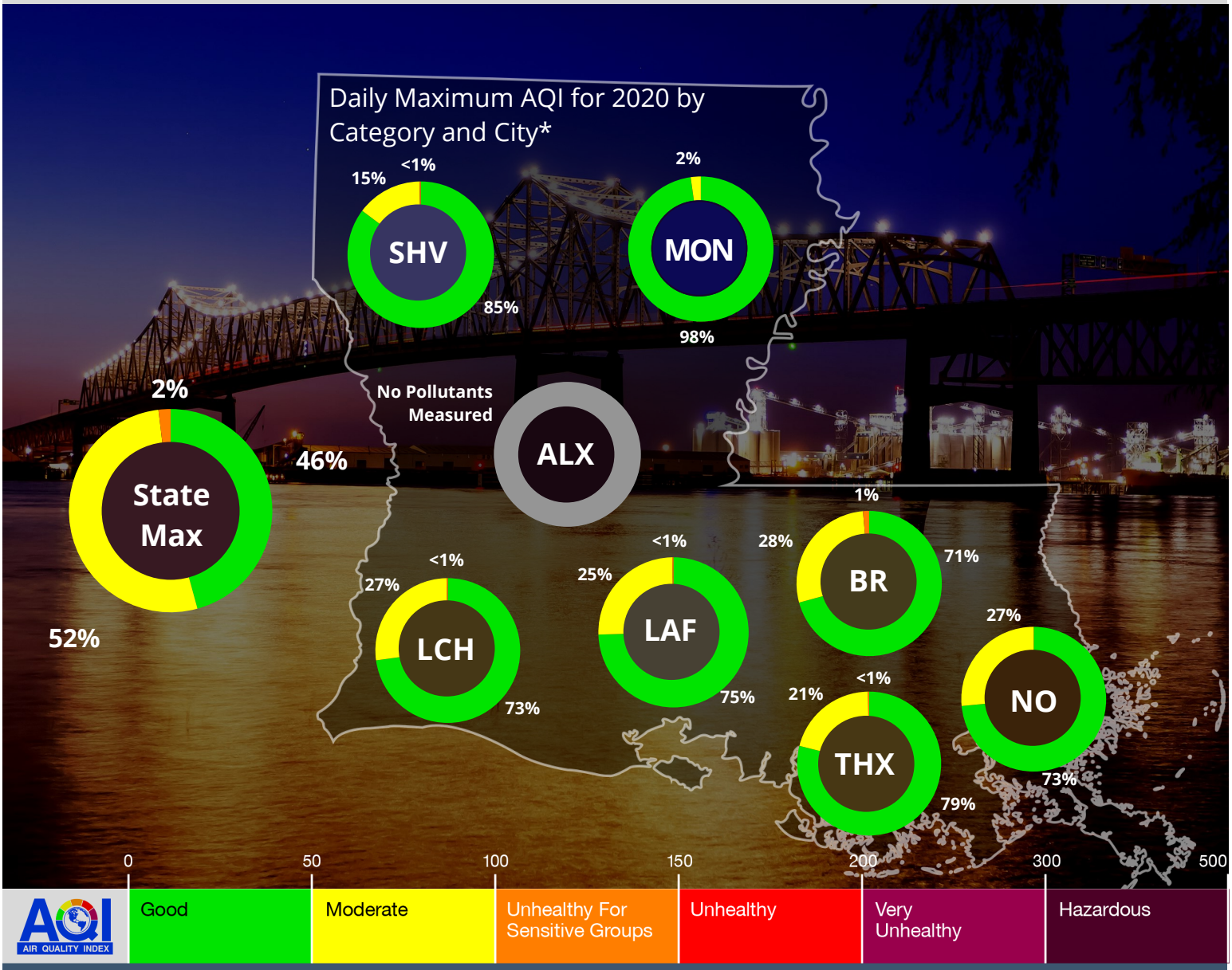
Highest AQI Days For 2020							
136 Ozone	June 18	Baton Rouge	120 $PM_{2.5}$	January 1	Lafayette	119 Ozone	August 7	Baton Rouge	116 $PM_{2.5}$	June 26	Lake Charles

Louisiana Air Quality Summary | 2020

Sonoma Technology, Inc. (STI) meteorologists provide same-day, next-day, and two-day Air Quality Index (AQI) forecasts for ozone and particulate matter ($PM_{2.5}$) in eight Louisiana cities. The graphs and charts shown below and on pages 2 through 8 summarize next-day AQI forecasts and observed AQI levels for 2020. Select high AQI days are discussed on pages 10 and 11.

Counts of observations and forecasts in each category are on pages 12 and 13, and forecast accuracy statistics are shown on page 14. During the year, 11 Air Quality Action Days were issued across the state. Pollution of fine particles, or $PM_{2.5}$, were responsible for 6 Action Days, while ozone pollution was the primary pollutant for 5 Action Days.



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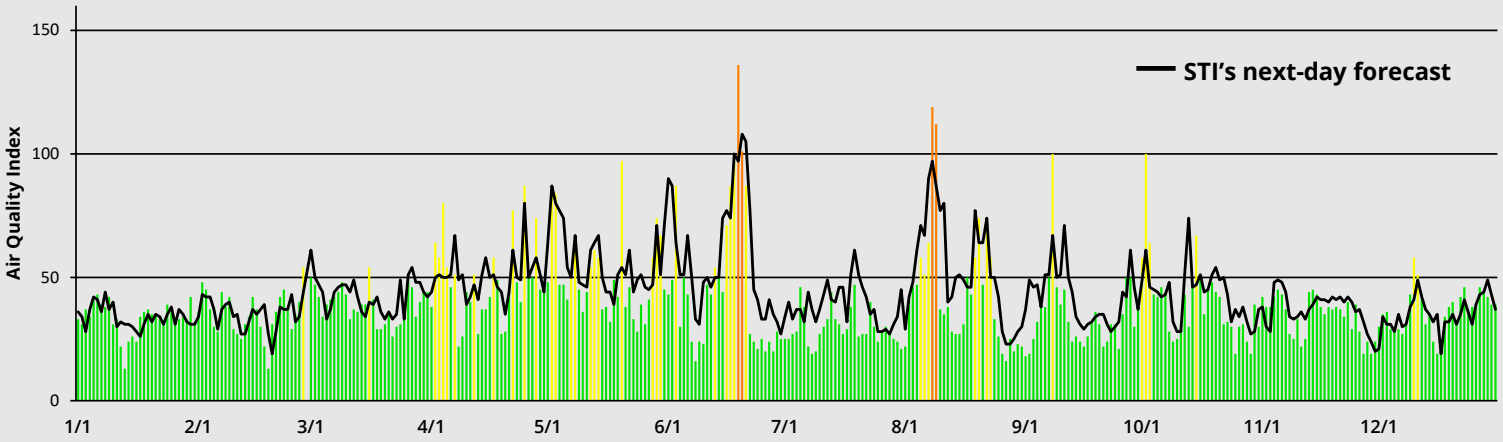
*BR – Baton Rouge
NO – New Orleans
SHV – Shreveport
LCH – Lake Charles
LAF – Lafayette
THX – Thibodaux
MON – Monroe
ALX – Alexandria

Highest Ozone AQI Days For Baton Rouge

136 Ozone	June 18 Carville	119 Ozone	August 7 Carville
112 Ozone	August 8 Capitol	101 Ozone	June 19 Carville

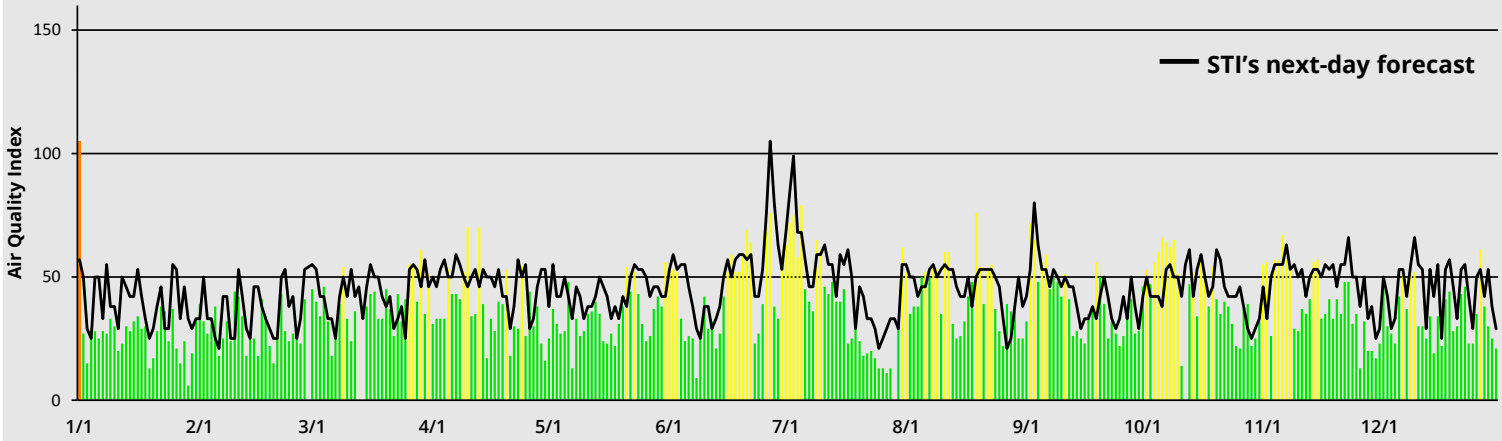
Baton Rouge Ozone



Highest $PM_{2.5}$ AQI Days For Baton Rouge

105 $PM_{2.5}$	January 1 French Settlement	83 $PM_{2.5}$	June 25 Capitol
79 $PM_{2.5}$	July 4 Capitol	76 $PM_{2.5}$	June 26 & Aug. 18 Capitol & French Settlement

Baton Rouge $PM_{2.5}$



No bars are shown for monitors or dates for which data were not available.

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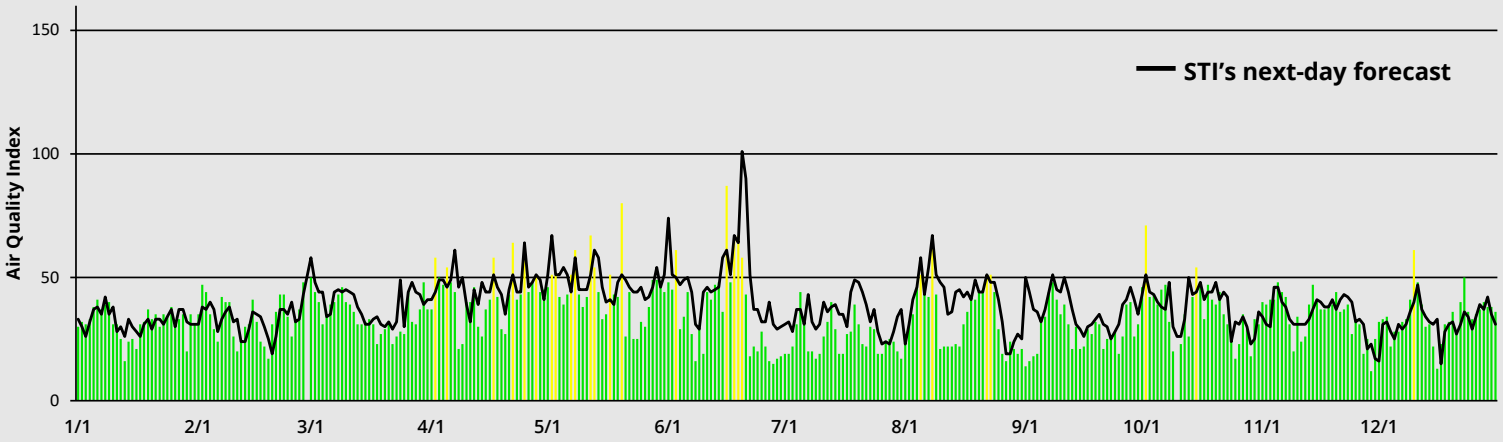
Highest Ozone AQI Days For Lafayette

87 Ozone	June 15 St. Martinville	80 Ozone	May 19 St. Martinville
71 Ozone	October 1 St. Martinville	67 Ozone	Three Days Lafayette and St. Martinville

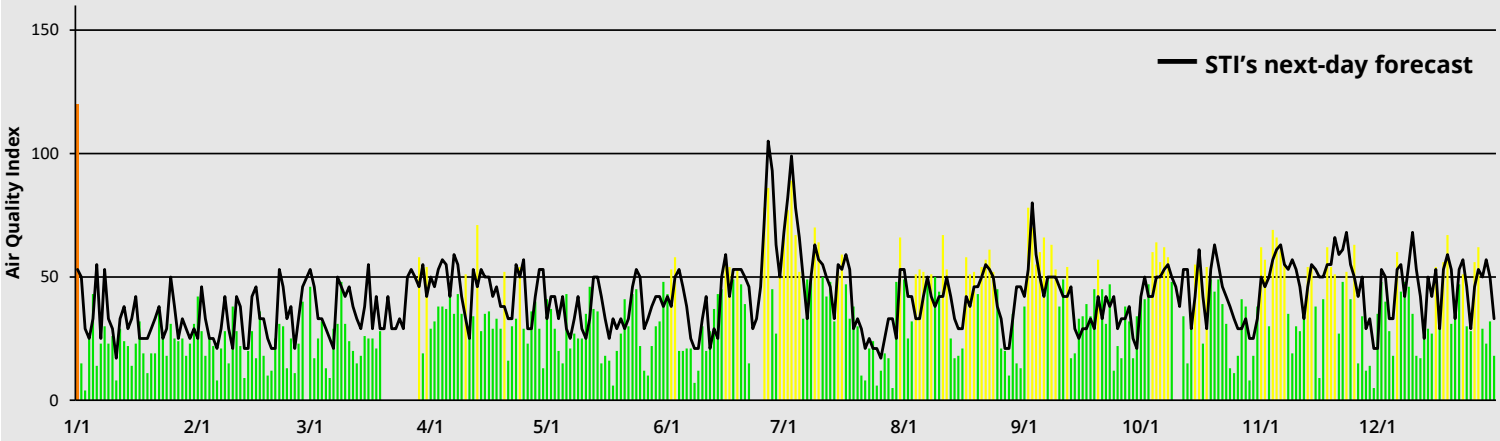
Lafayette Ozone



Highest $PM_{2.5}$ AQI Days For Lafayette

120 $PM_{2.5}$	January 1 Lafayette	89 $PM_{2.5}$	July 2 Lafayette
86 $PM_{2.5}$	June 26 Lafayette	78 $PM_{2.5}$	June 25 Lafayette

Lafayette $PM_{2.5}$



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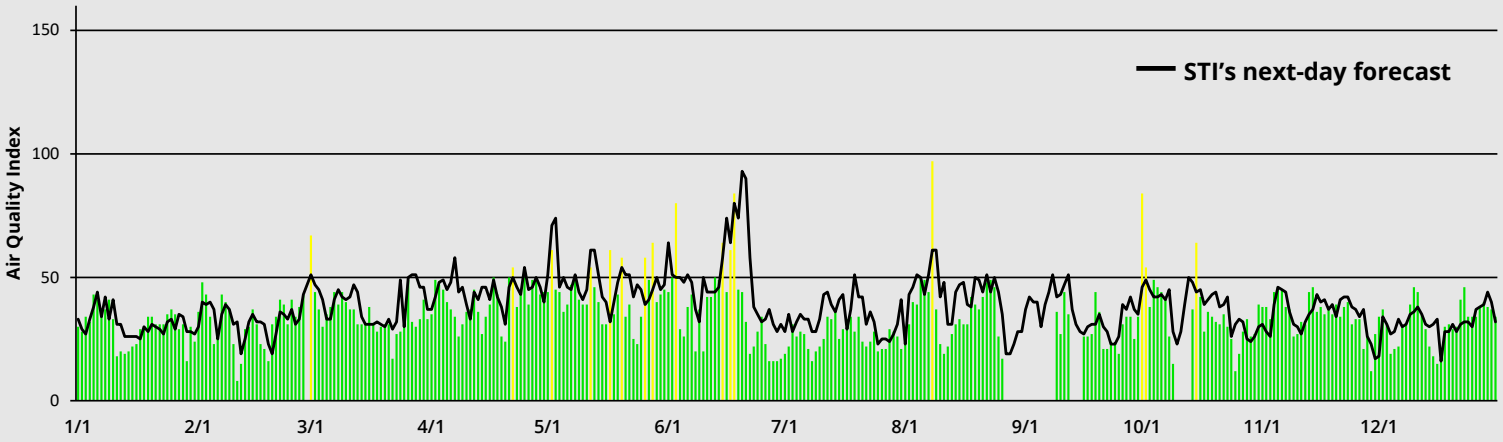
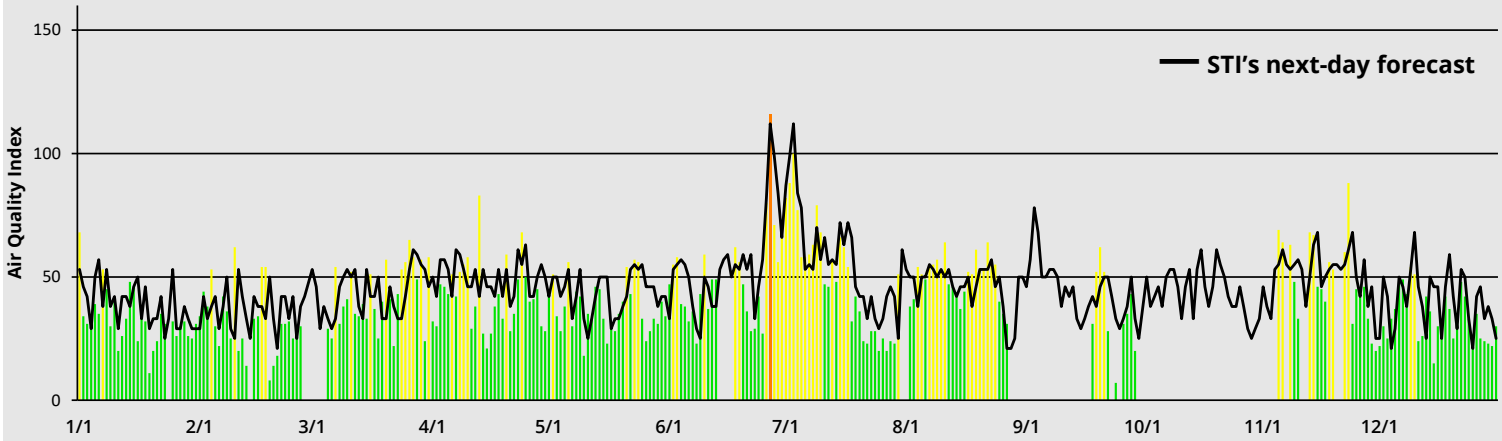
Highest Ozone AQI Days For Lake Charles							
97 Ozone	August 7	Vinton	84 Ozone	June 17 & Sept. 30	Vinton	80 Ozone	June 2	Vinton	67 Ozone	February 29	Vinton

Lake Charles Ozone



Highest $PM_{2.5}$ AQI Days For Lake Charles							
116 $PM_{2.5}$	June 26	Westlake	100 $PM_{2.5}$	July 2	Westlake	88 $PM_{2.5}$	July 1 & Nov. 22	Westlake	83 $PM_{2.5}$	April 12	Westlake

Lake Charles $PM_{2.5}$



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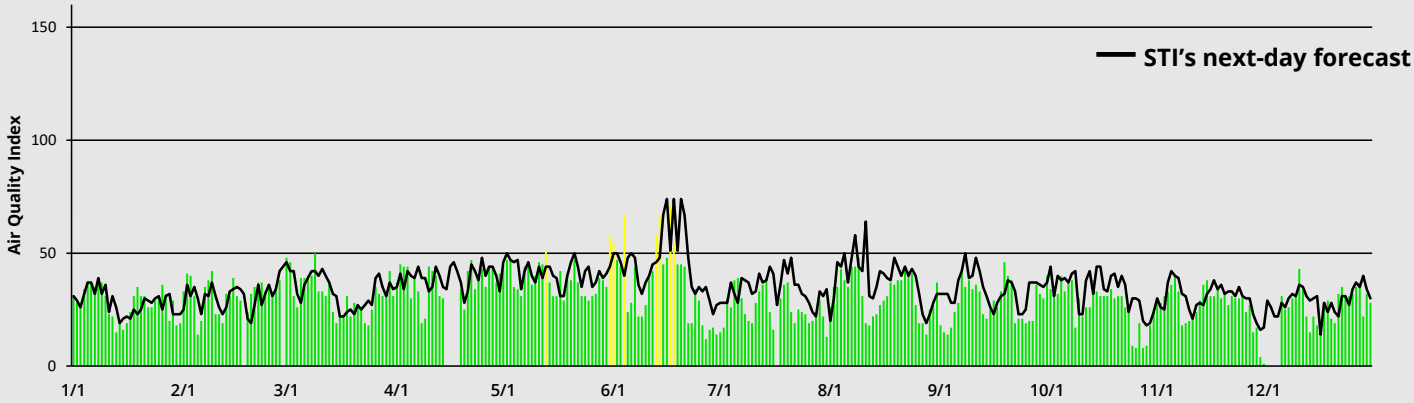
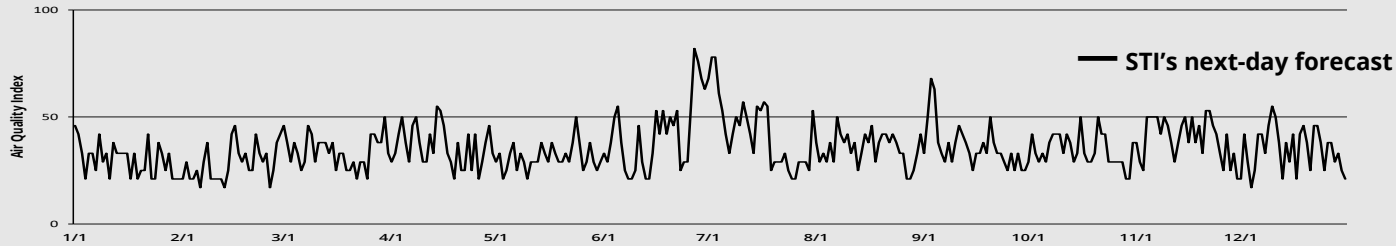
Highest Ozone AQI Days For Monroe							
71 Ozone	June 16 Monroe	67 Ozone	June 3 & 13 Monroe	58 Ozone	May 30 & Jun. 12 Monroe	54 Ozone	May 31 & Jun. 17 Monroe

Observational $PM_{2.5}$ data are not measured for Monroe and Alexandria, and observational ozone data are not measured for Alexandria.

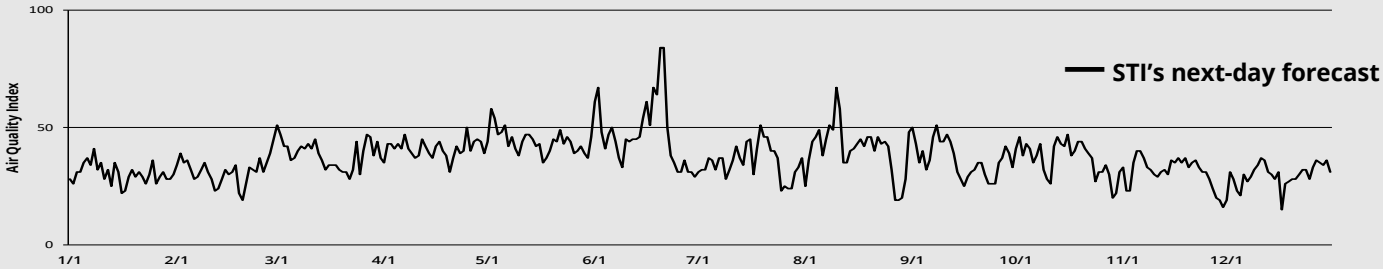
Monroe Ozone



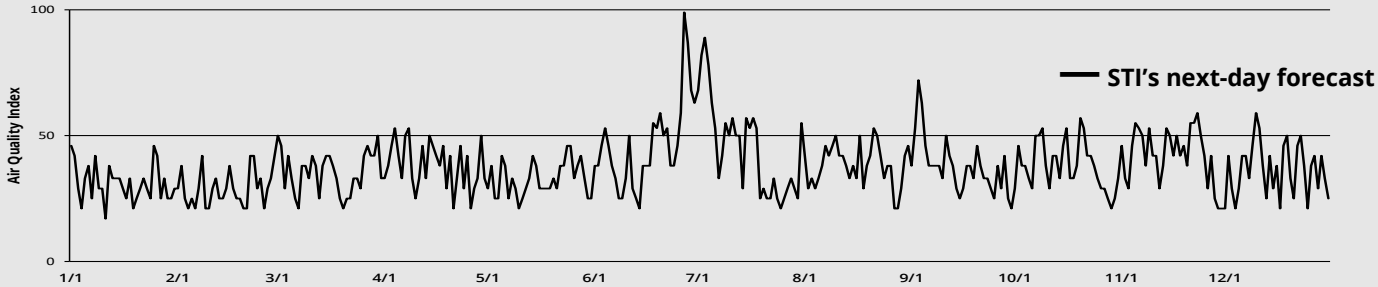
Monroe $PM_{2.5}$



Alexandria Ozone



Alexandria $PM_{2.5}$



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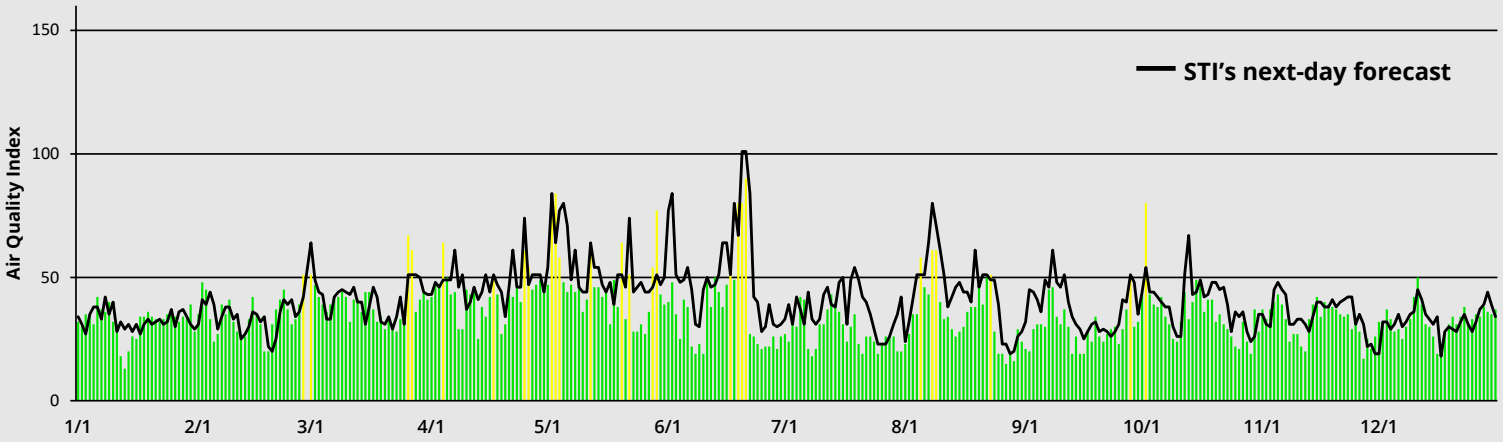
Highest Ozone AQI Days For New Orleans

90 Ozone	June 20	Madisonville
84 Ozone	May 2	Madisonville
80 Ozone	June 18, 19, & Oct. 1	Two Locations
77 Ozone	May 1 & 28	Kenner

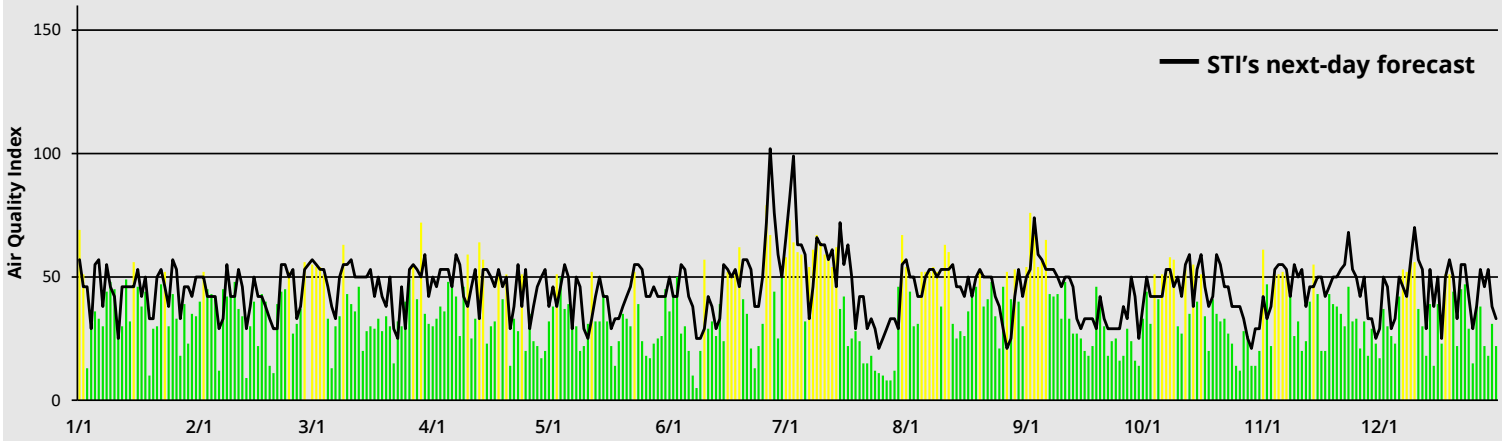
New Orleans Ozone



Highest $PM_{2.5}$ AQI Days For New Orleans

79 $PM_{2.5}$	June 25	City Park & Kenner
76 $PM_{2.5}$	September 1	Kenner
73 $PM_{2.5}$	July 1	Madisonville
72 $PM_{2.5}$	March 28	Chalmette Vista

New Orleans $PM_{2.5}$



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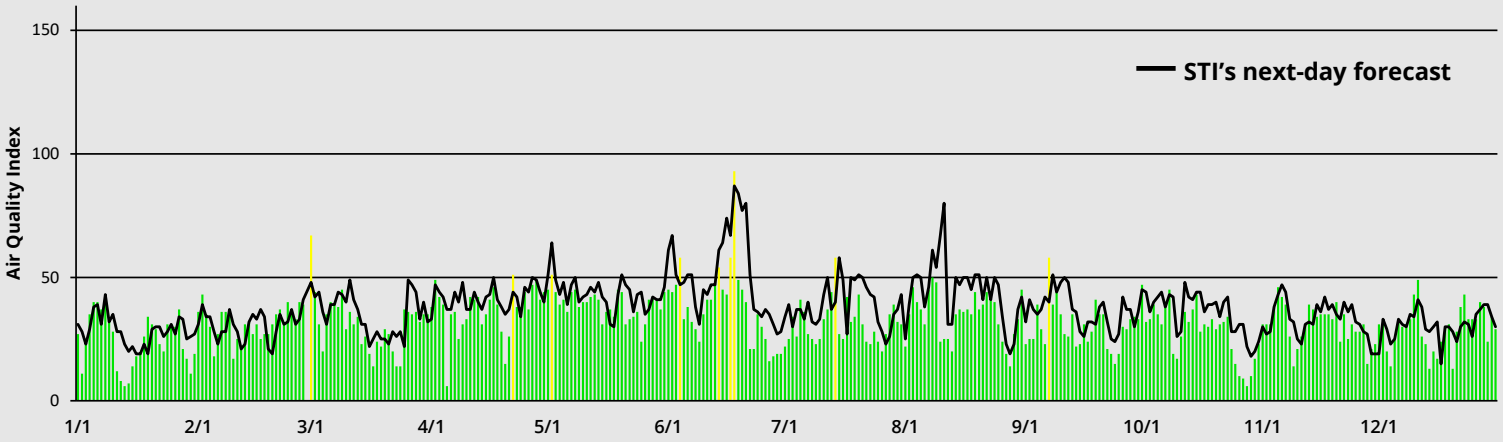
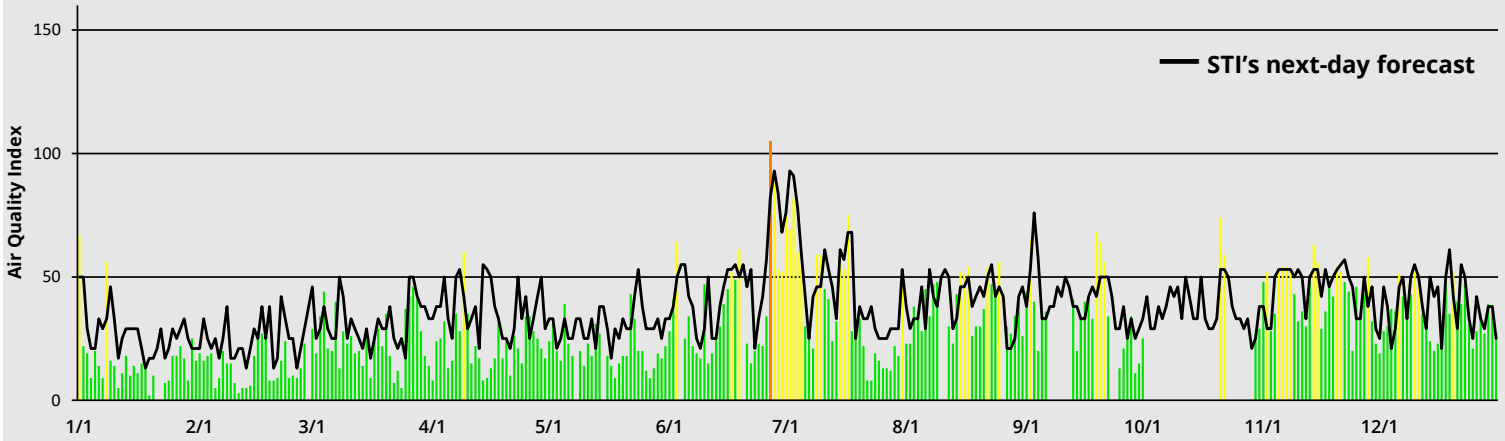
Highest Ozone AQI Days For Shreveport							
93 Ozone	June 17	Dixie	67 Ozone	February 29	Dixie	58 Ozone	Four Days	Dixie & Shreveport Airport	54 Ozone	June 13	Shreveport Airport

Shreveport Ozone



Highest $PM_{2.5}$ AQI Days For Shreveport											
105 $PM_{2.5}$	June 26	Shreveport Airport	88 $PM_{2.5}$	June 27	Shreveport Airport	82 $PM_{2.5}$	July 2	Shreveport Airport	75 $PM_{2.5}$	June 30	Shreveport Airport

Shreveport $PM_{2.5}$



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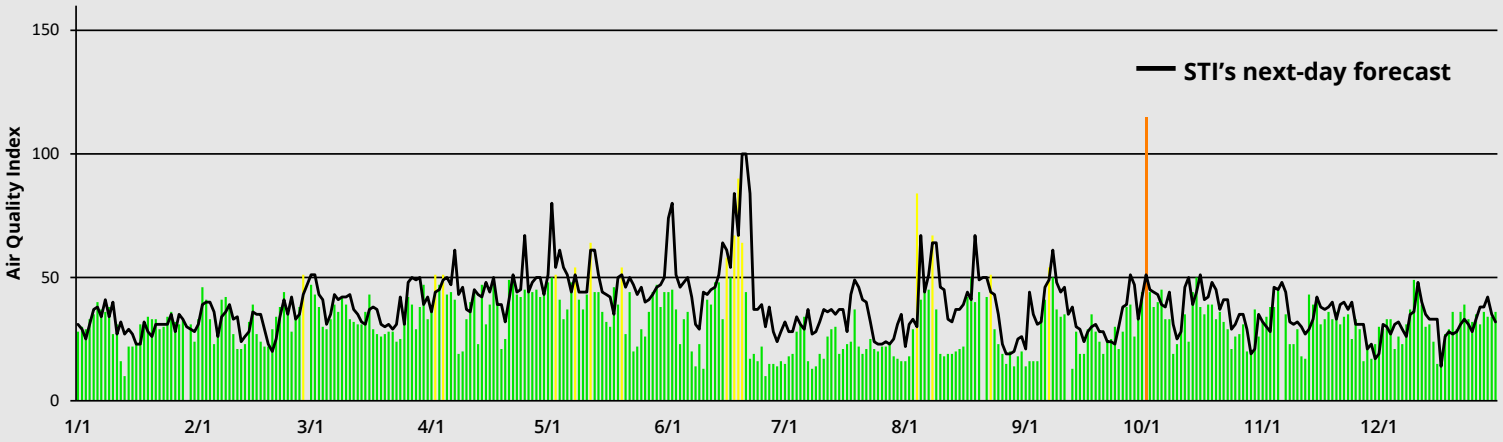
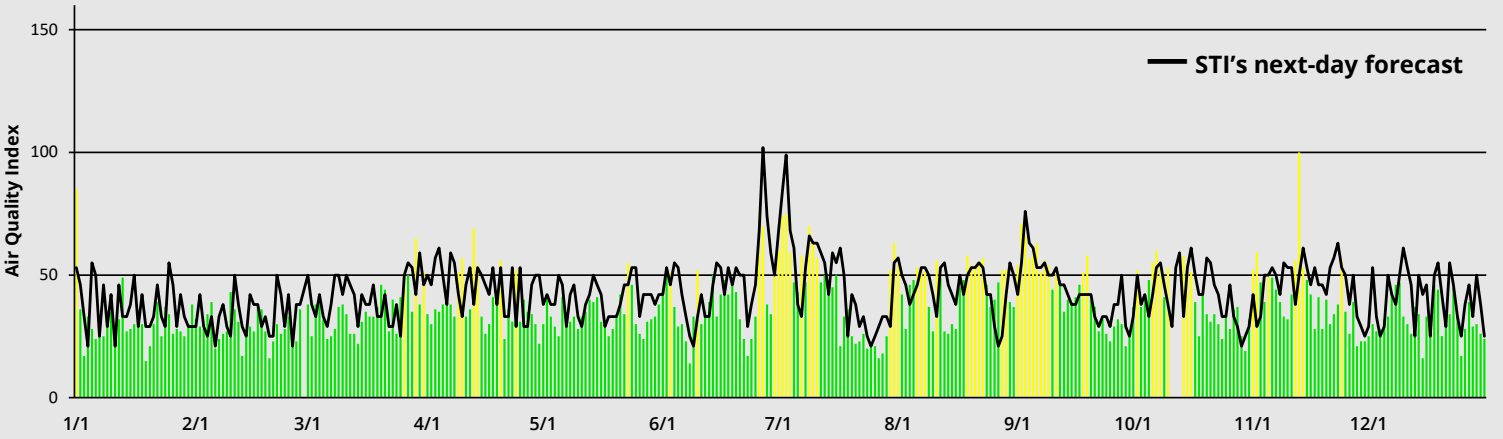
Highest Ozone AQI Days For Thibodaux							
115 Ozone	October 1 Thibodaux	90 Ozone	June 18 Thibodaux	84 Ozone	August 3 Thibodaux	67 Ozone	June 17 & August 7 Thibodaux

Thibodaux Ozone



Highest $PM_{2.5}$ AQI Days For Thibodaux							
100 $PM_{2.5}$	November 12 Thibodaux	85 $PM_{2.5}$	January 1 Thibodaux	76 $PM_{2.5}$	June 25 Thibodaux	75 $PM_{2.5}$	July 2 Thibodaux

Thibodaux $PM_{2.5}$



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Meteorological Summary, 2020

2020	Alexandria	Baton Rouge	Lafayette	Lake Charles	Monroe	New Orleans	Shreveport	Thibodaux
Average temperature (°F)	**67.6**	**70.2**	**70.3**	**69.9**	**66.9**	**73.0**	**67.3**	**71.3**
Average Max temperature (°F)	**77.9**	**80.2**	**79.5**	**79.1**	**77.4**	**80.9**	**77.5**	**80.6**
Average Min temperature (°F)	**57.4**	**60.1**	**61.0**	**60.7**	**56.5**	**65.1**	**57.1**	**62.0**
Number of days above 90°F	**79**	**88**	**77**	**56**	**86**	**81**	**79**	**81**
Number of days above 95°F	**15**	**13**	**4**	**4**	**25**	**12**	**11**	**17**
Number of days below 32°F	**13**	**7**	**2**	**1**	**16**	**0**	**15**	**3**
Total Precipitation (inches)	**82.56**	**67.91**	**67.48**	**60.06**	**72.32**	**71.75**	**61.54**	**53.92**

Meteorological data courtesy of the National Weather Service.

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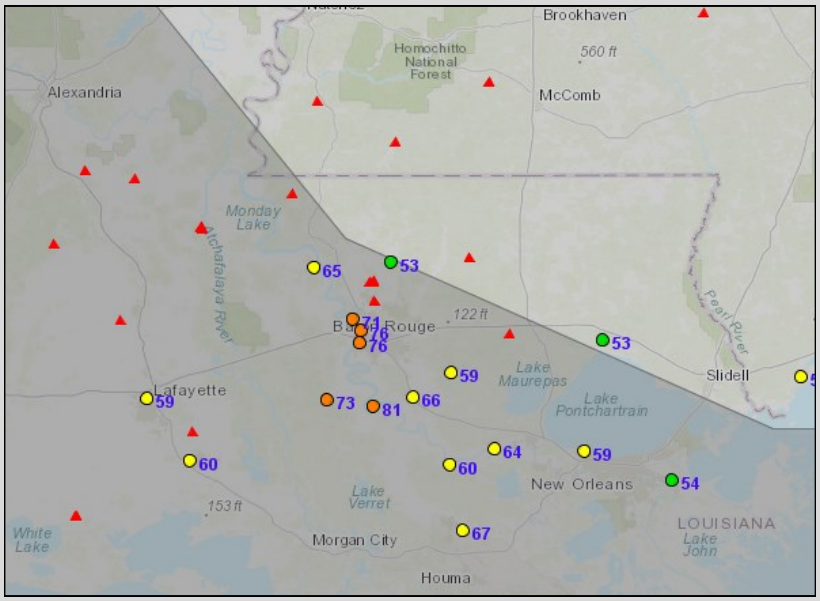
High Ozone Days

June 18, Baton Rouge: 136 AQI

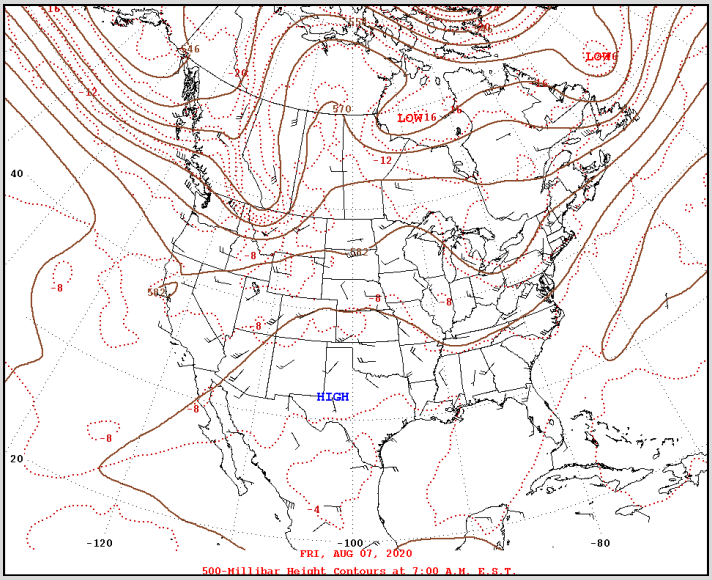
The highest observed AQI level of the year in Louisiana occurred on June 18 in Baton Rouge. On this day, a weak upper-level high pressure system over Texas inhibited vertical mixing in the lower levels of the atmosphere. At the surface, calm-to-light northerly winds limited pollutant dispersion, and sunny skies, combined with temperatures in the low 90s, supported ground-level ozone formation. Ozone development was also enhanced by smoke transport from regional agricultural fires north of Baton Rouge. These conditions, along with pollutant carryover from the previous three days, resulted in an observed AQI reading of 136 at the Carville monitoring site.



June 18: Daily maximum 8-hour ozone concentrations in ppb (dots), satellite fire detections (red triangles), and NOAA smoke plume analysis (gray). Smoke from fires north of Baton Rouge enhanced ozone formation, with numerous downwind monitoring sites reaching the Unhealthy for Sensitive Groups AQI category (orange dot) (Courtesy: AirNow-Tech).

August 7, Baton Rouge: 119 AQI

The second highest observed AQI of the year occurred on August 7 in Baton Rouge, when upper-level high pressure centered over Texas limited atmospheric mixing. Ozone development was also enhanced by abundant sunshine, afternoon high temperatures in the mid-90s, and calm-to-light west-northwesterly winds, which hindered pollutant dispersion. Pollutant carryover from the previous days also contributed to increased ozone concentrations, which resulted in the Carville monitoring site reaching the Unhealthy for Sensitive Groups AQI category.



August 7: 500 mb analysis valid at 7 a.m. CDT. At this time, upper-level high pressure was present west of Louisiana. This feature inhibited vertical mixing in the lower levels of the atmosphere, aiding ozone development in the Bayou State (Courtesy: NOAA).

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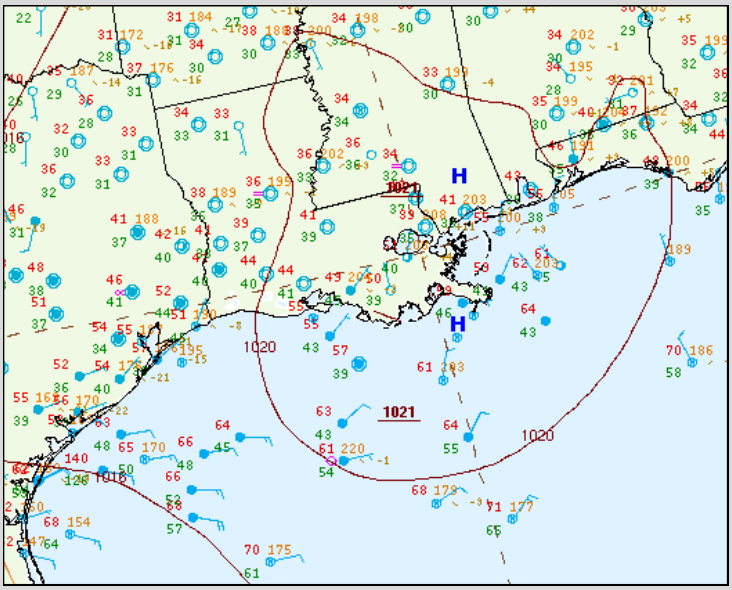
High $PM_{2.5}$ Days

January 1, Lafayette: 120 AQI

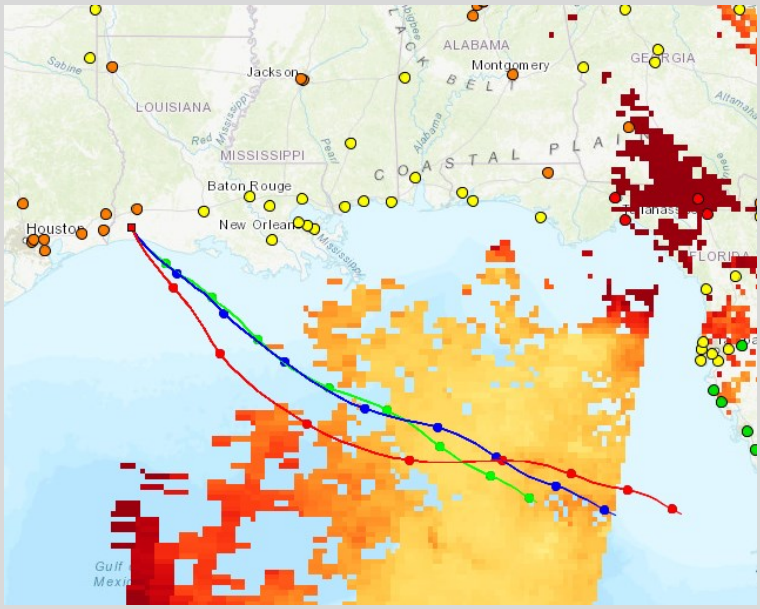
The year's highest levels of $PM_{2.5}$ in Louisiana occurred in Lafayette on New Year's Day. Surface high pressure over southeastern Louisiana early in the day hindered atmospheric mixing, while calm morning winds allowed pollutants to accumulate over the region. Additionally, carryover of smoke from the previous day's agricultural fires increased particle concentrations, and particle production was further enhanced by morning fog and high humidity. Therefore, despite southeasterly afternoon winds aiding dispersion and lowering particle concentrations, AQI levels reached the Unhealthy for Sensitive Groups category.



January 1: Surface weather map, valid at 6 a.m. High pressure over southeastern Louisiana limited vertical mixing in the lower levels of the atmosphere, allowing pollutants to accumulate over the region (Courtesy: NOAA).

June 26, Lake Charles: 116 AQI

June 26 was an Air Quality Action Day in Lake Charles, as Saharan dust contributed to Unhealthy for Sensitive Groups AQI levels. Light to moderate east-southeasterly winds were generated by surface high pressure over the southeastern United States. These winds transported a dense plume of Saharan dust from the Gulf of Mexico into the Bayou State, increasing particle concentrations. Because of these conditions, a daily observed AQI value of 116 was reached at the Westlake monitoring site. Dating back to 1999, this is Lake Charles' highest AQI value for $PM_{2.5}$ in June.



June 26: Daily 24-hour $PM_{2.5}$ concentrations in $\mu g/m^3$ (dots), 48-hour back trajectories ending at 11 p.m. on June 26 (green-100 m, red-250 m, blue-500 m above ground level), and MODIS-Terra satellite aerosol optical depth, which indicates Saharan dust in orange and red contours. Long-range, low-level transport of Saharan dust contributed to the Unhealthy for Sensitive Groups AQI levels in Lake Charles (Courtesy: AirNow-Tech).

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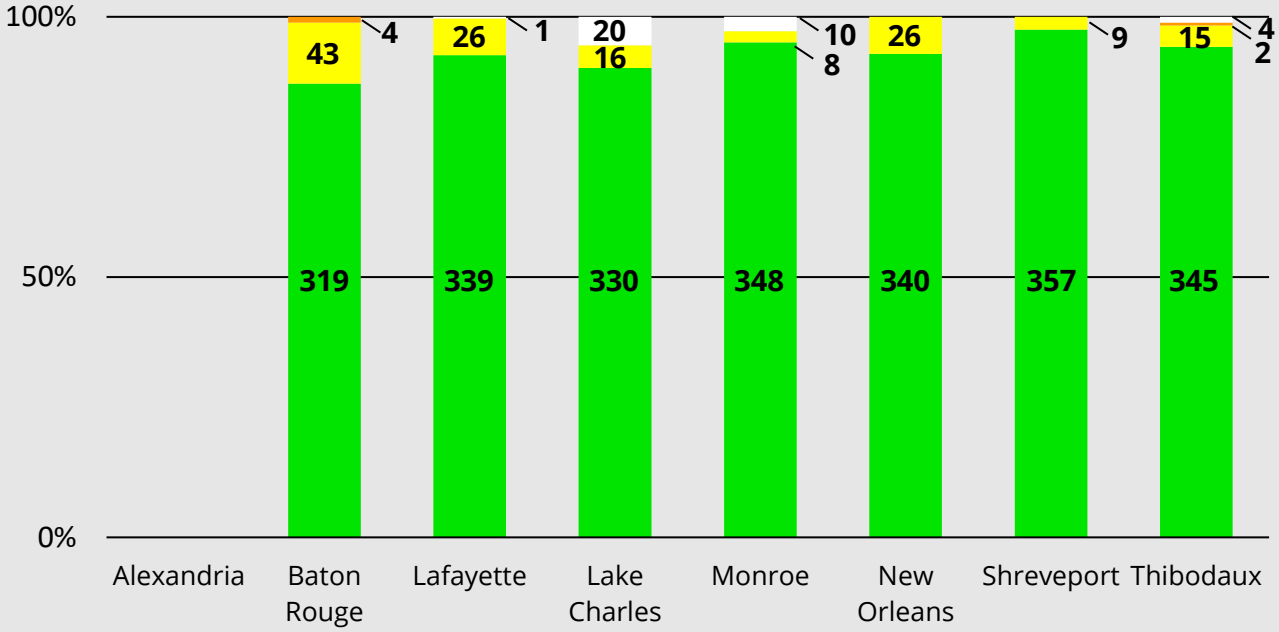
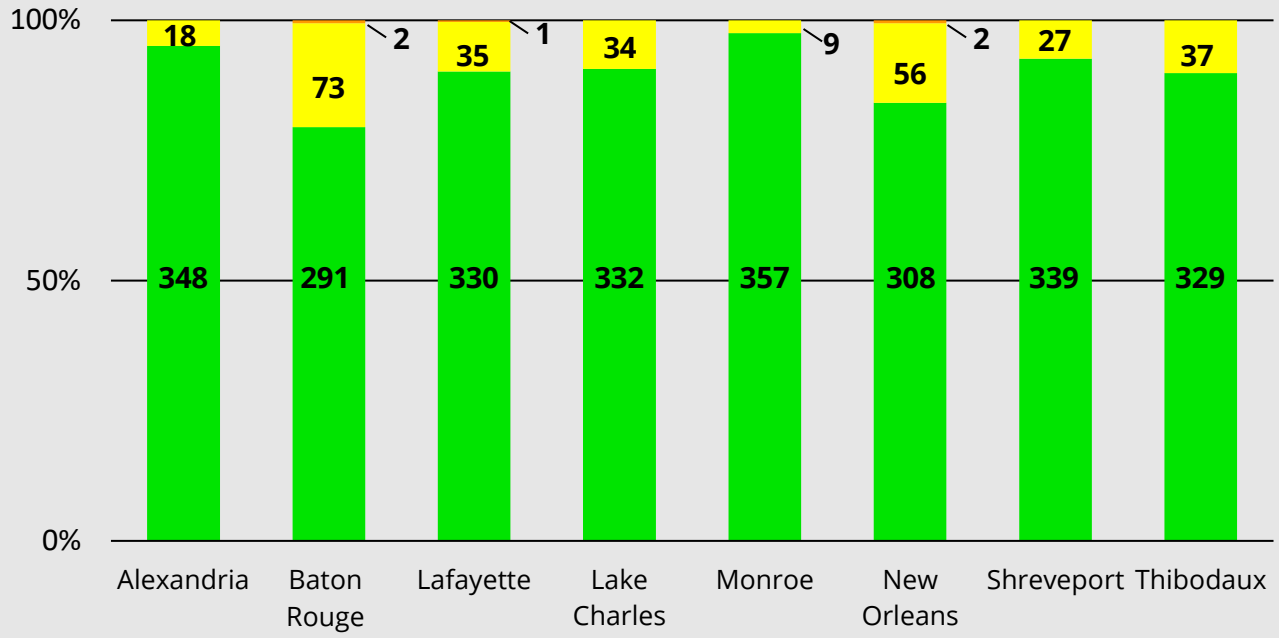
2020 Ozone

Count of Ozone Observations in Each AQI Category



Count of Ozone Forecasts in Each AQI Category



Observational ozone data are not measured for Alexandria.

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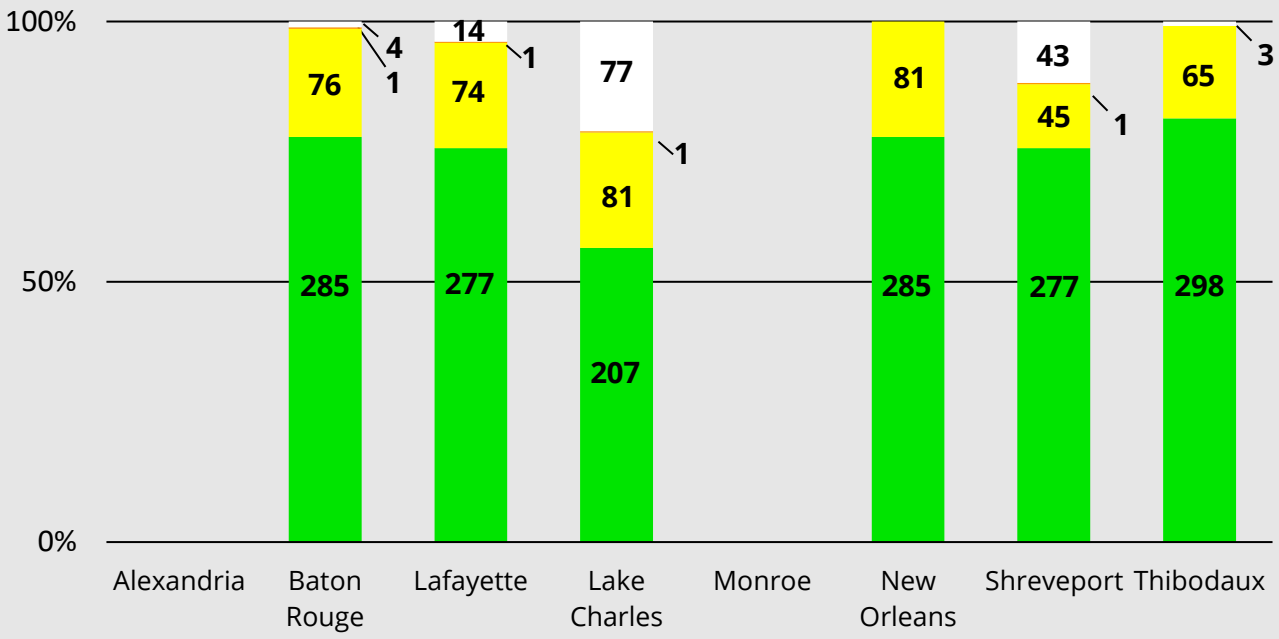
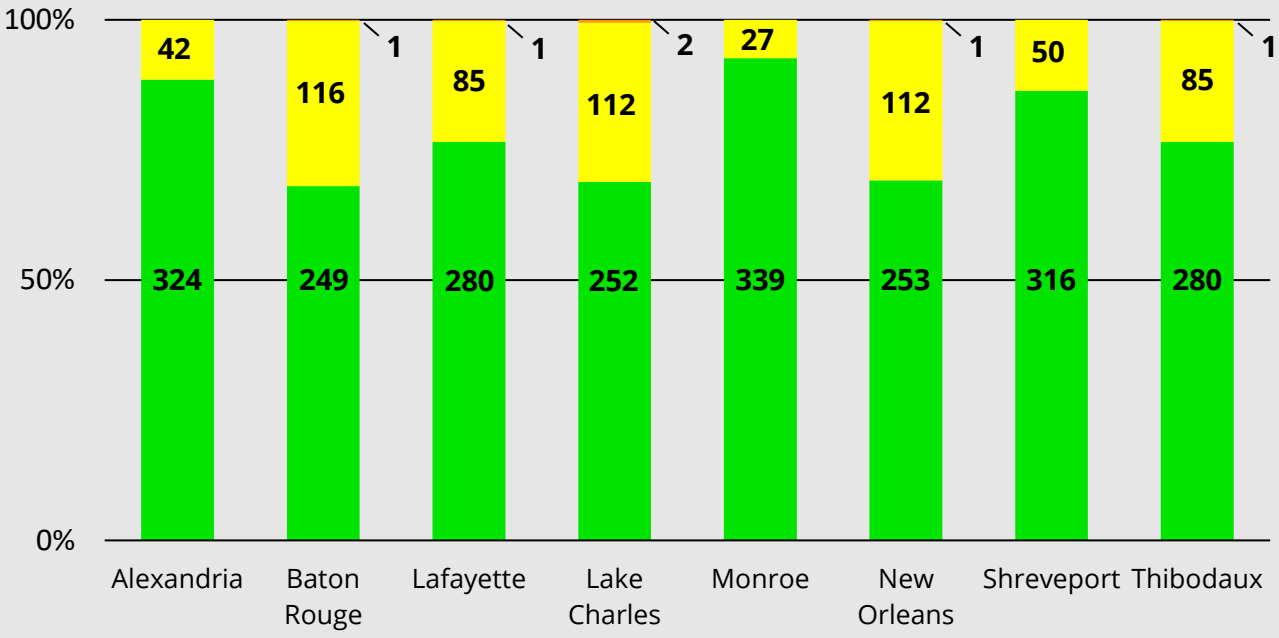
2020 $PM_{2.5}$

Count of $PM_{2.5}$ Observations in Each AQI Category



Count of $PM_{2.5}$ Forecasts in Each AQI Category



Observational $PM_{2.5}$ data are not measured for Monroe or Alexandria.

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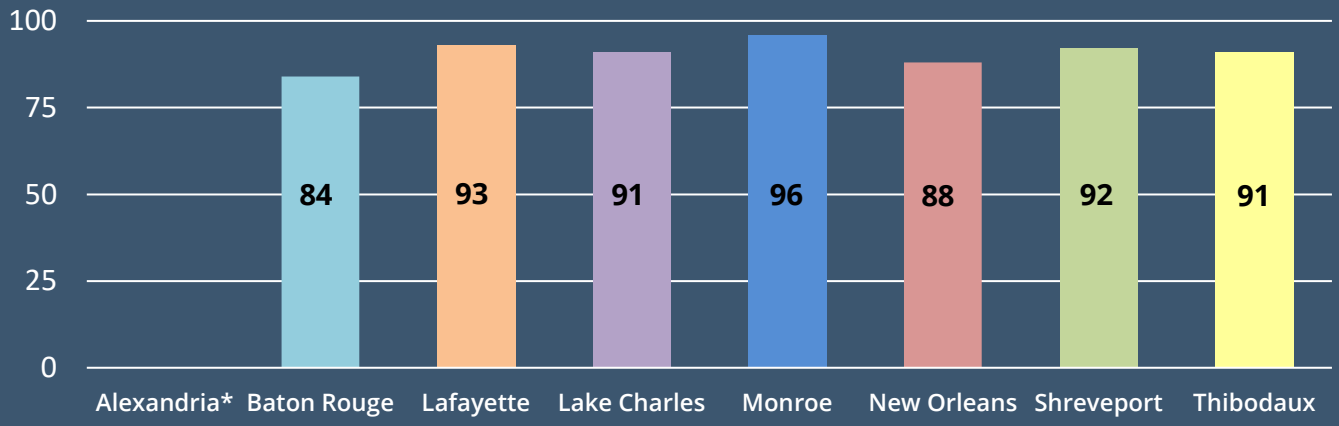
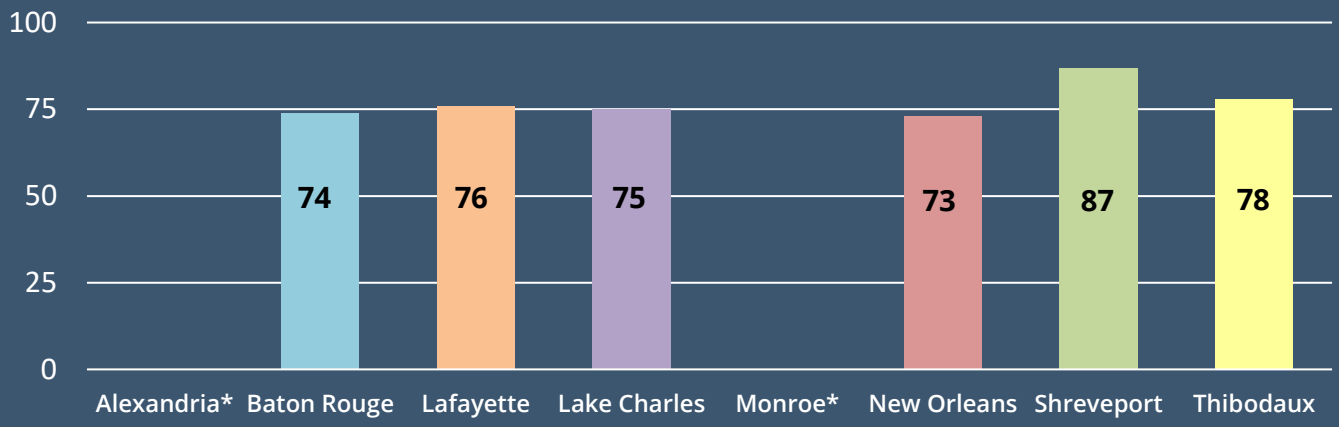
2020 Next-Day Forecast Statistics at the Good-to-Moderate Threshold

2020 next-day forecasting performance statistics are presented in the charts below. The statistics are calculated by comparing forecasted and observed AQI levels for the Good-to-Moderate threshold. Percent Correct indicates the percentage of forecasts that correctly predicted whether observations would be above or below a certain threshold. Because few USG days were predicted or observed in the Louisiana forecast cities in 2020, Moderate-to-USG forecast statistics are not shown.

Percent Correct—Ozone



Percent Correct—$PM_{2.5}$



**Observational $PM_{2.5}$ data are not measured for Monroe, and ozone and $PM_{2.5}$ data are not measured for Alexandria.*

Although Sonoma Technology, Inc., prepares air quality forecasts using the highest professional standards, forecasting is an inexact science. Therefore, Sonoma Technology, Inc., cannot assume any liability or responsibility for any consequences that might arise due to the accuracy or inaccuracy of forecasts delivered under this contract, or for any decisions or actions taken based on the forecasts provided.

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