

# AirNow & AirNow-Tech

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for

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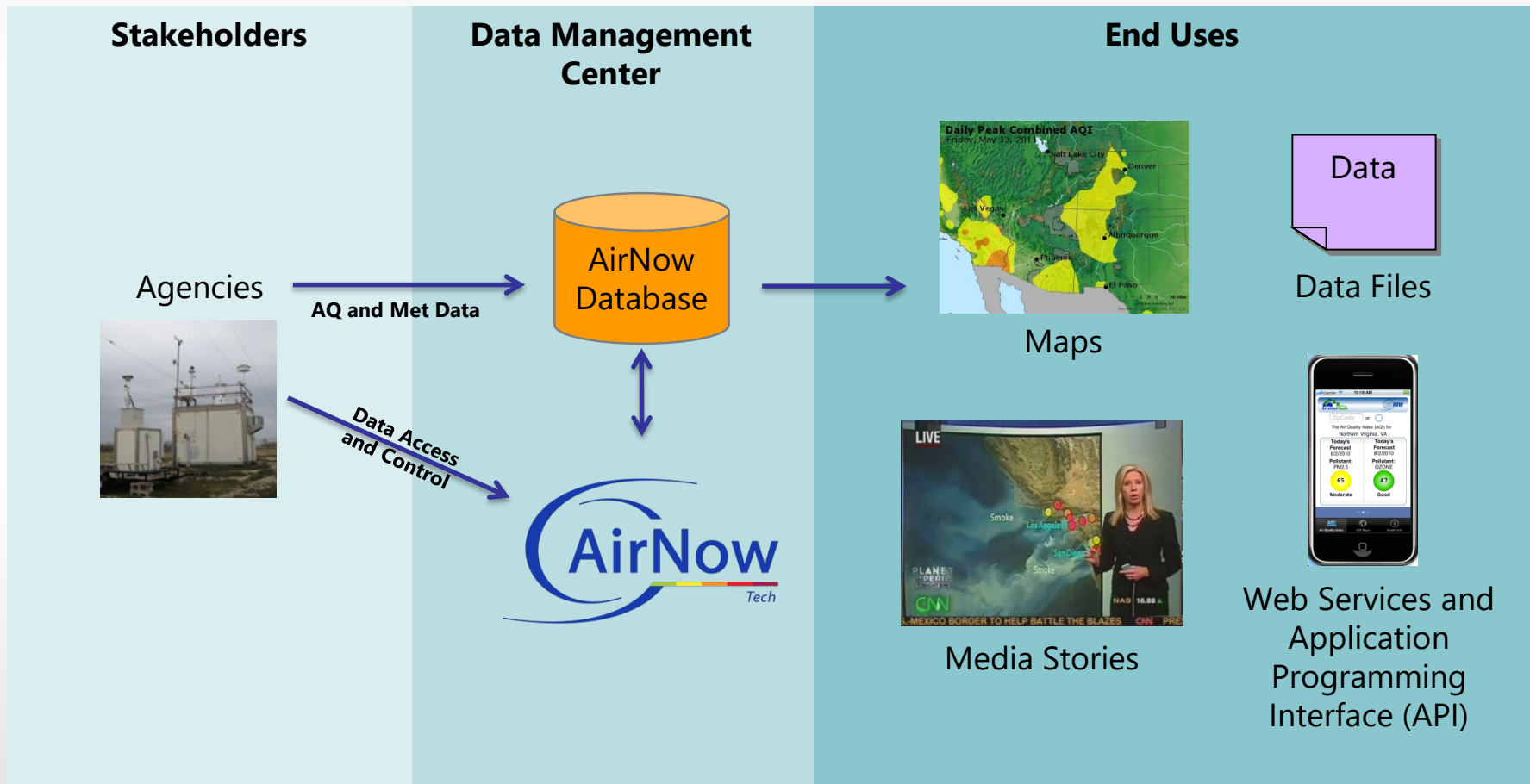


# Outline

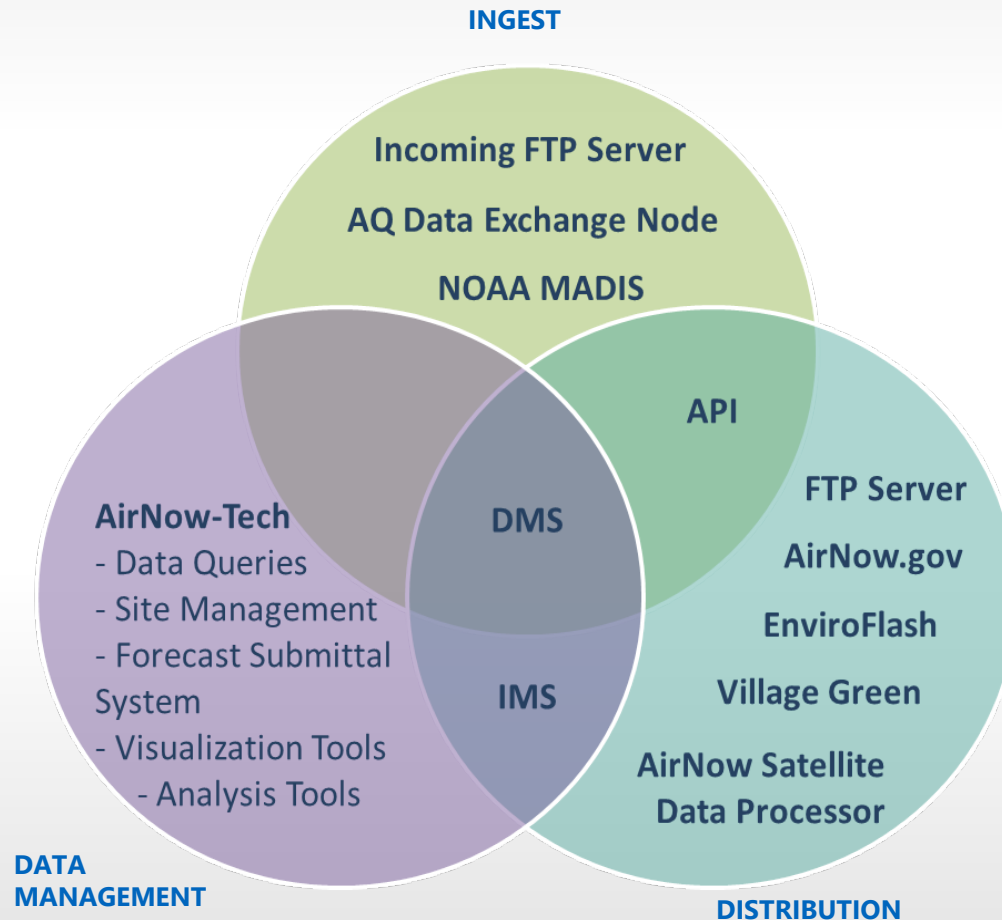
- Journey of Data Through AirNow
  - Data transmission
  - QC checks
  - Viewing and editing data
  - Data display on public websites
- AirNow and AirNow-Tech Help Options



# Journey of Data Through AirNow



# Major Functions



# Submitting Data

1. Request an AirNow-Tech account at <https://www.airnowtech.org/requestAccnt.cfm>
2. Files are sent via FTP server using AQCSV file format
  - Test directory available
  - Hourly files to be sent by 20 minutes past each hour
  - Contact [AirNowInfo@sonomatech.com](mailto:AirNowInfo@sonomatech.com) for FTP server information

# AQCSV File Format

- The AQCSV file format supports
  - AQS Standards (parameter codes, parameter occurrence codes [POC])
  - Speciated/lab data
  - Mobile monitor data
  - Sub-hourly data
- Allows for
  - Backfill of AQS data into AirNow when available
  - Easy encoding and parsing of data
  - Support of international data exchange

Sample line from an AQCSV file

```
840060670011,0,0,20161122T1200-0800,42601,60,,1,008,0,1,38.302591,-121.420838,WGS84,6,074,....
```

Site (AQS)  
Code

Date &  
Time

Parameter  
Code

Duration  
(minutes)

Value

QC  
Code

POC

Lat/  
Long

Elevation

Method Code

# What happens when the AirNow DMC receives a data file?

- New sites or parameters are created in the database
- Run automated QC checks (customizable)
- Calculation of aggregates and AQI
  - NowCast concentrations
  - Running 8-hour (ozone) and 24-hour averages (PM<sub>2.5</sub>)

Event Log							
Search:	<input type="text"/>	Previous	1	2	3	4	Next
	2017-01-09 12:16 AM	IMPORT	201701090015_840.CA1	<a href="#">more info</a>			
	2017-01-09 09:16 AM	IMPORT	201701090915_840.CA1	<a href="#">more info</a>			
	2017-01-09 08:16 AM	IMPORT	201701090815_840.CA1	<a href="#">more info</a>			
	2017-01-09 07:17 AM	IMPORT	201701090715_840.CA1	<a href="#">more info</a>			
	2017-01-09 06:16 AM	IMPORT	201701090615_840.CA1	<a href="#">more info</a>			

# Automated QC Checks (1)

- Three ways QC codes can be changed
  - In the AQCSV data files by the agency
  - During **Automated QC Checks**
  - Manually in AirNow-Tech
- QC checks are customizable by value and hour

QC Code	Cell Border
0 - Valid	White
1 - Adjusted	LightBlue
2 - Averaged	LightGreen
3 - Interpolated	Orange
4 - Estimated	Yellow
5 - Suspect	Magenta
6 - Suspect (audit failure)	Purple
7 - Insufficient Data	Blue
8 - Missing	Gray
9 - Invalid	Red

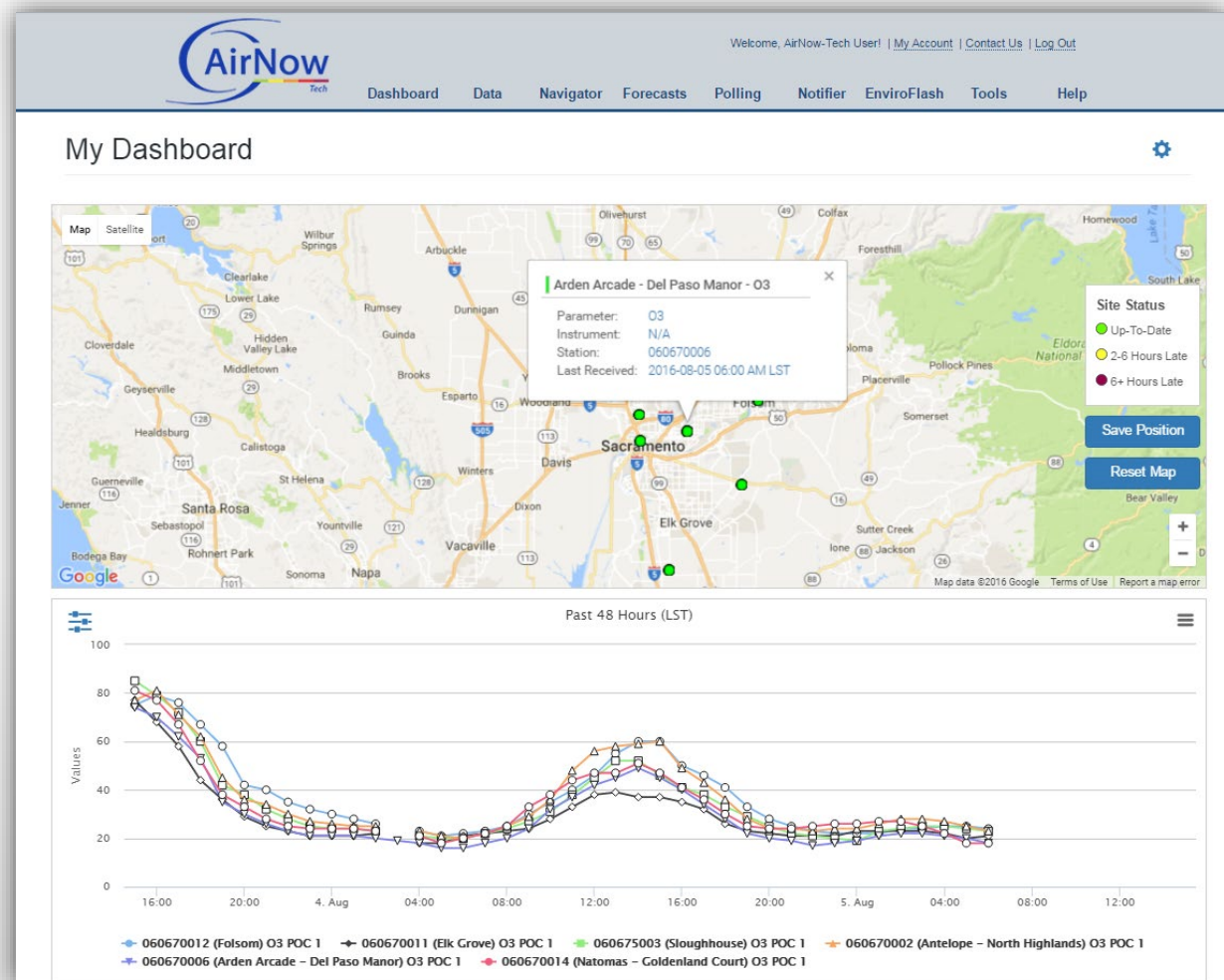


# Automated QC Checks (2)

- Range
  - Data values above or below a certain threshold
    - Minimum drift
    - Maximum suspect
    - Maximum severe
- Rate of Change
  - Difference in data values between two consecutive hours
- Sticking
  - Checks for data values “stuck” at the same value for a specified number of hours
  - “Sticking value”: minimum value for which data will be checked

# Dashboard (1)

- At-a-glance display shows data delivery status
- Stay up-to-date with the latest hourly readings
- Important for AQI reporting and alerts



# Dashboard (2)

- Event Log
  - Automatically updates every few minutes
  - Is AirNow receiving files? Are they being imported successfully?
- Instruments not reporting

Event Log

Type **SUCCESS**

Date (LST)  
2016-08-05 12:17 AM

Source  
IMPORT

Message  
File ingested: (201608042315\_840.CA1) (AQCSV) Records: 67; Inserted: 58; Updated: 0; Aggregated: 6; Mirrored: 5; QCed: 118

File Info

fileName	201608042315_840.CA1
imported	67
inserted	58
updated	0
aggregated	6
qcled	118

Event Log

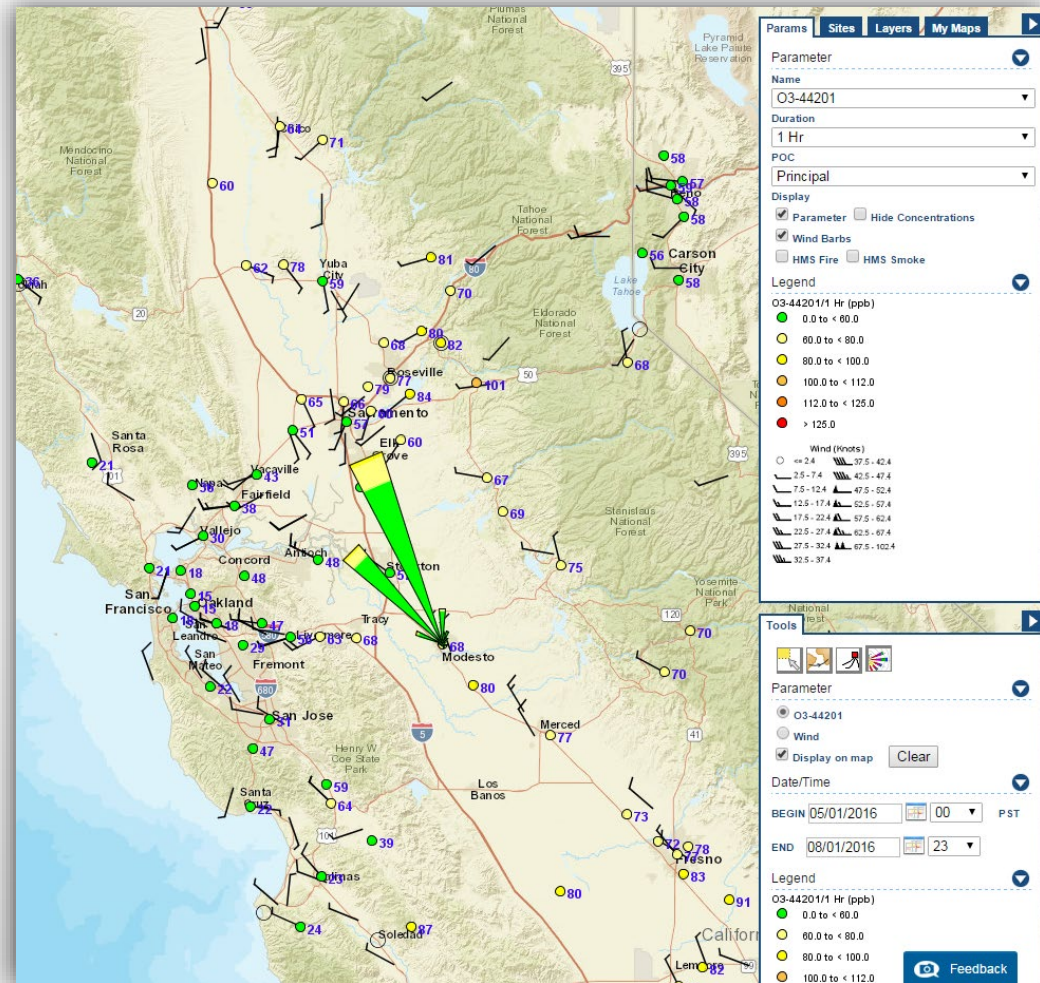
Search:

✓	2016-08-05 12:17 AM	IMPORT	201608042315_840.CA1	<a href="#">more info</a>
✓	2016-08-05 08:17 AM	IMPORT	201608050715_840.CA1	<a href="#">more info</a>
✓	2016-08-05 07:16 AM	IMPORT	201608050615_840.CA1	<a href="#">more info</a>
✓	2016-08-05 06:16 AM	IMPORT	201608050515_840.CA1	<a href="#">more info</a>
✓	2016-08-05 05:17 AM	IMPORT	201608050415_840.CA1	<a href="#">more info</a>

All Instruments Are Up to date 😊

# Navigator (1)

- Data view
  - View concentrations for each parameter from every agency
  - MADIS data from NOAA (temperature, wind, etc.)
  - HYSPLIT trajectories
  - Wind and pollution roses

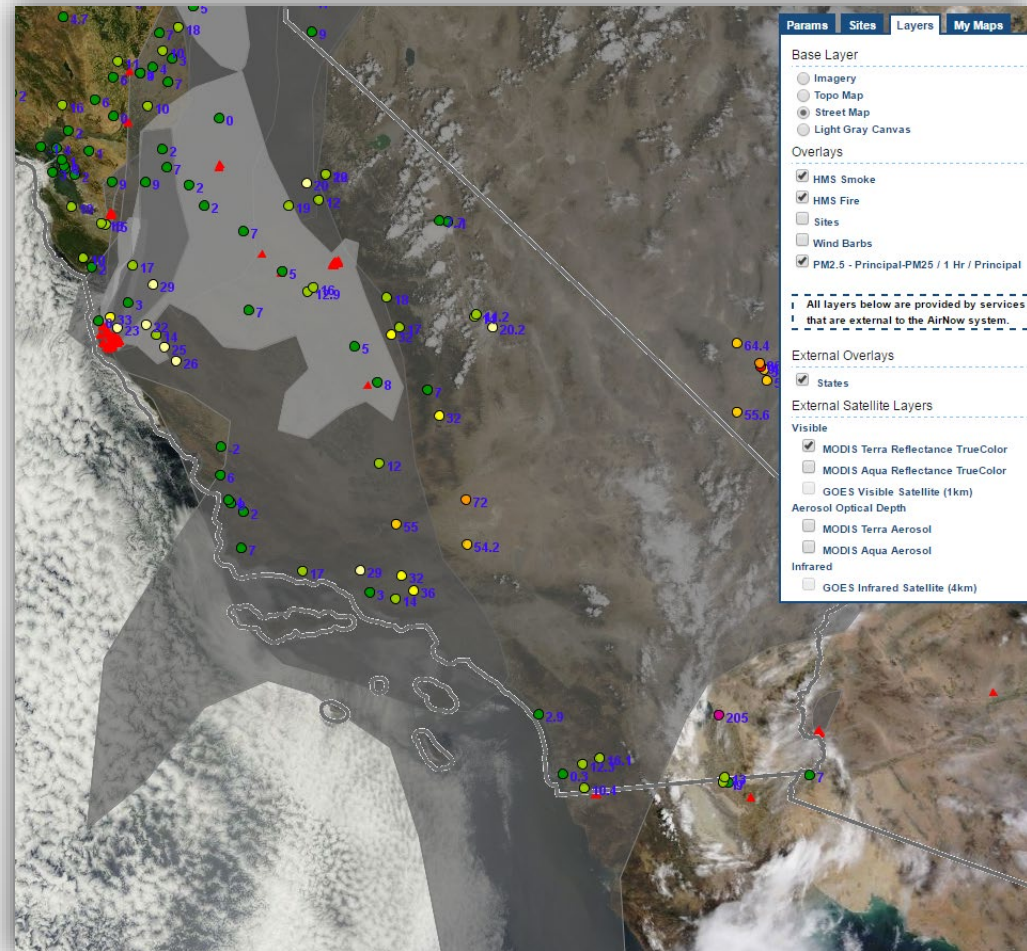


August 13, 2016, at 18:00 PDT: 1-hour ozone (ppb) with wind barbs and a pollution rose. Source: AirNow-Tech.



# Navigator (2)

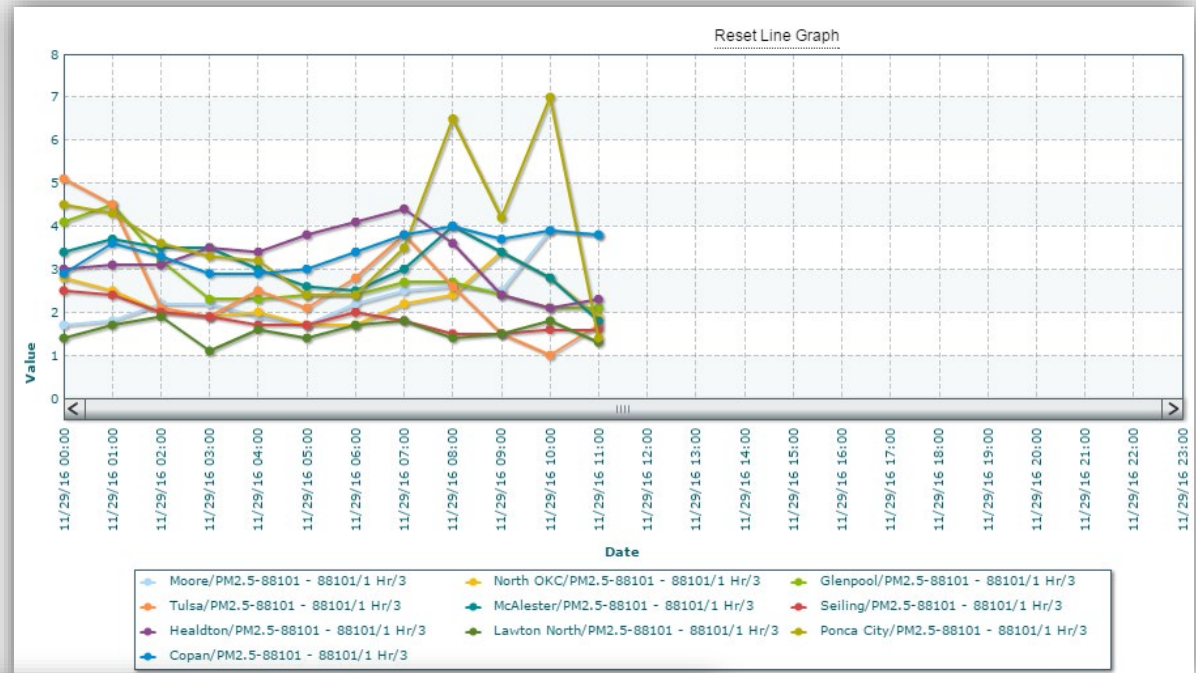
- External Layers
  - Moderate Resolution Imaging Spectroradiometer (MODIS) satellite imagery
  - MODIS Aerosol Optical Depth (AOD)
  - Hazard Mapping System (HMS) smoke and fire detections
  - Geostationary Operational Environmental Satellite (GOES) 1 km visible imagery



July 30, 2016, at 14:00 PDT: 1-hour  $PM_{2.5}$  ( $\mu\text{g}/\text{m}^3$ ), HMS smoke and fire detections, and MODIS satellite image. Source: AirNow-Tech.

# Data Queries

- Data view
  - View hourly, daily, and 8-hour concentration averages and AQI
  - Create line graphs and scatter plots
  - Edit values and QC codes with data editor rights
  - Export to CSV



Site/Site AQS/Param/POC	Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Copan/401470217/PM2.5-88101/3	11/29/16	2.9	3.6	3.3	2.9	2.9	3	3.4	3.8	4	3.7	3.9	3.8				
Glenpool/401430174/PM2.5-88101/3	11/29/16	4.1	4.5	3.2	2.3	2.3	2.4	2.4	2.7	2.7	2.4	2.1	2.1				
Healdton/400190297/PM2.5-88101/3	11/29/16	3	3.1	3.1	3.5	3.4	3.8	4.1	4.4	3.6	2.4	2.1	2.3				
Lawton North/400310651/PM2.5-88101/3	11/29/16	1.4	1.7	1.9	1.1	1.6	1.4	1.7	1.8	1.4	1.5	1.8	1.3				
McAlester/401210415/PM2.5-88101/3	11/29/16	3.4	3.7	3.5	3.5	3	2.6	2.5	3	4	3.4	2.8	1.8				
Moore/400270049/PM2.5-88101/3	11/29/16	1.7	1.8	2.2	2.2	1.9	1.7	2.2	2.5	2.6	2.5	3.9	3.8				
North OKC/401091037/PM2.5-88101/3	11/29/16	2.8	2.5	2	1.9	2	1.7	1.7	2.2	2.4	3.4	2.8	1.9				
Ponca City/400710604/PM2.5-88101/3	11/29/16	4.5	4.3	3.6	3.3	3.2	2.4	2.4	3.5	6.5	4.2	7	1.4				
Seiling/400430860/PM2.5-88101/3	11/29/16	2.5	2.4	2	1.9	1.7	1.7	2	1.8	1.5	1.5	1.6	1.6				
Tulsa/401431127/PM2.5-88101/3	11/29/16	5.1	4.5	2.1	1.9	2.5	2.1	2.8	3.8	2.6	1.5	1	1.7				

Editing Site:

Date:

Parameter:

QC Code:

9 - Invalid

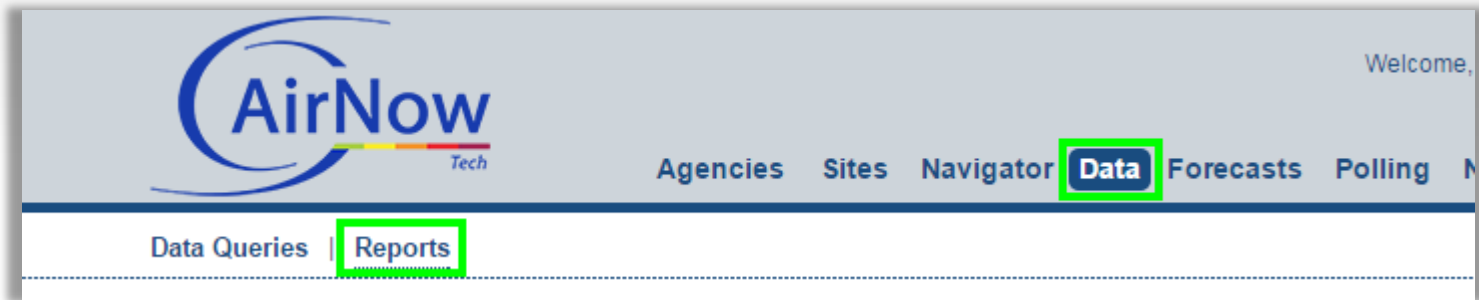
Value:

7

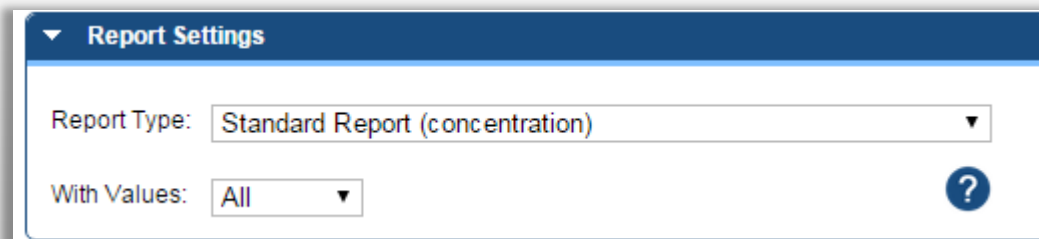
Save

Cancel

# Creating Data Queries & Reports (1)

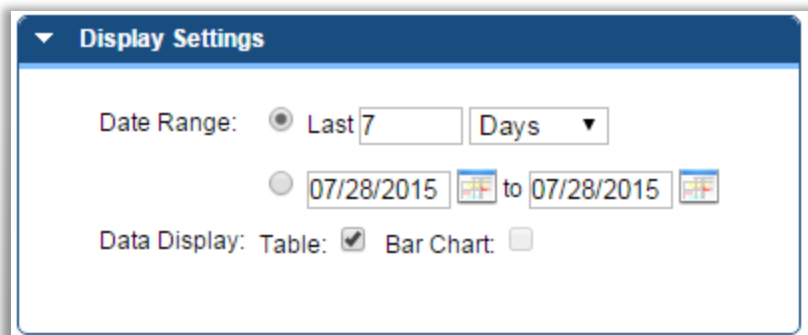


- For this example, we will create a 1-hr daily maximum ozone report for a site in California for the last week. At the top right, there is a "Report Settings" box. Here you can modify the type of report you wish to generate (Count of Occurrences, top 10 AQI days, etc.) and can filter by certain values. To obtain the 1-hour maximum ozone in parts per billion (ppb), select "Standard Report (concentration)".

A screenshot of the "Report Settings" dialog box. It has a blue header with a dropdown arrow and the text "Report Settings". Below the header, there are two rows of settings. The first row is "Report Type:" followed by a dropdown menu showing "Standard Report (concentration)". The second row is "With Values:" followed by a dropdown menu showing "All". A blue circular help icon with a white question mark is located to the right of the "With Values:" dropdown.

# Creating Data Queries & Reports (2)

- Choosing a date range
  - On the left side of the screen is a “Display Settings” box. Here you can choose the date range you wish to report on and choose whether to create a Table or Bar Chart. For the example, we will be querying the last 7 days.



The screenshot shows a "Display Settings" dialog box with a blue header and a white body. It contains the following controls:

- Date Range:** A radio button is selected for "Last 7" (with a text input field containing "7") and "Days" (with a dropdown arrow). A second radio button is unselected for a date range of "07/28/2015" to "07/28/2015", with calendar icons next to the date fields.
- Data Display:** The "Table" option is selected with a checked checkbox, and the "Bar Chart" option is unselected with an unchecked checkbox.



# Creating Data Queries & Reports (3)

- Parameter Selector Tool

The screenshot shows a web browser window titled "AirNowTech: Parameter Selector - Google Chrome" with the URL "https://www.airnowtech.org/data/parameterselector.cfm". The page is titled "Parameter Selector" and contains the following elements:

- Input Fields:** "AQS Code:" and "Text Search:" with corresponding text boxes. "Filter" and "Reset" buttons are to the right.
- Selection Lists:** Three lists for "Parameters", "Duration", and "POC".
  - Parameters:** 42603 - NOX, 42600 - NOY, 44201 - O3 (selected), 88305 - OC, 81102 - PM10, 85101 - PM10.
  - Duration:** 8 Hr begin time Avg, 1 Hr (selected), 1 Min, 15 Min, 24 Hrs.
  - POC:** Minimum, All (selected), 1, 2, 3, 4.
- Instructions:** "Select at least one parameter, one duration and one POC from the boxes above."
- Buttons:** "Retrieve Parameters" button.
- Filtered Parameters:** An empty list box on the left.
- Selected Parameters:** A list box containing "44201 - O3 - 1 Hr - All".
- Navigation:** Four arrow buttons (>>, >, <, <<) between the filtered and selected lists.
- Final Step:** "Parameter List Name:" text box containing "1-hour Ozone", with "Save", "OK", and "Cancel" buttons.

# Creating Data Queries & Reports (4)

- Site Selector Tool

The screenshot shows a web browser window titled "AirNowTech: Site Selector - Google Chrome" with the URL "https://www.airnowtech.org/data/SiteSelector.cfm". The page content is titled "Monitoring Sites Selector" and features several filter fields:

- Agency: Select Agency (dropdown)
- County:  Select County (dropdown)
- Parameter: Select Parameter (dropdown)
- CBSA:  Select CBSA (dropdown)
- EPA Region: Select Region (dropdown)
- State: California (dropdown)
- Status: Active (dropdown)
- AQS Code: All (text input)

Below the filters are three buttons: "Retrieve Sites", "Reset Filters", and "Reset Sites".

The interface is divided into two columns:

- Filtered Sites:** A list of sites with a scrollbar, including:
  - 060250007 - Brawley - 220 Main Street
  - 060251003 - El Centro - 9th Street
  - 060254003 - Westmorland - 570 Cook S
  - 060254004 - Niland - English Road
  - 060270002 - NCore - White Mountain R
  - 060270004 - Lone Pine
- Selected Sites:** A list of sites with a scrollbar, currently containing:
  - 060250005 - Calexico - Ethel Street

Between the two columns are four navigation buttons: ">>", ">", "<", and "<<".

At the bottom, there is a "Total Sites: 256" label, a "Site List Name:" text input field, and three buttons: "Save", "OK", and "Cancel".

# Creating Data Queries & Reports (5)

- Aggregations

After selecting parameters and sites, an aggregation needs to be chosen. Once an aggregation is chosen, the Filtered Data Set(s) box will populate available data series. Press the down arrows to move the desired selections into the "Selected Data Set(s):" box.

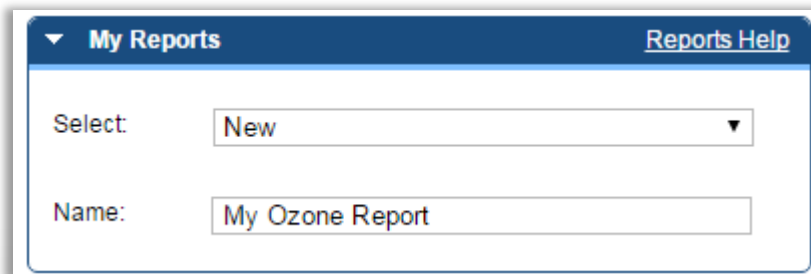
The screenshot displays the 'Data Settings' interface with the following elements:

- Parameter(s):** A dropdown menu showing 'Current Selection ( 1 parameters )' and a 'Parameter Selector' button.
- Site(s):** A dropdown menu showing 'Current Selection ( 1 sites )' and a 'Site Selector' button.
- Aggregation:** A dropdown menu set to 'Daily Max' with a help icon.
- Filtered Data Set(s):** An empty list box.
- Navigation Buttons:** A set of four buttons: two down arrows, one down arrow, and two up arrows.
- Selected Data Set(s):** A list box containing 'Callexico - Ethel Street/O3 - 44201/1 Hr/1 (Daily Max)' and a 'Clear' link.
- Spatial Grouping:** A dropdown menu set to 'Site List' with a help icon.
- Sort by:** A dropdown menu set to 'Value'.
- Source:** A dropdown menu set to 'Preliminary & Final Data'.

# Creating Data Queries & Reports (6)

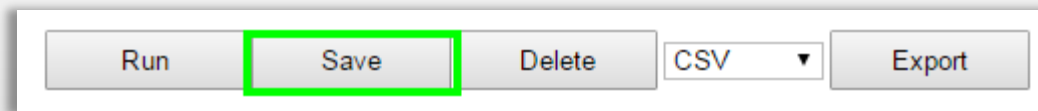
- Saving the Report

- To save this query for a future report, navigate to the “My Reports” box at the top left of your screen. Select New report, and type in a desired report name.



The screenshot shows a dialog box titled "My Reports" with a "Reports Help" link. It contains two input fields: a "Select" dropdown menu with "New" selected, and a "Name:" text box containing "My Ozone Report".

- Press the Save button at the bottom right of the screen to save the query.



The screenshot shows a control bar with five buttons: "Run", "Save", "Delete", "CSV", and "Export". The "Save" button is highlighted with a green border.

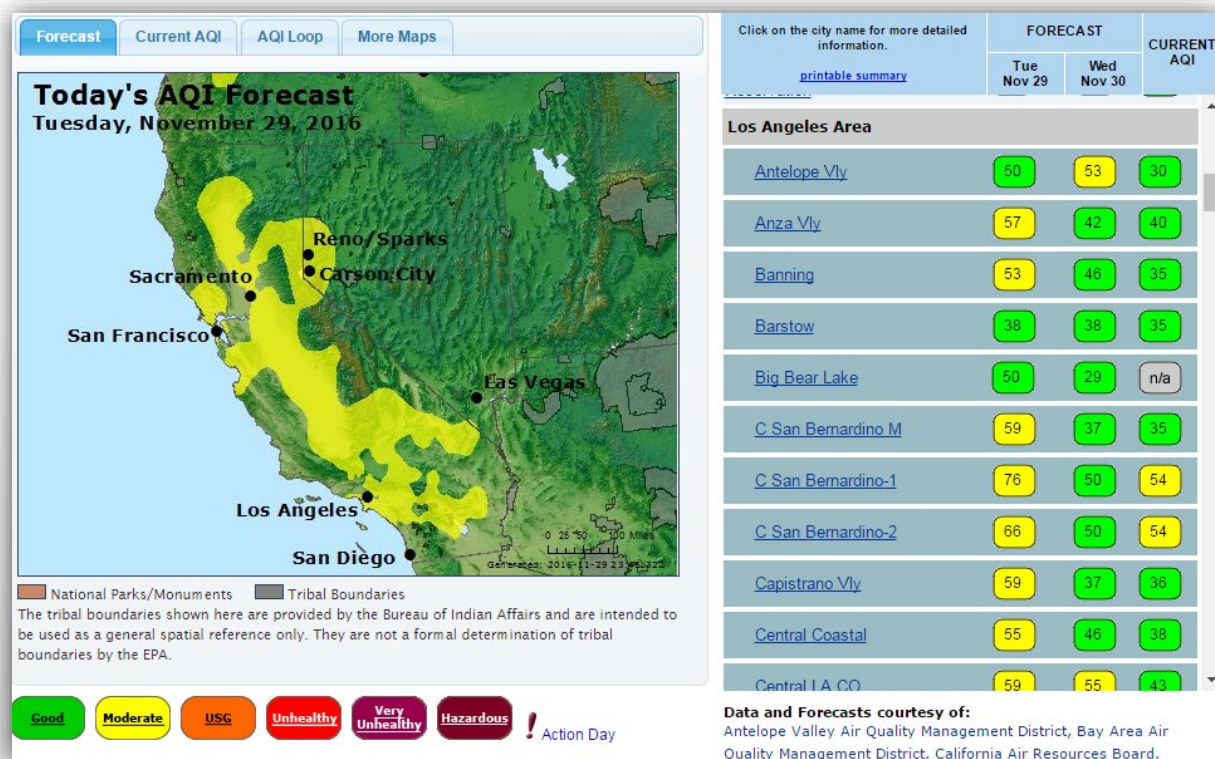
# Creating Data Queries & Reports (7)

- Running the report
  - Press Run to generate your report and return the data at the bottom of the screen. There is also an option to export your data in CSV format (see above image). For this example, our report yielded the following:

Group By	Date (LST)	Value
Calexico - Ethel Street / 060250005 / O3(PPB) / 1 Hr-Daily Max / 1	07-27-2015	83.0
Calexico - Ethel Street / 060250005 / O3(PPB) / 1 Hr-Daily Max / 1	07-21-2015	71.0
Calexico - Ethel Street / 060250005 / O3(PPB) / 1 Hr-Daily Max / 1	07-24-2015	71.0
Calexico - Ethel Street / 060250005 / O3(PPB) / 1 Hr-Daily Max / 1	07-22-2015	64.0
Calexico - Ethel Street / 060250005 / O3(PPB) / 1 Hr-Daily Max / 1	07-23-2015	55.0
Calexico - Ethel Street / 060250005 / O3(PPB) / 1 Hr-Daily Max / 1	07-25-2015	55.0
Calexico - Ethel Street / 060250005 / O3(PPB) / 1 Hr-Daily Max / 1	07-26-2015	55.0

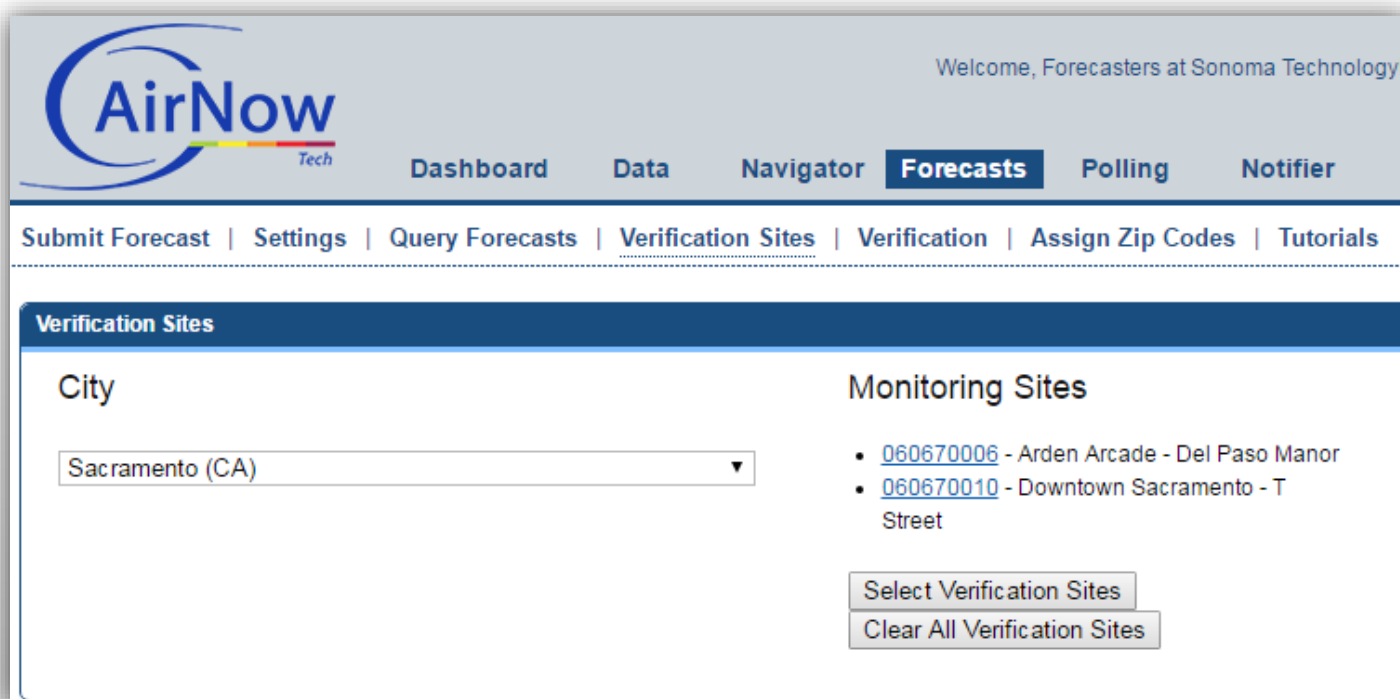
# How are current data displayed?

- Reporting areas (forecast cities)
  - How observations and forecasts are disseminated and displayed on AirNow.gov
  - Individual monitoring sites are assigned to each reporting area
  - Maximum NowCast AQI from sites in a reporting area will show as the “Current AQI”





# Configuring Settings in AirNow-Tech

- Verification sites
  - Can be added to or removed from reporting areas via the Verification Sites page
  - Any number of verification sites can be assigned to a reporting area



The screenshot displays the AirNow-Tech web application interface. At the top left is the AirNow Tech logo. The top right corner shows a welcome message: "Welcome, Forecasters at Sonoma Technology!". Below the logo is a navigation menu with tabs for Dashboard, Data, Navigator, Forecasts (highlighted), Polling, and Notifier. A secondary navigation bar contains links for Submit Forecast, Settings, Query Forecasts, Verification Sites (underlined), Verification, Assign Zip Codes, and Tutorials. The main content area is titled "Verification Sites" and features a "City" dropdown menu currently set to "Sacramento (CA)". To the right, under "Monitoring Sites", there is a list of two sites: "060670006 - Arden Arcade - Del Paso Manor" and "060670010 - Downtown Sacramento - T Street". At the bottom of this section are two buttons: "Select Verification Sites" and "Clear All Verification Sites".

# Configuring Settings in AirNow-Tech

- **Principal Parameter** 
  - The parameter/POC combination to be used as the data set for AirNow products
- **Public Parameter** 
  - Required before data are included in publicly available products



The screenshot displays the AirNow-Tech web interface for configuring a site. The header includes the AirNow logo and navigation tabs: Dashboard, Data, Navigator, Forecasts, Polling, and Notifier. The user is logged in as 'Forecaster'. The breadcrumb trail is 'Agencies » Site List » Edit Sites'.

The configuration form includes the following fields:

- AQS Code\*: 060670011
- Status\*: Active
- Site Name\*: Elk Grove
- Elevation: 21 ft. or 6.4008 m.
- Agency ID: CA1
- Dec Deg
- State: CA
- Latitude\*: 38.302591
- County: SACRAMENTO
- Longitude\*: -121.420838
- CBSA: Sacramento--Arden-Arcade--F
- GMT Offset\*: -8.00

Buttons at the bottom: [Enable Editing](#) and [View QC Criteria](#).

\*Required

**Parameters Measured:**

Parameter - AQS Code/POC	Star	People
<a href="#">BARPR - 64101/1</a>	★	
<a href="#">NO - 42601/1</a>	★	
<a href="#">NO2 - 42602/1</a>	★	
<a href="#">NOX - 42603/1</a>	★	
<a href="#">O3 - 44201/1</a>	★	
<a href="#">PM2.5 - 88501/3</a>	★	
<a href="#">PM2.5 - 88502/1</a>		
<a href="#">PM2.5 - 88502/3</a>		
<a href="#">PRECIP - 65102/1</a>	★	
<a href="#">RHUM - 62201/1</a>	★	
<a href="#">RWD - 61104/1</a>		
<a href="#">RWS - 61103/1</a>		
<a href="#">SRAD - 63301/1</a>	★	
<a href="#">TEMP - 62101/1</a>	★	
<a href="#">TNMOC - 43102/1</a>		
<a href="#">WD - 61102/1</a>	★	
<a href="#">WS - 61101/1</a>	★	



# Configuring Settings in AirNow-Tech

- Editing Principal and Public Parameters
  - Click Enable Editing
  - Select parameter from list
  - Check boxes and save

[Agencies](#) » [Site List](#) » Edit Sites

AQS Code\*:  Status\*:

Site Name\*:  Elevation:  ft. or  m.

Agency ID:  Dec Deg

State:  Latitude\*:


County:  Longitude\*:


CBSA:  GMT Offset\*:

\*Required


























**Parameter Specification for [Elk Grove](#)**

(UG/M3)

Set as Principal  

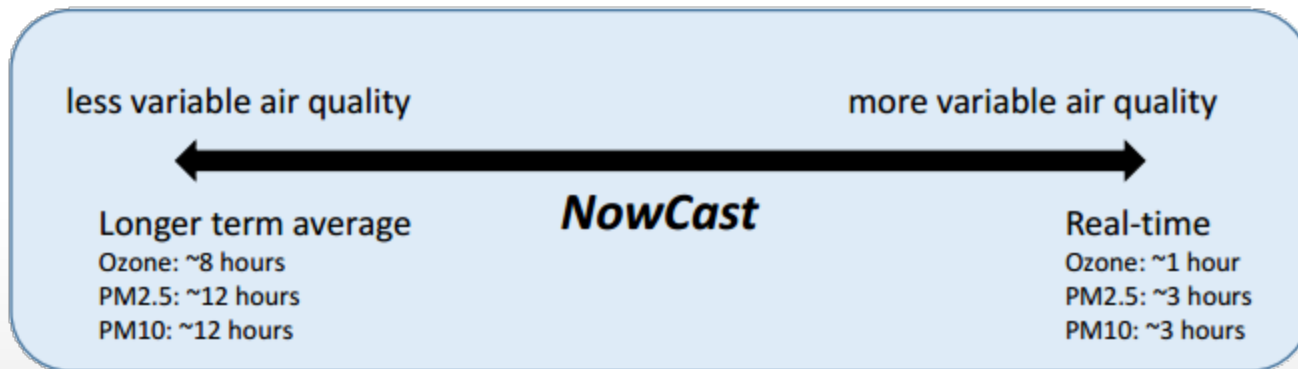
Approved for Public  

**Parameters Measured:**

Parameter - AQS Code/POC		
<a href="#">BARPR - 64101/1</a>		
<a href="#">NO - 42601/1</a>		
<a href="#">NO2 - 42602/1</a>		
<a href="#">NOX - 42603/1</a>		
<a href="#">O3 - 44201/1</a>		
<a href="#">PM2.5 - 88501/3</a>		
<a href="#">PM2.5 - 88502/1</a>		
<a href="#">PM2.5 - 88502/3</a>		
<a href="#">PRECIP - 65102/1</a>		
<a href="#">RHUM - 62201/1</a>		
<a href="#">RWD - 61104/1</a>		
<a href="#">RWS - 61103/1</a>		
<a href="#">SRAD - 63301/1</a>		
<a href="#">TEMP - 62101/1</a>		
<a href="#">TNMOC - 43102/1</a>		
<a href="#">WD - 61102/1</a>		
<a href="#">WS - 61101/1</a>		

# NowCast

- A way to express real-time air quality in the context of the AQI
- Aligns closely with what people are seeing or experiencing
- Calculation uses longer averages during periods of stable air quality and shorter averages when air quality is changing rapidly
- New Ozone NowCast algorithm coming this year



Good  
0 - 50

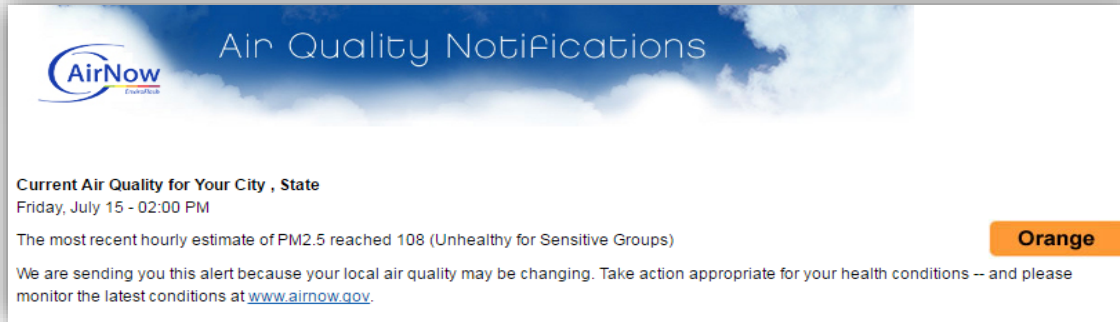
Moderate  
51 - 100

Unhealthy for  
Sensitive Groups  
101 - 150

Unhealthy  
151 - 200

Very Unhealthy  
201 - 300

# Where is the NowCast used?



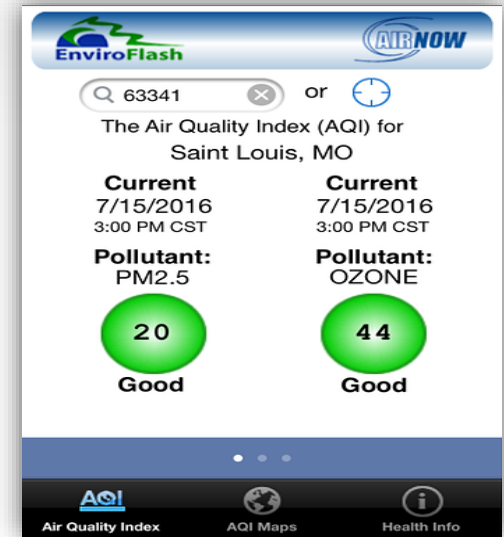
**AirNow** Air Quality Notifications

Current Air Quality for Your City , State  
Friday, July 15 - 02:00 PM

The most recent hourly estimate of PM2.5 reached 108 (Unhealthy for Sensitive Groups)

**Orange**

We are sending you this alert because your local air quality may be changing. Take action appropriate for your health conditions -- and please monitor the latest conditions at [www.airnow.gov](http://www.airnow.gov).



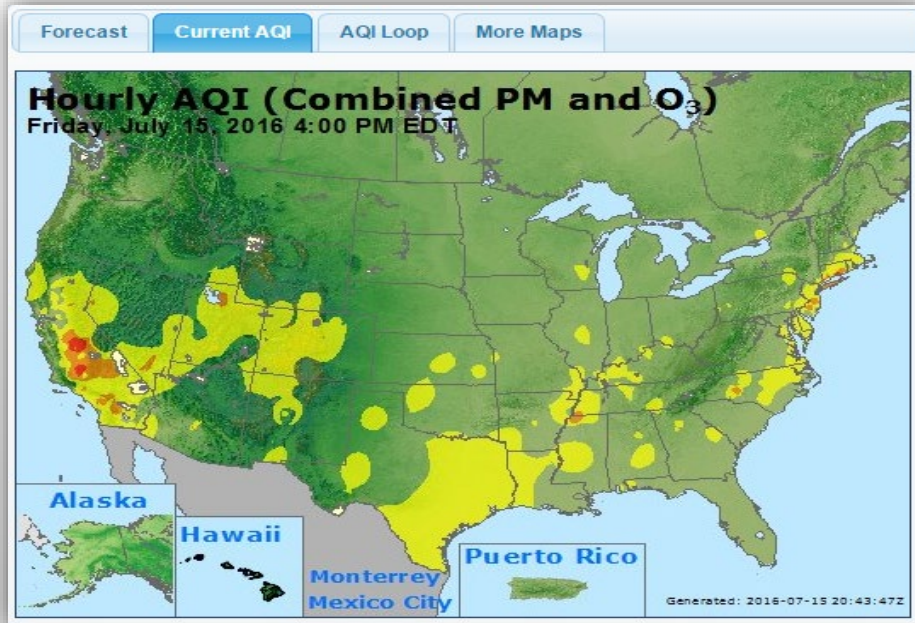
EnviroFlash AIRNOW

63341 or

The Air Quality Index (AQI) for Saint Louis, MO

<b>Current</b> 7/15/2016 3:00 PM CST	<b>Current</b> 7/15/2016 3:00 PM CST
<b>Pollutant:</b> PM2.5	<b>Pollutant:</b> OZONE
<b>20</b> Good	<b>44</b> Good

AQI Air Quality Index AQI Maps Health Info

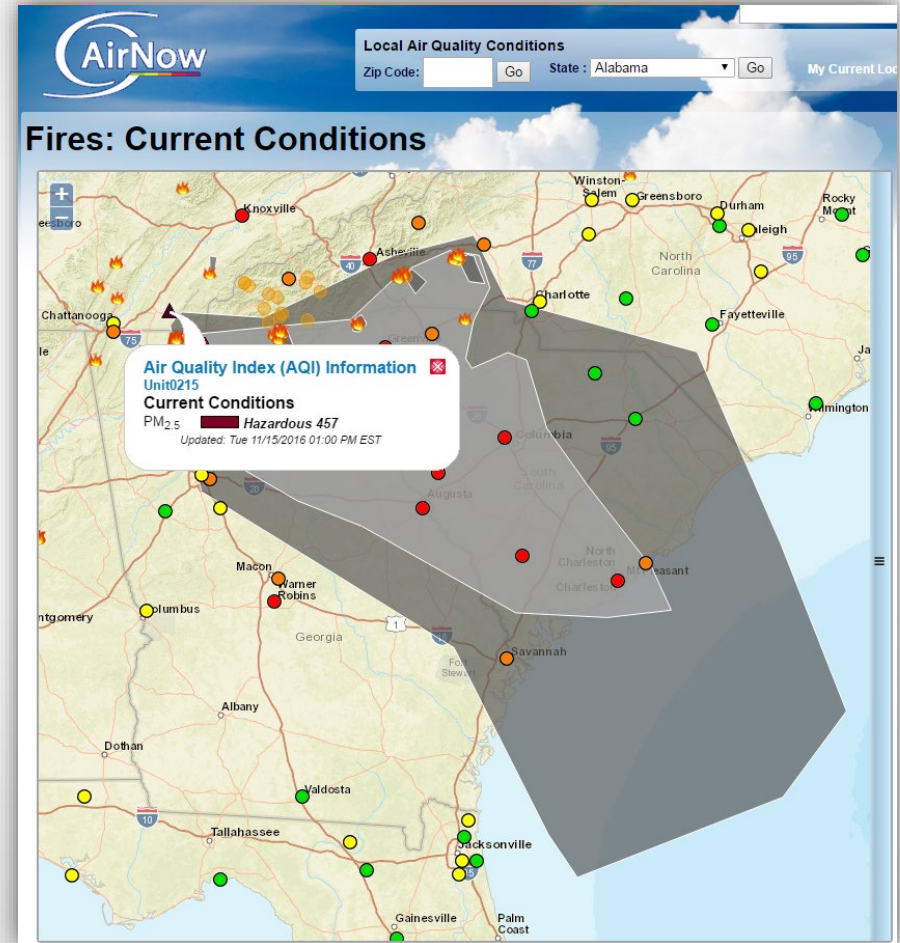
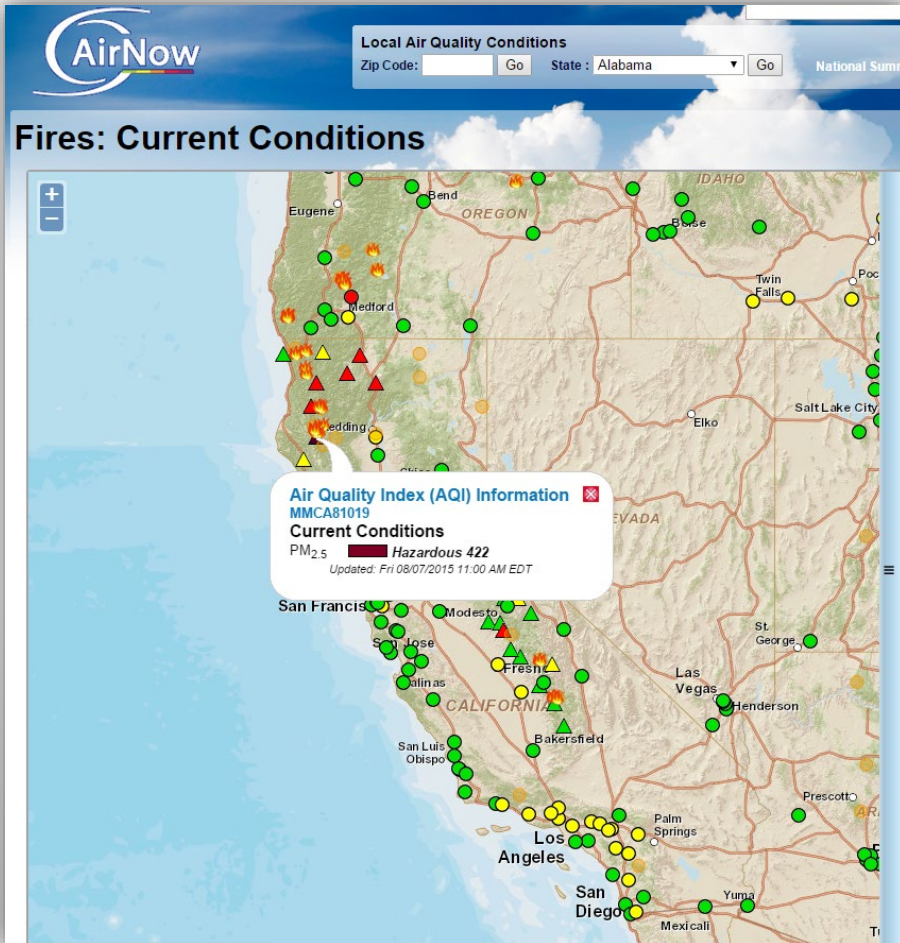


Click on the city name for more detailed information. <a href="#">printable summary</a>	FORECAST		CURRENT AQI
	Fri Jul 15	Sat Jul 16	
<a href="#">Aiken-Augusta - SC/GA</a>	39	42	56
<a href="#">Atlanta</a>	Good	Good	64
<a href="#">Columbus-Phenix City - GA/AL</a>	Good	Good	43
<a href="#">Macon</a>	Good	Good	39

Note: Values above 500 are considered Beyond the AQI. Follow recommendations for the Hazardous category. Additional information on reducing exposure to extremely high levels of particle pollution is available [here](#).



# AirNow Fire Page



[https://airnow.gov/index.cfm?action=topics.smoke\\_wildfires](https://airnow.gov/index.cfm?action=topics.smoke_wildfires)

# AirNow Department of State Page

The screenshot displays the AirNow Department of State website interface. At the top left is the AirNow logo. To its right is a search bar with a 'Go' button. Below this is a section titled 'Local Air Quality Conditions' with a 'Zip Code:' input field, a 'Go' button, a 'State:' dropdown menu set to 'Alabama', and another 'Go' button. To the right of this section is a 'My Current Location' button. Below the search area is a dark blue header with the AirNow Department of State logo and name. The main content area features a world map with various colored circles representing AQI values at different locations. To the right of the map are two dropdown menus: 'Select a City' and 'Select a Parameter', both with 'Select...' options. Below these is a text box with the following content:

**Welcome to AirNow DOS**  
AirNow DOS collects Air Quality Monitoring data from U.S. embassies and consulates around the world to inform U.S. personnel and citizens overseas.

Is your country interested in air quality monitoring? Check out AirNow International, the EPA's information package on how to set up a country-wide air quality monitoring program.

*AirNow DOS is powered by the U.S. Department of State in partnership with the U.S. EPA*

Note: Values above 500 are considered Beyond the AQI. Follow recommendations for the Hazardous category. Additional information on reducing exposure to extremely high levels of particle pollution is available [here](#).

At the bottom of the page, there is a navigation bar with links for Privacy and Security, Accessibility, Contact Us, AirNow on Facebook, Subscribe to RSS, and Follow us on Twitter.

[https://www.airnow.gov/index.cfm?action=airnow.global\\_summary](https://www.airnow.gov/index.cfm?action=airnow.global_summary)

# Submitting Forecasts in AirNow-Tech

- Forecast for ozone, PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, and SO<sub>2</sub>, and/or CO
- Forecasts issued in concentrations or AQI units for reporting areas
- Forecasts are for the EPA standard for each pollutant (e.g., 24-hr average for PM<sub>2.5</sub>)

**Youngstown**

Submitted: 11/29/2016 9:47 AM (PT) Apply to Group: None ▾ Save As Default

Pollutant	Yest. Obs Mon, 11/28	Today Tue, 11/29	Tomorrow Wed, 11/30	Day 2 Thu, 12/01	Day 3 Fri, 12/02	Day 4 Sat, 12/03	Day 5 Sun, 12/04	Delete Forecast
PM <sub>2.5</sub> Forecast (concentration)	12.5	9	12	8	6	7	11	<input type="checkbox"/>
<a href="#">Hide Guidance</a>								
AQMOS BlueSky Gateway 00Z		6	6					
BlueSky Gateway 00Z		8	5					
Action Day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

[Show Discussion](#)

# Forecast Dissemination

## EnviroFlash Emails



**Air Quality Notifications**

Forecast for Youngstown, OH  
Today and Tomorrow's Forecast

Monday, Nov 28:	53 AQI	Moderate	<b>Yellow</b>	Particle Pollution (2.5 microns)
Tuesday, Nov 29:	38 AQI	Good	<b>Green</b>	Particle Pollution (2.5 microns)

## API Web Services and File Products

### Forecasts

#### By Zip code

Get current or historical forecasted AQI values and categories for a reporting area by Zip code.

[Documentation](#)

[Query Tool](#)

#### By latitude/longitude

Get current or historical forecasted AQI values and categories for a reporting area by latitude and longitude.

[Documentation](#)

[Query Tool](#)

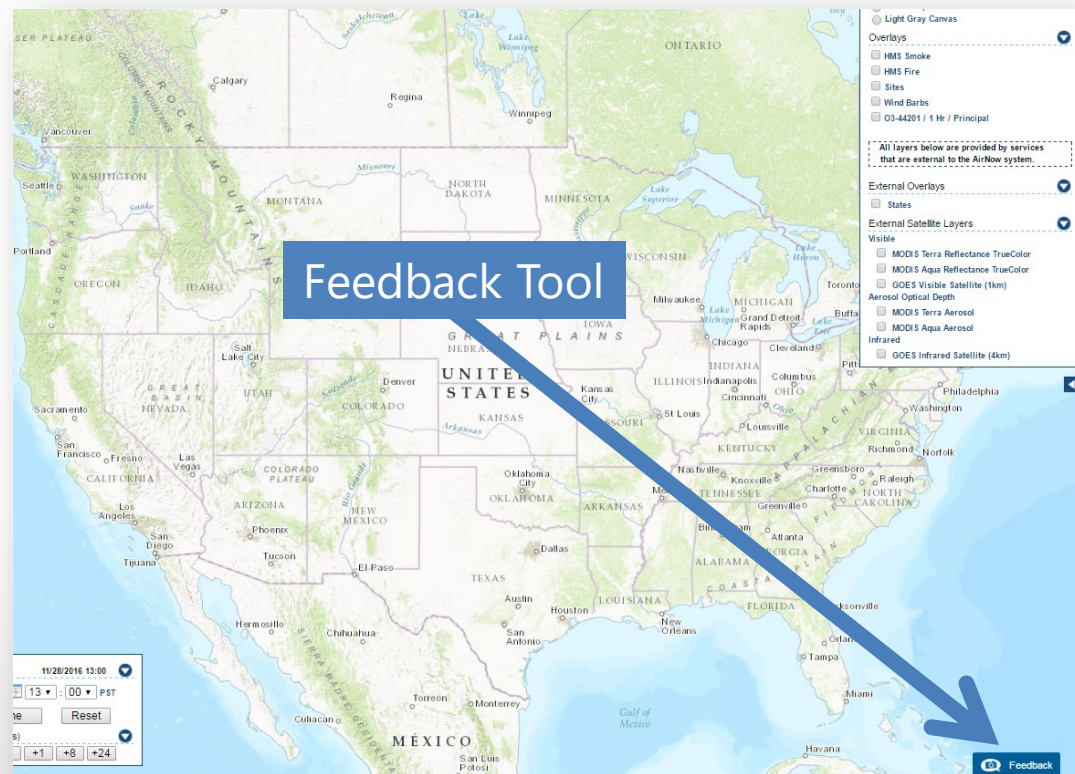
## AirNow.gov

Air Quality Forecast			
Today's High		Tomorrow's High	
Air Quality Index (AQI)		Air Quality Index (AQI)	
<b>38</b>	<b>Good</b>	<b>50</b>	<b>Good</b>
Health Message: None		Health Message: None	
AQI - Pollutant Details			
Particles (PM2.5)	<b>38</b>	<a href="#">Good</a>	Particles (PM2.5)
			<b>50</b>
			<a href="#">Good</a>
<p><b>Forecast Discussion:</b> Tuesday, November 29: An upper-level trough of low pressure will move through northeastern Ohio, enhancing mixing in the atmosphere. In addition, moderate and gusty southerly winds at the surface will disperse pollutants. As a result, AQI levels will be Good. Wednesday, November 30: Light southeasterly winds during the morning hours will gradually bring regional pollutants and moisture into the Mahoning Valley, increasing particle production. However, a cold front will move through Ohio in the afternoon, generating moderate westerly winds. These winds will bring a cleaner air mass into the region and keep AQI levels Good. Thursday through Saturday, light to moderate westerly to southwesterly winds will aid pollutant dispersion and continue to bring clean air into Youngstown-Warren. As a result, AQI levels will be Good on all three days. Sunday, a surface high pressure system will move over the Ohio River Valley, producing light southerly winds in the Youngstown area. These conditions will limit pollutant dispersion. However, low pollutant carryover from previous days will keep AQI levels Good.</p>			



# AirNow and AirNow-Tech Help

- Email questions to [AirNowInfo@sonomatech.com](mailto:AirNowInfo@sonomatech.com)
- Review resources page in AirNow-Tech
- The Feedback Tool on AirNow-Tech will send your comments and questions directly to the AirNow Data Management Center (DMC)
  - Located at the bottom right of each page in AirNow-Tech





# AirNow Discussion Forum

- Ask questions, get answers
- Information on a variety of AirNow topics
- [Forum.airnowtech.org](http://Forum.airnowtech.org)



all categories ▾ **Categories** Latest New Unread Top

Category Latest

**Announcements**  
Announcements about the AirNow Platform, usually pertaining to new features, bug fixes, and system downtime.

**AQI Info**  
Ask questions or find answers regarding the Air Quality Index (AQI) for ozone, PM2.5, and PM10, including the NowCast and Daily AQI calculations.

**General AirNow-Tech**  
Ask questions or find answers for general AirNow-Tech website use, including account management, compatible browsers, and bug reporting. Select AirNow-Tech FAQ to see common questions that have already been answered.

[AirNow-Tech FAQ](#)

System Maintenance 10 pm EDT on August 10

AirNow.gov Website Maintenance July 1-5

AirNow Updates to Ozone Real-time Reporting

System Maintenance 7:30 pm EDT, 4/21, to 4/22

System Maintenance Thursday, February 4

★ AQI Calculations Overview- Ozone, PM2.5, and PM10

The NowCast for Ozone and PM 21d

Daily and Hourly AQI - PM2.5 and PM10 Jul 5

Daily and Hourly AQI - Ozone Jul 5

The AQI Equation Jul 5

NOAA model forecasts not showing up [Resolved] Jun 30

Managing saved Site lists (Data Queries and Reports) Jun 9

Managing saved Parameter lists (Data Queries and Reports) Jun 9

What do numbers following parameters mean (ex: PM10-85101), and why does the same pollutant have multiple numbers? Nov '15

How do I manage the contact list for my agency? Jul '15

4 / year

## Daily and Hourly AQI - Ozone

AQI Info



mwhyton Marcus Hylton AirNow-Tech Guru

2 Jul 5

### Daily Ozone AQI

The daily ozone AQI is calculated by taking the maximum 8 hour concentration from 07:00-23:00 LST, and then converting to AQI. There are 17 8-hour averages considered in each day. Each 8-hour average requires 6 of 8 hours (75%) for a valid calculation. In addition, 75% or 13/17 of the 8-hour averages are needed for a valid daily ozone AQI calculation.

	8-hour average							
Hour	0	1	2	3	4	5	6	7
Raw PPB	44	46	50	54	58	66	60	58
8-hr PPB	54							
Daily AQI	50							

Following 7 hours

Example 1: Valid

	Day 1																							Day 2							
Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	0	1	2	3	4	5	6
Raw PPB	34	35	40	41	40	39	43	47	52	63	78	89	82	80	78	73	77	84	80	68	54	48	45	47	41	48	47	47	45	40	43
8-hr PPB	39	42	45	50	56	61	66	71	74	77	80	80	77	74	70	66	62	58	53	49	47	46	45	44							
Daily AQI																								133							

Example 2: Valid with Missing Data

	Day 1																							Day 2							
Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	0	1	2	3	4	5	6
Raw PPB	46	45	43			26	26	32				69	76	77	77	76	75	72	65	51	43	36	31	31	29	27	27		26	26	
8-hr PPB	36	34	31	28	38	45	56	66	75	74	73	71	67	61	56	50	44	39	34	32	30	28	27								
Daily AQI																								115							

Example 3: Insufficient Data

	Day 1																							Day 2							
Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	0	1	2	3	4	5	6
Raw PPB																															
8-hr PPB																															
Daily AQI																															

# Contact



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