

Part 303 – Guidance on Soil Climate Analysis Network (SCAN) Station Investment

303.0 Purpose

This national instruction provides guidance to NRCS State conservationists, directors of the Pacific Islands and Caribbean Areas, and National Headquarters leadership officials on decisions regarding investment in SCAN stations.

303.1 Background

- A. SCAN is a comprehensive, nationwide soil moisture and climate information system designed to provide data to support natural resource assessments and conservation activities. SCAN has provided mission support by providing data for drought mitigation, timing irrigation activities, and soil taxonomic classification. SCAN data has also been used in climate change research activities.
- B. The SCAN system is administered by NRCS jointly through the National Water and Climate Center (NWCC) and the Soil and Plant Science Division (SPSD).
- C. The system focuses on agricultural areas of the United States, monitoring and disseminating soil temperature and soil moisture content at several depths, air temperature, relative humidity, solar radiation, wind speed and direction, hourly precipitation, and more.
- D. SCAN originated as a pilot project with a few sites in 1991 to quantify soil moisture and soil temperature regimes for taxonomic classification of soils. The number of sites has grown as additional sites have been installed at the request of partners or customers. Presently, there are 215 sites.
- E. The annual operating and maintenance cost is approximately \$5,000 per site. Installation costs are approximately \$30,000 for stations in the conterminous United States (CONUS); Hawaii, Alaska and Caribbean stations are potentially more expensive. All estimates are in fiscal year (FY) 2018 dollars and do not include inflation.
- F. To best use funds to meet key agency deliverables, the Chief has made critical decisions regarding SCAN, as provided in the following section.

303.2 Investment Decisions Regarding SCAN Stations

- A. Approval for new SCAN stations will be made on a case-by-case basis in conjunction with specific agency initiatives by the directors of the NWCC and the SPSP.
- B. No agreements may be entered into whereby NRCS agrees to operate and maintain SCAN stations installed by other entities unless proven NRCS installation procedures have been followed and future funding is provided by the outside entity for maintenance at least 5 years into the future (costs dependent on possible inflation).
- C. NRCS will continue to provide funds for operation and maintenance of existing sites installed by NRCS until the equipment has exceeded its useful life or appropriate allowance holders and analysts determine the site is no longer essential to maintaining the network.
- D. Where a written agreement exists, NRCS will continue to provide funds for operation and maintenance of SCAN sites established prior to FY 2010 by partners.

303.3 External Requests for New SCAN Stations

- A. New site installations require an agreement between NRCS and the requesting entity that includes provisions for funding the site for a minimum of 5 years. If, at the end of 5 years, the agreement is not renewed, the station will be discontinued unless internal funding becomes available.
- B. Placement of new SCAN sites must be in accordance with the nationwide network design and the agreement approved in coordination with the NWCC director.
- C. Operation and maintenance (O&M) and data management and analysis will be provided by NWCC and SPSPD personnel or trained individuals in each State. It is the responsibility of the State conservationist or director of the Pacific Islands or Caribbean Area to support the SCAN network.

303.4 Negotiating External Agreements for Installation and Support (Operation and Maintenance of SCAN sites)

The entity requesting a new SCAN site must be willing and able to provide funding to cover all of the following:

- (1) The entire cost of installation of the SCAN station—currently estimated at \$30,000 in FY 2018 dollars for a single site (within the CONUS; others may be more expensive, depending on accessibility)
- (2) The entire cost of O&M of the SCAN station for a period of not less than 10 years—currently estimated at \$5,000 in FY 2018 dollars per year per site (within the CONUS; others may be more expensive, depending on accessibility)
- (3) The estimated cost of data management and analysis (quality control) of the data collected from the new SCAN site for a period of not less than 10 years—currently estimated at \$850 in FY 2018 dollars per year per site.

303.5 Additional Guidance

State conservationists, directors of the Pacific Islands and Caribbean Areas, and other appropriate officials are encouraged to work with their clients to help them identify and make best use the data provided by SCAN site instrumentation for resource management.

303.6 Contact for Additional Information

For additional information, contact the Director, National Water and Climate Center, at (503) 414-3055 or the Director, Soil and Plant Science Division at (202) 720-7848.