



BOUNTIFUL

City of Beautiful Homes and Gardens

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CITY MANAGER
GARY R. HILL

Memo

Date: November 17, 2015
To: Administrative Committee
From: Andy Hulka, Assistant Planner
Re: Staff Report for the Administrative Committee Meeting on Monday, November 23, 2015

Overview

5. **PUBLIC HEARING** - Consider approval of a Conditional Use Permit to allow for Solar Panels at 281 West 2400 South, Bernell Loveridge, applicant.

Item #5

Background

The property where the solar panels are to be installed is located in the (R-4) Single Family Zone. Solar power panels are classified in the city ordinance as "private power plants" and require a conditional use permit if they are over 10 watts. The applicant has indicated that the photovoltaic system to be installed will produce 4.95 kilowatts (4,950 watts), requiring a conditional use permit. On August 26, 2013 the Administrative Committee approved a conditional use permit (#2013-23) for an array on the detached garage at the property. The permit was for a 12-panel array that was approximately 240 square feet and 3.06 kilowatts (3,060 watts). The total rating of the existing system and the new system combined would be 8.01 kilowatts (8,010 watts), which is lower than the maximum 10 kilowatts.

Findings

The application submitted indicates the proposed installation of 1 photovoltaic array with a total of 18 panels. The new array will occupy approximately 308.6 square feet, bringing the total coverage to approximately 548 square feet when combined with the existing array, which is smaller than the 50% maximum roof coverage. The south facing roof will have 16 panels, with 5 panels on the lower row and 13 panels on the upper row. The panels will be connected to the roof by a Snap N Rack roof mount system. The roof is of truss construction, has a slope of 3/12, and is less than two years old. A review of information provided in the application indicates that all engineering requirements for the construction of solar panels in Bountiful City will be met. A reflection analysis of the roof pitch indicates that photovoltaic panels should not produce a reflection nuisance to surrounding properties.

Staff Recommendation

Based on the findings, staff has determined that the applicant would comply with all requirements for the conditional use permit. Staff recommends approval of the conditional use permit with the following conditions:

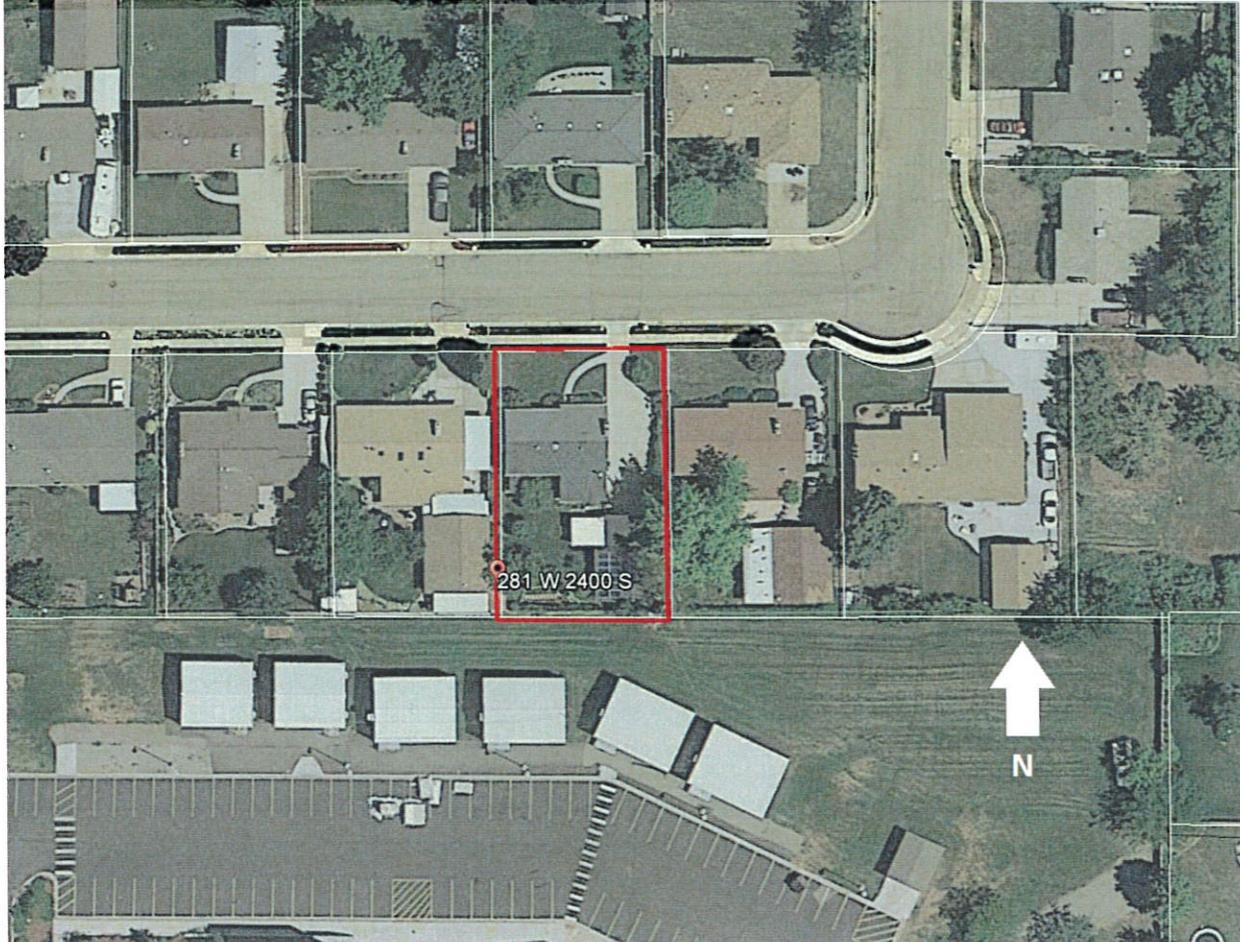
1. The applicant shall obtain a building permit.
2. The panels must be installed only as proposed in the application.
3. This conditional use permit is solely for this site and is non-transferable.

Bountiful Land Use Ordinance

14-14-126 PRIVATE POWER PLANTS

- A. A "Private Power Plant" is any device or combination of devices not owned and operated by a regulated utility company, which convert mechanical or chemical energy into electricity. A private power plant with a peak power generation capacity of 10 Watts/12v/500mAmp (or equivalent) is exempt from the provisions of this Section. A private power plant, including a windmill or wind turbine, shall not be permitted within Bountiful City limits, with the following exceptions:
1. A back-up power generator running on unleaded gasoline, diesel, natural gas, propane, or hydrogen fuel cell, rated for a single structure or building lot, located in accordance with the requirements of the zone in which it is located.
 2. A photovoltaic cell array or other passive solar energy system located in accordance with the requirements for occupied structures for the zone in which it is located.
- B. With the exception of a back-up power generator, no private power plant may be installed or used on any property unless a conditional use permit has been issued for the specific power generation device.
- C. A private power plant is not exempt from the height requirements of the Zone in which it is located, and shall be considered an occupied structure for the purposes of calculating height.
- D. Solar energy design standards and requirements
1. Solar energy panels or collectors that are mounted to the roof shall:
 - a. Not extend beyond the roofline.
 - b. Not reflect sunlight onto neighboring windows or rights-of-way.
 - c. Not exceed fifty (50) percent of the total roof area.
 - d. Shall be maintained in good condition.
 2. Prior to installation, use, and connection to the grid, the following shall be done:
 - a. A Conditional Use Permit shall be issued
 - b. A Building Permit shall be issued
 - c. The Power Department shall approve the application for net metering
 - d. The Power Department shall approve the physical installation

281 W 2400 S



Nov 23

CONDITIONAL USE PERMIT APPLICATION

Date of Submittal: Nov 18, 2015

Property Address: 281 West 2400 South

Applicant Name: Bernell Loveridge

Applicant Address: 1953 W 2425 S Woods Cross, UT 84087

Applicant Phone #: 801-298-5255

Applicant Email: peggy@imwindandsolar.com

1. Items that shall be included with any Conditional Use Permit application:

- a. A completed Bountiful City Application for Conditional Use Permit cover sheet (this document).
- b. Payment of Filing Fee (\$200 P.C. / \$50 A.C.)
- c. If the conditional use permit is to be approved by the Planning Commission, a mailing list of all property owners within three hundred feet (300') of the subject property boundaries based on the most recent Davis County Tax Assessment records, submitted on self-adhesive mailing labels. Items heard by the Administrative Committee do not require mailing labels.
- d. If the conditional use permit requires site plan review, two (2) full sized, and one (1) 11x17 copy or one (1) .PDF file, of the proposed site plan drawn at 1:10 scale or as required by the City Engineer and City Planner. A site plan shall include:
 - i. A north arrow, the scale of the drawing, and the date of the drawing.
 - ii. Street names and addresses.
 - iii. Property lines with dimensions.
 - iv. All sidewalks, driveways, curbs and gutter, and parking areas.
 - v. All existing easements, rights-of-way, and any other restrictions on the use of the property.
 - vi. Existing buildings, proposed buildings, and other significant features on the site.
 - vii. Existing buildings and significant features located on adjacent properties within 50 feet (50') of the subject property boundaries
 - viii. When required by the City Planner or City Engineer, and for all new construction, a survey including both existing and proposed contours of the land at intervals of two feet (2') or better.

- e. Typed responses to the following questions:
 - i. How does your proposed project fit in with surrounding properties and uses?
 - ii. What will you do to mitigate the potential conflicts with surrounding properties and uses?

2. Property Owner Authorization and Affidavit

The undersigned, being duly sworn, depose that I am (we are) the owner(s) or authorized agent(s) of the owner(s) of the property involved in this application and that the statements contained herein or by attachment, are to the best of my (our) knowledge true and correct.

Bernad Loweridge
 Owner/Agent: 11/10/2015

Nancy Loweridge
 Owner/Agent: 11-10-15

Bountiful City
 Miscellaneous - 6060 - 2016
 003027-0003 Darlene B 11/10/2015 04:04PM
 PLAN - Land Use Application
 Payment Amount: 50.00
 Transaction Amount: 50.00
 CHECK: 011317



MAYOR
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CITY COUNCIL
Kendalyn Harris
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Beth Holbrook
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John Pitt
CITY MANAGER
Gary Hill

SOLAR PANEL QUESTIONS

Please completely answer all questions (do not simply refer to an attachment)

Size of Array	
Array Dimensions	65.94 X 37.44
Total Number of Panels	18
Total rating of photovoltaic system:	4.95 KW
Mounting Location	
Roof/Wall/Other	Roof
Roof Pitch (Rise/Run e.g. "5/12")	3/12
Roofing Material Asphalt Shingle/Tile/Steel/Other Age & Condition of Shingles	Ashpalt Shingle 2014
Roof Construction Rafter/Truss/Joist	Truss
Engineering Analysis	
Connection to Roof	Snap N Rack 3.5 X 5/8 Lag Screw
Analysis of Existing Roof Structure with added Solar Equipment	It is our conclusion that the installation of solar panels on this existing roof will not adversely affect the structure of this house. The design of the solar panel supporting members and connections is by the manufacturer and/or installer.
Adequate Uplift Resistance (120 mph Exp B)	YES



UTAH OFFICES
Sandy
Layton
St. George

Project Number: U1678-0288-151

October 14, 2015

Intermountain Wind and Solar
1953 West 2425 South
Woods Cross, UT 84087

ATTENTION: Ryan Shaw

REFERENCE: **Bernell Loveridge Residence: 281 W. 2400 S. , Bountiful, Utah 84010
Solar Panel Installation**

Dear Mr. Shaw:

Per your request, we have reviewed photos relating to the installation of solar panels at the above-referenced site.

Based upon our review, it is our conclusion that the installation of solar panels on this existing roof will not adversely affect the structure of this house. The design of the solar panel supporting members and connections is by the manufacturer and/or installer. The adopted building code in this jurisdiction is the 2012 International Building Code and ASCE 7-10. Appropriate design parameters which must be used in the design of supporting members and connections are listed below:

- Ground snow load: 43 psf per Utah amendments to the IBC (verify with local building department)
- Design wind speed for risk category II structures: 155 mph (3-sec gust)
- Wind exposure: Category C

If using documents referencing ASCE 7-05, the design wind speed may be converted to an ASCE 7-05 equivalent of 120 mph, Exposure C.

Our conclusion regarding the adequacy of the existing roof is based on the fact that the additional weight related to the solar panels is less than 3.5 pounds per square foot. In the area of the solar panels, no 20 psf live loads will be present. Regarding snow loads, it is our conclusion that since the panels are slippery and dark, effective snow loads will likely be reduced in the areas of the panels. Regarding wind loads, we conclude that any additional forces will be negligible due to the low profile of the flush-mounted panel system. Regarding seismic loads, we conclude that any additional forces will be small. With an assumed roof dead load of 15 psf, solar panel dead load of 3 psf, and affected roof area of 40% (maximum), the additional dead load (and consequential seismic load) will be 8.0%. This calculation conservatively neglects the weight of wall dead load. Because the increase is less than 10%, this alteration meets the requirements of the exception in Section 807.5 of the 2012 International Existing Building Code. Thus the existing structure is permitted to remain unaltered.

During design and installation particular attention must be paid to the maximum allowable spacing of attachments and the location of solar panels relative to roof edges. The use of solar panel support span tables provided by the manufacturer is allowed only where the building type, site conditions, and solar panel configuration match the description of the span tables. Attachments to existing roof joist or rafters must be staggered so as not to over load any existing structural member. Waterproofing around the roof penetrations is the responsibility of others. All work performed must be in accordance with accepted industry-wide methods and applicable safety standards. Vector Structural Engineering assumes no responsibility for improper installation of the solar panels.

Please note that we have reviewed photos taken of the existing roof framing, but a representative of Vector Structural Engineering has not physically observed the roof framing of this home. Our conclusions are based upon our review of the photos and the assumption that all structural roof components and other supporting elements are in good condition and are sized and spaced such that they can resist standard roof loads.

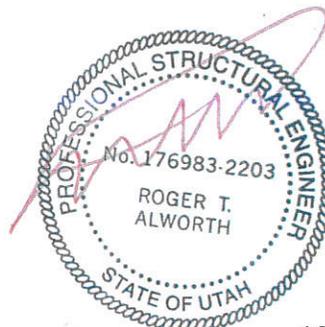
Very truly yours,

VECTOR STRUCTURAL ENGINEERING, LLC

Roger T. Alworth, S.E.
Principal

Enclosure

RTA/lcs



10/14/2015

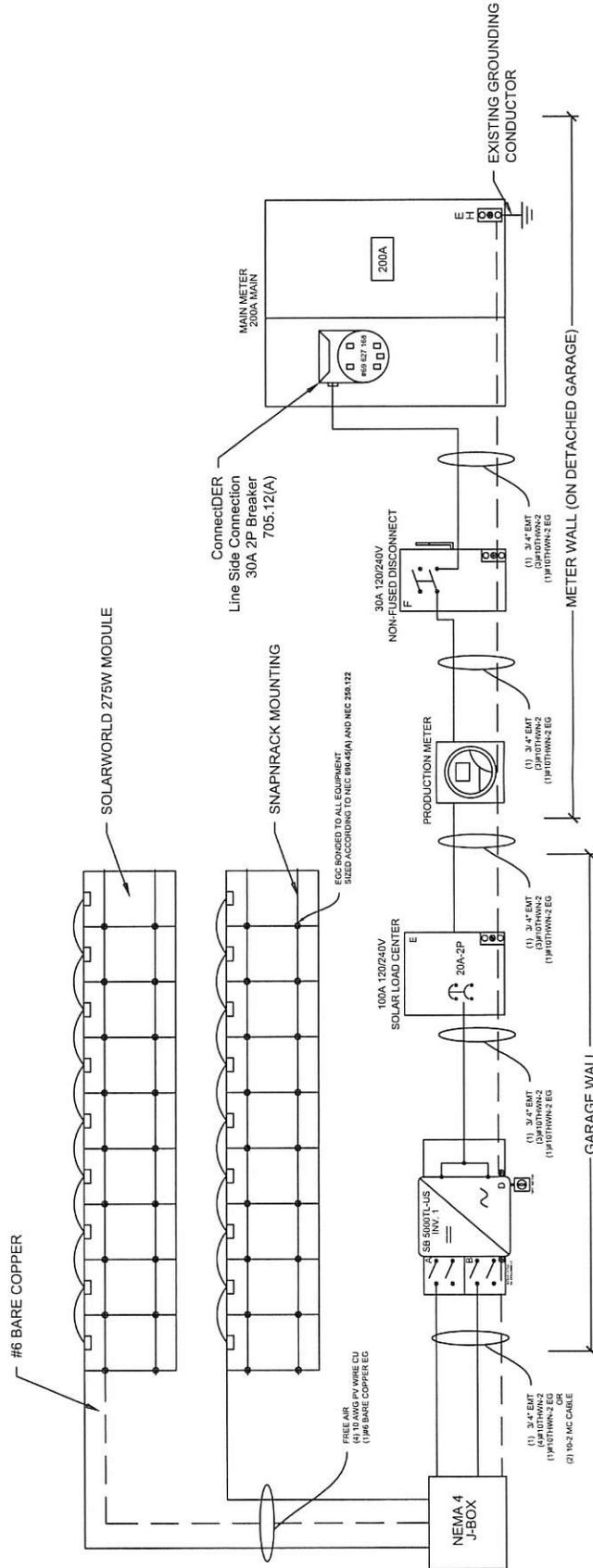
INVERTER SPECIFICATIONS	
MANUFACTURER	SMA AMERICA (TL)
MODEL	SB5000TL-US (240V)
MAX DC INPUT VOLTAGE	600 V
MAX OUTPUT POWER	5000 W
NOMINAL AC OUTPUT VOLTAGE	240 V
NOMINAL AC OUTPUT CURRENT	22 A
MAX FUSE (OCPD)	30 A

PV MODULE SPECIFICATIONS	
MANUFACTURER	Solarworld
MODEL	275 W
MAX POWER-POINT CURRENT (Imp)	8.94 A
MAX POWER-POINT VOLTAGE (Vmp)	31 V
OPEN CIRCUIT VOLTAGE (Voc)	39.4 V
SHORT CIRCUIT CURRENT (Isc)	9.38 A
MAX SERIES FUSE (OCPD)	27.5 A
MAX POWER (Pmax)	275 W
MAX VOLTAGE (Vdc)	600 V

SECURE POWER SUPPLY TECHNICAL DATA	
MAXIMUM AC VOLTAGE	125V
MAXIMUM AC CURRENT	12A
MAXIMUM POWER OUTPUT	1500W

PHOTOVOLTAIC AC OUTPUT LABEL	
AC OUTPUT CURRENT	22A
NOMINAL AC VOLTAGE	240V

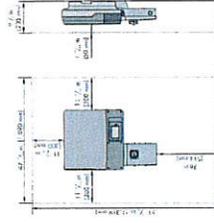
PV POWER SOURCE LABEL	
RATED MAXIMUM PP CURRENT (IMP)	9A
RATED MAXIMUM PP VOLTAGE (VMP)	279V
MAXIMUM SYSTEM VOLTAGE (VOC)	418V
SHORT-CIRCUIT CURRENT (ISC)	12A



SAFETY AND WARNING LABELS	
A	COMBINER BOX/PASS THROUGH
B	DC BREAKER OR DC DISCONNECT
C	DC CONDUIT
D	INVERTER
E	AC BREAKER OR AC DISCONNECT
F	BREAKER PANEL
G	PRODUCTION METER
H	METER MAIN

- ELECTRICAL NOTES:**
1. ALL COMPONENTS ARE GROUNDED PER NEC 2011 CODE
 2. INTERCONNECTION METHOD COMPLIES WITH 680.64
 3. ALL WIRES WILL BE RATED THHN/THWN-2
 4. ALL INTERCONNECTION WILL COMPLY WITH 705.12

ALL PHOTOVOLTAIC (DC) CIRCUITS WILL BE LABELED EVERY 10' ADDITIONAL INTERCONNECTION PHOTOS 680.31(4)



CERTIFIED
 PV Installation Professional
 INTERMOUNTAIN WIND & SOLAR
 1963 WEST 2425 SOUTH
 WOODS CROSS, UT 84087
 P 801-298-5255
 F 801-298-5355

WIND & SOLAR
 SCALE: N.T.S.
 PV03

DATE: 1/9/2015
 Project Designer: T. Schwan
 PROJECT # 2015-854
 SYSTEM SIZE: 4.95kW
 Revision: Bunkful

Bernell Lovelidge
 281 W 2400 S
 Bountiful, UT 84010



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Bountiful City, Utah Conditional Use Permit

A public hearing was held on November 16, 2015, at Bountiful City Hall to consider the request of Kent and Janice Roner for a Conditional Use Permit allowing for a Private Power Plant (Solar Panels) at the following location:

482 North Stone Creek Circle, Bountiful City, Davis County, Utah

ALL OF LOT 19, VILLAS AT STONE CREEK, THE. CONT. 0.37000 ACRES.

Parcel: 04-186-0019

The Bountiful City Administrative Committee heard the matter and considered the statements of the applicant, the City staff, and the public. As a result, the Administrative Committee makes the following findings:

1. This matter is properly heard before the Administrative Committee.
2. Appropriate public notice has been provided and a public hearing held.
3. The proposed request to operate a Private Power Plant (Solar Panels) meets the letter and the intent of the specific requirements in §14-2 and 14-14 et seq (Conditional Use Permit provisions) of the Bountiful City Land Use Ordinance.

The Bountiful City Administrative Committee hereby grants this Conditional Use Permit for a Private Power Plant (Solar Panels) to be located at 482 North Stone Creek Circle, in Bountiful, Davis County, Utah, with the following conditions:

1. The applicant shall obtain a building permit.
2. The panels must be installed only as proposed in the application.
3. This Conditional Use Permit is solely for this site and is non-transferable.

The Conditional Use Permit was approved on November 16, 2015, and this written form was approved this 23rd day of November, 2015.

Chad Wilkinson
Planning Director

ATTEST: Julie Holmgren
Recording Secretary



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Bountiful City, Utah Conditional Use Permit

A public hearing was held on November 16, 2015, at Bountiful City Hall to consider the request of Jonathan and Angela Muir, for a Conditional Use Permit allowing a Home Occupation Contractor Business (cabinetry and countertops installation) at the following location:

466 North 1150 East, Bountiful City, Davis County, Utah

ALL OF LOT 5, EASTWOOD PARK SUB PLAT A. CONT. 0.23 ACRES.

Parcel 04-019-0005

The Bountiful City Administrative Committee heard the matter and considered the statements of the applicant, the City staff, and the public. As a result, the Administrative Committee makes the following findings:

1. This matter is properly heard before the Administrative Committee.
2. Appropriate public notice has been provided and a public hearing held.
3. The proposed request to operate a home occupation contractor business meets the letter and the intent of the specific requirements in §14-17 et seq (Conditional Use Permit provisions) of the Bountiful City Land Use Ordinance.

The Bountiful City Administrative Committee hereby grants this Conditional Use Permit for Jonathan and Angela Muir to operate a home occupation contractor business located at 466 North 1150 East, in Bountiful, Davis County, Utah, with the following conditions:

1. The applicant shall maintain an active Bountiful City business license.
2. The Home Occupation will not create nuisances discernible beyond the premises (e.g. noise, dust, fumes, glare, traffic, etc.).
3. The use will comply with all applicable fire, building, plumbing, electrical, and life safety and health codes in the State of Utah, Davis County, and Bountiful City.
4. The use shall be office only and shall not include any manufacturing or prefabrication of cabinets at the residence.
5. The Conditional Use Permit is solely for this site and is non-transferable.

The Conditional Use Permit was approved on November 16, 2015, and this written form was approved this 23rd day of November, 2015.

Chad Wilkinson
Planning Director

ATTEST: Julie Holmgren
Recording Secretary