



**CITY OF SAINT PAUL**  
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**Date:** April 21, 2017  
**To:** Neighborhood Planning Committee  
**From:** Tony Johnson (651-266-6620)  
**Subject:** Alternative Financial Establishment Zoning Text Amendments

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### **Background**

In 2009 the City Council passed resolution 09-1349 directing the Planning Commission to study and recommend zoning code amendments regarding currency exchanges. The study was initiated after the City Council became aware that businesses operating in the same manner as currency exchanges and offering payday loans were circumventing regulations that applied to currency exchanges by obtaining licenses from the Minnesota Department of Commerce for consumer small loan companies, industrial loan and thrifts, and regulated loan companies.

In 2010 the City Council adopted an ordinance revising the zoning code regulation of currency exchanges by creating a broader use category, *alternative financial establishment*, with a definition largely based on state definitions (attached) for *currency exchange*, *consumer small loans* and *consumer short term loans*, although these loan types are not specifically called out. The definition starts with very broad criteria that apply to almost any financial institution and specifically includes consumer small loan companies, currency exchanges, industrial loan and thrifts, and regulated loan companies. These four Department of Commerce license types allow businesses to operate in a manner similar to currency exchanges and/or offer payday loans. The definition then provides specific exceptions for certain types of businesses such as banks and credit unions.

The definition in Zoning Code Sec. 65.511, *alternative financial establishment*, adopted in 2010 was intended to ensure that all businesses that operate in a manner similar to currency exchanges and/or offer payday loans are subject to the regulations in this section. However, businesses with an industrial loan and thrift license or with a regulated loan company license may operate without offering payday loans and check cashing, and might just offer other financial products and services. Industrial loan and thrift companies can offer a particularly broad array of financial services other than payday lending and check cashing.

An unintended consequence of the broad construction of the current definition in Zoning Code Sec. 65.511, *alternative financial establishment*, is that it included at least one business (Getten Credit Company) that apparently did not offer the type of loans and services this section is intended to regulate. This created zoning problems for Getten, and they have been forced to discontinue their St. Paul operation. The director of a neighborhood development

corporation that provides pass-through loans to businesses and home owners expressed concern that they might also fall under the definition of *alternative financial establishment* because there is no specific exception for them in the definition.

In December 2015 the City Council passed a resolution (attached) directing the Planning Commission to study and recommend zoning code amendments so that businesses that do not operate in the same manner as a currency exchange and do not offer payday loans are not unreasonably regulated as alternative financial establishments.

### **Public Hearing**

On April 21, 2017, the Planning Commission held a public hearing on the proposed amendment to Sec. 65.511 regarding alternative financial establishments. No testimony was received. The public record has been left open for written testimony until 4:30 PM on Monday, April 24, 2017.

### **Proposed Amendment**

Simplify Zoning Code Sec. 65.511, *alternative financial establishment*, to make it easier to read and understand. Rather than a complex definition that starts with very broad criteria that apply to almost any financial institution and then providing specific exceptions for certain types of businesses, amend the definition so that it applies to the specific financial services and products this section is intended to regulate. This would allow businesses that are licensed as regulated lenders or industrial loan and thrifts and do not offer payday loans or check cashing to fall under the zoning standards for another land use category as determined by the zoning administrator. This would typically be banks and credit unions because of the similarity in the financial services they offer. Some businesses with a regulated lender license may be more similar to other uses because they offer financing for specific goods such as appliances or solar panels. Neighborhood development corporations do not have the license types and do not provide the financial services and products specified in the amended definition, so they would clearly not fall under the definition.

### **Staff Recommendation**

Staff recommends that the Planning Commission recommend the following amendment to Zoning Code Section 65.511, and forward the amendments to the Mayor and City Council for their consideration.

NOTE: Existing language to be deleted is shown by ~~strikeout~~. New language to be added is shown by underlining. [Drafting notes are in brackets.]

### **Sec. 65.511. Alternative financial establishment.**

~~A business person, firm, association, corporation or partnership engaged in the business or service of check cashing or making loans to be repaid in one (1) lump sum or in installments over a set period of time, either collateralized or not, for which there is a fee or service charge, or interest received, including but not limited to loans collateralized by personal check, payroll check, wage assignment or personal property title, or collateralized with the promise to relinquish possession of any personal property upon default. Alternative financial~~

~~establishment includes but is not limited to~~ defined and licensed by the Minnesota Department of Commerce as a consumer small loan companyies, currency exchanges, industrial loan and thrifts, ~~and or regulated loan company~~ies, ~~as defined and licensed by the Minnesota Department of Commerce.~~ Alternative financial establishment does not include federal or state chartered banks, credit unions, or savings banks, nor does it include a person, firm, association, corporation or partnership that provides the service of cashing checks, drafts, money orders, or travelers checks for a fee, ~~incidental to the person's primary business and the charge for cashing a check or draft does not exceed one dollar (\$1.00) or one (1) percent of the value of the check or draft, whichever is greater.~~ makes consumer small loans, or makes consumer short-term loans.

*Standards and conditions:*

- (a) The alternative financial establishment shall be located at least one hundred fifty (150) feet from any lot in a residential district or lot occupied with a one-, two-, or multiple-family dwelling, measured in a straight line from the closest point of the building in which the business is or is to be located to the closest point of the residential property line.
- (b) ~~The~~ No alternative financial establishment shall be located ~~within~~ at least two thousand six hundred forty (2,640) feet ~~of~~ from any another alternative financial establishment and one thousand three hundred twenty (1,320) feet from any pawnshop, measured from the nearest building wall of the existing establishment to the nearest building wall of the proposed use, ~~or if there is no building, to the nearest lot line of the proposed use.~~
- ~~(c) No alternative financial establishment shall be located within one thousand three hundred twenty (1,320) feet of any pawnshop, measured from the nearest building wall of the existing establishment to the nearest building wall of the proposed use, or if there is no building, to the nearest lot line of the proposed use.~~

Here's how this would look without the strikeouts and underlines:

**Sec. 65.511. Alternative financial establishment.**

A business defined and licensed by the Minnesota Department of Commerce as a consumer small loan company, currency exchange, industrial loan and thrift, or regulated loan company that provides the service of cashing checks, drafts, money orders, or travelers checks for a fee, makes consumer small loans, or makes consumer short-term loans.

*Standards and conditions:*

- (a) The alternative financial establishment shall be located at least one hundred fifty (150) feet from any lot in a residential district or lot occupied with a one-, two-, or multiple-family dwelling, measured in a straight line from the closest point of the building in which the business is or is to be located to the closest point of the residential property line.
- (b) The alternative financial establishment shall be located at least two thousand six hundred forty (2,640) feet from any other alternative financial establishment and one thousand three hundred twenty (1,320) feet from any pawnshop, measured from the nearest building wall of the existing establishment to the nearest building wall of the proposed use.



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**Date:** April 20, 2017  
**To:** Neighborhood Planning Committee  
**From:** Jake Reilly (266-6618/jake.reilly@ci.stpaul.mn.us)  
**Subject:** Draft Alternative Energy Zoning Study Zoning Code Amendments

### **Introduction**

Section 60.103(k) of the Zoning Code states that a purpose of the Zoning Code is “to promote the conservation of energy and the utilization of renewable energy resources.” The Zoning Code contains no specific provisions for wind energy conversion systems (WECS). On April 15, 2011, the Planning Commission initiated a zoning study to consider amendments to the zoning code pertaining to wind turbines that will address issues specific to wind turbines and conditions under which wind turbines might be permitted in various zoning districts.

In 2013, while staff was studying wind turbine regulation, the Minnesota Legislature passed a suite of laws that are driving the market for solar installations and enabling local government authority. In particular, Minnesota Statute 216B.1641 established the Xcel Energy Community Solar Garden Program. This program allows for large solar farms or gardens on structures and on large plots of land. The goal was to allow people who want to use solar energy as part of their energy consumption, but are unable to do so on their own. Saint Paul’s zoning code does not accommodate solar gardens on large plots of land.

This memo addresses both issues.

### **Wind Background**

In 2002 Macalester College applied for and received a Determination of Similar Use (DSU) for a free-standing, 10 kW, 102-foot high wind turbine located on the campus. Since then a number of people have approached the Department of Safety and Inspections (DSI) seeking information about free-standing and building-mounted wind turbine regulation in the city. On April 12, 2011 Capitol Lien and Title at 1010 North Dale applied for a DSU for a free-standing wind turbine and three building-mounted wind turbines. This application was approved subject to several conditions, including the completion of a noise study by a qualified acoustical engineer. On December 1, 2011, Metropolitan State University applied for a conditional use permit for a 20kW wind turbine on a freestanding pole 104 feet high. That application was initially approved by the Planning Commission, but upon appeal from the neighborhood was denied by the City Council in 2012.

This section of the memo outlines types of wind turbines; contains a survey of city and county ordinances regulating turbines or WECS; and makes recommendations for a Saint Paul ordinance related to WECS.

## **Research**

### ***Categories and design of wind turbines***

There are two categories that wind turbines fit into, according to the industry. The first is “large wind” which refers to turbines with a capacity of 5,000 kilowatts or more. “Small wind” is any turbine with a capacity of less than 5,000 kilowatts. The State of Minnesota Wind Siting Act (Chapter 203-S.F. No. 1076) uses the same categories in its wind turbine definitions.

Wind turbines also come in two different designs. Horizontal-axis turbines have blades that rotate perpendicular to the ground. These turbines must face into the wind in order to function and are similar to those seen in large wind farms, or locally at Macalester, in North Saint Paul, and in Maple Grove. Vertical-axis turbines have blades or rotors that rotate parallel to the ground and can capture turbulent wind, or wind in any direction. They have an egg beater-like appearance. Local examples include the three roof-top mounted, and one free-standing turbines at the Capitol Lien and Title company on Dale Street, and at the newly constructed Hy-Vee Grocery stores around the metro, including Oakdale, on the solar- and wind-powered electrical vehicle charging stations on their developments.

Like the Hy-Vee electrical vehicle charging station example, there are other hybrid wind/solar fixtures, usually light fixtures for use in parking lots or in public right of way with a solar power element and a wind power element. The solar element is a photovoltaic system and the wind element is a vertical axis wind turbine, or a small wind turbine.

### ***Potential land use impacts***

Siting of wind turbines may have potential land use impacts. For large wind, consideration of the “fall” zone is important. However, wind installations of either variety are unlikely to impact the amount of traffic congestion in the public streets, or impede the normal and orderly development and improvement of the surrounding property. There is debate about the impact on the public health and safety of wind turbine products, which will be discussed later in this memo.

### ***Other cities’ regulations:***

Staff reviewed nearly 20 ordinances from half a dozen states examining type of wind systems permitted, method of permitting; addressed zoning districts, heights, setbacks and other life/safety concerns, environmental concerns around humans and animals, and also spoke with regulators at the State and solar and wind-energy providers operating in Minnesota.

#### Height, setbacks, and blade clearance

Large wind systems generally require a conditional use permit, as in Minneapolis, and are not permitted in residential or office districts. The regulations usually restrict large wind installations to lots of one acre or greater and with no more than one turbine per acre. However, in Maple Grove and Eden Prairie, they are permitted as an accessory structure in all districts.

For large wind, setbacks are generally a 1.1 x height from any property lines (Cleveland, Lincoln, New York State Energy Research and Development Authority (NYSERDA)) or simply based on the tower height (Duluth, Madison, Plymouth), sometimes with a total height restriction (Duluth). The Distributed Wind Energy Association’s model ordinance, suggests a 1.1 to 1.25 x height distance from property lines.

Height of large wind turbines generally depends on the lot size. Minneapolis restricts height to 100’ tall on sites of five or more acres and 60’ on sites of one to five acres. NYSERDA recommends that the

height of the turbine from the ground to the top of the rotor at its highest position be 30', while in Plymouth, blade arcs “shall have a minimum of 30 feet of clearance over any accessory structure or tree.” The American Wind Energy Association recommends that on a 1/2 to 1-acre lot, the height maximum should be no more than 150'.

Small wind turbines are generally permitted in all districts without a conditional use permit (Wisconsin). Lincoln, NE and Schaumburg, IL permit small wind turbines as a conditional or special use. Ground-mounted units are permitted as an accessory structure (Chicago, Duluth) and roof mounted ones are permitted in all districts (Henderson, NV and Minneapolis). In Minneapolis one may not install a wind turbine on a residential structure with fewer than four stories.

For small wind, setbacks vary from being a simple 1:1 height ratio (Wisconsin) to 10' to 15' from the property line for smaller units (Oakland, Cleveland, Denver, AWEA). Chicago and Schaumburg, IL both require a 20' setback from all lot lines. Minneapolis sites wind turbines at least 10' from the wall of a structure.

Height restrictions generally refer to building-mounted small wind turbines but there are some restrictions for ground-mounted ones in residential districts. For ground-mounted turbines they must not be more than a certain height taller than the building on the property. This varies from 7' (Oakland) to 75' (Denver). Minneapolis and Chicago, two urban cities surveyed from our region, require the turbine to be not greater than 15' above the rooftop or parapet, whichever is greater.

#### Noise

Noise regulations of large wind turbines vary from place to place. Cleveland limits sound to not more than 50 decibels measured from the nearest residential property line. This matches the MN Model ordinance and MN State noise rules (MN Rule 7030). NYSERDA suggests not more than 55 dB(A) at property line and AWEA 60 dB(A) at nearest building or not more than 5 dB(A) above ambient noise. Reno, Nevada and Schaumburg, IL limit wind turbine sound levels to 50 decibels over ambient noise, in residential districts and 60 decibels over ambient noise in other districts, according to “Planning for Wind Energy,” a publication of the APA. The APA recommends using that standard. The output of a typical 2 kW turbine (the size to serve a single-family residence) is about 55 dBA at a distance of 50 feet. This is about the same level as a household air conditioning unit at 100 feet. In comparison, a passenger car at 65 mph at 25 ft is 77 dB, which is noted as being “annoyingly loud to some people,” by the acoustic engineering firm IAC Acoustics. Decibels are additive which means a sound that is 50 dB (for example, standing 100 feet away from a large electrical transformer) is 1/4<sup>th</sup> as loud as that traffic example, and 80 dB is actually two times louder than 70 dB.

#### Access

Access to a wind turbine is typically limited by fencing and a lock and/or limiting climbing apparatus to not less than 8' above the ground, with the most common restriction being no climbing apparatus within 12' of the ground (NYSERDA, Minneapolis, Schaumburg, MN Model, Plymouth)

#### Animal impacts

Bat and bird impacts are not specifically mentioned in any codes currently established in the US. However, there have been some studies that suggest that at large wind sites anywhere from 1 to 3 birds are killed per tower per year. Bats potentially experience a kill rate of almost three times that. Wind turbines generally pose risks to individuals, not populations. Birds are more likely to be killed by other human infrastructure and utilities like vehicles, windows, communications towers, pollution and house cats, according to “Planning for Wind Energy.” For most urban applications wind turbines are mounted lower than bird and bat migration paths. “Because of the relatively smaller blades and short tower heights, home-sized wind machines are considered too small and too dispersed to present a

threat to birds. Researchers do not consider a study of home-sized wind systems worth funding.” (focusonenergy.com) Small WECS have very limited wildlife impacts, according to the APA. The blade areas do not create as much of a hazard and there is typically plenty of maneuvering space around them. The number of birds killed annually by WECS is fewer than by housecats or glass windows and doors. In fact, in 2006 the Audubon Society issued a statement in support of well-located WECS. No research was found specifically about birds or bats and vertical wind turbines. An industry representative has stated that vertical wind turbines appear to be solid objects when spinning, which would cause birds and bats to fly around them, rather than try to go through them. There is no evidence to suggest that vertical wind turbines create enough disturbance in the wind to draw birds or bats in to them.

#### Other regulations

When addressed, the following criteria are found for all wind turbines: The wind turbines are not to interfere with electromagnetic communications; they are not to be used for advertising; the color or finish should blend in with the architecture or be screened or painted a subdued, non-reflective color. The American Wind Energy Association and Boston both refer to the systems minimizing glare and flickering shadows, which may be caused by the rotor spinning. Wind turbines must be removed when abandoned, which is defined differently based on the city, but most commonly after a 12-month period (Minneapolis, Maple Grove).

#### **Hybrid (Wind/Solar) Light Fixtures**

Hybrid (wind/solar) light fixtures are light fixtures for use in parking lots or in public right of way with a solar power element and a wind power element. The solar element is a photovoltaic system and the wind element is a small vertical axis wind turbine. The light fixtures are similar to cobra head lights and reflect downward, as required by the zoning code. The zoning code does not specify lighting as a use, accessory or otherwise. However, it does set standards in Section 63 and in the T districts.

Section 63.116 Exterior Lighting of the zoning code addresses standards for exterior lighting. It requires that lighting be shielded to reduce glare and arranged as to reflect lights away from all adjacent residential districts in such a way as not to exceed 3 footcandles measured at the residential district boundary. Lighting illuminating the exterior of a building must also be placed and shielded to avoid interference with the vision of people on highways or adjacent property.

Section 63.318 sets the standard for lighting in parking facilities. It requires that parking facilities be illuminated to a level to allow safe, secure access to the parking facility and within it, and states that all lighting shall conform to Section 63.116.

Additionally, the Traditional Neighborhood district design standards in Section 66.343 state that pedestrian-scale lighting shall be provided in parking areas but that poles shall not be more than 25 feet in height in parking lots and 16 feet in height along interior sidewalks and walkways.

The Zoning Code as currently written does not preclude the use of a hybrid (wind/solar) light fixture. The hybrid light fixture is similar to standard light fixtures used in parking lots, and would be treated the same by the zoning code. The kinetic feature of the vertical-axis wind turbine is designed to minimize flicker impacts and the solar panel is similar to solar panels on other fixtures on light posts such as solar-powered wireless broadband internet systems in use around the country.

#### **Analysis**

Staff recommends code amendments to permit wind energy conversion systems that are consistent with regulations of surrounding communities, in order to incentivize such systems by providing regulatory simplicity and predictability while still protecting neighborhoods.

Code recommendations suggest dealing with WECS as an accessory use, rather than as a primary use. Due to the nature of development and the market in Saint Paul, it is unlikely that a WECS would be proposed as a primary use. Large wind (greater than 5,000 kW and generally a vertical turbine) might be considered as a primary use, but staff believes that users of wind turbines will seek to power a business or facility as an accessory use and not a primary use. If the market or patterns of development changes or interest arrives, WECS as a primary use may be considered.

Code recommendations cover issues such as height, setback, minimizing flicker impact, and minimizing noise impact, and when and where to consider a Conditional Use Permit application.

Staff does not recommend establishing hybrid light fixtures as a use in the zoning code, but recommends adding language to Sec. 63.116 Exterior Lighting.

## **Solar**

In 2011 Saint Paul amended the zoning code to better accommodate solar installations.

Since then, state law enabling the creation of Community Solar Gardens was passed in 2013. Community Solar Gardens are centrally-located solar photovoltaic (PV) systems that provide electricity to participating subscribers. Xcel Energy customers can participate in projects offered by private developers. Members of other utilities in Minnesota can subscribe to a community solar garden if one is offered by the utility. The first solar garden project was launched by the Wright-Hennepin Cooperative Electric Association that year. The first solar garden in Xcel Energy’s Minnesota region went online in Kasota, MN in 2015. Most solar gardens are being built on the urban fringe in Dakota, Wright, and Sherburne Counties, and solar gardens on rooftops have not yet come to fruition, according to resources available from the Clean Energy Resource Teams (CERTs) organizations.

Because Minnesota state statutes leave most solar development regulation to local governments, it is important for Saint Paul to have development regulations that are “solar ready,” which means ordinances will address all the types of solar land uses the community is likely to see. At this time, Saint Paul’s ordinance, while providing an as-of-right solar installation opportunity for accessory use solar, it does not address solar as a principal use. Additionally, the zoning code does not include information on solar access associated with solar easements; solar roof incentives such as offering bid preferences to purchasers/developers of publicly-owned lots who commit to providing solar capacity on the site when fully built out; density bonuses for kilowatt or square foot of solar capacity per unit; or commercial parking lot reductions. Finally, the zoning code does not specifically state that community solar gardens are permitted. If Saint Paul is to be considered fully solar ready, perhaps the zoning code should be amended to accommodate some of those other factors common in other communities’ codes of ordinances.

## **Action sought**

Staff is seeking feedback on two things:

1. Are the wind energy issues adequately addressed, or is more information or study required?
2. Is there interest in evaluating additions to the zoning code to accommodate some of the missing items associated with community solar gardens above.



Staff has a goal to move forward with any amendments in a timely manner so that any code amendments are finalized before the end of the fourth quarter of this year (2017).

**Attachments**

- a. Proposed code amendments for WECS
- b. 2011 Solar Zoning Study memo and ordinance

## **Recommended code language, wind**

### **Sec. 63.116. Exterior lighting.**

...

(d) Hybrid (wind/solar) light fixtures will be placed so as to minimize flicker impacts and shall not exceed 25 feet in height. They shall be set back from other principal structures by at least one (1) times the height of the fixture.

### **Sec. 65.925. Wind energy conversion system (WECS)**

Any device such as a windmill, or wind turbine that converts wind energy to electrical energy, and associated facilities including the support structure of the system.

#### Standards and conditions:

(a) In residential, traditional neighborhood and business districts, a conditional use permit is required for a wind energy conversion system with a capacity of more than one (1) kilowatt (kW) on a freestanding pole.

(b) A building-mounted WECS shall be subject to the maximum building height specified for the district or a maximum of fifteen (15) feet above the height of the building to which it is attached, whichever is greater. In residential districts the system shall be set back 10 feet from all exterior walls of the building to which it is attached.

(c) In residential, traditional neighborhood and business districts, a WECS with a capacity of more than one (1) kilowatt (kW) on a freestanding pole shall be subject to the following standards and conditions:

(1) Wind energy conversion systems shall not be permitted on properties less than five (5) acres in size. Freestanding poles shall not exceed one hundred (100) feet in height, measured to the center of the hub, for properties greater than five (5) acres in size.

(2) The system shall not be located in a required front or side yard and shall be set back one and one tenth (1.1) times the height of the system from the residential structures.

(3) In residential and traditional neighborhood districts, the pole shall be on institutional use property at least one (1) acre in area. In business districts, the zoning lot on which the pole is located shall be in an area of contiguous business or industrial zoning at least one (1) acre in area. A maximum of one (1) wind energy conversion system per acre of lot area shall be allowed.

(d) In industrial districts, the system on a freestanding pole shall not exceed one hundred fifty (150) feet in height, shall not be located in a required front or side yard, and shall be set back one and one tenth (1.1) times the height of the system from residential structures.

(e) Wind energy conversion systems shall conform to the uniform building codes, electrical codes and Minnesota Rules 7030 governing noise, and Chapter 293, Noise Regulations. System noise shall not exceed 55 dB(A) at the nearest residential property line. For property within a locally designated heritage preservation site or district, the system shall be subject to review and approval of the heritage preservation commission.

(f) Freestanding poles shall be a monopole design with a non-reflective, subdued finish.

(g) All WECS rotors shall not have rotor diameters greater than forty-five (45) feet.

(h) Blade arcs created by the WECS shall have a minimum of thirty (30) feet of clearance over any structure or tree within a two hundred (200) foot radius.

(i) Wind energy facilities shall be sited in a manner that minimizes shadowing or flicker impacts. The applicant has the burden of proving that this effect does not have significant adverse impact on neighboring or adjacent uses.

(j) Electrical equipment shall be housed within an existing structure whenever possible. If a new equipment building is necessary, it shall be permitted and regulated as an accessory building.

(k) Wind energy conversion systems that are no longer used shall be removed within one (1) year of nonuse.

(l) An applicant for a building permit for a wind energy conversion system shall provide written certification to the building official from a licensed structural engineer that:

(1) For building-mounted systems, the structure has the structural integrity to carry the weight and wind loads;

(2) The system is designed not to cause electrical, radio frequency, television and other communication signal interference; and

If the applicant plans to connect the system to the electricity grid, written evidence that the electric utility service provider serving the property has been informed of the applicant's intent to install a wind energy conversion system shall also be submitted to the building official.



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**Date:** September 7, 2011  
**To:** Planning Commission  
**From:** Neighborhood Planning Committee  
**Subject:** Solar Energy Systems Zoning Text Amendments - Public Hearing Testimony and Recommendations

### **Background**

In 2008 the cities of St. Paul and Minneapolis received a U.S. Dept. of Energy Solar America Cities grant to identify strategies that will result in solar-friendly policies, practices and regulations. Policy LU-3.19 in the Saint Paul Comprehensive Plan calls for study of “tools, techniques, and regulations to facilitate increased usage of solar energy systems, either as standalone systems or as supplements to conventional energy sources.” § 60.103(k) of the Zoning Code states that a purpose of the Zoning Code is “to promote the conservation of energy and the utilization of renewable energy resources.”

The Zoning Code treats solar energy systems as a permitted accessory use in all zoning districts under the definition of *accessory use* in § 65.910. The code does not separately list solar energy systems as an accessory use, just as it does not separately list air conditioners, ventilation equipment, and similar equipment. A solar energy system mounted on a building is subject to the dimensional standards that apply to the building. A freestanding solar energy system is subject to the dimensional and locational standards that apply to an accessory structure.

This current practice in Saint Paul generally appears to be a good balance between providing for solar energy systems and adequately regulating them. It does not seem to be a significant barrier to use of solar energy systems. Neither is there evidence that solar energy systems installed under existing regulations are inconsistent with the intent and purpose of the Zoning Code to promote and protect the public health, safety and general welfare.

Before permits are issued for installation of a solar energy system in Saint Paul, the plans and construction drawings are reviewed by Department of Safety and Inspections plan review and zoning staff and the structural engineer to ensure code compliance. Required documentation includes a building permit application, engineering plans showing the framing system and how it is attached to a building, location on a building, elevations, and a site plan if it is located in a yard rather than on a building. A separate electrical permit is required for photovoltaic systems, and a mechanical permit is required for thermal systems.

Last spring we reviewed zoning regulations pertaining to solar energy systems in the Saint Paul code, a Minnesota model ordinance, Minneapolis and other cities, and recommended amendments that may improve or clarify the Saint Paul code.

On July 8, 2011, the planning commission held a public hearing on draft solar energy systems zoning text amendments that clarify and add some detail to the regulations that apply to solar energy systems while maintaining the current general approach. Three people testified at the public hearing and also submitted written comments. In addition, written comments were received from two other interested parties. This memo summarizes the public hearing testimony, reviews research and analysis on the issues raised, and presents comments and recommendations in response to the testimony for the commission to consider as it makes its recommendations on the proposed solar energy systems zoning code text amendments.

## **Public hearing testimony issues, analysis, and recommendations**

Public hearing testimony on the draft solar energy systems zoning code text amendments focused on three issues: visual impact, height, and setbacks of solar installations.

### **1. Visual impacts**

#### **Summary**

The public hearing draft amendments delete the word *mechanical* in § 63.110(e), and further amends § 63.110(e) by changing the word *visibility* to *visual impact* as follows:

#### **Sec. 63.110. Building design standards.**

- (e) The ~~visibility~~ visual impact of rooftop ~~mechanical~~ equipment shall be reduced through such means as location, screening, or integration into the roof design. Screening shall be of durable, permanent materials that are compatible with the primary building materials. Exterior mechanical equipment such as ductwork shall not be located on primary building facades.

The amendment would apply this general design standard for rooftop equipment to solar energy systems that are not mechanical systems. It would also help make it clear that § 63.110(e) doesn't require screening to reduce *visibility* of rooftop equipment, but rather requires reducing the *visual impact*, which can be done through such things as location and integration into the roof design as well as by screening.

#### **Testimony**

Ralph Jacobson, owner of Innovative Power Systems and president of Minnesota Solar Energy Industries Association, noted that solar panels are not intrinsically unsightly, what people think of as nice looking can be fairly subjective, and for solar panels it's more a matter of how they are deployed.

Michael Russelle, 1480 Chelmsford, questioned how and why screening would be applied to reduce the visual impact of solar panels on a residential building.

Terry Brueck, 2279 Summit, said § 63.110(e) should allow for rooftop solar arrays to be south facing, clarifying that "south facing collectors are allowed in the roof design, including south facing panels at right angles against the roofline."

James Darabi, Solar Farm, LLC, St. Paul, expressed concern that electrical conduits and insulated solar fluid pipes (in the case of solar hot water) should be allowed on primary building facades, that it can sometimes be difficult and very expensive to put them elsewhere, and they can look much like rain gutter downspouts.

Daniel Williams, owner of Powerfully Green, a solar energy system installer, said he assumes that the language in § 63.110(e) about "mechanical equipment such as ductwork" on primary building facades does not apply to solar plumbing and solar electric runs, which are similar to Xcel electric runs and downspouts commonly on primary building facades.

#### **Analysis and response**

The draft amendment to § 63.110(e) addresses how solar panels are deployed, with a fair amount of flexibility. It does not require screening of rooftop solar panels, but rather requires reducing the *visual impact* of rooftop solar panels, which can be done through such things as location and integration into the roof design as well as by screening.

Most cities do not require screening of rooftop solar installations. The MN Model Sustainable Development Ordinance recommends that active solar systems "shall be designed to blend into the architecture of the building or be screened from routine view from public rights-of way other than alleys." An apartment building with a flat roof may have a parapet that screens a rooftop solar energy system and is all that is necessary to reduce its visual impact. In other cases, solar panels may be integrated into the roof design to blend into the architecture of the building, with no screening at all.

For historic structures, the National Trust for Historic Preservation generally recommends taking each installation application case by case and looking at screening, minimizing the visual effect of the installation, and using materials that appear similar to others in use on the structure or in the area. For cities with certified local heritage preservation programs, this review is best done by the Heritage Preservation Commission, which is what is presently done in Minneapolis and Saint Paul.

The draft amendment to § 63.110(e) may prevent solar panels from being mounted at right angles to the roof on the front of a house if it can't be done in a way that is integrated into the roof design. But it would allow solar panels to be mounted at right angles to a roof on the back of a house or on an accessory structure in locations where they would have less visual impact.

The current language in § 63.110(e) about “mechanical equipment such as ductwork” on primary building facades does not apply to solar plumbing and solar electric runs, just as it does not apply to Xcel electric runs or rain gutter downspouts. There is no proposed amendment to this language, and it would continue not to apply to solar plumbing and solar electric runs.

#### Recommendation

Amend § 63.110(e) as proposed in the public hearing draft amendments.

## **2. Height**

### Summary

The public hearing draft amendments, in proposed new Sec. 65.921, solar energy system, contain specific regulations both for the height of building mounted solar energy systems and the height of freestanding solar energy systems. Building mounted systems would generally be treated as part of the building, subject to the dimensional standards that apply to the building itself, provided that building mounted systems in residential districts would not be allowed to extend above the ridge of a gable, gambrel, hip or mansard roof, and would not be allowed to extend more than 12 feet above the surface of a flat or shed roof. Freestanding systems would be subject to the height standards for accessory buildings, provided that in residential districts they would have a height limit of 12 feet within 10 feet of a property line, with additional height equal to additional setback to a maximum height of 20 feet. There was public testimony about the impact of these proposed height restrictions on the practical viability and economic feasibility of solar energy installations, with suggestions for changes to the draft regulations to facilitate the increased usage and viability of solar energy systems as called for in the Comprehensive Plan, consistent with the purpose of the Zoning Code and the Solar America Cities grant.

### Testimony

Ralph Jacobson, owner of Innovative Power Systems and president of Minnesota Solar Energy Industries Association, noted that limiting the height of building mounted systems in residential districts to the height of the roof ridge may be appropriate in some cases and not in others.

Daniel Williams, owner of Powerfully Green, talked about the necessity of meeting program guidelines for receiving state rebates and utility incentives, including size, angles, and southern orientation. Some cities allow additional height and going slightly above the roof ridge in some cases, particularly toward the rear of buildings and in such places as on accessory structures in rear yards that are less visible, which can facilitate meeting the program guidelines.

Terry Brueck, 2279 Summit, suggested that new § 65.921(a) should “allow solar panels on roofs in the rear of the property to extend above the ridge if not visible from the sidewalk on the front side of the property,” . . . “especially allow for roof mounted arrays on garages (or other out buildings on the rear of the property) to extend above the ridge. . .,” and “include allowances for solar panels that must be facing south.” He said increasing the maximum height of freestanding systems from 20 to 25 feet can improve the payback period of a system by as much as 30%.

James Darabi, Solar Farm, LLC, St. Paul, said a height of at least 15 feet (rather than 12 feet) is needed to provide for standard panels, three feet for snow shed, and optimal tilt angles for our latitude. He also expressed concern about the proposed 20-foot maximum height for freestanding systems in residential districts, and said a 24-foot height would allow for an economical panel size and wiring eight feet off the ground.

#### Analysis and response

The Minnesota model ordinance recommends that building mounted solar energy systems not exceed the height limit for the district. This allows more height for solar systems in zoning districts with higher height limits. In commercial and industrial districts it also allows more height for solar panels that are set back more, thereby limiting their visual impact. The draft amendments are consistent with this.

Minneapolis and Seattle allow solar energy systems to extend above the building height limit for the district. Minneapolis has a requirement that building mounted systems be setback one (1) foot from the exterior perimeter of a roof for every foot it extends above the parapet wall or roof surface, exempting systems that extend less than three feet above the roof surface. This standard reduces the visual impact of solar energy systems by limiting height at the edge of a roof where it would be most visible, and allows taller, more efficient and economically feasible systems further back from the roof edge, facilitating increased usage of solar energy systems as called for in the Comprehensive Plan.

Minneapolis allows building mounted solar energy systems to extend up to three feet above the roof ridge. Allowing this in residential districts in St. Paul for accessory buildings (which can't be in a required yard except a rear yard) and for principal structures when not readily visible from the front property line would help to facilitate the increased usage of solar energy systems as called for in the Comprehensive Plan, consistent with the purpose of the Zoning Code and the Solar America Cities grant.

The Minnesota model ordinance currently recommends that the height of freestanding systems not exceed 15 feet when oriented at maximum tilt, but based on experience and feedback the MPCA is planning to change this to 20 feet. Minneapolis and Ithaca have a 20 foot height limit. Roseville, CA simply limits freestanding systems to the height standards of the district.

Saint Paul limits accessory buildings in residential districts to 15 feet in height; building height is measured to the average height between eaves and roof ridge, so the ridge of accessory building roofs may commonly be 20 to 22 feet high. Accessory buildings in commercial and industrial districts are subject to the same height standards as principal structures. Allowing freestanding solar energy systems in residential districts to be up to 15 feet high within 10 feet of an interior property line and up to 25 feet high with additional setback equal to the additional height would be consistent with this and with standards in other similar cities.

#### Recommendation

Amend proposed new Sec. 65.921, solar energy system, to read as follows:

##### **Sec. 65.921. Solar energy system.**

##### **Standards and conditions:**

- (a) Building mounted systems shall be subject to the dimensional standards that apply to the building, provided that the height standards for building mounted systems in residential districts shall be as follows:**
  - (1) The system shall extend no more than three (3) feet above the surface of a roof at its exterior perimeter, and shall be set back at least one (1) foot from the exterior perimeter for every additional foot that the system extends above the height of the roof at its exterior perimeter;**
  - (2) The system shall not extend above the ridge of a gable, gambrel, hip or mansard roof, except that it may extend up to three (3) feet above the ridge of an accessory building, and**

may extend up to three (3) feet above the ridge of a principal building when not readily visible from the front property line.

(b) Freestanding systems shall be treated as accessory buildings for the purpose of maximum height, maximum lot area coverage, and location requirements; provided that freestanding systems in residential districts shall not exceed fifteen (15) feet in height within ten (10) feet of an interior property line, except for a property line along an alley, with additional height equal to additional setback from property lines permitted to a maximum height of twenty-five (25) feet.

### **3. Setbacks**

#### Summary

The public hearing draft amendments, in proposed new Sec. 65.921, solar energy system, use the building setback standards that apply to the building for solar energy systems mounted on a building, and apply setback and locational standards for accessory buildings to freestanding solar energy systems. For freestanding systems in residential districts, the public hearing draft relates setback to system height, with a height limit of 12 feet within 10 feet on a property line and additional height equal to additional setback to a maximum of 20 feet.

#### Testimony

Terry Brueck, 2279 Summit, suggested changing the setback requirement that relates to the height of freestanding systems in residential districts to pertain just to setbacks from adjacent residential property.

Daniel Williams, owner of Powerfully Green, said the setback requirement that relates to the height of freestanding systems in residential districts should not apply to setbacks along alleys, where systems for “solar car ports” and on garages would need to be more than 12 feet high.

#### Analysis and response

The setback requirements for buildings help to ensure adequate light and air to adjacent property, a purpose of the Zoning Code. § 63.501(b) of the code requires that “accessory buildings, structures or uses shall not be erected or established in a required yard except a rear yard. All of the compared cities prohibit freestanding solar energy systems in a required front yard and apply the requirements for accessory uses. Allowing taller freestanding solar energy systems along alleys would help to facilitate the increased usage of solar energy systems as called for in the Comprehensive Plan, consistent with the purpose of the Solar America Cities grant and stated purposes in the Zoning Code both to ensure adequate light and air to adjacent property and “to promote the conservation of energy and the utilization of renewable energy resources.”

#### Recommendation

Amend proposed new Sec. 65.921(b) to apply the setback requirement that relates to the height of freestanding systems in residential districts only to setbacks from interior property lines, except for property lines along an alley, as in revised draft Sec. 65.921(b) above.

### **Recommendations**

The Neighborhood Planning Committee recommends that solar energy systems continue to be permitted in all zoning districts as an accessory use, with building mounted systems subject to the dimensional standards that apply to the building, and freestanding systems subject to the standards that apply to accessory structures. “*Solar energy system*” should be specifically added to the accessory uses listed under Article VII, 65.900, Accessory Uses, to clarify this, and to clarify that ground-mounted freestanding solar energy systems are treated as accessory *buildings* for the purpose of maximum height, maximum lot area coverage, and location requirements. The committee recommends the language in proposed new Sec. 65.921 below, responding to issues raised and



suggestions made in public hearing testimony, to add some practical detail to solar energy system regulation in residential districts and help facilitate the increased usage of solar energy systems as called for in the Comprehensive Plan, consistent with the purpose of the Solar America Cities grant and stated purpose in the Zoning Code “to promote the conservation of energy and the utilization of renewable energy resources.”

The committee also recommends consideration of the double underlined sentence in the draft amendments below, so that solar energy systems on roofs of traditional narrow commercial buildings immediately next to other commercial buildings, where the systems would not be visible from the street, are not unduly restricted. The 15 foot height is based on testimony from solar installers to provide for standard panels, 3 feet for snow shed, and optimal tilt angles for our latitude.

The Neighborhood Planning Committee recommends amending Sec. 63.110(e) as noted below to apply this general design standard for rooftop equipment to solar energy systems that are not mechanical systems, and help make it clear that § 63.110(e) doesn't require screening to reduce *visibility* of rooftop equipment, but rather requires reducing the *visual impact*, which can be done through such things as location and integration into the roof design as well as by screening.

### **Recommended Zoning Code Amendments**

#### **Sec. 63.110. Building design standards.**

- (e) The ~~visibility~~ visual impact of rooftop ~~mechanical~~ equipment shall be reduced through such means as location, screening, or integration into the roof design. Screening shall be of durable, permanent materials that are compatible with the primary building materials. Exterior mechanical equipment such as ductwork shall not be located on primary building facades.

#### **Sec. 65.921. Solar energy system.**

##### Standards and conditions:

- (a) Building mounted systems shall be subject to the dimensional standards that apply to the building, provided that the height standards for building mounted systems in residential districts shall be as follows:

- (1) The system shall extend no more than three (3) feet above the surface of a roof at its exterior perimeter, and shall be set back at least one (1) foot from the exterior perimeter for every additional foot that the system extends above the height of the roof at its exterior perimeter;
- (2) The system shall not extend above the ridge of a gable, gambrel, hip or mansard roof, except that it may extend up to three (3) feet above the ridge of an accessory building, and may extend up to three (3) feet above the ridge of a principal building when not readily visible from the front property line.

For systems mounted on a commercial or industrial building within five (5) feet of a commercial or industrial building on an adjoining lot, a system that does not conform to the height standards that apply to the building may extend up to fifteen (15) feet above the surface of a flat roof along the common property line.

- (b) Freestanding systems shall be treated as accessory buildings for the purpose of maximum height, maximum lot area coverage, and location requirements; provided that freestanding systems in residential districts shall not exceed fifteen (15) feet in height within ten (10) feet of an interior property line, except for a property line along an alley, with additional height equal to additional setback from property lines permitted to a maximum height of twenty-five (25) feet.

#### **Sec. 65.9224. Support services in housing for the elderly.**

## **October 19, 2011 Amendments**

An ordinance amending Legislative Code Chapters 63 and 65 pertaining to solar energy systems

WHEREAS, on February 24, 2010, the City Council adopted Policy LU-3.19 in the Saint Paul Comprehensive Plan calling for study of “tools, techniques, and regulations to facilitate increased usage of solar energy systems, either as standalone systems or as supplements to conventional energy sources;” and

WHEREAS, Section 60.103(k) of the Zoning Code states that a purpose of the Zoning Code is “to promote the conservation of energy and the utilization of renewable energy resources;” and

WHEREAS, Section 61.801(b) of the Zoning Code authorizes the Saint Paul Planning Commission to initiate amendments to the code; and

WHEREAS, on April 1, 2011, the Planning Commission initiated a study to consider Zoning Code text amendments to facilitate the increased usage and viability of solar energy systems; and

WHEREAS, on July 8, 2011, the Planning Commission held a public hearing on draft solar energy systems text amendments to clarify and add some detail to regulations that apply to solar energy systems; and

WHEREAS, the Planning Commission considered the public testimony and recommendations of the Neighborhood Planning Committee on the proposed amendments to Chapters 63 and 65 of the Zoning Code and made its recommendations to the Mayor and City Council on September 16, 2011; and

WHEREAS, a public hearing before the City Council having been conducted on October 19, 2011 at which all interested parties were given an opportunity to be heard, the Council having considered all the facts and recommendations concerning the amendments; NOW THEREFORE,

THE COUNCIL OF THE CITY OF SAINT PAUL DOES HEREBY ORDAIN

### **Section 1**

That Legislative Code Chapter 63 Zoning Code – Regulations of General Applicability is hereby amended as follows:

#### **Sec. 63.110. Building design standards.**

- (e) The ~~visibility~~ visual impact of rooftop ~~mechanical~~ equipment shall be reduced through such means as location, screening, or integration into the roof design. Screening shall

be of durable, permanent materials that are compatible with the primary building materials. Exterior mechanical equipment such as ductwork shall not be located on primary building facades.

## Section 2

That Legislative Code Chapter 65 Zoning Code – Land Use Definitions and Standards is hereby amended as follows:

### **Sec. 65.921. Solar energy system.**

#### Standards and conditions:

(a) Building mounted systems shall be subject to the dimensional standards that apply to the building, provided that the height standards for building mounted systems in residential districts shall be as follows:

(1) The system shall extend no more than three (3) feet above the surface of a roof at its exterior perimeter, and shall be set back at least one (1) foot from the exterior perimeter for every additional foot that the system extends above the height of the roof at its exterior perimeter;

(2) The system ~~shall not may~~ extend ~~up to three (3) feet~~ above the ridge of a gable, gambrel, hip or mansard roof. ~~, except that it may extend up to three (3) feet above the ridge of an accessory building, and may extend up to three (3) feet above the ridge of a principal building when not readily visible from the front property line.~~

For systems mounted on a commercial or industrial building within five (5) feet of a commercial or industrial building on an adjoining lot, a system that does not conform to the height standards that apply to the building may extend up to fifteen (15) feet above the surface of a flat roof along the common property line.

(b) Freestanding systems shall be treated as accessory buildings for the purpose of maximum height, maximum lot area coverage, and location requirements; provided that freestanding systems in residential districts shall not exceed fifteen (15) feet in height within ten (10) feet **of a parkway or** an interior property line, except for a property line along an alley, with additional height equal to additional setback from property lines permitted to a maximum height of twenty-five (25) feet.

### **Sec. 65.922~~1~~. Support services in housing for the elderly.**

## Section 3

This ordinance shall become effective thirty (30) days after its passage, approval, and publication.