

Exhibit A1 – 2009 LAND USE CODE AMENDMENTS
Alternative Energy Systems

EXHIBIT A1	<p>A1(a). <u>IMC 18.02 Definitions</u></p> <ol style="list-style-type: none">1. IMC 18.02.030 Definitions – A: adding definitions for various types of Alternative Energy Systems.2. IMC 18.02.090 Definitions – G: adding definition reference.3. IMC 18.02.210 Definitions – S: adding definition references.4. IMC 18.02.250 Definitions – W: adding definition reference. <p>A1(b). <u>IMC 18.06.130 Table of Permitted Uses</u>, expressly permitting Wind and Solar Alternative Energy Systems in certain zones and setting the level of review.</p> <p>A1(c). <u>IMC 18.07 Required Development and Design Standards</u>,</p> <ol style="list-style-type: none">1. IMC 18.07.060 Building Height: add a new height exception from height limits for solar panels or arrays, subject to certain restrictions.2. IMC 18.07.137 Alternative Energy Systems: add a new section governing Alternative Energy Systems.
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SUMMARY

Amendments are proposed to the IMC to address various alternative energy systems. The proposal would explicitly allow solar panel systems and “geothermal” heat pump-type systems in all zoning districts. This would be achieved by defining geothermal alternative energy installations as accessory uses and making solar panels an exception to height limits by amending Chapter 18.04 IMC – Definitions, IMC 18.06.130 – Table of Permitted Uses, and Chapter 18.07 IMC – Required Development and Design Standards.

Solar panels would be added as an exception to the height limit, subject to restrictions. No determination is made as to whether solar panels would heat water for heating purposes or generate electrical power, so as to allow either type. Panels under 6 square feet in size would be exempt under the definition to allow for solar-powered driveway lights, parking meters, lighted signs, etc.

Geothermal systems are in reference to “ground-source heat pumps” or other types of heat pumps that utilize a medium other than the air for heat transfer. These systems have the advantage of requiring only electricity to circulate fluid through the system to provide heating and/or cooling for a structure, rather than burning fossil fuels such as natural gas or heating oil. The systems are extremely efficient and are relatively straightforward to install. There are two primary types of ground-source heat pump systems: the shallow/horizontal and the deep-bore/vertical. Shallow systems require the clearing and excavation of several thousand square feet of land to bury a series of pipes for heat transfer, while the deep-bore systems require the drilling of a well to serve the same purpose. Deep-bore systems have the advantage of being

buildable on space-constrained sites, such as in urban areas. Such systems would be prohibited in the Class 1 Critical Aquifer Recharge Areas (CARAs) to protect against any potential impacts which may result from well drilling within these areas. Alternately, a similar system may be installed within a body of water to utilize heat transfer with the water. Several such systems have been installed in Lake Sammamish in the Greenwood Point/South Cove neighborhood to date. The purpose of the proposal is to explicitly allow geothermal heat pump systems and to ensure the city adequately reviews them.

Wind turbines would be allowed as an accessory use as demonstration projects only, in certain commercial and community facilities zones. They would be reviewed under the Level 2 process to ensure all potential impacts are adequately addressed. Wind turbines would be restricted in size to small wind turbines, not large utility-scale systems.

Installation of any power-generating system, such as solar photovoltaic or wind, would require an applicant to acquire appropriate permits and also the approval of the electrical utility provider, Puget Sound Energy (PSE). PSE has an interest in maintaining the integrity of their electrical power grid. While extremely unlikely, PSE may deny approval to install grid-connected power-generating systems if such a system does not meet their requirements. Failure to meet PSE requirements would likely also mean such a system would not meet National Energy Code requirements. City staff would work with PSE and the applicant in such a case to resolve any issues.

Exhibit A1(a): IMC 18.02 Definitions

Purpose of Amendment: Add definitions and definition references for Alternative Energy Systems.

1: IMC 18.02.030 Definitions – A

Add definitions for various Alternative Energy Systems

18.02.030 Definitions – A.

Abandon/abandonment... Alteration, structural: (no changes)

Alternative Energy System: Equipment used to generate thermal and/or electrical energy from non-utility sources.

Alternative Energy System (Geothermal): Equipment that transfers thermal energy to and/or from the ground for the purposes of heating and/or cooling a building. An Alternative Energy System (Geothermal) consists of a closed-loop system of pipes filled with liquid, a heat exchanger, and heat pump.

Alternative Energy System (Solar): Equipment that converts and then transfers or stores solar energy into usable forms of thermal or electrical energy. A solar array is composed of multiple solar panels. For the purposes of this code, an Alternative Energy System (Solar) does not include any solar collection system of six (6) square feet in size or less.

Alternative Energy System (Wind): Equipment used to produce electricity by converting the kinetic energy of wind to rotational, mechanical and electrical energy. An Alternative Energy System (Wind) may consist of the turbine apparatus (rotor, nacelle and tower) and any other buildings, support structures, or other related improvements necessary for the generation of electric power.

Amendment, major:... (no changes)

2: IMC 18.02.090 Definitions – G

Add definition reference for Geothermal Alternative Energy System.

18.02.090 Definitions – G.

Gable:... Geotechnical exploration: (no changes)

Geothermal Alternative Energy System: see Alternative Energy System (Geothermal).

Glare:... (no changes)

3: IMC 18.02.210 Definitions – S

Add definition references for Solar Array, Solar Panel, and Solar Alternative Energy System.

18.02.210 Definitions – S.

Satellite dish:... Social services/nonprofit organizations: (no changes)

Solar Alternative Energy System: See Alternative Energy System (Solar).

Solar Array: Alternative Energy System (Solar).

Solar Panel: See Alternative Energy System (Solar).

Special event:... (no changes)

4: IMC 18.02.250 Definitions – W

Add definition reference for Wind Turbine.

18.02.210 Definitions – W.

Walkway:... Wholesale trade: (no changes)

Wind Turbine: See Alternative Energy System (Wind).

Window, drive-through: (no changes)

Exhibit A1(b): IMC 18.06.130 Table of Permitted Land Uses

Purpose of Amendment: Expressly permit Alternative Energy Systems in certain zones and set the level of required review.

Land Uses	ZONING DISTRICTS																
	CONSERVANCY/ RECREATION	RESIDENTIAL								COMMERCIAL				FACILITIES			MIN
	C-Rec	C-Res	SF-E	SF-S	SF-SL	SF-D	MUR	MF-M	MF-H	PO	CBD	R	IC	CF-F	CF-R	CF-OS	M
ACCESSORY & TEMPORARY (Continued)																	
Accessory Structures/Uses ¹																	
- <u>Alternative Energy System - Solar</u>		0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
- <u>Alternative Energy System – Wind (Demonstration Project)</u> ⁹										2		2	2	2	2		2
- Automobile Service Station	<i>See Automotive, Automotive Service Station</i>																
- Automatic Teller Machine (ATM)							1	2	2	1	1	1	1	1			
- Columbarium (Ex. An accessory to a church) ⁷		1	1	1	1	1	1	1	1	1	1	1	1				1
- Day Care Center							2	2	2	1	1	1	1	2			
- Drive-Through Window or Station Facility with any permitted use (<i>unless noted otherwise within this table</i>)										2	3 ⁸	1	1	2			
- Hazardous Waste Storage													3	3			

and/or Treatment Facilities, On-Site ²																		
- Heliport/Helipad/Helistop										3		3	3	3				
DISTRICT KEY: C-Rec = Conservancy Recreation C-Res = Conservancy Residential SF-E = Single Family Suburban Estates (1.24 du/acre) SF-S = Single Family Suburban (4.5 du/acre)	SF-D = Single Family Duplex (7.26 or 14.52 du/acre) SF-SL = Single Family Small Lot (7.26 du/acre) MUR = Mixed Use Residential MF-M = Multifamily Medium Density (14.52 du/acre) MF-H = Multifamily High Density (29 du/acre)	PO = Professional Office CBD = Cultural and Business District R = Retail Commercial IC = Intensive Commercial M = Mineral Resource			CF = Community Facilities CF-OS = Open Space CF-R = Recreation CF-F = Facilities													

FOOTNOTES KEY:

¹ Accessory structures/uses may only be permitted as “accessory” to a principal use on a site. Accessory uses, which are external to the building with the primary use, shall be reviewed according to the level established by this table regardless of the street frontage or size of site. Accessory uses within the existing building only need a Level 0 Review, except those accessory uses which require a Level 3 Review.

² RCW 70.105.225 requires all local governments to designate zones for these facilities, according to state siting criteria. These facilities are prohibited in Class 1, 2 and 3 CARA. Aboveground storage tanks for hazardous substances or hazardous waste with primary and secondary containment area and spill protection plan are allowed in Class 1, 2 and 3 CARA subject to compliance with federal and state standards. Processing, storage and disposal of radioactive substances (except certain medical uses) is prohibited in Class 1, 2 and 3 CARA.

³ Temporary buildings and/or uses shall be reviewed according to the level established by this table regardless of the street frontage or size of site. Temporary buildings or structures are required to meet the screening requirements for outdoor display unless that use is a seasonal agricultural vendor, such as a produce stand or Christmas tree stand. Outdoor storage areas for temporary buildings or structures shall meet the screening requirements in the Design Criteria Checklist.

⁴ Dishes over twenty (20) inches in diameter require review. IMC 18.07.505, Wireless communication facilities, may also apply.

⁵ Permitted in retail districts; however, only permitted on Gilman Blvd. west of SR 900 due to the Gilman Boulevard Parkway Park and Recreation Facility.

⁶ No review required for accessory outdoor retail display or sidewalk sales; however, the display must meet the approval criteria in IMC 18.07.540

⁷ No additional parking is required for a columbarium when it is accessory to a church/religious facility.

⁸ Only accessory vending stands and office/professional/financial uses are permitted with drive-throughs in the CBD District. All others are prohibited.

⁹ Only as an accessory use, see IMC 18.07.137 Alternative Energy Systems.

PERMITTED USE & LEVEL OF REVIEW KEY:

0 = Level 0 Review; 1 = Level 1 Review*; 2 = Level 2 Review*; 3 = Level 3 Review, regardless of size/location of parcel; NO NUMBER = NOT PERMITTED

*Level 3 Review required if Level 1 or 2 proposal is ≥ three (3) acres and < fifteen (15) acres; Level 3 Review is also required for Level 1 or Level 2 proposals located on Front St., Sunset Way, NW Maple St., Newport Way, Gilman Blvd. (east of SR 900); SR 900; NW Sammamish Rd.; East Lake Sammamish Parkway (ELSP); SE 56th Street west to one thousand two hundred (1,200) feet east of ELSP, Issaquah-Fall City Road, Issaquah-Pine Lake Road SE, 228th Avenue SE, SE 43rd Way, West Lake Sammamish Parkway (WLSP) or any street or street segment that abuts and is generally parallel to Interstate 90 (I-90), or the site abuts I-90; see Chapter 18.04 IMC for details on levels of review; provided, that this provision shall not apply to property subject to the IMC 18.19.030 Olde Town Design Standards. The level of review designated on the Table of Permitted Uses is required for property subject to the Olde Town Design Standards.

*Level 5 Review required if project is > fifteen (15) acres.

Well Head Protection: Any zoning districts within the well head protection area may preclude or condition some permitted uses as established in this table.

Critical Aquifer Recharge Areas – Any proposed uses within critical aquifer recharge areas that have the potential to degrade water quality in the CARA may be prohibited, or conditioned as established in IMC 18.10.796.

Exhibit A1(c): IMC 18.07 Required Development and Design Standards

Purpose of Amendment: Providing for installation of certain Alternative Energy Systems and establishing development standards for Alternative Energy Systems.

1: IMC 18.07.060 Building Height

Add a new subsection exempting solar panels from height limits, subject to certain restrictions

18.07.060 Building Height

- A. Purpose: The purpose of the building height standard is to balance lot size, building bulk, and open space area, and ensure compatibility of architectural character and scale with the surrounding area.
- B. Measuring Height:
 - 1, 2, 3...(no changes)
 - 4. Height Exceptions: The following uses and features shall not be subject to height limitations and are not required to be reviewed through an Administrative Adjustment of Standards, provided they are necessary and architecturally integrated:
 - a. Water towers;
 - b. Power transmission towers;
 - c. Chimneys and smoke stacks to the minimum required by the Building Code;
 - d. Flag poles;
 - e. Wireless communication towers, including telescoping antenna (except those towers regulated in residential districts). See Table of Permitted Uses (IMC 18.06.130);
 - f. Scenery lofts and flytowers;
 - g. Mechanical penthouse or ornamental screening for rooftop heating, ventilating, and air conditioning equipment, and stair towers (to the minimum required by the Building Code);
 - h. Elevator shafts to the minimum required by Code;
 - i. Solar panels or arrays, provided all the following criteria are met:
 - (1) The solar panel or array is not within a required setback, or on a structure within a required setback;
 - (2) The height of the solar panel or array is the minimum necessary to generate usable energy;
 - (3) The solar panel or array shall not cause excessive glare or reflections so as to constitute a hazard to pedestrians and/or vehicular traffic;
 - (4) The support structure of a roof-mounted solar panel or array is screened by extended parapets or other architecturally-integrated screening; and
 - (5) The solar panel or array complies with the approval criteria in IMC 18.07.137 – Alternative Energy Systems;
 - ±j. Architectural pediments which do not provide additional floor space to a building/structure and other uses or features in which the increased height is necessary for proper building use or function. Approval of the additional height for architectural pediments and other uses or features shall be granted, provided all the following criteria are met:
 - (1) The height and bulk of architectural pediments are consistent with the scale and design of the building;

- (2) The visual character of the building bulk and height are compatible and consistent with the surrounding area and the natural skyline of Issaquah;
- (3) The adjustment of the height will be equal to or superior in fulfilling the purpose of the height requirements;
- (4) The height shall not exceed the limitations of the Shoreline Management Program;
- (5) If the wall plane of a building for which signage is proposed increases in height, the wall area used in determining the area of a sign shall not include the additional wall area of the architectural pediment or feature. The architectural pediment shall not be covered with any signage; and
- (6) Buildings with architectural pediments shall not be required to provide any additional pervious surface for the additional height increase as a result of the use of such pediment(s).

2: IMC 18.07.137 Alternative Energy Systems

Add development standards for Alternative Energy Systems to the Accessory Use section of the IMC.

18.07.137 Alternative Energy Systems

A. Purpose and Intent: This section is established to:

1. Promote clean energy production by citizens and businesses;
2. Ensure that alternative energy structures are compatible with the principal structure and development on adjacent properties;
3. Provide options to traditional energy use; and
4. Promote reduction of energy use within the City.

B. General Approval Criteria: Alternative energy systems shall meet all of the following criteria:

1. Setbacks: Alternative energy systems shall not be located within any building setback or required setback.
2. Compliance with International Building Code: Any installation of an alternative energy system shall comply with any and all applicable provisions of the International Building Code.
3. Compliance with National Electric Code: Any installation of an alternative energy system shall comply with any and all applicable provisions of the National Electric Code.
4. Utility Notification: No alternative energy system shall be installed unless evidence has been provided to the City of Issaquah that the utility company has been informed of the customer's intent to install an interconnected customer-owned power generation system. Off-grid systems shall be exempt from this requirement.

C. Geothermal Alternative Energy Approval Criteria: In addition to the approval criteria established in subsection (B) of this section, geothermal alternative energy systems shall comply with the following standards:

1. Location:

- a. Ground-source: Geothermal Alternative Energy Systems (geothermal systems) shall be located entirely within the subject property, or within appropriate easements.
- b. Water-source: The heat-exchanger part of a geothermal system may be located within Lake Sammamish. No portion of a geothermal system shall be located within a stream.

2. Critical Aquifer Recharge Area: Geothermal systems within the Critical Aquifer Recharge Area (CARA) shall comply with all requirements of IMC 18.10.796 – Critical Aquifer Recharge Areas (CARAs). Vertical or deep-bore geothermal systems are not permitted within Class 1 CARAs.
 3. Installation: Installation of geothermal systems shall comply with all Building Department requirements, and applicable state laws and codes.
 4. System Design: Open-loop geothermal systems are prohibited.
- D. Wind Alternative Energy Approval Criteria: In addition to the approval criteria established in subsection (B) of this section, wind alternative energy systems shall comply with the following standards:
1. Purpose: Wind Alternative Energy Systems (wind turbines) are allowed as an educational demonstration project to determine how the use of small wind turbines may affect the demonstration project site, surrounding properties, and the city as a whole.
 2. Location: Wind turbine demonstration projects shall be located only in zones where expressly permitted by IMC 18.06.130 Table of Permitted Land Uses. Wind turbines shall not be located in residential zones.
 3. Setbacks: Wind turbine demonstration projects shall be setback a minimum of one hundred (100) feet from the property line of any existing residential use.
 4. Size of system: The maximum diameter of rotor blades shall be no more than ten (10) feet.
 5. Clearance of Blades: No part of a wind turbine shall extend within fifteen (15) feet of the ground. No blades shall extend over parking areas, driveways, or sidewalks.