

MINNESOTA SOLAR ELECTRIC REBATE

Instructions for Residential Rebate Applications



INTRODUCTION

The Minnesota Solar Electric Rebate for Residences provides financial support for the installation of solar electric systems with rated capacities of between 0.5 and five kilowatts (kW). (Businesses should refer to the *MINNESOTA SOLAR ELECTRIC REBATE for Businesses* instructions.) To be eligible:

- a residence must be in Minnesota;
- a solar electric system must be installed at a primary residence;
- a system must be installed by a licensed contractor that meets program participation criteria ;
- the installation must comply with all applicable federal, state and local requirements; and
- the installation must be completed within nine months of approval of the rebate application.

This program is funded by the American Recovery and Reinvestment Act of 2009 (ARRA), Pub. L. 111-5 and authorized by Laws of Minnesota 2009 Chapter 138. Federal and state guidelines require that projects adhere to a number of reporting and project implementation standards as outlined below.

The basic steps to receiving a residential solar electric rebate are listed below.

1. Employ energy efficiency and conservation measures first: make your home as efficient as possible.
2. Learn about solar energy system options.
3. Find out whether your location can benefit from solar energy by conducting a solar site assessment. A solar site assessor can provide an objective evaluation of your specific location. Office of Energy Security (OES) requires a site assessment prior to applying for state solar rebate incentives. The solar site assessor need not be the solar installer who completes the installation for the purpose of this program.
4. Select a solar installer. See the publication *Hiring a Renewable Energy Contractor* at www.energy.mn.gov > *Renewables* > *Solar* > *Purchase & Installation*. It includes a list of solar installers serving Minnesota. Note that not all installers listed are eligible to participate in the program.
5. Your installer should work with your electric utility on an interconnection application, if applicable, and local building officials on any applicable building codes.
6. Submit an application AFTER assembling all supporting documentation with help from your installer. (See checklist below.) Additional funding may be available through federal tax incentives or your local utility. For a current list of federal, state, and utility energy incentives, visit the Database of State Incentives for Renewable Energy website at www.dsireusa.org.

Make a copy of the rebate application materials for your files and mail or hand deliver the originals to:

Solar Electric Rebate Program
Minnesota Office of Energy Security
85 7th Place East, Suite 500
Saint Paul, MN 55101-2198

IMPORTANT: Do not order, purchase or install any equipment before receiving a Rebate Confirmation Form indicating that the application has been approved. Failure to comply with any requirement at any point in the rebate process may disqualify the applicant from receiving a state rebate.

7. OES will make every effort to notify you whether your application is approved within 30 days of receiving a completed application. Your solar installer may be notified as well. If approved, you will also receive a **Rebate Claim Form** that you will need to complete and return after your system is installed.
8. After the installation is complete, submit the original **Rebate Claim Form** and supporting materials to the Solar Electric Rebate Program. If the rebate claim package is complete, a rebate check will be issued within 30 days.

IMPORTANT: System installation must be completed by the expiration date indicated on the Rebate Confirmation Form. Extensions may be made on a case-by-case basis and must be requested at least 5 business days prior to the expiration date.

REBATE APPLICATION CHECKLIST

- 1. Rebate Application Form with original signatures
- 2. Evidence of Intent (application for interconnection or evidence of \$500 minimum down payment)
- 3. Site Photos
 - A panoramic photo or series of 5 photos from 90° to 270° through south, labeled
 - A photo of the proposed installation site, labeled
- 4. Solar shading analysis (Pathfinder, SunEye, or similar)
- 5. Solar Site Diagram-Top View
- 6. End User Agreement
- 7. National Historic Preservation Act documentation (See Exhibit A.)

CONTRACTOR QUALIFICATIONS AND REBATE LIMITS

Solar Contractor Qualifications	Applications submitted by March 31, 2010	Applications submitted After March 31, 2010
Licensed electrical contractor with at least two solar PV installations of at least 0.5 kW in previous 12 months	Project completed and claim submitted by Sept 30, 2010: \$1.75 per watt up to \$8,750 maximum rebate	\$1.50 per watt
Licensed general contractor with at least two solar PV installations of at least 0.5 kW in previous 12 months	Claim submitted after Sept 30, 2010: \$1.50 per watt up to \$7,500 maximum rebate	
Above plus NABCEP certified PV installer	Project completed and claim submitted by Sept 30, 2010 \$2.00 per watt up to \$10,000 maximum rebate Claim submitted after Sept 30, 2010: \$1.75 per watt up to \$8,750 maximum rebate	\$1.75 per watt

MINNESOTA SOLAR ELECTRIC REBATE

Instructions for Residential Rebate Applications



TERMS AND CONDITIONS

Complete rebate applications are processed on a first-come, first-served basis until all available funds have been reserved. Mailed applications will be time stamped as having been submitted at 4:00 p.m. on the postmark date.

A **Rebate Confirmation Form** and **Rebate Claim Form** will be mailed to the applicant upon application approval. Claim the rebate by completing the installation and submitting the **Rebate Claim Form** with supporting documentation within nine months of receiving the **Rebate Confirmation Form**. Note that the rebate amount may be based on date of rebate claim submission. (See table on previous page.) **No installation work should be done before receiving the Rebate Confirmation Form. Failure to adhere to this requirement may void the rebate.**

The rebate amount will not exceed the total cost of an installation minus federal, utility or other incentives. See www.DSIREUSA.ORG for a comprehensive list of incentives from federal, state, and utility sources.

Past Minnesota Solar Rebate Program participants are eligible for up to five kW combined capacity.

The total funding for all state solar rebate programs is up to \$3 million. See www.energy.mn.gov for state solar rebate program information including the Solar Hot Water Rebate Program and the Solar Air Heat Program.

OES reserves the right to adjust these terms and conditions as necessary.

The Office of Energy Security website hosts a solar section with information and web links that may be useful: www.energy.mn.gov, then click on *Renewables > Solar*. Questions regarding this application should be directed to the Energy Information Center at (651) 296-5175 or energy.info@state.mn.us.

Eligible Equipment

1. All of the major system components including modules and inverters must be new.
2. Photovoltaic modules must come with a 20-year or greater manufacturer's performance warranty and must be certified as meeting the most current edition of Underwriters Laboratory Standard 1703 (UL1703). (As of February 2010, the current edition of UL1703, the Standard for Flat-Plat Photovoltaic Modules and Panels, is Third Edition published March 2002, Revised April 2008.)
3. All inverters must be certified as meeting the current edition of Underwriters Laboratory Standard 1741 (UL1741) and come with a minimum five-year manufacturer's warranty. (As of February 2010 the most current edition of UL1741, the Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources, is Second Edition, published January 28, 2010.)

Installation Requirements

1. Installations are subject to the requirements and provisions of Minnesota statute (216B.164), Minnesota rules (Chapter 7835), the currently adopted edition of the National Electrical Code, and electric utility requirements.
2. Installations must comply with all applicable building and zoning codes.
3. Fixed-tilt installations should have a tilt angle between 20 and 60 degrees.
4. Applicants must demonstrate that the system will not be shaded by buildings, trees, electricity poles, towers, chimneys, etc. using a shading analysis tool and site photos.
 - a. Installers are responsible for ensuring an accurate representation of the site.
 - b. Installations should result in energy production equivalent to a minimum net effect of 90% of an ideally sited system.

- c. The Program Administrator or its subcontractor reserves the right to reject any application if the installation site is compromised by shading.
 - d. OES or its subcontractor reserves the right to conduct site inspections to verify compliance with program guidelines.
5. Installations must be performed by appropriately licensed, professional solar installers in order to qualify for a rebate. All electrical work must be performed by a licensed electrician working for a licensed electrical contractor.
 6. The installer must provide information to the applicant about operation and performance considerations relating to shading, snow cover, and maintenance of the system.
 7. The system must include performance monitoring equipment that records the electricity generated by the solar electric system. The applicant must agree to share the energy production data from the solar electric system.

Prevailing Wage Requirements

Laws of Minnesota 2009 Chapter 138 requires payment of state prevailing wage rates for solar electric installations funded through this program for projects greater than \$25,000. At present, state residential prevailing wage determinations are being established by the Minnesota Department of Labor and Industry. Until state residential wage determinations are issued, contractors performing work under this program must comply with federal prevailing wage requirements. Federal prevailing wage information can be found at: www.wdol.gov.

Solar Installer/Contractor Requirements

By signing the Minnesota Solar Electric Rebate Application, a Solar Installer/Contractor agrees to:

- Provide the state with accurate information regarding the full scope of the project, including but not limited to: itemized pricing of equipment, labor, work performed, and total system cost.
- Abide by all state and federal guidelines and requirements, including reporting and record keeping, associated with the Minnesota Solar Electric Rebate Program.
- Require subcontractors to abide by all state and federal guidelines and requirements associated with the Minnesota Solar Electric Rebate Program.
- Maintain records of wages paid for projects requiring prevailing wages for a period of three years for projects greater than \$25,000.

Application Changes

- Major changes (such as change of purchaser, location, or increases in system size) require reapplication or prior written approval. Decreases in the size of the solar system to be installed must be documented on the **Rebate Claim Form** and supporting materials.
- Requests for extension of the rebate expiration date must be made in writing at least 5 business days prior to expiration.

ARRA Requirements

National Environmental Policy Act (NEPA)

OES is required to notify DOE if it determines that an activity categorically excluded from NEPA review appears to present an extraordinary circumstance as defined under 10 CFR § 1021.410(b). Applicants will need to certify to OES that the proposed solar installation activities will NOT:

1. Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, including requirements of DOE and/or Executive Orders;
2. Require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators);
3. Disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; or
4. Adversely affect environmentally sensitive resources. Environmentally sensitive resources include, but are not limited to:
 - (i) Property (e.g., sites, buildings, structures, objects) of historic, archeological, or architectural significance designated by federal, state, or local governments or property eligible for listing on the National Register of Historic Places;
 - (ii) Federally listed threatened or endangered species or their habitat (including critical habitat), federally proposed or candidate species or their habitat, or state-listed endangered or threatened species or their habitat;

- (iii) Wetlands regulated under the Clean Water Act (33 U.S.C. 1344) and floodplains;
- (iv) Areas having a special designation such as federally and state-designated wilderness areas, national parks, national natural landmarks, wild and scenic rivers, state and federal wildlife refuges, and marine sanctuaries;
- (v) Prime agricultural lands;
- (vi) Special sources of water (such as sole-source aquifers, wellhead protection areas, and other water sources that are vital in a region); and
- (vii) Tundra, coral reefs, or rain forests.

National Historic Preservation Act

Any federally funded, licensed or permitted project requires consideration of historic resources under Section 106 of National Historic Preservation Act of 1966. Projects receiving funds through ARRA are subject to review for the identification and preservation of historic resources.

Minnesota Data Privacy Act/Tennessee Warning

The Minnesota Data Privacy Act requires that certain information you provide on this form remain as private data. The information about you that is collected on the Solar Electric Rebate Program application will be classified as either public or private data. Public data will be accessible to the public. Private data about you will be accessible only to you and state personnel and their authorized subcontractors who administer the program and reporting requirements. The data you give us about yourself is needed to:

- Identify you;
- Contact you in case of program or energy use evaluation;
- Comply with certain federal and state reporting requirements;
- Evaluate program effectiveness; and
- Administer the Solar Hot Water Rebate Program.

If you choose to supply all of the requested data, your completed rebate application will be processed on a first-come, first-served basis. If you refuse to supply data requested on the rebate application form, your application will not be processed.

Please note that rebates and rebate applications may be considered public documents and may be subject to disclosure to the public upon request.

Definitions

Anti-islanding test – a utility engineer will test the completed system for safety before an interconnection contract is processed

Azimuth – the direction measured in degrees from North that the solar installation is oriented

Building code – check with city and/or county to identify permits needed for the solar installation

DC rating – solar capacity, measured in watts

End-User Agreement – agreement between applicant and the Office of Energy Security to provide data on the electricity produced by the solar energy system

Evidence of Intent – evidence that the applicant is serious about participating in the solar rebate program: \$500 down payment to the installer or utility interconnection application is acceptable

Grid connected – PV system is interconnected to an electric utility; grid connected systems in Minnesota benefit from net metering if the capacity is not more than 40 kW

Interconnection contract – a contract with the electric utility to let a customer sell electricity back to the utility; utilities must use standard state contract (MN Rule 7835.9910 www.leg.state.mn.us)

Interconnection guidelines – safety and technical requirements for the solar installation

Inverter – converts DC electricity from the solar panels into AC electricity

Kilowatt (kW) – 1000 watts (five 200 watt solar modules = 1 kilowatt)

Maximum Power Point Tracking (MPPT) – Devices incorporated into the PV system which allow each individual panel to deliver continuously at maximum available power based on total panel illumination, irrespective of conditions of other panels in the system (such as local shading and soiling, panel matching, other panel or interconnect failures, etc.)

Minnesota Rules Chapter 7835 – Minnesota’s net metering rules (www.leg.state.mn.us)

Minnesota Statute 216B.164 – Minnesota’s net metering statute (www.leg.state.mn.us)

National Environmental Protection Act (NEPA) – requires federal agencies to integrate environmental values into their decision making processes by considering the environmental impacts of their proposed actions. As a federally funded program, the Minnesota Solar Electric Rebate Program is subject to NEPA provisions. The following solar electric systems are categorically excluded:

- Ground mounted installations sized to serve the site load and not more than 60 kW
- Building mounted installations sized to serve the building load

National Electrical Code Article 690 – national electrical safety standards for photovoltaic systems established by the National Fire Protection Association (www.mfpa.org)

Off-grid PV system – not interconnected to an electric utility; relies on battery storage

Solar module warranty – solar modules in the rebate program must have a 20-year or greater performance warranty

Photovoltaics – (PV) a semiconductor technology that converts sunlight to direct current electricity

Renewable Development Fund (RDF) – an Xcel Energy fund for renewable energy

Rebate Claim Form – a form to receive the rebate once the solar installation is complete; the form is mailed to applicant upon application approval (sent with Confirmation Form)

Rebate Confirmation Form – the form received once the applicant is approved for a rebate; work must not begin before receiving this form

Renewable Energy Credit (REC) – also known as green tags, a REC represents the value of all environmental and social attributes in a Megawatt-hour of renewable energy; RECs can be sold or traded independently from the electricity associated with them

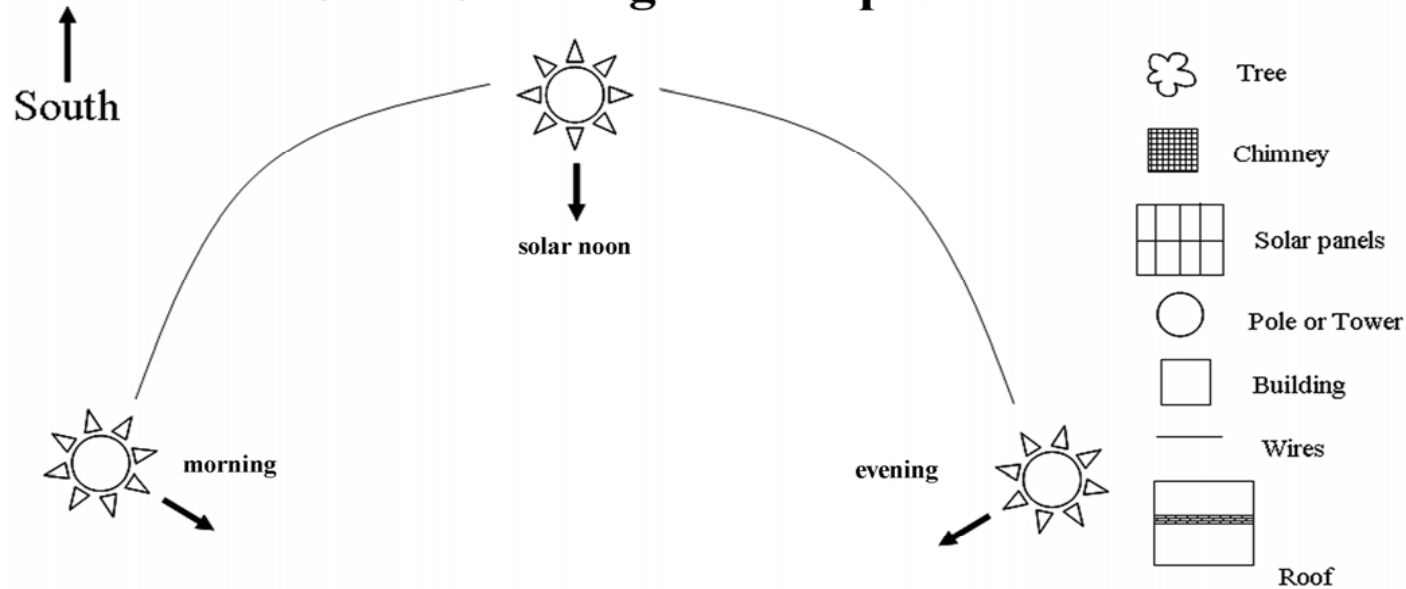
Site pictures – a labeled photo of the proposed solar energy system installation location AND labeled panoramic photos of the horizon from East to West through South

Shading Analysis Tool – a device used to accurately chart the total shading at a specific location. (Pathfinder, Suneye or comparable tools are acceptable)

System rating – the sum of all of the solar modules used in the system (# of solar modules x DC rating of solar modules.)

Tilt angle – the elevation angle from horizontal at which the solar modules are positioned

Solar Site Diagram - Top View



This diagram must be completed as part of the MN Solar Electric Rebate Application.

Using the symbols (at right) sketch the locations and distances between the proposed array and surrounding objects. Include estimated heights above ground for all objects.

What angle will the array face? _____ (180° = due South)

1. Draw the proposed location of the solar system using the appropriate symbols.
2. Determine the orientation of the system.
3. Draw any objects that appear in the photos of the horizon. Pay particular attention to those objects which may appear to present a shading obstruction in the horizon photos.
 - a. You do not need to draw objects that are located behind the solar panels unless they reach over the top of the solar panels.
 - b. Estimate the appropriate width at the widest point of each object.
 - c. Measure and make note of the distance from the solar array to each object on the diagram.
 - d. Include heights of objects and the height of the lowest point of the PV array.

This site diagram must accompany the application. The site diagram is a representation of the solar installation's location along with nearby objects that might shade the system. It is designed to help interpret the photos included with the application form and as a cross reference to the shading analysis.

**MINNESOTA SOLAR ELECTRIC REBATE
RESIDENTIAL APPLICATION**



APPLICANT INFORMATION

Name _____
 Mailing Address _____
 City, State, Zip _____
 Phone _____
 E-mail _____
 Electric Utility if applicable _____
 Utility account # _____

Site Address if different than mailing address: _____

 Township, section, and range (rural properties only): _____

 County _____
 Year subject property built _____

Is applicant a past Minnesota Solar Rebate recipient? Yes No
 Is this a primary residence for at least 1 occupant? Yes No
 Will system be visible from the street? Yes No
 Is property located within or adjacent to a historical preservation district?
 Is the property individually listed in the National Register of Historic Places?
 Are you aware of any events of historical significance associated with the property?
 Is the system sized no larger than required to meet the building load?

Yes No
 Yes No
 Yes No
 Yes No

SOLAR INSTALLER/CONTRACTOR INFORMATION

Business Name _____
 Lead Installer Name _____
 Mailing Address _____
 City, State, Zip _____
 Phone _____
 E-mail _____
 All electrical work must be performed by a licensed electrician
 working for a licensed electrical contractor:
 Electrician License # _____

The solar installer must meet the following criteria to be eligible
 to install under this program.
 A licensed residential contractor or licensed electrical contractor
 License # _____
 Does your business have at least two solar PV installations
 in the previous 12 months? (list dates, addresses, and sizes in kW)

Is lead installer NABCEP Solar PV certified? (not required for eligibility) Yes No If yes, NABCEP Solar PV # _____

INSTALLATION INFORMATION

Solar Module Manufacturer _____
 Solar Module Model # _____
 • Thin film: Yes No
 • Number of modules _____
 • Module rating _____ watts
 • System rating (sum of solar panels) _____ kW
 • Module performance warranty _____ years
 • Tilt of panels (if fixed) _____ degrees
 • Battery system: Yes No _____ # and rating
 • Is Maximum Power Point Tracking (MPPT) performed centrally for all modules or individually for each module?

Inverter Manufacturer _____
 Inverter Model # _____
 • Inverter Rating _____ kW
 • Warranty _____ years
 System type (circle one) Fixed Seasonally adjusted
 Single Axis Dual Axis
 Location (circle one) Roof Ground Pole
 Azimuth angle (orientation) _____ degrees
 Interconnection (circle one) Grid-tied Off-Grid
 Centrally Individually

Office Use:

Date App. Rec: _____ post /HD App. # _____ Date of Letter _____ Rebate Amount \$ _____

DECLARATION

The undersigned warrants, certifies and represents that: (1) the information provided in this form is true and correct to the best of my knowledge; and (2) the installation will meet all Minnesota Solar Electric Rebate Program requirements.

SIGNATURE

The following supporting documentation is included in this application:

- Evidence of intent
- Site photos
- Shading analysis
- Solar site diagram
- End User Agreement
- Historic preservation documentation (See Exhibit A)
 - photos of structures on the property unless pole mounted
 - aerial view as shown by <http://mapper.acme.com/> unless pole mounted

Signature _____

Applicant (original signature required)

Signature _____

Solar Installer (original signature required)

Print Name _____

Date _____

Print Name _____

Date _____



END-USER AGREEMENT
Minnesota Solar Electric Rebate Program

- I. I agree to provide the Minnesota Department of Commerce Office of Energy Security (OES) with solar electricity generation data from my solar electric system for a period of four years either through inverter or separate meter readings.
- II. I agree to provide OES, or its contractors, access to the proposed solar installation site for the purpose of conducting a site audit. The results of the audit may be used to verify the data submitted in the Solar Electric Rebate Application and to determine eligibility.
- III. If necessary, I agree to provide OES, or its contractors, with access to any photovoltaic hardware and related components on my property as necessary for the completion of ongoing research related to the Minnesota Solar Electric Rebate Program. Access will be scheduled with the applicant at least seven working days in advance.
- IV. If necessary, I agree to allow OES and its contractors or subcontractors to install electricity data collection devices on my property so that information from my solar electric energy system may be retrieved and included in research being conducted by OES. I understand that data collected from the photovoltaic system on the property may be made available to the public. Access will be scheduled with the applicant at least seven working days in advance.
- V. For grid-connected systems, I authorize my electric utility to release data related to the amount of electricity produced by my solar electric installation.

Applicant name _____

Signature _____

Date _____

If grid-connected:

Electric Utility _____

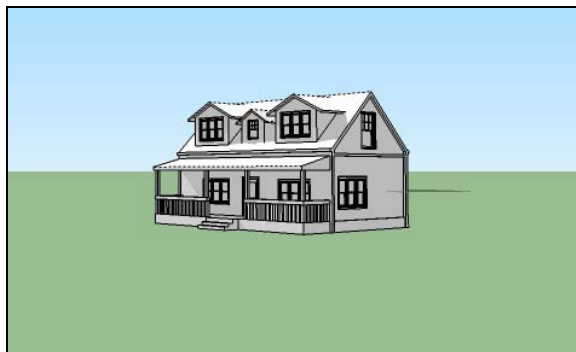
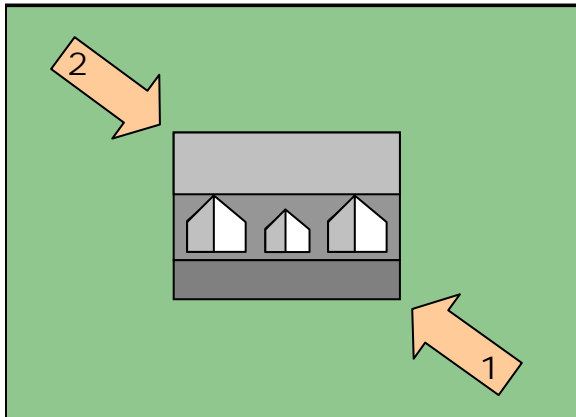
Electric Utility Account # _____

Historic Preservation 101

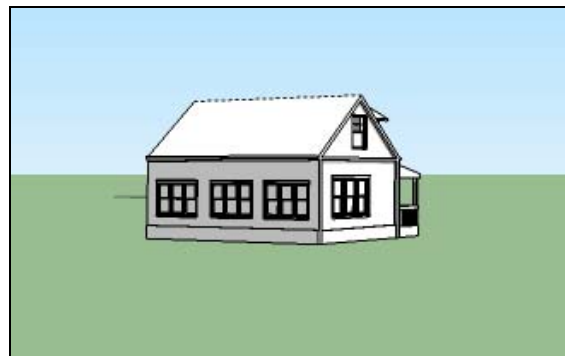
Photographs and Maps

Photography

Take at least two photographs of each major structure on the property. Shoot from opposite corners so that two sides of the building are visible in each photo.



View one



View two

Maps

Provide a topographical map and an aerial photo for properties within designated historic districts, in rural areas, or involving substantial ground disturbance. This information is available online at <http://mapper.acme.com/>. Applicants can print hard copies to submit with project proposals, and can also create electronic copies by clicking the “Link to this page” button to create a unique URL.