

Data Quality Expectations for Ambient Air Data Used by Clark County, Nevada

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Deliberating Performance Targets for Air Quality Sensors
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Clark County, Department of Air Quality

- Designated authority to regulate local air quality
- Planning and Monitoring Divisions collaborate to characterize ambient air quality and inform the public of past, present and forecasted air quality conditions
- History of professional studies to identify network coverage needs and causes of challenging air quality concerns

Utilizing measurements from small sensors

- We recognize potential value of data from responsibly operated small sensors for some purposes:
 - Adequacy of spatial distribution of monitoring stations
 - Expanded coverage of current air quality for forecasting purposes
 - Not suitable to assess NAAQS compliance

DAQ support to research and citizen-science studies using small sensors

- Collaborate for instrument performance comparisons with data from DAQ Tier V regulatory ambient air monitoring stations
 - Cooperate to optimize proximity of sensors, with constraints
 - Preliminary hourly average data publicly available in near-real time
 - Validated data available in AQS on a timely schedule
- Comparison plan needs to include environmental conditions and siting factors potentially affecting data
- Discourage developing “calibration” factor to modify small-sensor measurement data

FYI – status on ASTM International work in developing small-sensor standards

- Work is in progress by Subcommittee D22.03 on Ambient Atmospheres and Source Emissions
<https://www.astm.org/COMMIT/SUBCOMMIT/D2203.htm>
- Draft text from: WK64899 Performance Evaluation of Ambient Air Quality Sensors and Other Sensor-based Instruments
 - Establishes standardized tests and assessment criteria for the performance evaluation of sensor based continuous instruments for ambient air quality measurements.
 - Describes both laboratory and field tests that provide information on candidate instrument repeatability, sensitivity, linearity, cross- interferences, temperature impacts, drift and measurement uncertainty as compared with the more costly instruments typically used by entities such as government agencies.