal Code titled "Solar Energy Systems" is hereby adopted to read as follows:

Sec. 29.1309 SOLAR ENERGY SYSTEMS.

Purpose. Solar energy is a clean, readily available and renewable energy source. This section establishes regulations to facilitate the installation and construction of Solar Energy Systems so that systems are safe, effective, and efficient, as well as harmonious with the character of the adjacent area where located. The provisions of this Section apply to the placement, construction and use of "solar energy systems" as defined in this section.

The following standards shall apply to the development of Solar Energy Systems:

(1) Allowed Use. Solar Energy Conversion is an allowed accessory use in all zoning districts pursuant to the standards in this section.
(2) District Classifications.
(a) Residential Properties. As used in this subsection residential properties include those zoned RL, RM, UCRM, RH, RLP, FS-RL, FS-RM, and also F-VR, F-PRD, and S-SMD.

(b) Non-residential Properties. As used in this subsection, all properties not zoned in the residential classifications above shall be classified as non-residential property.

(3) Freestanding Solar Energy Systems:

(a) Setbacks

(i) Front. Solar Energy Systems shall not be located within any required front setback. They may be located in a front yard (beyond the required front setback line) subject to approval of a Solar Energy System Special Use Permit by the Zoning Board of Adjustment.

(a) Front yard, as used in this section, is the space between the principal building on the lot and the front lot line. See definition and graphic in Section 29.406(7)(e).

(ii) Side and Rear. Six (6) feet from all property lines and other structures.

(iii) Corner and Through Lots. The definition and requirements for a front yard in Section 29.406(7)(e) shall prevail when the subject lot is not an interior lot.

(iv) Easements, Utilities, Rights of Way. No portion of any solar energy system shall extend into any easement, right of way or public way, regardless of above stated exceptions and regulations for setback and yard requirements.

(b) Location. Systems shall be located on the same lot as the building being served. Where there is no principal building, the system is not allowed.

(c) Height. Six (6) feet in height maximum in side and rear yards. Four (4) feet in height maximum in front yards. The height shall be measured from the grade at system base to the highest peak, including the highest position of any adjustable system.

(d) Freestanding System Size:

(i) Residential Properties. Systems shall not exceed one-tenth (1/10) the footprint of the principal building served or one hundred (100) square feet, whichever is greater.

(ii) Non-Residential Properties. Systems shall not exceed one-half (1/2) of the footprint of the principal building served.

(iii) Lot Coverage. Freestanding systems shall be included in the maximum lot coverage or minimum landscaped area calculations except that up to 40 square feet is allowed regardless of total lot coverage.

(iv) Measurement of the system shall be based upon the area of the solar receiving panel, regardless of the adjustment angle of the panel.

(v) A freestanding system, or portion thereof, not visible from abutting street rights of way at any time of the year is exempt from maximum size and coverage calculations.

(4) Residential Attached Solar Energy Systems are permitted to be located on the roof or attached to a building, subject to all of the following:

(a) In the case of wall mounting, no part of the system shall project more than five (5) feet from the building.

(b) In the case of front wall mounting, attached systems are only allowed subject to approval of a Solar Energy System Special Use Permit by the Zoning Board of Adjustment. The front wall, as used in this section is defined as any wall coincident with the front yard as defined in Section 29.406(7) (e).

(c) No part of the system shall extend more than 50 percent into any required side or rear setback. No part of the system shall extend into any required front setback.

(d) No portion of any solar energy system shall extend into any easement, right of way or public way, regardless of above stated exceptions and regulations for setback and yard requirements.

(e) Systems shall not exceed the maximum height in the zone, for the structure to which it is attached.

(f) The building must have a conforming principal use.

(g) Roof attached systems may be mounted on principal and accessory building roofs provided they conform to the maximum height standards established in the zone. Additionally, systems shall be mounted parallel to the pitch of the roof and be no higher than 6 inches from the roof surface except that systems not meeting the flush mount requirement may be allowed subject to approval of a Solar Energy System Special Use Permit, provided they do not project more than 5 feet from the roof surface. A system or a portion of a system not visible from abutting street rights of way is exempt from the flush mount requirement, but no part of the system shall project higher than 5 feet from the roof surface.

(h) Section 29.401(5), pertaining to height exceptions for architectural features and projections shall not apply.

(i) Section 29.402(2), pertaining to exceptions for projections into required setbacks shall not apply.

(j) There is no surface area size limitation on attached systems, unless otherwise required by a Solar Energy System Special Use Permit.

(5) Non-Residential Attached Solar Energy Systems are permitted on the roof of, or attached to a non-residential building, subject to all of the following:

(a) For wall mounting, no part of the system shall project more than five (5) feet from the wall.

(b) For roof mounting, no part of the system shall project more than ten (10) feet from the roof.

(c) No part of the system shall extend more than 50 percent into any required side or rear setback. No part of the system shall extend more than 20 percent into any required front setback.

(d) No part of the system shall exceed the maximum height permitted in the zone, for the structure to which it is attached.

(e) The building must have a conforming principal use.

(f) Section 29.401(5), pertaining to height exceptions for architectural features and projections shall not apply.

(g) Section 29.402(2), pertaining to exceptions for projections into required setbacks shall not apply.

(6) Zoning Permit-Exempt systems. The following systems are exempt from zoning permit requirements:

(a) Systems in which the cumulative surface area of the system is four (4) square feet or less

(b) Systems or building parts integral to the structure, that are passive (Passive Solar Energy Systems) in nature and do not project from the structure

(7) Code Compliance. Solar Energy Systems shall comply with all applicable building codes and are not exempt from any such inspections and permits. The applicant or designee is encouraged to meet with the regulatory and utility agencies before purchasing equipment to understand feasibility and code requirements prior to applying for a zoning permit.

(8) Solar Access. A property owner who has installed or intends to install a solar energy system shall be responsible for negotiating with other property owners in the vicinity for any necessary solar easement. The granting of a zoning permit or Special Use Permit by the City does not constitute solar access rights.

(9) Historic Districts. All solar energy systems within a historic overlay district are not permitted unless a Certificate of Appropriateness has been granted by the Historic Preservation Commission pursuant to Chapter 31, Municipal Code. None are exempt.

(10) Application for Solar Energy System Zoning Permit (SES ZP)

The Planning & Housing Director shall prescribe the application form and any necessary submittal requirements, as needed, to determine compliance with this section. The Zoning Permit application shall include, but not be limited to:

(a) A plot plan drawn to scale, showing:

(i) Existing structures on the lot

(ii) Proposed system

(iii) Property lines

(iv) Setbacks of existing and proposed structures

(v) Rights of way

(vi) Utility diagram applicable to proposed system

(b) Elevation views and dimensions

(c) Manufacturer's photographs

(d) Manufacturer's spec sheet including capacity

(e) Demarcation of dimensions. For systems claiming exemption due to "no-visibility" from abutting street rights of way, the applicant shall place demarcation posts, rods or balloons and schedule an appointment for staff to confirm no visibility.

(f) Certificate of Appropriateness from Historic Preservation Commission, if applicable

(11) Issuance of Solar Energy System Zoning Permit (SES ZP)

The Planning & Housing Director shall review the permit application. If the application is compliant, an approval shall constitute a Solar Energy System Zoning Permit (SES ZP) and the applicant shall then be authorized to seek any other necessary building permits and approvals before installation. Any decision of denial shall be in writing and supported by substantial evidence contained in a written record. The Zoning Permit can be revoked if there is evidence that the system does not comply with the permit.

(12) Solar Energy System Special Use Permit (SES SUP):

(a) Application. The Planning & Housing Director shall prescribe the application form and any necessary submittal requirements, as required in this Section and Section 29.1503. The Director can waive any of the submittal requirements of a SES SUP upon request of the applicant, which the Director deems not applicable.

(b) Procedure. The procedure shall follow Section 29.1503(a), Special Use Permits. Sections 29.1503(b-d), (Residential Zone Standards, Commercial Zone Standards and Functional Families) shall not apply to the review of SES SUP applications.

(c) Review Criteria. To approve a SES SUP, the Zoning Board of Adjustment must find that the proposal conforms to all of the following five criteria (i-v) and either vi. OR vii.:

(i) The system will be harmonious with the character of the neighboring properties as they exist on the date of approval, which is defined as properties within 200 feet of the system property

(ii) Access to open space (air and light) from the neighboring properties is not significantly reduced

(iii) If in a historic district, a Certificate of Appropriateness has been granted by the Historic Preservation Commission

(iv) The predominate pattern of building placement, height, orientation and scale among the neighboring properties and general area beyond the neighboring properties will not be negatively impacted or altered by the system

(v) The system conforms with all other city, state and federal regulations

AND EITHER

(vi) Unique topography, vegetation or lot conditions exist which help to shield the system from the view of neighboring properties and from the street.

OR

(vii) Placement of the principal building allows the system to be located and operated in a way that helps to shield the system from the view of neighboring properties and from the street.

(d) Review and Approval. The Zoning Board of Adjustment can request additional information if insufficient information is presented to determine conformance with the criteria. If approved, the SES SUP can be revoked after a public hearing, if there is evidence that the system does not comply with the provisions of the Special Use Permit. The Board may impose conditions as it deems necessary for the general welfare of the public and for ensuring that the intent and objectives of this Ordinance will be observed. The application shall include the same information required for a SES ZP, and shall also include statements addressing how the application meets the criteria of subsection C above.

When a Solar Energy System Special Use Permit is approved, it shall constitute the equivalent of the Solar Energy System Zoning Permit.

(13) Site Development Plan Exemption. A Freestanding Solar Energy System is exempt from Site Development Plan requirements if the surface area of the system is less than 150 square feet as measured in this Section.

(14) Exception Provisions Not Applicable. An Exception for a Minor Area Modification, as defined in Section 29.1506 shall not be allowed or applicable to Solar Energy Systems.

(15) Interconnection: Interconnected Solar Energy Systems are allowed subject to the standards in this section. Evidence of a signed interconnection agreement with the applicable electric utility shall be submitted to the

Department of Planning & Housing prior to approval of any interconnected solar energy system. The applicant is encouraged to work with the applicable utility before purchasing equipment. The maximum allowable rated capacity of an Interconnected Solar Energy System is 10 kW, or 10,000 Watts unless evidence from the applicable utility has demonstrated that safe interconnection can be achieved and the need is for on-site usage for the principal use of the property. Any system over 100 kW is not allowed.

(16) Abandonment: System use shall be determined abandoned under the provisions of Section 29.307, which requires notice by the Zoning Enforcement Officer to the property owner. The system shall be removed within 90 days of the termination date, at the cost of the property owner.

(17) Signage: Any signs on the system shall be limited to one square foot.

(18) Commercial systems: A Commercial Solar Energy System is not allowed in the City of Ames.

(19) Appearance. The property owner of any solar energy system shall maintain such system in a safe and attractive manner, including replacement of defective parts, painting, cleaning, and other acts that may be required for the maintenance and upkeep of the function and appearance of such a system. The owner shall also maintain the ground upon which the system is located in an orderly manner, such that is free of debris, tall grass and weeds, and any associated structures remain quality in appearance.

(20) Underground Wire Requirement. Wires shall be underground or otherwise concealed, to the greatest extent possible, where crossing open areas.

(21) Industry standard: Before any Solar Energy System zoning permit is issued for a Solar Energy System, evidence shall be shown that the system and parts meet industry standards, such as Underwriters Laboratories (UL), or another standard applicable to the technology and materials of the system."

Section Five. All ordinances, or parts of ordinances, in conflict herewith are hereby repealed to the extent of such conflict, if any.

Section Six. This ordinance shall be in full force and effect from and after its passage and publication as required by law.

Passed this _____ day of _____, _____.

_____ _____

Diane R. Voss, City Clerk Ann H. Campbell, Mayor

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