

North Coast Unified Air Quality Management District



Air Monitoring Network Plan 2012

NCUAQMD
2300 Myrtle Ave
Eureka, CA 95501

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Definition of Terms

AAC: Atmospheric Analysis and Consulting

AQS: Air Quality System

ARB: Air Resources Board

E-BAM: Emergency Beta-Attenuation Monitor

BAAQMD: Bay Area Air Quality Management District

FEM: Federal Equivalency Method

FRM: Federal Reference Method

MSA: Micropolitan Statistical Area

NAAQS: National Ambient Air Quality Standards

NOAA: National Oceanographic and Atmospheric Administration

NCUAQMD: North Coast Unified Air Quality Management District

PQAO: Primary Quality Assurance Agency

SIP: State Implementation Plan

SLAMS: State and Local Air Monitoring Site

Executive Summary

The District maintains a network of air pollution monitoring equipment throughout the North Coast. The network has developed slowly, beginning in 1986 with a solitary PM10 monitoring station. Currently there are five stations in operation.

NCUAQMD is located in the far northwestern portion of California. It is comprised of three counties: Humboldt, Del Norte, and Trinity, which together cover 7,753 square miles. It is bordered on the west by the Pacific Ocean and extends from the Oregon Border south approximately 140 miles to the Mendocino County line. Eureka, the county seat of Humboldt County, is 284 miles north of San Francisco, 466 miles south of Portland, Oregon and on the coast of the Pacific Ocean. Inversions and diurnal offshore wind patterns are common. The area is made up of complex terrain, from coastal wetlands to rugged mountains.

Major sources located in the Humboldt Bay region (Eureka, Arcata) include the Fairhaven Power Plant, and PG&E's Humboldt Bay Power Plant. The first source is located on the Samoa Peninsula just east of Eureka. The PG&E plant is located just south of Eureka.

In addition to these Title 5 sources, NCUAQMD is impacted by mobile and large industrial sources. The District is also impacted by wood smoke in the winter and agricultural crop residue burning and wild fires in the summer.

Overview of Network Operation

Network Design.

The North Coast Unified Air Quality Management District operated 5 monitoring sites in 2011. The following maps show the locations of the monitoring sites. Tables 1 and 2 list the pollutants measured at each site.

Table 1. List of Special Purpose Monitoring Sites

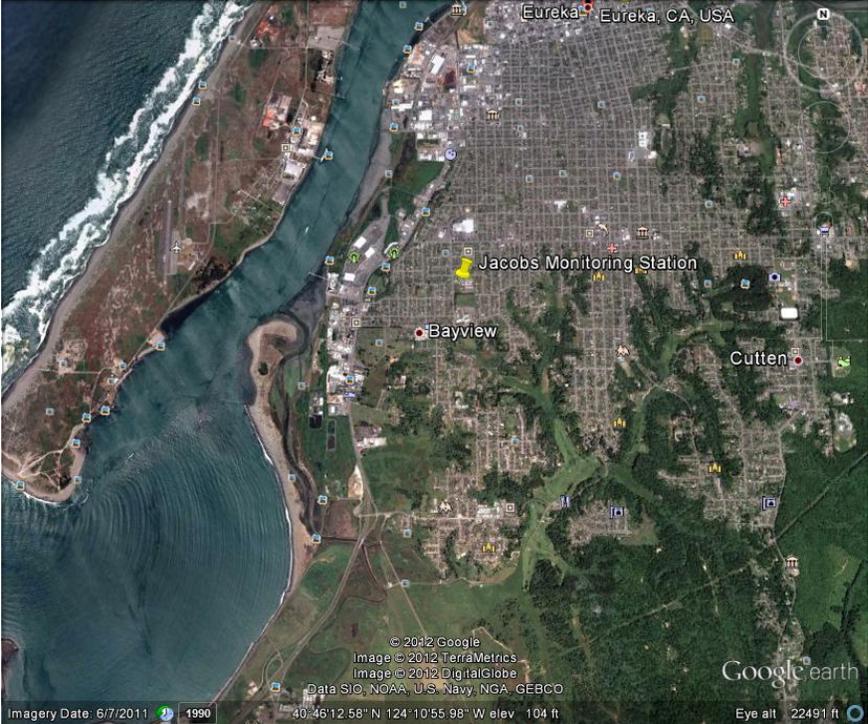
| Site Name | AQS Site # | Pollutant Monitored |
|---------------|------------|-----------------------------------------------------------------------------------------------------------|
| Jacobs | 060231004 | PM ₁₀ , PM _{2.5} , O ₃ , NO ₂ , CO, SO ₂ |
| Humboldt Hill | 060231005 | PM ₁₀ , PM _{2.5} , O ₃ , NO ₂ , CO, SO ₂ , toxics |

Table 2. List of State and Local Air Monitoring Sites

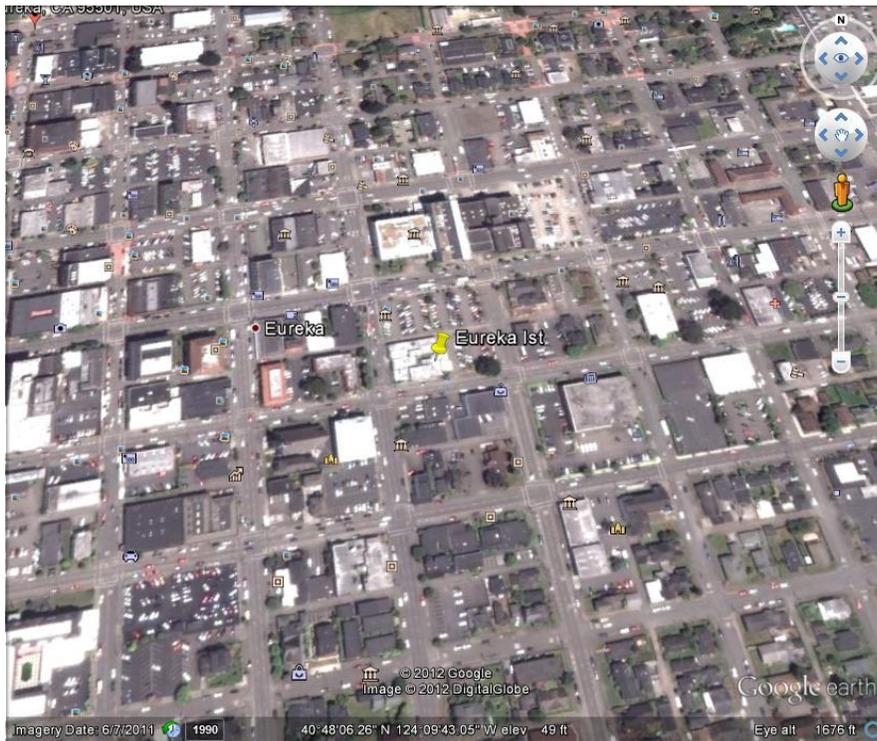
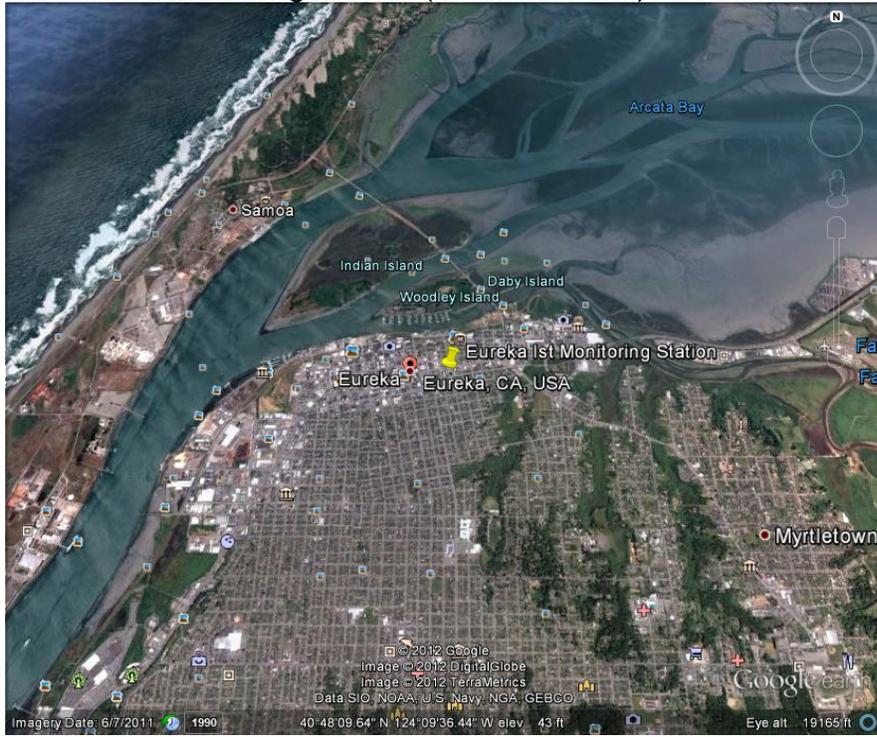
| Site Name | AQS Site # | Pollutants Monitored |
|---------------|------------|--------------------------------------|
| Eureka Ist | 060231002 | PM ₁₀ , PM _{2.5} |
| Weaverville | 061050002 | PM ₁₀ , PM _{2.5} |
| Crescent City | 060150006 | PM ₁₀ |

Monitoring Station Locations

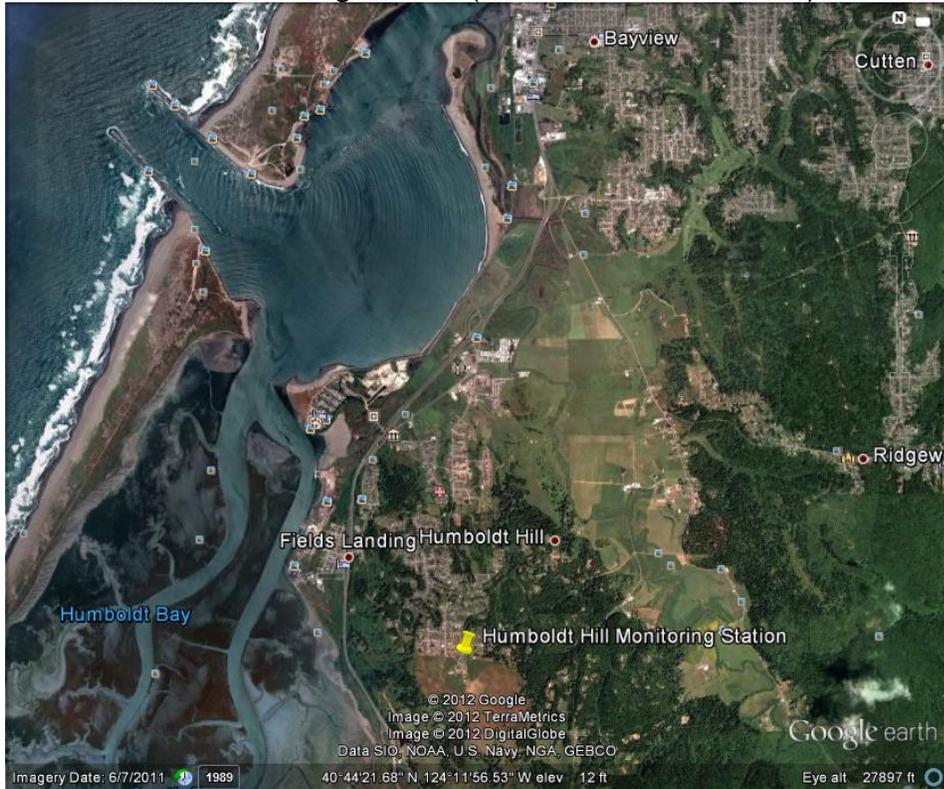
Jacobs Monitoring Station (717 South Ave)



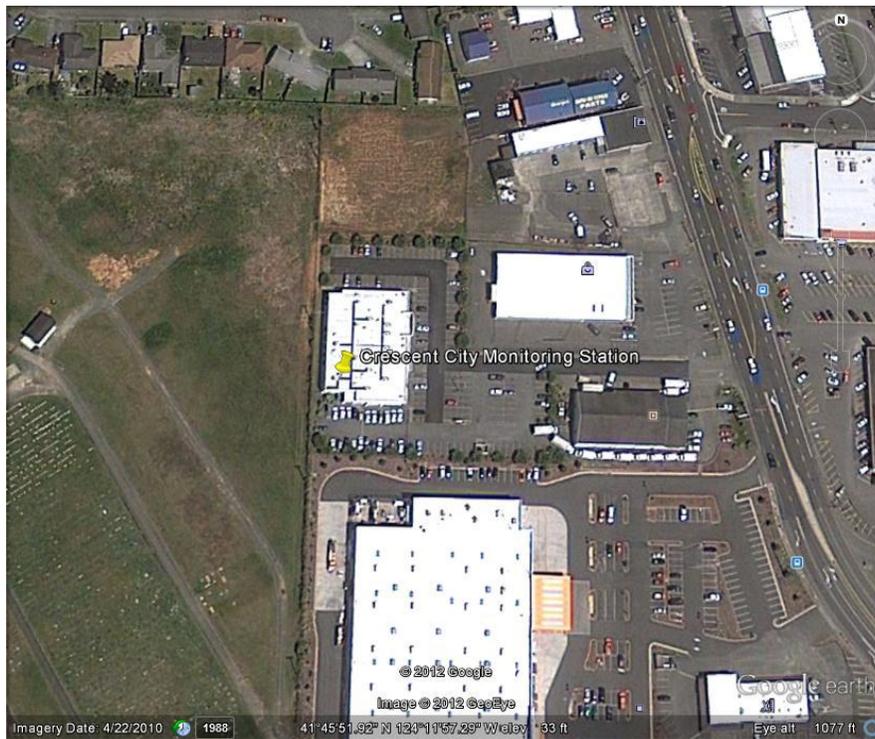
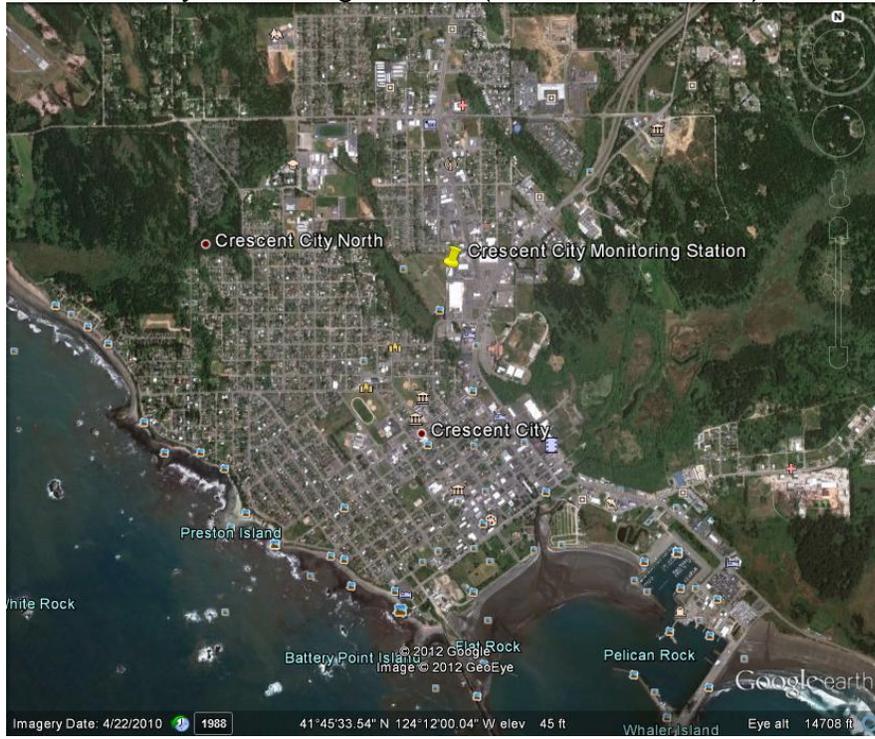
Eureka Ist Monitoring Station (6th and I street)



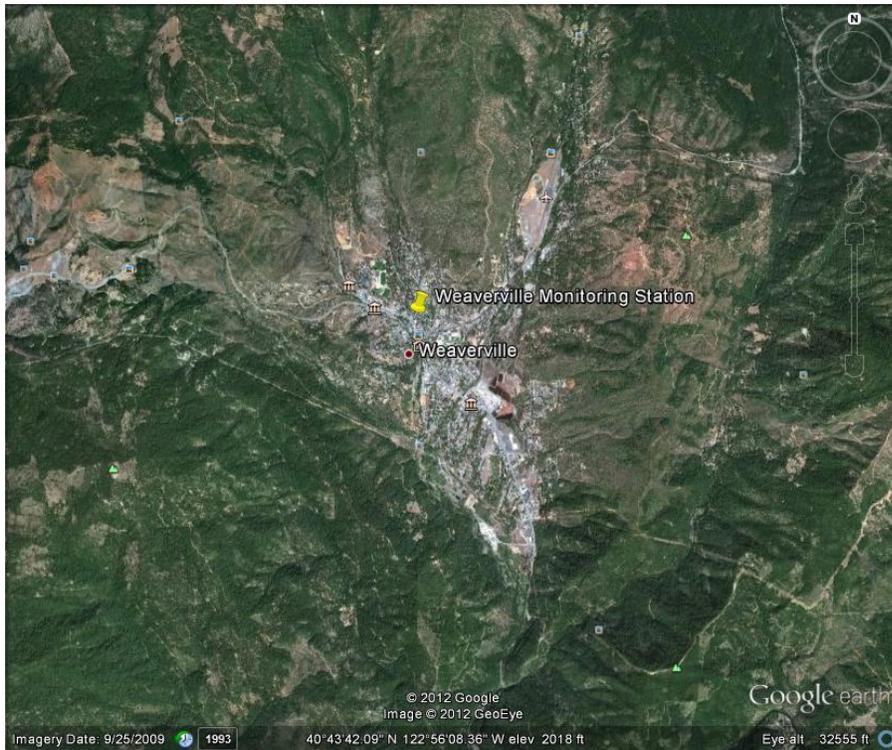
Humboldt Hill Monitoring Station (7333 Humboldt Hill Rd.)



Crescent City Monitoring Station, (880 Northcrest Dr.)



Weaverville Monitoring Station, (11 Court Street)



Minimum Monitoring Requirements

This network meets the minimum monitoring requirements for all criteria pollutants (Tables 3-11).

Ozone

Table 3. Minimum Monitoring Requirements for Ozone.

| Micropolitan Statistical Area | County | Pop. In Year 2010 | 4th highest 8-hour max. (ppm) (2009-2011) | 3 year design value | Monitors Required | Active Monitors | Monitors Needed |
|-------------------------------|-----------|-------------------|-------------------------------------------|---------------------|-------------------|-----------------|-----------------|
| Eureka-Arcata-Fortuna | Humboldt | 134,623 | Jacobs 0.046 | Jacobs 0.047 | 0 | 2 | 0 |
| | | | Humboldt Hill* 0.040 | * | | | |
| Crescent City | Del Norte | 28,610 | - | - | 0 | 0 | 0 |
| none | Trinity | 13,786 | - | - | 0 | 0 | 0 |

* The Humboldt Hill monitoring station value was calculated using only 2011 data. There is not enough data to find the 3 year design value.

No monitors are required for either a SIP or Maintenance Plan. The NCUAQMD monitors Ozone as an examination of population exposure levels.

PM 2.5

Table 4. Minimum Monitoring Requirements for FRM PM_{2.5}.

| Micropolitan Statistical Area | County | Pop. In Year 2010 | Annual Design Value (ug/m ³) (2009-2011) | Daily Design Value (ug/m ³) (2009-2011) | FRM Monitors Required | Monitors Active | Monitors Needed |
|-------------------------------|-----------|-------------------|------------------------------------------------------|-----------------------------------------------------|-----------------------|-----------------|-----------------|
| Eureka, Arcata, Fortuna | Humboldt | 134,623 | I street 6.1 | I street 19 | 0 | 2 | 0 |
| | | | Jacobs 6.4 | Jacobs 21 | | | |
| Crescent City | Del Norte | 28,610 | - | - | 0 | 0 | 0 |
| none | Trinity | 13,786 | * | * | 0 | 0 | 0 |

Table 5. Minimum Monitoring Requirements for Continuous PM_{2.5} monitors.

| Micropolitan Statistical Area | County | Pop. In Year 2010 | Annual Design Value (ug/m ³) (2009-2011) | Daily Design Value (ug/m ³) (2009-2011) | FEM monitors required | Monitors Active | Monitors Needed |
|-------------------------------|-----------|-------------------|------------------------------------------------------|-----------------------------------------------------|-----------------------|-----------------|-----------------|
| Eureka, Arcata, Fortuna | Humboldt | 134,623 | Humboldt Hill* 8.2 | Humboldt Hill* 21 | 0 | 1 | 0 |
| Crescent City | Del Norte | 28,610 | | - | 0 | 0 | 0 |
| none | Trinity | 13,786 | * | * | 0 | 1 | 0 |

*Sufficient Trinity County data has not yet been monitored to allow for design value reporting.

* The Humboldt Hill monitoring station value was calculated using only 2011 data.

No monitors are required for either a SIP or Maintenance Plan. The NCUAQMD participates in the Federal Fine Particulates monitoring program by operating instruments at the Eureka Ist station, the Jacobs station and the Weaverville station. The NCUAQMD monitors PM_{2.5} at the Jacobs site monitoring station as an examination of population exposure. Both Humboldt County PM_{2.5} monitors are FRMs suitable for national comparison, sampling on a frequency of 1/3 during the winter season, 1/6

during the summer season. A non-FEM PM_{2.5} monitor in Trinity County was replaced with an FEM monitor in August 2011.

Table 6. Collocation of continuous PM_{2.5} monitors

| Method Code | # Primary Monitors | # Required Collocated monitors | # Active Collocated FRM monitors | # Active Collocated FEM Monitors |
|-------------|--------------------|--------------------------------|----------------------------------|----------------------------------|
| 195 | 2 | 1 | 0 | 0 |

No PM_{2.5} monitors are required by either a SIP or Maintenance Plan. NCUAQMD recently deployed two newly designated FEM monitors, at different locations in the district. As no other instruments of this type operate in the PAQO, one collocated instrument is required at these continuous monitor sites. This need will be addressed in the Proposed Modifications to Network section.

PM₁₀

Table 7. Minimum Monitoring Requirements for PM₁₀.

| Micropolitan Statistical Area | County | Population in Year 2010 | Max Concentration (2009-2011) (ug/m ³) | Monitors Required | Monitors Active | Monitors Needed |
|-------------------------------|-----------|-------------------------|----------------------------------------------------|-------------------|-----------------|-----------------|
| Eureka, Arcata, Fortuna | Humboldt | 134,623 | I street 64 | 1 | 3 | 0 |
| | | | Jacobs 49 | | | |
| | | | Humboldt Hill* - | | | |
| Crescent City | Del Norte | 28,610 | 61 | 1 | 1 | 0 |
| none | Trinity | 13,786 | 59 | 1 | 1 | 0 |

*Sufficient data has not yet been generated by the Humboldt Hill monitoring station to allow for reporting.

NCUAQMD is non-attainment for the State PM₁₀ standard. For our maintenance plan we are required by the State of California to operate a sampler in each of the three counties on a 1 in 6 schedule. NCUAQMD also operates two additional samplers in Eureka, to examine population exposure more closely.

NO₂

Table 8. Minimum Monitoring Requirements for NO₂.

| Micropolitan Statistical Area | County | Pop. in Year 2010 | Annual Design Value (ppb) (2009-2011) | Monitors Required | Active Monitors | Monitors Needed |
|-------------------------------|-----------|-------------------|---------------------------------------|-------------------|-----------------|-----------------|
| Eureka-Arcata, Fortuna | Humboldt | 134,623 | Jacobs 3.59* | 0 | 2 | 0 |
| | | | Humboldt Hill 0.99* | | | |
| Crescent City | Del Norte | 28,610 | - | 0 | 0 | 0 |
| none | Trinity | 13,786 | - | 0 | 0 | 0 |

*The Jacobs station did not satisfy summary criteria

* The Humboldt Hill monitoring station value was calculated using only 2011 data.

No monitors are required for SIP or Maintenance Plans. NCUAQMD monitors NO₂ in Humboldt County to examine population exposure. Based on population, no near-road NO₂ monitors are required within the NCUAQMD boundaries.

SO₂

Table 9. Minimum Monitoring Requirements for SO₂.

| Micropolitan Statistical Area | County | Pop. in Year 2010 | Annual Design Value (ppb) (2009-2011) | Max 24 hour (ppb) (2009-2011) | Max 1 hour (ppb) (2009-2011) | Monitors Required | Active Monitors | Monitors Needed |
|-------------------------------|-----------|-------------------|---------------------------------------|-------------------------------|------------------------------|-------------------|-----------------|-----------------|
| Eureka-Arcata, Fortuna | Humboldt | 134,623 | Jacobs 0.59 | Jacobs 1.9 | Jacobs 2.1 | 0 | 2 | 0 |
| | | | Humboldt Hill* 0.07 | Humboldt Hill* 0.6 | Humboldt Hill* 0.8 | | | |
| Crescent City | Del Norte | 28,610 | - | - | - | 0 | 0 | 0 |
| none | Trinity | 13,786 | - | - | - | 0 | 0 | 0 |

*The Humboldt Hill monitoring station value was calculated using only 2011 data.

No monitors are required for SIP or Maintenance Plans. The NCUAQMD is not required to monitor SO₂. NCUAQMD monitors SO₂ in Humboldt County to examine population exposure.

CO

Table 10. Minimum Monitoring Requirements for CO.

| Micropolitan Statistical Area | County | Pop. in Year 2010 | 8-hour Design Value (ppm) (2009-2011) | 1 hour. Design Value (2009-2011) | Monitors Required | Collocated Monitors Required | Active Monitors | Monitors Needed |
|-------------------------------|-----------|-------------------|---------------------------------------|----------------------------------|-------------------|------------------------------|-----------------|-----------------|
| Eureka-Arcata-Fortuna | Humboldt | 134,623 | Jacobs 1.0 | Jacobs 1.5 | 0 | 0 | 2 | 0 |
| | | | Humboldt Hill 1.6 | Humboldt Hill 1.7 | | | | |
| Crescent City | Del Norte | 28,610 | - | - | 0 | 0 | 0 | 0 |
| none | Trinity | 13,786 | - | - | 0 | 0 | 0 | 0 |

*The Humboldt Hill monitoring station value was calculated using only 2011 data.

No monitors are required for SIP or Maintenance Plans. The NCUAQMD is not required to monitor CO. NCUAQMD monitors CO in Humboldt County to examine population exposure.

Pb

Table 11. Minimum Monitoring Requirements for Pb.

| MSA | County | Pop. In Year 2010 | Annual Design Value (years) | Monitors Required | Active Monitors | Monitors Needed |
|-------------------------|-----------|-------------------|-----------------------------|-------------------|-----------------|-----------------|
| Eureka, Arcata, Fortuna | Humboldt | 134,623 | - | 0 | 0 | 0 |
| Crescent City | Del Norte | 28,610 | - | 0 | 0 | 0 |
| none | Trinity | 13,786 | - | 0 | 0 | 0 |

No monitors are required for SIP or Maintenance Plans. The NCUAQMD is not required to monitor Pb and does not do so.

Quality Control

All NCUAQMD ambient air monitoring meets stringent ARB Quality Control and Quality Assurance requirements. ARB audit records and site information for NCUAQMD can be found on the ARB website at <http://www.arb.ca.gov/aaqm/qmosqual/qmosqual.htm>. If you desire audit information, and do not have access to the web, please contact NCUAQMD directly at (707) 443-3093.

Recent or Proposed Modifications to Network

A new special purpose monitoring station located on Humboldt Hill, Eureka began operation in June 2011. This station was designed to meet a permit requirement of the newly upgraded Pacific Gas and Electric plant, which is located at the foot of Humboldt Hill. The station monitors O₃, NO₂, SO₂, CO, NH₃, PM₁₀, PM_{2.5}, air toxics, wind direction, wind speed, temperature, pressure, and rH.

A Grimm continuous PM_{2.5} FEM was deployed in Weaverville August of 2011. The existing PM_{2.5} non-FEM was shut down. The Grimm monitor also measures non-FEM PM₁₀. In addition, a high volume PM₁₀ FRM operates at this location.

A collocated FRM PM_{2.5} monitor is required next to a GRIMM 180 in the NCUAQMDs Primary Quality Assurance Organization. San Joaquin Valley Unified APCD is a member of the same PQAO and will be collocating a Grimm 180 with a PM_{2.5} FRM at one of their sites in the near future. This collocation is expected to meet the NCUAQMD requirement for collocation.

A continuous PM₁₀ FEM monitor is planned to be placed in Crescent City in fall of 2012. The location for this monitor has not yet been found. It is not possible to collocate it with the current FRM PM₁₀. The FRM will be removed after the FEM is fully operational.

A continuous PM_{2.5} FEM is planned to be placed in Crescent City in 2013. This instrument will be located with the continuous PM₁₀ FEM discussed above.

Review of Changes to PM2.5 Monitoring Network

The NCUAQMD has not changed the location of any violating PM2.5 monitor. Any changes to the NCUAQMD's PM2.5 network are reviewed by EPA Region 9's review process. NCUAQMD has never removed a PM2.5 monitor, and has added three monitors since the inception of its 2.5 monitoring program. If a violating PM2.5 monitor ever needed to be moved, we would use the annual network plan inspection/comment process to provide for the review of this change.

In August of 2011, the BAM1020 (non-FEM) previously monitoring PM2.5 in Weaverville was replaced with the Grimm 180 (FEM). This change allows the data collected to be used for national comparison purposes. The Humboldt Hill station also uses a Grimm 180. The incorporation of Grimm instruments into the network caused a collocation requirement. NCUAQMD plans to meet this requirement as funding allows.

Data Submission Requirements

Precision/Accuracy reports are submitted to the ARB no later than 60 days after the quarter of record. The ARB uploads NCUAQMD data to AQS no later than 90 days after the quarter of record. The ARB submits the annual data certification no later than May each year.

Data Availability

NCUAQMD air quality data is available on the National Air Quality System (AQS) database. It can also be obtained directly from NCUAQMD, in the form of monthly or yearly reports. Please contact NCUAQMD at 707-443-3093 to request copies of these reports.

Detailed Site Information

Site Name: Jacobs

The Jacobs site was established in December of 2006 it is located on the South side of Eureka and is expected to represent neighborhood scale air quality.

| | | | | | | |
|--------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------|----------------------------------|--------------------------|---------------------------|
| Site Name | Jacobs | | | | | |
| AQS ID | 060231004 | | | | | |
| GIS coordinates | 103.91015E 4514.83731N WGS84 | | | | | |
| Location | Alice Birney Elementary School | | | | | |
| Address | 717 South Ave, Eureka | | | | | |
| County | Humboldt | | | | | |
| Dist. to road (meters) | 50 | | | | | |
| Traffic count (AADT) | 3100 (2007) | | | | | |
| Representative statistical area name | Eureka, Arcata, Fortuna | | | | | |
| Groundcover | grass | | | | | |
| PEP audit? | Information maintained by EPA | | | | | |
| NPAP audit? | Information maintained by EPA | | | | | |
| PM Flow audits | Performed every 15 sampling runs by NCUAQMD, Performed annually by EPA, Performed annually by ARB | | | | | |
| Gaseous audits | Performed annually by ARB | | | | | |
| Gaseous One-point control checks | Performed a minimum of once per two weeks | | | | | |
| Representative Area | Humboldt County Micropolitan Statistical Area, Eureka-Arcata-Fortuna, suburban | | | | | |
| Pollutant | O3 | NO2 | CO | SO2 | PM2.5 | PM10 |
| Parameter Code | 44201 | 42602 | 42101 | 42401 | 88101 | 85101 |
| Basic Monitoring Objective | NAAQS comparison | NAAQS comparison | NAAQS comparison | NAAQS comparison | NAAQS comparison | NAAQS comparison |
| Site Type | Population exposure | Population exposure | Population exposure | Population exposure | Population exposure | Population exposure |
| Monitor Type | Special purpose | Special purpose | Special purpose | Special purpose | Special purpose | Special purpose |
| Spatial scale | Neighborhood | Neighborhood | Neighborhood | Neighborhood | Neighborhood | Neighborhood |
| Sampling method | Photometric EQOA-0880-047 | Chemiluminescence RFNA-1289-074 | Gas Filter correlation RFCA-0981-054 | Pulsed Florescence EQSA-0486-060 | Low Volume RFPS-0498-117 | High Volume RFPS-1287-063 |
| Instrument manufacturer and model | Thermo 49i | Thermo 42i | Thermo 48i | Thermo 43i | R&P 2000 | Thermo HVol |
| FRM/FEM/ARM | FRM | FRM | FRM | FRM | FRM | FRM |
| Collecting Agency | NCUAQMD | NCUAQMD | NCUAQMD | NCUAQMD | NCUAQMD | NCUAQMD |
| Analytical Lab | N/A | N/A | N/A | N/A | BAAQMD | NCUAQMD |

| Site Name | Jacobs | | | | | |
|---------------------------------------------------------|---------------|--------------|--------------|--------------|-----------------------------|--------------|
| Pollutant | O3 | NO2 | CO | SO2 | PM2.5 | PM10 |
| Reporting Agency | ARB | ARB | ARB | ARB | BAAQMD | ARB |
| Start date | Dec 15, 2006 | Dec 15, 2006 | Dec 15, 2006 | Dec 15, 2006 | Dec 25, 2006 | Dec 15, 2006 |
| Current Sampling Frequency | continuous | continuous | continuous | continuous | 1:3 Oct-Mar 1:6 Apr-Sept | 1:6 |
| Sampling season | Year round | Year round | Year round | Year round | Year round | Year round |
| Probe height (meters) | 4.5 | 4.5 | 4.5 | 4.5 | N/A | N/A |
| Distance from supporting structure (meters) | 1.9 | 1.9 | 1.9 | 1.9 | N/A | N/A |
| Distance from obstructions on roof | N/A | N/A | N/A | N/A | N/A | N/A |
| Distance from obstructions not on roof (meters) | 19 | 19 | 19 | 19 | 19 | 19 |
| Distance from trees (meters) | 15 | 15 | 15 | 15 | 15 | 17 |
| Distance to furnace or incinerator flue | N/A | N/A | N/A | N/A | N/A | N/A |
| Distance between collocated monitors | N/A | N/A | N/A | N/A | N/A | N/A |
| Unrestricted airflow (degrees) | 360 | 360 | 360 | 360 | 360 | 360 |
| Probe material | Teflon | Teflon | Teflon | Teflon | N/A | N/A |
| Residence time (seconds) | 9.6 | 9.6 | 5.5 | 11.4 | N/A | N/A |
| Will there be changes within the next 18 months? | No | No | No | No | No | No |
| Is it suitable for comparison against the annual PM2.5? | N/A | N/A | N/A | N/A | Yes | N/A |

Site Name: Eureka I Street

The 1st site was established in 1986. It is located downtown Eureka near HWY 101 and is expected to represent middle scale air quality.

| | | |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------|
| Site Name | Eureka Ist | |
| AQS ID | 060231002 | |
| GIS coordinates | 103.92619E 4517.39332N WGS84 | |
| Location | Humboldt County Health Department | |
| Address | 529 Ist, Eureka | |
| County | Humboldt | |
| Dist. to road | 9 meters to 6 th St, 30 meters to 5 th St. | |
| Traffic count | 6 th street has ADT of 9,000 , 5 th street has ADT of 25,500 | |
| Groundcover | Paved | |
| PEP audit? | Information maintained by EPA | |
| NPAP audit? | Information maintained by EPA | |
| Flow audit? | Performed every 15 sampling runs by NCUAQMD, Performed annually by EPA, Performed annually by ARB | |
| Representative Area | Humboldt County Micropolitan Statistical Area, Eureka-Arcata-Fortuna, Urban | |
| Pollutant | PM2.5 | PM10 |
| Parameter code | 88101 | 85101 |
| Basic Monitoring Objective | NAAQS comparison | NAAQS comparison |
| Site Type | Highest Concentration | Highest Concentration |
| Monitor Type | SLAMS | SLAMS |
| Spatial scale | Middle Scale | Middle Scale |
| Sampling method | Low Volume RFPS-0498-117 | High Volume RFPS-1287-063 |
| Instrument manufacturer and model | R & P 2000 | Thermo HVol |
| FRM/FEM/ARM | FRM | FRM |
| Collecting Agency | NCUAQMD | NCUAQMD |
| Analytical Lab | BAAQMD | NCUAQMD |
| Reporting Agency | BAAQMD | ARB |
| Start date | Jan 1999 | Nov 1986 |
| Current Sampling Frequency | 1:3 Oct-Mar 1:6 Apr-Sept | 1:6 |
| Sampling season | Year round | Year round |
| Probe height (meters) | 6 | 6 |
| Distance from supporting structure (meters) | 2 | 2 |
| Distance from obstructions on roof (meters) | 5 | 5.5 |
| Distance from obstructions not on roof (meters) | 25 | 25 |
| Distance from trees below probe height (meters) | 6.5 | 4.6 |

| Site Name | Eureka Ist | |
|---------------------------------------------------------|-------------------|-------------|
| Pollutant | PM2.5 | PM10 |
| Distance to furnace or incinerator flue (meters) | 5 | 5 |
| Distance between collocated monitors | N/A | N/A |
| Unrestricted airflow | 270 degrees | 270 degrees |
| Probe material | N/A | N/A |
| Residence time | N/A | N/A |
| Will there be changes within the next 18 months? | No | No |
| Is it suitable for comparison against the annual PM2.5? | Yes | N/A |

Site Name: Humboldt Hill

The Humboldt Hill site was established in June 2011. It is located in Humboldt Hill on the South side of Eureka and is expected to represent neighborhood scale air quality.

| | | | | | | | | |
|-----------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------|-----------------------------------|---------------------|-----------------------------|---------------------------|---------------------|
| Site Name | Humboldt Hill | | | | | | | |
| AQS ID | 060231005 | | | | | | | |
| GIS coordinates | 40.71528 (N) -124.20139 (W) | | | | | | | |
| Location | Humboldt Hill Summit | | | | | | | |
| Address | 7333 Humboldt Hill Road, Eureka | | | | | | | |
| County | Humboldt | | | | | | | |
| Dist. to road | 25 | | | | | | | |
| Traffic count | Unknown, less than 50 | | | | | | | |
| Groundcover | grass | | | | | | | |
| PEP audit? | Information maintained by EPA | | | | | | | |
| NPAP audit? | Information maintained by EPA | | | | | | | |
| PM Flow audits | Performed every 15 sampling runs by NCUAQMD, Performed annually by EPA, Performed annually by ARB | | | | | | | |
| Gaseous audits | Performed annually by ARB | | | | | | | |
| Gaseous One-point control checks | Performed a minimum of once per two weeks | | | | | | | |
| Representative Area | Humboldt County Micropolitan Statistical Area, Eureka-Arcata-Fortuna, suburban | | | | | | | |
| Pollutant | O3 | NO2 | CO | SO2 | NH3 | PM2.5 | PM10 | Toxics |
| Parameter code | 44201 | 42602 | 42101 | 42401 | 42604 | 88101 | 85101 | |
| Basic Monitoring Objective | NAAQS comparison | NAAQS comparison | NAAQS comparison | NAAQS comparison | Air pollution data | NAAQS comparison | NAAQS comparison | Air pollution data |
| Site Type | Population exposure | Population exposure | Population exposure | Population exposure | Population exposure | Population exposure | Population exposure | Population exposure |
| Monitor Type | Special purpose | Special purpose | Special purpose | Special purpose | Special purpose | Special purpose | Special purpose | Special purpose |
| Spatial scale | Neighborhood | Neighborhood | Neighborhood | Neighborhood | Neighborhood | Neighborhood | Neighborhood | Neighborhood |
| Sampling method | Photometric EQOA-0880-047 | Chemiluminescence RFNA-1289-074 | Gas Filter correlation RFCA-0981-054 | Pulsed Fluorescence EQSA-0486-060 | Chemiluminescence | Light scatter EQPM-0311-195 | High Volume RFPS-1287-063 | Summa canister |
| Instrument manufacturer and model | Thermo 49i | Thermo 42i | Thermo 48i | Thermo 43i | Thermo 17i | Grimm 180 | Thermo HVol | ATEC 2200 |
| FRM/FEM/ARM | FRM | FRM | FRM | FRM | no | FEM | FRM | no |
| Collecting Agency | NCUAQMD | NCUAQMD | NCUAQMD | NCUAQMD | NCUAQMD | NCUAQMD | NCUAQMD | NCUAQMD |
| Analytical Lab | N/A | N/A | N/A | N/A | N/A | N/A | NCUAQMD | AAC |

| Site Name | Humboldt Hill | | | | | | | |
|---------------------------------------------------------|---------------|---------------|---------------|---------------|-------------------------|---------------|--------------|--------------|
| Pollutant | O3 | NO2 | CO | SO2 | NH3 | PM2.5 | PM10 | Toxics |
| Reporting Agency | ARB | ARB | ARB | ARB | N/A | ARB | ARB | N/A |
| Start date | June 20, 2011 | June 20, 2011 | June 20, 2011 | June 20, 2011 | Did not operate in 2011 | June 20, 2011 | Dec 15, 2011 | Dec 15, 2011 |
| Current Sampling Frequency | continuous | continuous | continuous | continuous | continuous | continuous | 1:6 | bimonthly |
| Sampling season | Year round | Year round | Year round | Year round |
| Probe height (meters) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 5.3 | N/A | 4.5 |
| Distance from supporting structure (meters) | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.7 | N/A | 1.9 |
| Distance from obstructions on roof | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Distance from obstructions not on roof (meters) | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Distance from trees (meters) | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 |
| Distance to furnace or incinerator flue | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Distance between collocated monitors | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Unrestricted airflow (degrees) | 360 | 360 | 360 | 360 | 360 | 360 | 360 | 360 |
| Probe material | Teflon | Teflon | Teflon | Teflon | Teflon | Teflon | N/A | Teflon |
| Residence time (seconds) | 10.7 | 10.8 | 10.4 | 13.7 | Did not operate in 2011 | N/A | N/A | N/A |
| Will there be changes within the next 18 months? | No | No | No | No | No | No | No | No |
| Is it suitable for comparison against the annual PM2.5? | N/A | N/A | N/A | N/A | N/A | Yes | N/A | N/A |

Site Name: Weaverville

The Weaverville site was established in 1995. It is located downtown Weaverville near HWY 299 and is expected to represent middle scale air quality.

| | | |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------|
| Site Name | Weaverville | |
| AQS ID | 061050002 | |
| GIS coordinates | 104.95617E 4509.31330N WGS84 | |
| Location | Trinity County Courthouse | |
| Address | 11 Court Street, Weaverville | |
| County | Trinity | |
| Dist. to road | 7 meters to side road, 21 meters to highway 299 | |
| Traffic count | 1408 AADT for Garden Gulch; 5,100 AADT for HWY 299 | |
| Groundcover | Paved | |
| PEP audit | Information maintained by EPA | |
| NPAP audit | Information maintained by EPA | |
| Flow audit | Performed every 15 sampling runs by NCUAQMD, Performed annually by EPA, Performed annually by ARB | |
| Representative Area | Rural, no MSA in Trinity County | |
| Pollutant | PM2.5 | PM10 |
| Parameter Code | 88101 | 85101 |
| Basic monitor objective | NAAQS comparison | NAAQS comparison |
| Site Type | Population exposure | Population exposure |
| Monitor Type | SLAMS | SLAMS |
| Spatial scale | Middle Scale | Middle Scale |
| Sampling method | GRIMM 180 FEM | High Volume RFPS-1287-063 |
| Instrument manufacturer and model | Grimm 180 | Thermo HVol |
| FRM/FEM/ARM | FEM | FRM |
| Collecting Agency | NCUAQMD | NCUAQMD |
| Analytical Lab | N/A | NCUAQMD |
| Reporting Agency | ARB | ARB |
| Start date | Aug 2011 | Jan 1995 |
| Current Sampling Frequency | Continuous | 1:6 |
| Sampling season | Year round | Year round |
| Probe height (meters) | 9.4 | 7 |
| Distance from supporting structure (meters) | 3 | 1.5 |
| Distance from obstructions on roof (meters) | 10 | 7 |
| Distance from obstructions not on roof (meters) | 20 | 20 |
| Distance from trees (meters) | 15 | 15 |
| Distance to furnace or incinerator flue | N/A | N/A |

| Site Name | Weaverville | |
|---------------------------------------------------------|------------------------|-------------|
| Pollutant | PM2.5 | PM10 |
| Distance between collocated monitors | N/A | N/A |
| Unrestricted airflow (degrees) | 270 | 270 |
| Probe material | N/A | N/A |
| Residence time | N/A | N/A |
| Will there be changes within the next 18 months? | No | No |
| Is it suitable for comparison against the annual PM2.5? | FEM installed Aug 2011 | N/A |

Site Name: Crescent City

The Crescent City site was established in 1998. It is located at the Del Norte County Health Department near HWY 101 and is expected to represent neighborhood scale air quality.

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------|
| Site Name | Crescent City |
| AQS ID | 060150006 |
| GIS coordinates | 103.90908E 4624.31858N WGS84 |
| Location | Del Norte County Health Department |
| Address | 880 Northcrest Dr |
| County | Del Norte |
| Dist. to road | 600 meters to HWY 101 200 meters to Northcrest |
| Traffic count | 38,500 ADT HWY101 8,222 ADT Northcrest |
| Groundcover | Paved/grass |
| PEP audit | Information maintained by EPA |
| NPAP audit | Information maintained by EPA |
| Flow audit | Performed every 15 sampling runs by NCUAQMD, Performed annually by EPA, Performed annually by ARB |
| Representative Area | Del Norte County, Micropolitan Statistical Area, Crescent City Urban |
| Pollutant | PM10 |
| Parameter Code | 85101 |
| Basic Monitoring Objectives | NAAQS comparison |
| Site Type | Population exposure |
| Monitor Type | SLAMS |
| Spatial scale | Neighborhood |
| Sampling method | High Volume RFPS-1287-063 |
| Instrument manufacturer and model | Thermo HVol |
| FRM/FEM/ARM | FRM |
| Collecting Agency | NCUAQMD |
| Analytical Lab | NCUAQMD |
| Reporting Agency | ARB |
| Start date | Mar-1998 |
| Current Sampling Frequency | 1:6 |
| Sampling season | Year round |
| Probe height | 5.5 meters |
| Distance from supporting structure | 1.5 meters |
| Distance from obstructions on roof | N/A |
| Distance from obstructions not on roof | N/A |
| Distance from trees | 90 meters |
| Distance to furnace or incinerator flue | N/A |

| | |
|---------------------------------------------------------|----------------------|
| Site Name | Crescent City |
| Pollutant | PM10 |
| Distance between collocated monitors | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material | N/A |
| Residence time | N/A |
| Will there be changes within the next 18 months? | Yes |
| Is it suitable for comparison against the annual PM2.5? | N/A |

Signature

The Executive Office of the North Coast Unified Air Quality Management District hereby verifies this plan has gone through a 30 day public comment period, and approves the "Air Monitoring Network Plan for 2012". Staff is directed to begin implementation effective immediately.

Mr. Richard L. Martin Jr.

date