2013 Air Monitoring Network Plan

May 9, 2013
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SIPRAC

Connecticut Department of Energy and Environmental Protection
Purpose of Network Plan

- Comply with 40 CFR 58.10
- Describe current air monitoring network configuration
- Propose network changes
- Provide analysis/rationale to demonstrate compliance with new EPA monitoring initiatives

Plan is posted on DEEP website under: Air/Air Monitoring/Network Design
DEEP Current Monitoring Network
DEEP Proposed Network Changes

• Discontinue PM$_{2.5}$ sampling at Norwich Court House
• Establish Continuous FEM PM$_{2.5}$ sampling at Groton Fort Griswold
• Discontinue SO$_2$ monitoring at Westport Sherwood Island State Park
| Town                  | Site                              | PM2.5 (FRM) | PM2.5 (FRM, Collocated) | PM10 (PM Coarse) (FRM, Collocated) | PM10 (PM Coarse) (Continuous) | PM2.5 (Continuous) | PM2.5 Carbon (FRM, Collocated) | PM2.5 Carbon (Continuous) | PM2.5 Sulfate (GoE, Continuous) | PM10/PM-Coarse (Continuous) | PM2.5 Sulfate (Continuous) | PM10/PM-Coarse (FRM, Collocated) | PM2.5 Sulfate (GoE, Continuous) | Rain Fall | Barometric Pressure | Solar Radiation | Traffic Count | Wind Direction | Wind Speed | Transparency | New Point Air Quality | Relative Humidity | Temperature | Dew Point / Rel. Humidity | Wind Speed | Ozone | SO2 | NO | NOx | VOCs (PAMS) | Carbonyls (PAMS) | Temperature | Dew Point / Rel. Humidity | Wind Speed | Ozone | SO2 | NO | NOx | VOCs (PAMS) | Carbonyls (PAMS) |
|----------------------|----------------------------------|-------------|--------------------------|-------------------------------------|-------------------------------|----------------|--------------------------------|----------------------|--------------------------------|--------------------------|------------------------------|--------------------------------|--------------------------------|----------------------------|--------------------|----------------|-------------------|-------------------|----------------|-----------------|----------------------|-------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Bridgeport           | Edison School                    |             | X                        |                                     | X                             |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |
| Bridgeport           | Roosevelt School                 | 1/3         | X                         | X                                   | X                             |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |
| Cornwall             | Mohawk Mountain                  | 1/3         | X                         | X                                   | X                             |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |
| Danbury              | West Conn. State Coll.           | 1/3         | X                         | X                                   | X                             |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |
| East Hartford        | High Street                      | 1/3         | X                         |                                      |                               |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |
| East Hartford        | McAuliffe Park                   | 1/1         | X                         | X                                   | X                             |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |
| Greenwich            | Point Park                       |             | X                         |                                     |                               |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |
| Stratton             | Fort Griswold                    | X*          |                           |                                      |                               |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |
| Hartford             | Huntley Place                    | X           | X                         | X                                   | X                             |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |
| Madison              | Hammonasset S.P.                 |             | X                         |                                     |                               |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |
| Middletown           | Conn. Valley Hosp.               |             |                           |                                      |                               |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |                   |
| New Haven            | Criscoula Park                   | 1/1         | 1/6                       | X                                    | 1/6                           | 1/6            | 1/12                           | X                    |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |                   |
| New Haven            | State Street                     | 1/3         |                           |                                      |                               |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |                   |
| Norwich              | Norwich Courthouse               | 1/1         |                           |                                      |                               |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |                   |
| Stafford             | Shenipsit State Forest          |             |                           |                                      |                               |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |                   |
| Stratford            | Stratford Lighthouse            |             |                           |                                      |                               |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |                   |
| Waterbury            | Bank St                          | 1/3         | 1/6                       | X                                    |                               |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |                   |
| Westport             | Sherwood Island S.P.             | 1/3         |                           |                                      |                               |                |                                |                      |                                |                          |                              |                                |                              |                           |                    |                |                   |                   |                |                 |                      |                   |                    |                   |                   |                   |                   |                   |                   |

*Propose to establish FEM PM$_{2.5}$ monitoring to replace non-regulatory PM$_{2.5}$ monitoring
Monitoring Network Descriptions

- Extent of Network
- Monitoring methods
- Sampling frequencies
- Discussion and analysis of changes
2012 PM$_{2.5}$ Daily Design Values

Daily NAAQS: 35 $\mu$g/m$^3$

*Site Incomplete for 2010 year
2012 PM$_{2.5}$ Annual Design Values

Annual NAAQS: 12.0 µg/m$^3$
2012 Ozone Design Values

8-Hour NAAQS: 75 ppb
Site Information Section

Town – Site: Westport – Sherwood Island State Park
County: Fairfield
Address: Sherwood Island SP
AQS Site ID: 09-001-9003
Spatial Scale: Regional
Statistical Area: CSA (New York-Newark-Bridgeport)

Latitude: 41.11822°
Longitude: -73.33681°
Elevation: 4 m (13 ft)
Year Established: 1996
Site Information Section (cont.)

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<th>PM2.5 Nephelometer</th>
<th>PM2.5/PM10/PM-C</th>
<th>PM10 FRM (lo-vol)</th>
<th>PM10 FRM colo</th>
<th>STN</th>
<th>IMPROVE</th>
<th>Continuous OC/EC</th>
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<th>Cont. PAH</th>
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**Site Description:** The Westport Sherwood Island State Park site is a regional-scale site located in southwestern Connecticut. This is a coastal site that is approximately 0.5 km to the south of I-95 on the Long Island Sound. This site meets all siting requirements and criteria and has been approved internally by DEEP and independently by EPA Region I.

**Monitoring Objectives:** The Westport Sherwood Island State Park monitoring site is a PAMS and PM2.5 SLAMS site. Objectives include collecting PM$_{2.5}$ FRM measurements for compliance purposes. Ozone is measured at the Westport site for compliance assessment and AQI and forecasting purposes and PAMS and NO$_x$ monitoring is conducted to obtain measurements of ozone precursors.

**Planned changes for 2013-2014:** Discontinuing SO$_2$ monitoring by 1/1/2014.
Recent/Current Monitoring Network Changes

• Madison ozone site relocated within Hammonasset State Park
• Groton Fort Griswold shelter replaced
• Hartford Huntley Place near-road site operating since April 2013
• East Hartford McAuliffe Park shelter replacement May-June 2013
• Hartford Morgan Street CO site to close June 2013
Ongoing Projects

• Data management network upgrades
• Air quality website has gone live
• Virtual machine network complete
• Air quality education kiosks
• Automatic data retrieval from PM filter samplers
• Assessment and classification of continuous PM2.5 samplers
Continuous PM2.5 Sampler Performance (MetOne BAM 1020)
New Haven Criscuolo Park

$y = 1.0301x + 2.1141$

$R^2 = 0.8615$
East Hartford McAuliffe Park

y = 1.0547x + 1.3138
R² = 0.9098
East Hartford High Street

\[ y = 1.1039x + 0.7634 \]

\[ R^2 = 0.9372 \]
Cornwall Mohawk Mountain

$y = 0.7917x + 2.8245$

$R^2 = 0.5326$
Hartford Near-Road Site
Hartford Near-Road Site
Hartford Near-Road Site
• Draft Network Plan to be posted on DEEP website this month for public review
• Watch for email announcement
• http://www.ct.gov/deep/cwp/view.asp?a=2684&Q=321798&deepNav_GID=1744
• Submit comments to:
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  DEEP/Air Management
  79 Elm St, Hartford, CT 06106
  randall.semagin@ct.gov