

APPENDIX E

GUIDELINES FOR EXISTING NETWORK OPERATORS

Most pre-existing networks will likely easily fit in the Tier III category with minor updates. See below for how to upgrade the networks/stations to more rigorous tiers.

NETWORKS WITH PRE-INSTALLED SOIL MOISTURE SENSORS

TIER III

- Verify sensor(s) is(are) factory calibrated and report accuracy. This information can be sourced from the sensor manual or by contacting the company.
- Ensure compliance with allowable missing data values per Table 8, Chapter 8.
- Report metadata as per Tier III requirements ([Metadata Guidance](#) document). Besides basic information on site location, you will need access to the soil series classification per NRCS SSURGO. You can identify the soil series from this [link](#) by searching for latitude and longitude of your site (<https://casoilresource.lawr.ucdavis.edu/gmap/>).

TIER II

- **Installing additional sensors:** If additional sensors need to be installed to upgrade the tier of a station:
 - Do not remove or disturb pre-existing sensors.
 - Reach out to local NRCS offices or soil science departments in land-grant universities to request help with site characterization.
 - With the help of a soil scientist, follow guidelines for micro-site selection and install the new set of sensors in a new borehole. It is recommended to install new sensors at all depths even if the pre-installed sensors are already measuring data at that depth.
 - Collect soils for calibration as described in Appendix A and apply calibration to both sets of sensors.
 - Report data from both sets of sensors.
- **No additional sensors required:** If the pre-installed sensors satisfy the depth requirements of Tier II:
 - Reach out to local NRCS offices or soil science departments in land-grant universities to request help with site characterization. Site characterization can be performed anywhere near the installed site as recommended by the soil scientist. Ensure that you are at least one foot away from the installed sub-surface sensors' extremities. You can also reach out to the National Coordinated Soil Moisture Monitoring Network (NCSMMN) at soil.moisture@noaa.gov and the [AASC Mesonet](#) community for recommendations.
 - Upgrade metadata as required. Tier II metadata will require assistance from a soil scientist.

- Ensure compliance with parameters described in ‘Data Stream Density’ per Table 8, Chapter 8.
- Ensure all QA/QC procedures are in place (Chapter 7).

TIER I

- ☐ In addition to activities described for Tier II data, perform post-validation for all installed sensors.

GUIDELINES FOR REPLACING FAILED SENSORS

When a new sensor(s) is(are) to be added to replace an existing failed sensor “close” to the existing site, then it must be installed along the same contour such that neither the new sensor or existing sensors impede water flow above the ground where either of them are installed.

NETWORKS WITH NO PRE-EXISTING SOIL MOISTURE SENSORS

Follow Appendix A.