

USRCRN Candidate Site Host Guide

The National Oceanic and Atmospheric Administration (NOAA) is the federal agency that provides scientific measurements and data for marine and atmospheric environments.

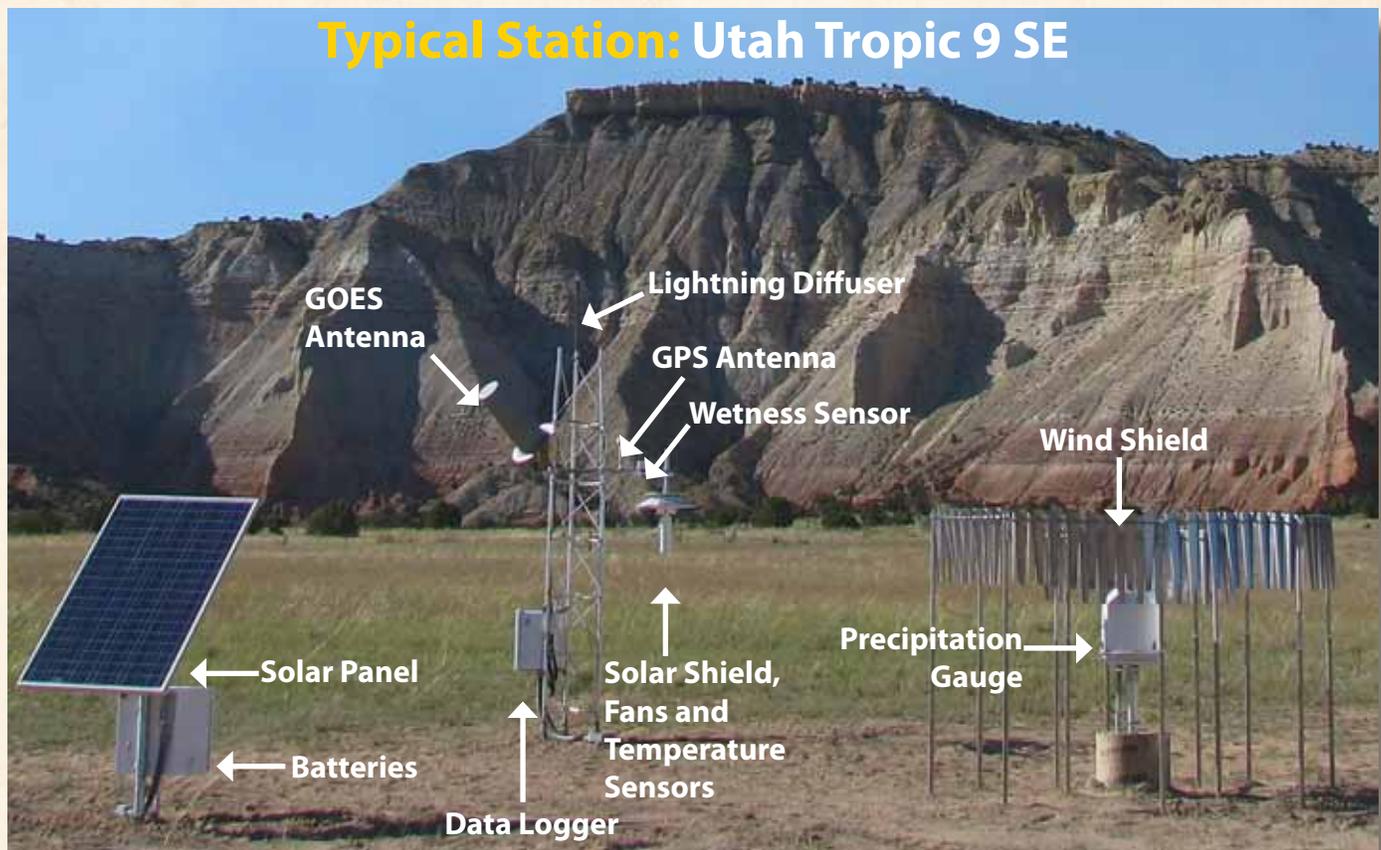
PURPOSE— The U.S. Regional Climate Reference Network (USRCRN) Program is installing a regional network of 538 newly sited and automated climate observing stations across the nine NOAA Climate Regions. The stations observe and transmit temperature and precipitation measurements that constitute a critical component of the U.S. regional climate record. Each station is equipped with a triple configuration of calibrated sensors and digitally records and transmits five-minute observation data hourly. Timely and accurate temperature and precipitation data will support economic business decisions

through improved preparation for and response to heat waves, poor air quality, drought, forest fires, coastal inundation, changes to ecosystem structure and function, and other phenomena.

The stations are being installed across the contiguous United States on a geographical grid to ensure proper spatial representation.

The network has many federal, state, regional, and municipal partners, including National Park Service, Bureau of Land Management, U.S. Forest Service, U.S. Fish and Wildlife Service, Bureau of Reclamation, state parks, and regional and municipal airports.

Typical Station: Utah Tropic 9 SE



PERMITTING AND LICENSING

If selected, the host organization will be expected to enter into a formal agreement (Site Land Agreement [SLA]) with NOAA. The SLA documents specific information related to the site and establishes a formal understanding of expectations between NOAA and the host organization.

NOAA will need host permitting/licensing contact information to initiate the SLA process.

The SLA process entails the following:

- Site Land Agreement and other information are emailed to the host organization's permitting/licensing contact after the site has been surveyed and selected as a USRCRN site by a NOAA review team.
- The host permitting/licensing contact will be asked to provide any information regarding required clearances of the site (e.g. archaeological, biological, cultural, etc.).
- The host permitting/licensing contact resolves any issues or questions with the USRCRN Program Office and submits the SLA for host signature to the appropriate organizational authority.

Before a station can be staged for installation, a signed Site Land Agreement is required. Expediting the SLA process is essential to timely completion and overall Program success.

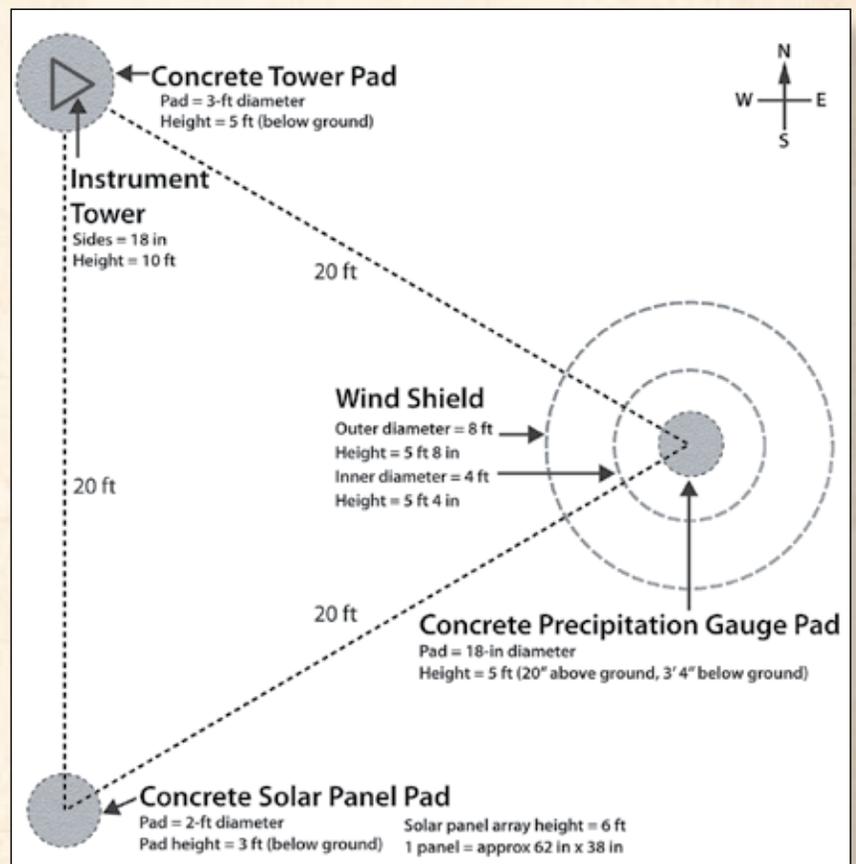
INSTALLATION ACTIVITIES

A NOAA engineer will contact the host organization with detailed installation information typically 30 days prior to installation. Station construction takes place in two steps. The first step involves ground excavation and construction activities and usually takes less than eight hours to complete. The second step involves mounting and activating the meteorological instruments and also takes less than eight hours. Step two occurs anywhere from one day to one week after step one, but usually within a day or two. Minimal, if any, change to the natural contours or erosion potential of the area occurs, and minimal, if any, woody vegetation is disturbed.

A typical installation is described below:

- Step one begins when a pick-up truck tows a flat-bed trailer carrying a small backhoe to the permitted location.
- Approximately 5 cubic yards of soil is removed to place concrete forms into three holes and PVC conduit into two trenches.
- The soil removed from each of the three holes is placed in a pile beside each hole.
- The soil removed from the two trenches will be placed along the edge of each trench. A 1.25-inch-diameter PVC conduit is placed into each 18-foot-long and approximately 18-inch-deep trench and the soil is used to backfill the trenches. Each trench results in 0.25 cubic foot of displaced soil after backfill.

Schematic of Station Layout



Pad specifications (after concrete placement and before instrument installation) [overhead view].



Typical Station Installation Activities

- Approximately 3 cubic yards of displaced soil is used to backfill the trenches and around the concrete forms. The remaining displaced soil will be dispersed over the permitted footprint with minimal if any change to the natural contours or erosion potential of the area.
- A concrete truck delivers 2.0 cubic yards of 4,000 psi ready-mix concrete to the permitted location and deposits it into the three holes.
- Step two typically occurs a day or two later. A pick-up truck drives to the permitted location towing a 16-foot-long by 7-foot-wide box trailer.
- The mounts and tower are attached to the concrete footings, and the meteorological instruments and satellite communications equipment are installed.

MAINTENANCE ACTIVITIES

In order to perform maintenance activities, NOAA will need year-round access to the station. The site host's ability and willingness to provide a limited level of maintenance is an important factor in the site selection process. This maintenance typically takes between two and four hours a year.

Host-provided maintenance includes:

- **Grounds Maintenance:** Consistent grounds maintenance ensures high quality temperature and precipitation measurements, so the site needs to be maintained in the same condition as when the station was installed.
- **Clearing Excessive Vegetation:** To a reasonable extent, the 29-foot by 29-foot site should be kept clear of excessive vegetation and debris. Tall grass can interfere with accurate temperature and precipitation observations and should be maintained at a height that allows for climate-quality observations. These requirements are established on a station-by-station basis.
- **Perform Simple Replacements or Repairs:** On rare occasions the host may be asked to perform simple replacements or repairs. A NOAA engineer will always make contact and be available to provide technical guidance, instruction, and support. NOAA will supply any equipment, tools, and shipping.
- **Empty Precipitation Gauge:** NOAA remotely monitors the precipitation gauge and will inform the host organization's local representative if and when the gauge needs to be emptied. NOAA will supply specific instructions, a manual pump, and phone support.
- **Store and Replace Antifreeze:** The precipitation gauge may need to be serviced with antifreeze before freezing temperatures occur. In order to prevent gauge damage and erroneous data, the host will be asked to drain and replace old antifreeze. NOAA will supply the antifreeze and waste containers. Both the new and waste antifreeze will require year-round storage. NOAA technicians will restock the antifreeze supply and remove the waste containers during the annual site maintenance visits.
- **Visual Station Inspection:** Periodic visual inspection of the station by the host may be requested by NOAA engineers.

WEB ACCESS

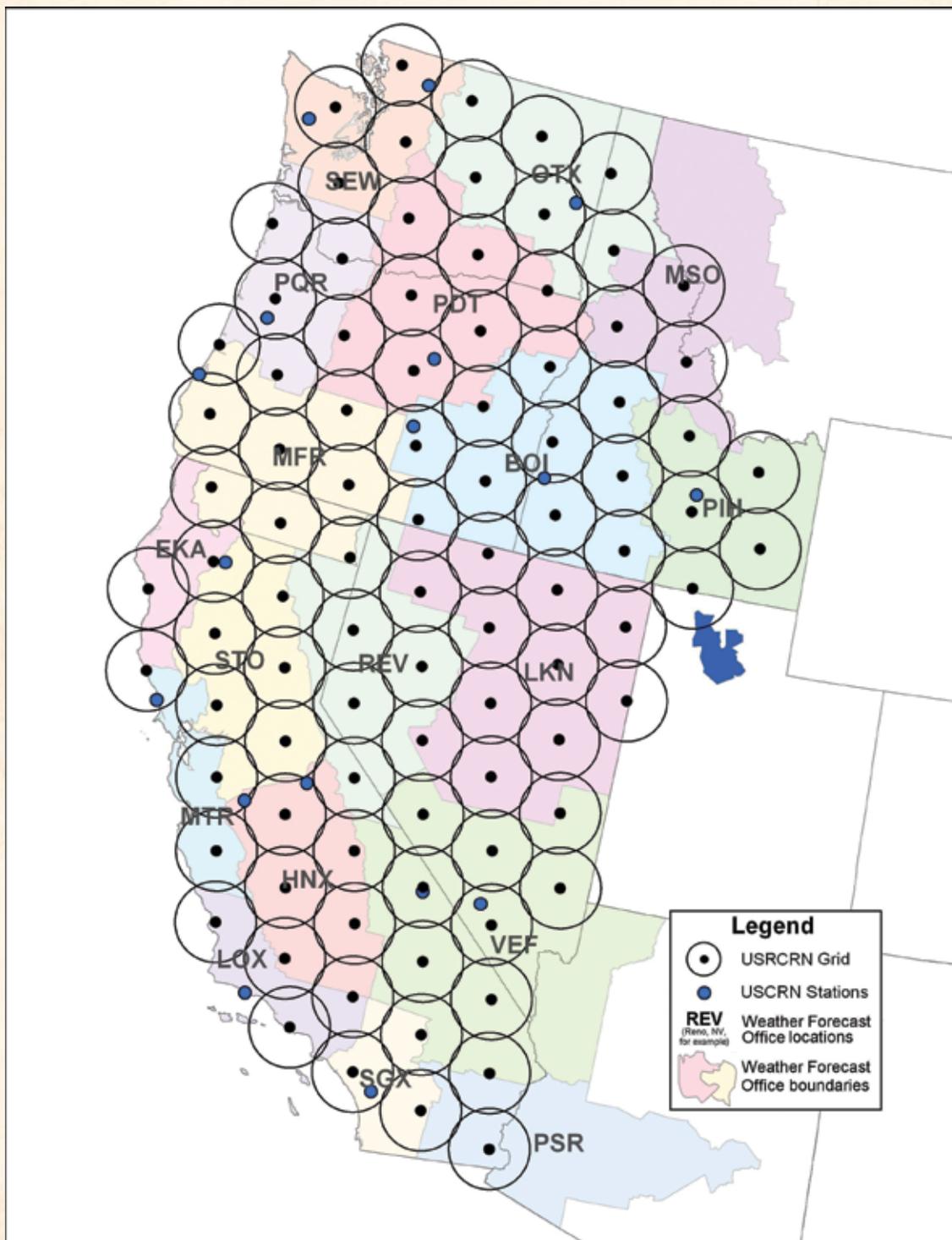
Data and other information are available online:

- USRCRN home page
<http://www.ncdc.noaa.gov/crn/usrcrn/>
- Hourly observations
<http://www.ncdc.noaa.gov/crn/observations.htm?network=usrcrn>

Agencies interested in hosting a USRCRN station should contact the Program Manager at USRCRN.Program@noaa.gov

Information related to climate data available at:
www.ncdc.noaa.gov

West and Northwest Climate Regions – USRCRN Grid



* The U.S. Regional Climate Reference Network, a regional network, shares processing and Web resources with another NOAA network, the U.S. Climate Reference Network (USCRN), which is designed to detect the *national* climate signal.