**LOCAL HISTORIC DISTRICT:** Fourth Ward

**PROPERTY ADDRESS:** 601 N. Pine Street

**SUMMARY OF REQUEST:** Solar Panel Addition

**OWNER:** Dave Broderdorp

**APPLICANT:** Bob Kingery

### Details of Proposed Request

**Existing Conditions**
The existing structure is a 1.5 story Victorian style home constructed in 1900. It is located on the corner of North Pine Street and West 9th Street in Fourth Ward.

**Proposal**
The proposal is the addition of 10-13 solar panels on three south facing roof planes. The applicant has stated a crape myrtle would be removed if “Array Deck 1” panels are approved. The panels are designed to be mounted flat on the roof.

The HDC Policy & Design Guidelines do not have explicit guidelines for solar panels on rooftops but considers this proposal an Addition. Ideally, solar panels should be located to the rear of a property and not substantially visible. The Secretary of Interior’s Standards states solar panels can be installed in a sensitive manner and should conform to guidance regarding rooftop additions, i.e. that they be minimally visible to avoid altering the historic character of the building. See the National Park Service’s *Technical Preservation Services* section on alternative energy (ITS Number 52).

### Policy & Design Guidelines - Additions
Additions to existing structures in Local Historic Districts have a responsibility to complement the original structure. Additions should reflect the design, scale and architectural style of the original structure. The following guidelines are intended to encourage addition designs that are compatible with the existing structure, while not fully mimicking the original design.
2. Additions must respect the original character of the property, but must be distinguishable from the original construction.

3. All additions to the front or side of existing properties must be of a design that is sensitive to the character and massing of the existing structure.

4. Additions to the front or side of existing structures that are substantially visible from a street must go before the full Commission.

**Staff Analysis**
The Commission will determine if the solar panel design and location meets the guidelines for additions. The guideline for setback does not apply.
• 21.5% efficiency
Ideal for roofs where space is at a premium or where future expansion might be needed.

• Maximum performance
Designed to deliver the most energy in demanding real world conditions, in partial shade and hot rooftop temperatures.1, 2, 3

• Premium aesthetics
SunPower® Signature™ Black X-Series panels blend harmoniously into your roof. The most elegant choice for your home.

Unmatched Performance, Reliability & Aesthetics

Highest Efficiency6
Generate more energy per square foot
X-Series residential panels convert more sunlight to electricity producing 44% more power per panel,1 and 75% more energy per square foot over 25 years.3,4

Highest Energy Production7
 Produce more energy per rated watt
High year one performance delivers 8-10% more energy per rated watt.3 This advantage increases over time, producing 21% more energy over the first 25 years to meet your needs.4

Engineered for peace of mind
Designed to deliver consistent, trouble-free energy over a very long lifetime.4,5

Designed for durability
The SunPower Maxeon Solar Cell is the only cell built on a solid copper foundation. Virtually impervious to the corrosion and cracking that degrade Conventional Panels.4,5
Same excellent durability as E-Series panels.
#1 Ranked in Fraunhofer durability test.10
100% power maintained in Atlas 25+ comprehensive PVDI Durability test.11

SunPower X-Series

Maintains High Power at High Temps
No Light-Induced Degradation
High Average Watts
Better Low-Light and Spectral Response
High-Performance Anti-Reflective Glass

Maintains High Power at High Temps
No Light-Induced Degradation
High Average Watts
Better Low-Light and Spectral Response
High-Performance Anti-Reflective Glass

SunPower E-Series

Maintains High Power at High Temps
No Light-Induced Degradation
High Average Watts
Better Low-Light and Spectral Response
High-Performance Anti-Reflective Glass

Maintains High Power at High Temps
No Light-Induced Degradation
High Average Watts
Better Low-Light and Spectral Response
High-Performance Anti-Reflective Glass

SunPower X-Series delivers even more energy.7

sunpowercorp.com
X-SERIES SOLAR PANELS

OPERATING CONDITION AND MECHANICAL DATA

- Temperature: -40°F to +185°F (-40°C to +85°C)
- Max load:
  - Wind: 50 psf, 2400 Pa, 245 kg/m² front & back
  - Snow: 112 psf, 5400 Pa, 550 kg/m² front
- Impact resistance: 1 inch (25 mm) diameter hail at 52 mph (23 m/s)
- Appearance: Class A+
- Solar Cells: 96 Monocrystalline Maxeon Gen III Cells
- Tempered Glass: High Transmission Tempered Anti-Reflective
- Junction Box: IP-65 Rated
- Frame: Class 1 black anodized, highest AAMA Rating
- Weight: 41 lbs (18.6 kg)

TESTS AND CERTIFICATIONS

- Standard tests: UL 1703, IEC 61215, IEC 61730
- EHS Compliance: RoHS, OHSAS 18001:2007, lead-free
- Ammonia test: IEC 62716
- Salt Spray test: IEC 61701 (passed maximum severity)
- PID test: Potential-Induced Degradation free: 1000V
- Available listings: CEC, UL, TUV, MCS

ELECTRICAL DATA

<table>
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<tr>
<th>Model</th>
<th>X21-335-BLK</th>
<th>X21-345</th>
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<tr>
<td>Nominal Power (Pnom)</td>
<td>335 W</td>
<td>345 W</td>
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<td>Power Tolerance</td>
<td>+5/-0%</td>
<td>+5/-0%</td>
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<td>Avg. Panel Efficiency</td>
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<td>21.5%</td>
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<td>Rated Voltage (Vmp)</td>
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<td>Rated Current (Imp)</td>
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<td>Open-Circuit Voltage (Voc)</td>
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<tr>
<td>Short-Circuit Current (Isc)</td>
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<td>Maximum System Voltage</td>
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<tr>
<td>Maximum Series Fuse</td>
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<td>Power Temp Coef. (Pmpp)</td>
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<td>Voltage Temp Coef. (Voc)</td>
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<tr>
<td>Current Temp Coef. (Isc)</td>
<td>3.5 mA / °C</td>
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REFERENCES:
1. All comparisons are SPR-X21-345 vs. a representative conventional panel: 240W, approx. 1.6 m², 15% efficiency.
3. Typically 8-10% more energy per watt, BEW/DNV Engineering “SunPower Yield Report,” Jan 2013, with CFV Solar Test Lab Report #12063, Jan 2013 temp. coef. calculation.
5. “SunPower Module 40-Year Useful Life” SunPower white paper, Feb 2013. Useful life is 99 out of 100 panels operating at more than 70% of rated power.
6. Higher than E Series which is highest of all 2600 panels listed in Photon Int'l, Feb 2012.
7. 1% more energy than E-Series panels, 8% more energy than the average of the top 10 panel companies tested in 2012 (151 panels, 102 companies), Photon Int'l, Mar 2013.
9. Some exclusions apply. See warranty for details.
10. X-Series same as E-Series, 5 of top 8 panel manufacturers were tested by Fraunhofer ISE, “PV Module Durability Initiative Public Report,” Feb 2013.
13. Based on average of measured power values during production.

For further details, see extended datasheet: www.sunpowercorp.com/datasheets Read safety and installation instructions before using this product.