



## Division of Air Quality

Annual Monitoring Plan 2014

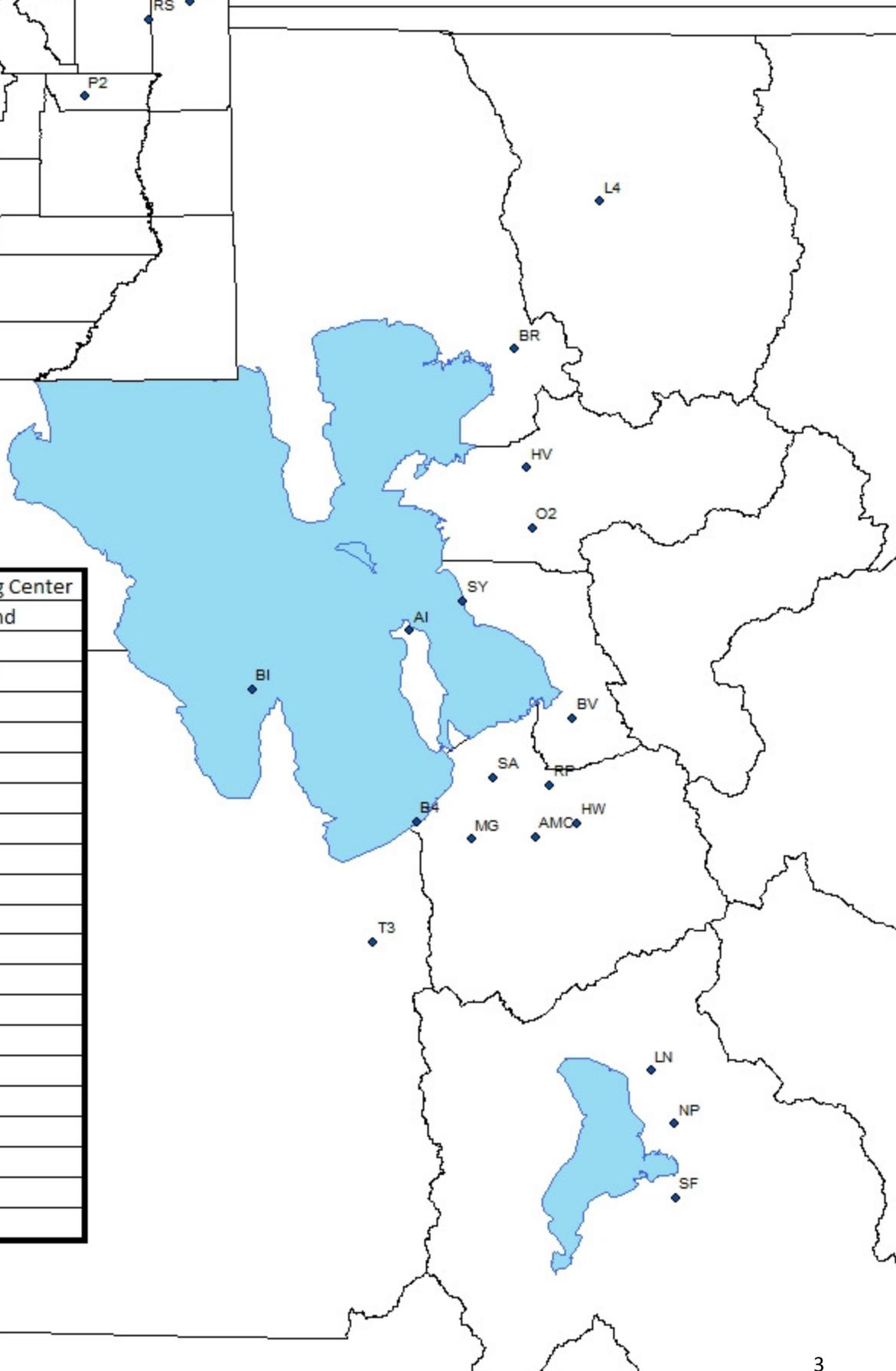
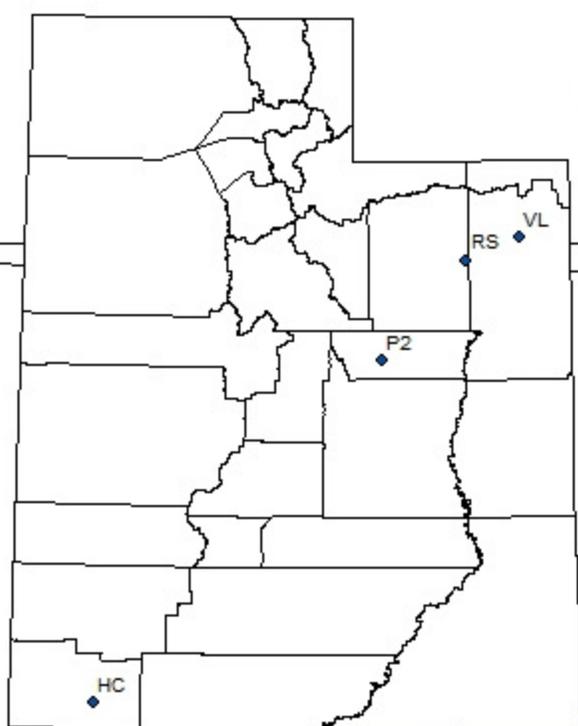


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# Utah Air Quality Monitoring Network

April, 2014



AMC	Air Monitoring Center
AI	Antelope Island
B4	Beach
BI	Badger Island
BR	Brigham City
BV	Bountiful
HC	Hurricane
HV	Harrisville
HW	Hawthorne
L4	Logan
LN	Lindon
MG	Magna
NP	North Provo
O2	Ogden #2
P2	Price
RP	Rose Park
RS	Roosevelt
SA	Salt Air
SF	Spanish Fork
SY	Syracuse
T3	Tooele
VL	Vernal

Real Real Spec. Toxics  
 PM 2.5 co-PM2.5 Time PM 10 co-PM10 Time PM coar:PM2.5 Lead O3 NO2 NOY SO2 CO PAMS Met  
 PM 2.5 PM 10

<b>Cache</b>																	
Logan	1/1	1/12	X	1/3						X	X						X
<b>Box Elder</b>																	
Brigham City	1/3		X							X	X						X
<b>Weber</b>																	
Ogden 2	1/3		X	1/3	X					X	X				X		X
Harrisville	1/3									X							
<b>Davis</b>																	
Syracuse																	X
Antelope																	X
Bountiful	1/3							X		X	X					X	X
<b>Salt Lake</b>																	
Rose Park	1/1	1/12															
Hawthorne	1/1		X	1/1	X	1/1	X			X	X	X	X	X	X	X	X
Magna	1/3			1/3					X								X
Beach										X							X
Saltaire																	X
<b>Tooele</b>																	
Tooele	1/3									X							X
Badger I																	X
<b>Utah</b>																	
N Provo	1/1		X	1/3	1/12	X				X	X				X		X
Lindon	1/1	1/12	X	1/3		X		X									X
Spanish Fork	1/3									X							X
<b>Washington</b>																	
Hurricane	1/3		X	X		X				X	X						X
<b>Uintah Basin</b>																	
Vernal			X							X	X						X
Roosevelt			X							X	X						X
Price										X	X						X

County	EPA AIRS Code	Station Name - Code	Station Address	UTM Coord.	UTM Coord.	Elevation (meters)
				Northing	Easting	
Cache County	490050004	Logan - L4	125 West Center St., Logan City	4620246	430287	1380
Box Elder County	490030003	Brigham City - BR	140 West Fishburn, Brigham City	4593978	415045	1334
Weber County	490571003	Harrisville - HV	425 West 2550 North, Harrisville	4572829	417416	1331
	490570002	Ogden #2 - O2	228 East 32nd Street, Ogden City	4562188	418249	1316
Davis County	490110004	Bountiful - BV	171 W. 1370 N, Bountiful	4528360	425503	1309
		Antelope Island,	Great Salt Lake	4543850	396506	1349
		Syracuse	Great Salt Lake	4549182	406033	1285
Salt Lake County	490353006	Hawthorne - HW	1675 S. 600 E., Salt Lake City	4509639	426361	1306
		Salt Air - SA	Great Salt Lake	4517750	411449	1282
	490352004	Beach - B4	Great Salt Lake Beach Marina	4509966	397803	1284
	490351001	Magna - MG	2935 South 8560 West, Magna	4506790	407536	1317
	490353010	Rose Park - RP	1400 West Goodwin Ave., Salt Lake City	4516479	421458	1295
Utah County	490494001	Lindon - LN	50 North Main Street, Lindon	4465692	439400	1442
	490490002	North Provo - NP	1355 North 200 West, Provo City	4456141	443590	1402
	490495010	Spanish Fork - SF	Spanish Fork Airport, Spanish Fork	4443095	443761	1380
Tooele County	490490003	Tooele - T3	434 North 50 West, Tooele	4488438	389927	1511

Tooele County		Badger Island	Great Salt Lake	4533506	368518	1282
Duchesne County	490130002	Roosevelt - RS	290 South 1000 West, Roosevelt, UT	4460879	584230	1587
Uintah County	490471003	Vernal - VL	220 South 1000 East, Vernal, UT	4479030	626371	1605
Carbon County	490071003	Price - P2	351 South 2500 East, Price, UT	4382915	519750	1740
Washington County	490530007	Hurricane - HC	147 North 870 West, Hurricane, UT	4117231	295368	992

**Site:** Air Monitoring Center (AM)      **Longitude:** 111.9610      **Station Type:** SPM  
**AQS#:** 49-035-3011      **Latitude:** 40.7119      **MSA:** Salt Lake City  
**Address:** 2861 West Parkway Blvd.      **Elevation (M):** 1292  
**City:** West Valley  
**County:** Salt Lake

**Site Objective:**

This site is established to determine mercury in wet deposition and dry deposition.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is located at the Air Monitoring Center, in the city of West Valley, Salt Lake County.

**Can data from this site be used to evaluate NAAQS ?:** No

**Gas/Particulate parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Monitoring Objective</b>	<b>Spatial Scale</b>
Dry Dep. Mercury	Cold Vapor Atomic Absorption	Continuous	Population Exposure	SPM- Transport Regional
Wet Dep. Mercury	Manual NADP MDN	Integrated 7 day	Population Exposure	SPM- Transport Regional
Ammonia	Manual NADP AMoN	Integrated 14 day	Population Exposure	SPM- Transport Regional

**Meteorological Parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Tower Height</b>	<b>Spatial Scale</b>
Ambient Pressure	Barometric Pressure Transducer	Continuous	2 meters	Urban
Relative Humidity	Elec. Thin Film	Continuous	4 meters	Urban
Leaf Wetness		Continuous	4 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	4 meters	Urban
Wind Direction	Sonic 2D	Continuous	4 meters	Urban
WD Sigma	Elec. EPA method	Continuous	4 meters	Urban
Wind Speed	Sonic 2D	Continuous	4 meters	Urban

<b>Site:</b> Antelope Island (AI)	<b>Longitude:</b> 112.2313	<b>Station Type:</b> SPM
<b>AQS#:</b> 49-011-6001	<b>Latitude:</b> 41.0393	<b>MSA:</b> Salt Lake City
<b>Address:</b> Antelope Island	<b>Elevation (M):</b> 1359	
<b>City:</b> Not in a city		
<b>County:</b> Davis		

**Site Objective:**

This site is established to collect meteorological information for air quality modeling.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is on Antelope Island State Park, near the ranger residences, in Davis County.

**Can data from this site be used to evaluate NAAQS ?:** No

**Meteorological parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Tower Height</b>	<b>Spatial Scale</b>
Relative Humidity	Elec. Thin Film	Continuous	6 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	6 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	6 meters	Urban
WD Sigma	Elec. EPA method	Continuous	6 meters	Urban
Wind Speed	Elec. Chopped signal Level 1	Continuous	6 meters	Urban

<b>Site:</b> Badger Island (BI)	<b>Longitude:</b> 112.5620	<b>Station Type:</b> SPM
<b>AQS#:</b> 49-045-6001	<b>Latitude:</b> 40.9421	<b>MSA:</b> Salt Lake City
<b>Address:</b> Badger Island	<b>Elevation (M):</b> 1282	
<b>City:</b> Not in a city		
<b>County:</b> Tooele		

**Site Objective:**

This site is established to collect meteorological information for air quality modeling.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is located on the south end of the Great Salt Lake on the remnants of Badger Island in Tooele County.

**Can data from this site be used to evaluate NAAQS ?:** No

**Meteorological parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Tower Height</b>	<b>Spatial Scale</b>
Precipitation	Tipping cup	Continuous	2 meters	Urban
Relative Humidity	Elec. Thin Film	Continuous	10 meters	Urban
Solar Radiation	Elec. LiCor	Continuous	2 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Urban

<b>Site:</b> Beach #4 (B4)	<b>Longitude:</b> 112.2103	<b>Station Type:</b> SLAMS
<b>AQS#:</b> 49-035-2004	<b>Latitude:</b> 40.7343	<b>MSA:</b> Salt Lake City
<b>Address:</b> 12100 West 1200 South	<b>Elevation (M):</b> 1284	
<b>City:</b> Magna		
<b>County:</b> Salt Lake		

**Site Objective:**

Ozone is monitored based on an ozone saturation study and the interaction with the Great Salt Lake.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is located at the Great Salt Lake Marina on the south east end of the Great Salt Lake.

**Can data from this site be used to evaluate NAAQS ?:** Yes

**Gas/Particulate parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Monitoring Objective</b>	<b>Spatial Scale</b>
Ozone	Instrumental Ultra Violet	Seasonal	Population Exposure	SLAMS-High Neighborhood

**Meteorological parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Tower Height</b>	<b>Spatial Scale</b>
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Urban

<b>Site:</b> Bountiful Viewmont (BV)	<b>Longitude:</b> 111.8845	<b>Station Type:</b> SLAMS
<b>AQS#:</b> 49-011-0004	<b>Latitude:</b> 40.903	<b>MSA:</b> Salt Lake City
<b>Address:</b> 1380 North 200 West	<b>Elevation (M):</b> 1309	
<b>City:</b> Bountiful		
<b>County:</b> Davis		

**Site Objective:**

The Bountiful Viewmont site is established to determine public exposure to air pollution. The site also monitors the ambient air near the oil refineries and local sand and gravel operations. Previous monitoring and saturation studies have recorded high ozone concentrations. This site is chosen for intensive speciation of PM<sub>2.5</sub> under the EPA Chemical Speciation Network (CSN) and gaseous Volatile Organic Compounds under the EPA National Air Toxics Trends Network (NTTN) including hexavalent chromium and carbonyl compounds. Nitrogen dioxide is monitored in support of the ozone monitoring.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is located near Viewmont High School at the north end of the city of Bountiful, Davis County.

**Can data from this site be used to evaluate NAAQS ?:** Yes

**Gas/Particulate parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Monitoring Objective</b>	<b>Spatial Scale</b>
Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS- Population Neighborhood
Ozone	Instrumental Ultra Violet	Seasonal	Population Exposure	SLAMS-High Neighborhood
PM <sub>2.5</sub>	Manual Gravimetric	1 in 3 days	Population Exposure	SLAMS- Population Neighborhood
PM <sub>10</sub> metals	Manual Gravimetric	1 in 6 days	Population Exposure	SLAMS- Population Neighborhood
PM <sub>10</sub> metals co-located	Manual Gravimetric	6 samples/year	Population Exposure	SLAMS- Population Neighborhood
PM <sub>2.5</sub> Speciation	Manual EPA CSN	1 in 6 days	Population Exposure	SLAMS- Population Neighborhood
VOC	Manual EPA NTTN	1 in 6 days	Population Exposure	SLAMS- Population Neighborhood
Semi-volatile	Manual EPA NTTN	1 in 6 days	Population Exposure	SLAMS- Population Neighborhood
Carbonyl compounds	Manual EPA NTTN	1 in 6 days	Population Exposure	SLAMS- Population Neighborhood
Black Carbon	Aethalometer	Continuous	Population Exposure	SLAMS- Population Neighborhood

### Meteorological parameters:

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Tower Height</b>	<b>Spatial Scale</b>
Ambient Pressure	Barometric Pressure Transducer	Continuous	1 meter	Urban
Relative Humidity	Elec. Thin Film	Continuous	10 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Urban

<b>Site:</b> Brigham City (BR)	<b>Longitude:</b> 112.0177	<b>Station Type:</b> SLAMS
<b>AQS#:</b> 49-003-0003	<b>Latitude:</b> 41.4929	Not in an MSA, but is in the Salt
<b>Address:</b> 140 West Fishburn Dr.	<b>Elevation (M):</b> 1334	<b>MSA:</b> Lake-Ogden-Clearfield CSA
<b>City:</b> Brigham City		
<b>County:</b> Box Elder		

**Site Objective:**

This site is established to determine the boundary of ozone concentrations greater than the NAAQS and PM2.5 comparison to Cache County.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is located in a neighborhood area of Brigham City in Box Elder County.

**Can data from this site be used to evaluate NAAQS ?:** Yes

**Gas/Particulate parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Monitoring Objective</b>	<b>Spatial Scale</b>
Ozone	Instrumental Ultra Violet	Seasonal	Population Exposure	SLAMS- Population Neighborhood
PM <sub>2.5</sub>	Manual Gravimetric	1 in 3 days	Population Exposure	SLAMS- Population Neighborhood
PM <sub>2.5</sub> Real time	Instrumental TEOM FDMS	Continuous	Population Exposure	SLAMS- Population Neighborhood

**Meteorological parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Tower Height</b>	<b>Spatial Scale</b>
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Urban

**Site:** Harrisville (HV)  
**AQS#:** 49-057-1003  
**Address:** 425 West 2550 North  
**City:** Harrisville  
**County:** Weber

**Longitude:** 111.9865  
**Latitude:** 41.3027  
**Elevation (M):** 1331

**Station Type:** SLAMS  
**MSA:** Ogden-Clearfield

**Site Objective:**

This site is established in response to an ozone saturation study indicating this as a potentially high ozone concentration area.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is located on the grounds of an elementary school in the city of Harrisville, Weber County.

**Can data from this site be used to evaluate NAAQS ?:**

Yes

**Gas/Particulate parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Monitoring Objective</b>	<b>Spatial Scale</b>
Ozone	Instrumental Ultra Violet	Seasonal	Population Exposure	SLAMS- Population Neighborhood

**Meteorological parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Tower Height</b>	<b>Spatial Scale</b>
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Urban

<b>Site:</b> Hawthorne (HW)	<b>Longitude:</b> 111.8721	<b>Station Type:</b> SLAMS
<b>AQS#:</b> 49-035-3006	<b>Latitude:</b> 40.7344	<b>MSA:</b> Salt Lake City
<b>Address:</b> 1675 South 600 East	<b>Elevation (M):</b> 1306	
<b>City:</b> Salt Lake City		
<b>County:</b> Salt Lake		

**Site Objective:**

This site is established to represent the population exposure in the Salt Lake City area. The Hawthorne site is also the EPA NCore site for Utah.

**Does the site meet the objective:**

Yes, all current objectives are met. Ncore monitoring began January 2011.

**Site Description:**

The site is located at Hawthorne Elementary School in the southeast section of Salt Lake City, Salt Lake County .

**Can data from this site be used to evaluate NAAQS ?:** Yes

**Gas/Particulate parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Monitoring Objective</b>	<b>Spatial Scale</b>
Carbon Monoxide, trace	Instrumental Gas Phase Correlation	Continuous	Population Exposure	SLAMS- High Neighborhood
Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS- High Neighborhood
Ozone	Instrumental Ultra Violet	Continuous	Population Exposure	SLAMS- High Neighborhood
NOY trace level	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS- Population Neighborhood
SO2 trace level	Pulsed fluorescence	Continuous	Population Exposure	SLAMS- Population Neighborhood
PM <sub>2.5</sub>	Manual Gravimetric	Daily	Population Exposure	SLAMS- Population Neighborhood
PM <sub>2.5</sub> Speciation	Manual EPA CSN	1 in 3 days	Population Exposure	SLAMS- Population Neighborhood
PM <sub>2.5</sub> Real time N-core	Instrumental TEOM FDMS	Continuous	Air Pollution Index	SLAMS- Population Neighborhood
PM <sub>10</sub>	Manual Gravimetric	Daily	Population Exposure	SLAMS- Population Neighborhood
PM <sub>10</sub> Real time N-core	Instrumental TEOM FDMS	Continuous	Air Pollution Index	SLAMS- Population Neighborhood
PM <sub>coarse</sub>	Manual Gravimetric subtraction	Daily	Population Exposure	SLAMS- Population Neighborhood
Organic & Elemental Carbon	Instrumental Semi-continuous NIDR	Continuous	Population Exposure	SLAMS- Population Neighborhood
PAMS C2 to C 12	Instrumental gas chromatography	Continuous	Ozone modeling input	Population Neighborhood
Visibility	Instrumented	Continuous	Public Information	Population Neighborhood

### Meteorological Parameters:

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Tower Height</b>	<b>Spatial Scale</b>
Ambient Pressure	Barometric Pressure Transducer	Continuous	3 meters	Urban
Relative Humidity	Elec. Thin Film	Continuous	10 meters	Urban
Solar Radiation	Elec. EPPLY	Continuous	4 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Urban

**Site:** Hurricane (HC)  
**AQS#:** 49-053-0007  
**Address:** 147 North 870 West  
**City:** Hurricane  
**County:** Washington

**Longitude:** 113.3051  
**Latitude:** 37.1791  
**Elevation (M):** 992

**Station Type:** SLAMS  
**MSA:** St. George

**Site Objective:**

This site is established to determine population exposure to ozone in Washington County.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

This site is located behind the Hurricane City offices. This site replaces Santa Clara.

**Can data from this site be used to evaluate NAAQS ?:**

Yes

**Gas/Particulate parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Monitoring Objective</b>	<b>Spatial Scale</b>
Ozone	Instrumental Ultra Violet	Continuous	High winter ozone study	Regional
Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	High winter ozone study	Regional
PM <sub>2.5</sub> RealTime	Thermo Sharp 5030	Continuous	AQI	SLAMS- Population Neighborhood
PM <sub>2.5</sub>	Manual Gravimetric	1 in 3 day	Pollution Exposure	SLAMS- Population Neighborhood
PM <sub>10</sub>	Manual Gravimetric	1 in 3 day	Pollution Exposure	SLAMS- Population Neighborhood

**Meteorological parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Tower Height</b>	<b>Spatial Scale</b>
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Regional
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Regional
WD Sigma	Elec. EPA method	Continuous	10 meters	Regional
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Regional
Barometric pressure	Pressure transducer	Continuous	2 meters	Regional



**Site:** Logan #4 (L4)                      **Longitude:** 111.8382                      **Station Type:** SLAMS  
**AQS#:** 49-005-0004                      **Latitude:** 41.731                      **MSA:** Logan  
**Address:** 125 West Center Street                      **Elevation (M):** 1380  
**City:** Logan  
**County:** Cache

**Site Objective:**

This site is established to determine general population exposure based on increased population.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is located downtown in the City of Logan, Cache County.

**Can data from this site be used to evaluate NAAQS ?:** Yes

**Gas/Particulate parameters:**

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS- Population Neighborhood
Ozone	Instrumental Ultra Violet	Continuous	Population Exposure	SLAMS- Population Neighborhood
PM <sub>2.5</sub>	Manual Gravimetric	Daily	Population Exposure	SLAMS- Population Neighborhood
PM <sub>2.5</sub>	Manual Gravimetric co-located	1 in 12 days	Precision and accuracy assessment	SLAMS- Population Neighborhood
PM <sub>2.5</sub> Real time	Instrumental TEOM FDMS	Continuous	Air Pollution Index	SLAMS- Population Neighborhood
PM <sub>10</sub>	Manual Gravimetric	1 in 3 days	Population Exposure	SLAMS- High Neighborhood

**Meteorological parameters:**

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Relative Humidity	Elec. Thin Film	Continuous	10 meters	Urban
Solar Radiation	LiCor	Continuous	10 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Urban

<b>Site:</b> Magna (MG)	<b>Longitude:</b> 112.0946	<b>Station Type:</b> SLAMS
<b>AQS#:</b> 49-035-1001	<b>Latitude:</b> 40.7068	<b>MSA:</b> Salt Lake City
<b>Address:</b> 2935 South 8560 West	<b>Elevation (M):</b> 1317	
<b>City:</b> Magna		
<b>County:</b> Salt Lake		

**Site Objective:**

This site is established to determine particulate matter, and lead (Pb) concentrations from the Kennecott smelter.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is located on the roof of Brockbank Junior High School in the city of Magna, located in western Salt Lake County.

**Can data from this site be used to evaluate NAAQS ?:** Yes

**Gas/Particulate parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Monitoring Objective</b>	<b>Spatial Scale</b>
PM <sub>2.5</sub>	Manual Gravimetric	1 in 3 days	Population Exposure	SLAMS- Population Neighborhood
PM <sub>10</sub>	Manual Gravimetric	1 in 3 days	Population Exposure	SLAMS-High Neighborhood
Pb	Manual Gravimetric/EPA method 6020A	1 in 6 days	Population Exposure	SLAMS-High Neighborhood
Pb co-located	Manual Gravimetric/EPA method 6020A	1 in 12 days	Population Exposure	SLAMS-High Neighborhood

**Meteorological parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Tower Height</b>	<b>Spatial Scale</b>
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Urban

**Site:** North Provo (NP)  
**AQS#:** 49-049-0002  
**Address:** 1355 North 200 West  
**City:** Provo  
**County:** Utah

**Longitude:** 111.6633  
**Latitude:** 40.2538  
**Elevation (M):** 1402

**Station Type:** SLAMS  
**MSA:** Provo-Orem

**Site Objective:**

This site is established to determine population exposure to air pollutants.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is located at north end of the City of Provo, Utah County. It is located on the grounds of the Dale Rex Army National Guard Armory.

**Can data from this site be used to evaluate NAAQS ?:** Yes

**Gas/Particulate parameters:**

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Carbon Monoxide	Instrumental Gas Phase Correlation	Continuous	Population Exposure	SLAMS- Population Neighborhood
Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS- High Neighborhood
Ozone	Instrumental Ultra Violet	Continuous	Population Exposure	SLAMS- Population Neighborhood
PM <sub>2.5</sub>	Manual Gravimetric	Daily	Population Exposure	SLAMS- Population Neighborhood
PM <sub>2.5</sub> Real time	Instrumental TEOM FDMS	Continuous	Air Pollution Index	SLAMS- Population Neighborhood
PM <sub>10</sub>	Manual Gravimetric	1 in 3 days	Population Exposure	SLAMS- Population Neighborhood
PM <sub>10</sub>	Manual Gravimetric co-located	1 in 12 days	Precision and accuracy assessment	SLAMS- Population Neighborhood
PM <sub>10</sub> Real time	Instrumental TEOM FDMS	Continuous	Air Pollution Index	SLAMS- Population Neighborhood

**Meteorological parameters:**

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Urban

**Site:** Ogden #2 (O2)  
**AQS#:** 49-057-0002  
**Address:** 228 East 32nd Street  
**City:** Ogden  
**County:** Weber

**Longitude:** 111.9751  
**Latitude:** 41.207  
**Elevation (M):** 1316

**Station Type:** SLAMS  
**MSA:** Ogden-Clearfield

**Site Objective:**

This site is established to replace the original Ogden site to determine population exposure to pollution.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is located in the City of Ogden in Weber County.

**Can data from this site be used to evaluate NAAQS ?:** Yes

**Gas/Particulate parameters:**

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Carbon Monoxide	Instrumental Gas Phase Correlation	Continuous	Population Exposure	SLAMS- Population Neighborhood
Ozone	Instrumental Ultra Violet	Continuous	Population Exposure	SLAMS- Population Neighborhood
Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS-High Neighborhood
PM <sub>2.5</sub>	Manual Gravimetric	Daily	Population Exposure	SLAMS-High Neighborhood
PM <sub>2.5</sub> Real time	Instrumental TEOM FDMS	Continuous	Air Pollution Index	SLAMS-High Neighborhood
PM <sub>10</sub>	Manual Gravimetric	Daily	Population Exposure	SLAMS-High Neighborhood
PM <sub>10</sub> Real time	Instrumental TEOM	Continuous	Air Pollution Index	SLAMS-High Neighborhood

**Meteorological parameters:**

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Relative Humidity	Elec. Thin Film	Continuous	10 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Urban



**Site:** Roosevelt (RS)  
**AQS#:** 49-013-0002  
**Address:** 1000 West 290 South  
**City:** Roosevelt  
**County:** Duchesne

**Longitude:** 110.009  
**Latitude:** 40.2941  
**Elevation (M):** 1588

**Station Type:** SPM  
**MSA:** Not in MSA

**Site Objective:**

This site is established to determine maximum ozone and PM<sub>2.5</sub> concentrations in Duchesne County.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is located in the city park North West section of Roosevelt

**Can data from this site be used to evaluate NAAQS ?:** Yes

**Gas/Particulate parameters:**

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Ozone	Instrumental Ultra Violet API	Seasonal	High ozone winter study	Regional
Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	High ozone winter study	SLAMS- Population Neighborhood
PM <sub>2.5</sub> Real time	Instrumental Thermo 5030 Sharp	Continuous	Population Exposure	SLAMS- Population Neighborhood

**Meteorological parameters:**

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
WD Sigma	Elec. EPA method	Continuous	10 meters	Urban
Wind Speed	Sonic Method	Continuous	10 meters	Urban
Wind Direction	Sonic Method	Continuous	10 meters	Urban
Relative Humidity	Elec. Thin Film	Continuous	10 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	2 meters	Urban
Temperature Difference	Math channel	Continuous	10 – 2 meters	Urban



<b>Site:</b>	Saltair (SA)	<b>Longitude:</b>	112.0498	<b>Station Type:</b>	SPM
<b>AQS#:</b>	49-035-3005	<b>Latitude:</b>	40.806	<b>MSA:</b>	Salt Lake City
<b>Address:</b>	6640 West 1680 North	<b>Elevation (M):</b>	1282		
<b>City:</b>	Salt Lake City				
<b>County:</b>	Salt Lake				

**Site Objective:**

This site is established to collect meteorological information for air quality modeling.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is located west of the Salt Lake Airport in Salt Lake County.

**Can data from this site be used to evaluate NAAQS ?:** No

**Meteorological parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Tower Height</b>	<b>Spatial Scale</b>
Relative Humidity	Elec. Thin Film	Continuous	10 meters	Urban
Solar Radiation	Elec. LiCor	Continuous	2 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Urban

**Site:** Spanish Fork (SF)  
**AQS#:** 49-049-5010  
**Address:** 312 West 2050 North  
**City:** Spanish Fork  
**County:** Utah

**Longitude:** 111.6601  
**Latitude:** 40.1363  
**Elevation (M):** 1380

**Station Type:** SLAMS  
**MSA:** Provo-Orem

**Site Objective:**

This site is established to determine the boundary of the high ozone and PM<sub>2.5</sub> concentrations in Utah County.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is located at the Spanish Fork Airport in the city of Spanish Fork, Utah County.

**Can data from this site be used to evaluate NAAQS ?:** Yes

**Gas/Particulate parameters:**

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Ozone	Instrumental Ultra Violet	Seasonal	Population Exposure	SLAMS- Population Neighborhood
PM <sub>2.5</sub>	Manual Gravimetric	1 in 3 days	Population Exposure	SLAMS- Transport Regional

**Meteorological parameters:**

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Urban

**Site:** Syracuse (SY)  
**AQS#:** 49-011-6002  
**Address:** 4700 West 1700 South  
**City:** Syracuse  
**County:** Davis

**Longitude:** 112.1188  
**Latitude:** 41.0885  
**Elevation (M):** 1284

**Station Type:** SPM  
**MSA:** Ogden-Clearfield

**Site Objective:**

This site is established to collect meteorological information for air quality modeling.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is located in the city of Syracuse near the causeway to Antelope Island State Park, Davis County.

**Can data from this site be used to evaluate NAAQS ?:** No

**Meteorological parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Tower Height</b>	<b>Spatial Scale</b>
Relative Humidity	Elec. Thin Film	Continuous	10 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Urban

**Site:** Tooele #3 (T3)  
**AQS#:** 49-045-0003  
**Address:** 434 North 50 West  
**City:** Tooele  
**County:** Tooele

**Longitude:** 112.2998  
**Latitude:** 40.5393  
**Elevation (M):** 1511

**Station Type:** SLAMS  
**MSA:** Salt Lake City

**Site Objective:**

This site is established to determine population exposure to air pollutants.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

The site is located in the city of Tooele, Tooele County.

**Can data from this site be used to evaluate NAAQS ?:** Yes

**Gas/Particulate parameters:**

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Ozone	Instrumental Ultra Violet	Seasonal	Population Exposure	SLAMS- Population Neighborhood
PM <sub>2.5</sub>	Manual Gravimetric	1 in 3 days	Population Exposure	SLAMS- Population Neighborhood
PM <sub>2.5</sub> Real time	Instrumental TEOM FDMS	Continuous	Air Pollution Index	SLAMS- Population Neighborhood

**Meteorological parameters:**

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Relative Humidity	Elec. Thin Film	Continuous	3 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Urban

**Site:** Vernal (VL)  
**AQS#:** 49-047-1003  
**Address:** 220 South 1000 East  
**City:** Vernal  
**County:** Uintah

**Longitude:** 109.5097  
**Latitude:** 40.4523  
**Elevation (M):** 1603

**Station Type:** SLAMS  
**MSA:** Not in an MSA

**Site Objective:**

This site is established in response to an ozone study.

**Does the site meet the objective:**

Yes, all objectives are met.

**Site Description:**

This site is located in a farm field adjacent to 1000 East.

**Can data from this site be used to evaluate NAAQS ?:**

Yes

**Gas/Particulate parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Monitoring Objective</b>	<b>Spatial Scale</b>
Ozone	Instrumental Ultra Violet	Continuous	High winter ozone study	Regional
Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	High winter ozone study	Regional
PM <sub>2.5</sub> Real Time	Thermo Sharp 5030	Continuous	AQI	SLAMS- Population Neighborhood

**Meteorological parameters:**

<b>Parameter</b>	<b>Sampling &amp; Analysis Method</b>	<b>Operating Schedule</b>	<b>Tower Height</b>	<b>Spatial Scale</b>
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Regional
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Regional
WD Sigma	Elec. EPA method	Continuous	10 meters	Regional
Wind Speed	Elec. Chopped signal Level 1	Continuous	10 meters	Regional
Barometric pressure	Pressure transducer	Continuous	2 meters	Regional

### Planned network changes SFY2014

Several changes are proposed for the Utah monitoring network for the next 18 months. Many items are “housekeeping”, while others are planned to improve the data available for health advisories, characterization of urban and rural areas, and modeling of high pollution periods. All the identified changes are subject to available monies, personnel, and consultation with EPA.

- Establish a new monitoring site in the southeast area of Salt Lake County. This site is intended to supply data for the increasing population in the southern end of the Salt Lake valley and provide information for the computer modeling to better refine pollution forecasting models. We are currently looking in the south central area of Salt Lake County, but this location may change due to modeled needs and location availability. This site is expected to be a multi pollutant site with a wide range of parameters being monitored.
- A new monitoring site in Herriman is currently being established. Electrical power has already been routed for the future station. This site is intended to supply air quality data for the increasing population in the southwestern areas of Salt Lake County. This site will primarily monitor particulates and ozone.
- Currently, a proposed location for an EPA NO<sub>2</sub> Near-Road monitoring site in Salt Lake County is on the west side of I-15 near 4900 South. This monitoring site is planned, but will not be implemented until funding and resources are available to establish and operate the site. Other monitoring objectives currently have a higher priority for scarce resources.
- A new monitoring site in Erda, northern Tooele County, has not been located yet. This site would replace the Beach (B4) monitoring station as well as the Tooele (T3) monitoring station. Recent ozone studies indicate the Erda site is higher than both the Beach site and the Tooele site for ozone. We are actively looking for a new site.
- Our previous years of monitoring SO<sub>2</sub> and new regulations showed a need to adjust our network of SO<sub>2</sub> monitors. To that end, we have shut down SO<sub>2</sub> monitors in the following locations; North Salt Lake (N2), Beach (B4), Bountiful (BV) and Magna (MG). Review of our data showed that 75% of the data collected were below the detection limit of the instruments and the reasons used to establish these monitoring locations were no longer valid. We continue to monitor for SO<sub>2</sub> with a trace level instrument at the Hawthorne (HW) station as part of the NCORE monitoring effort.
- After three years of monitoring at the Price (P2) and Fruitland (FL) sites, the decision was made to continue with full maintenance and operation of the Price (P2) station. As of January 1, 2014, the State of Utah Bureau of Land Management (UBLM) has taken responsibility for the maintenance efforts of the Fruitland(FL) site. UBLM will be responsible for the upkeep of the site while the Air Monitoring Section will audit and calibrate the air quality instruments. The Fruitland (FL) station has been removed from the DAQ network.
- A BLM site in Escalante will be included in the Audit and Calibration schedule of DAQ’s air monitoring section.

- In 2014, monitoring shelters at Logan (L4), Ogden (O2), Harrisville (HV), and Rose Park (RP) need to be upgraded as resources became available. The current shelters are old and need major repairs to meet monitoring requirements. We will look at each site to ensure siting criteria continues to be met before replacing shelters. The Cache County site, currently located in Logan, Utah, will be moved to a new site farther north in Smithfield, Utah. Other monitoring sites will also be evaluated against siting criteria as well.
- PM<sub>2.5</sub> and PM<sub>10</sub> monitoring at Hurricane (HC) started on January 1, 2014, in order to establish a 3-year baseline record of particulate levels in the St. George MSA.
- The Spanish Fork (SF) station will need to be moved in the next two years due to airport construction. The airport has offered an alternative location that is across the street from the current location, but we will evaluate other sites in the area before making any changes.
- Our own network review has determined that the North Provo (NP) and Lindon (LN) stations are duplicative and there is little value to keeping both stations. We have evaluated each parameter and had decided to close the North Provo station and moving any needed monitoring to the Lindon station. However, there have been changes suggested to the CSN sampling that is taking place at the Lindon site. These changes may impact the previous decision to consolidate to Lindon. We will reevaluate how to consolidate the sites once the CSN issues have been resolved.
- Review of the meteorological sites in our network indicates that the West Jordan (WJ) site provides data of little value, based on other data collected. We will shut this station down.
- The PM<sub>2.5</sub> sampler at Harrisville (HV) was shut down on December 31, 2013. Sampled concentrations were lower than at other sites within the same CBSA. Ozone will be the only parameter monitored.
- The Washington Boulevard (W2) CO monitor was shut down on December 31, 2013.
- The Vernal (VL) station will be shut down due to property development. It will be relocated at another site within the city limits of Vernal, Utah.
- On September 20, 2013, North Salt Lake (N2) site was shut down due to the replacement of a damaged sewage pipe which ran beneath the site.
- All stations will be reviewed this year to ensure that they continue to meet required siting criteria. Any sites that do not meet applicable criteria will be evaluated for future actions.