Louisiana Air Quality Summary | October 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 and 3, summarize next-day AQI forecasts and observed AQI levels for October 2020. A monthly meteorological summary is shown on page 4, the year-to-date count of days in each AQI category by city is shown on pages 5 and 6, and forecast accuracy statistics are shown on page 7.

In October 2020, AQI levels in Louisiana were Good on 12 days, Moderate on 18 days, and Unhealthy for Sensitive Groups (USG) on 1 day. No Action Days were issued during the month. Of 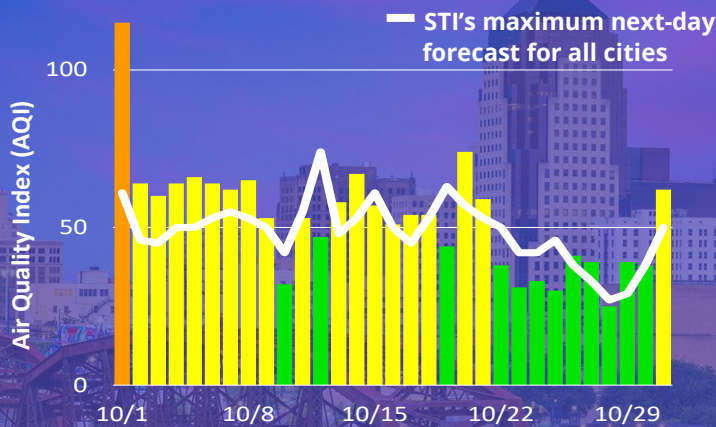the 19 Moderate or higher AQI days in October 2020, fine particles were the primary pollutant on 16 days. On these days, light winds hindered vertical mixing and pollutant dispersion. Particle concentrations further increased in areas close to regional agriculture fires. In addition, occasional patchy fog in southeastern Louisiana enhanced particle production.
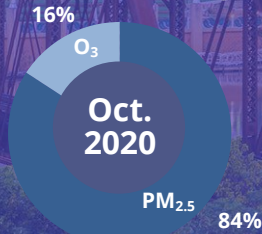
The month's highest AQI day was recorded on October 1. On this day, sunny skies and warm temperatures aided ozone development. Furthermore, light northwesterly winds transported smoke from regional fires into Thibodaux, enhancing ozone formation. As a result, the observed AQI value was 115, which is in the Unhealthy for Sensitive Groups category.

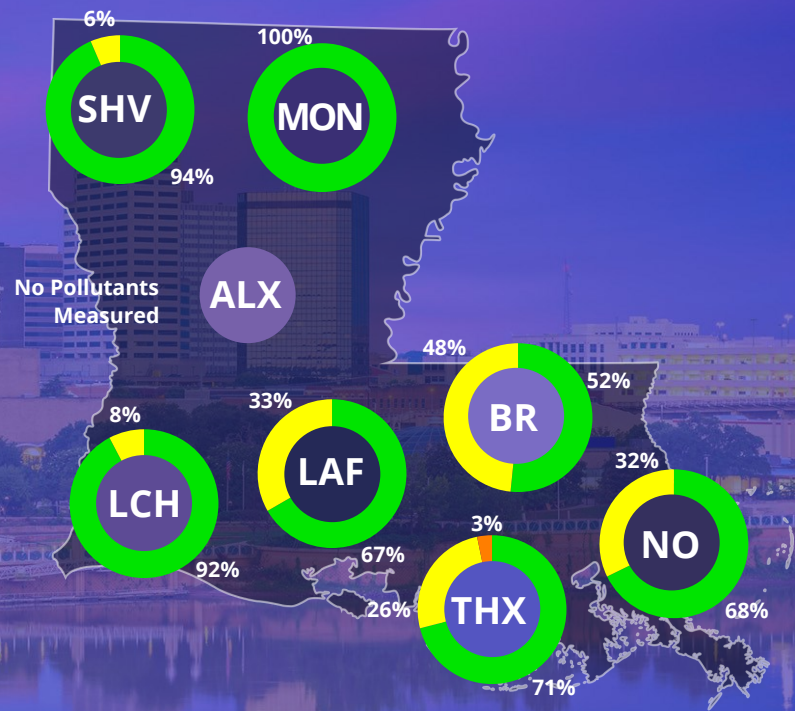## Statewide Maximum AQI for October 2020

In October 2020, AQI levels in Louisiana were Good on 12 days, Moderate on 18 days, and Unhealthy for Sensitive Groups (USG) on 1 day. No Action Days were issued during the month.

— STI's maximum next-day forecast for all cities

Highest Pollutant on Moderate or higher AQI Days

Oct. 2020: O$_3$ 16%, PM$_{2.5}$ 84%

Daily Maximum AQI for October 2020 by Category and City*

SHV 6% / 94%
MON 100%
ALX No Pollutants Measured
LCH 8% / 92%
LAF 33% / 67%
BR 48% / 52% / 32%
THX 26% / 3% / 71%
NO 32% / 68%

AQI	Good	Moderate	Unhealthy For Sensitive Groups	Unhealthy	Very Unhealthy	Hazardous
	0–50	50–100	100–150	150–200	200–300	300–500
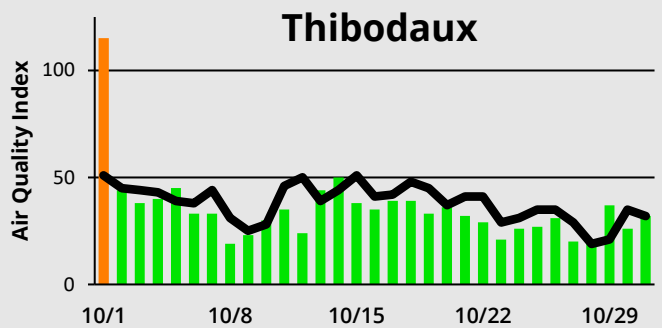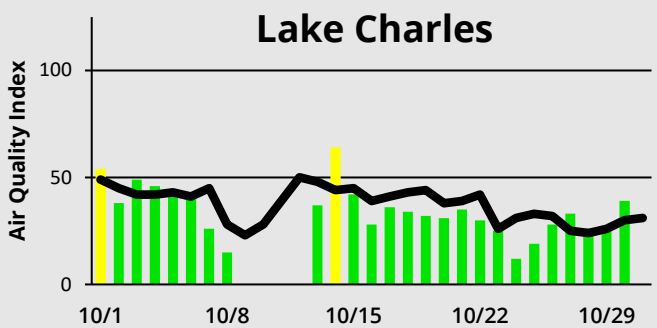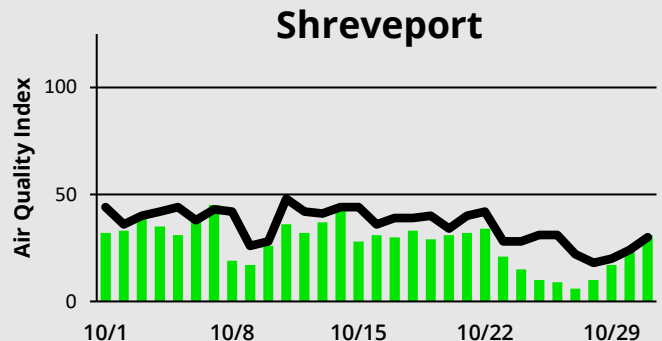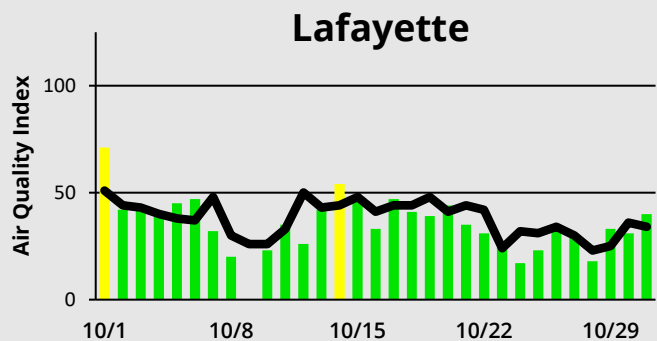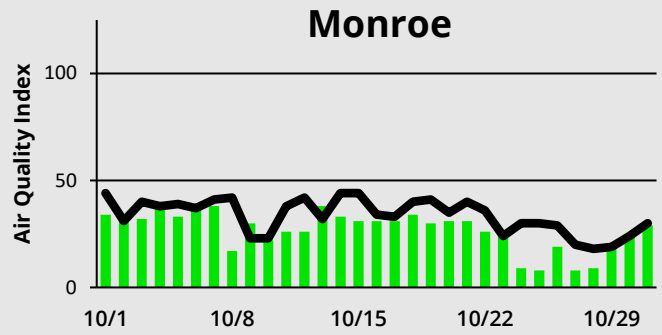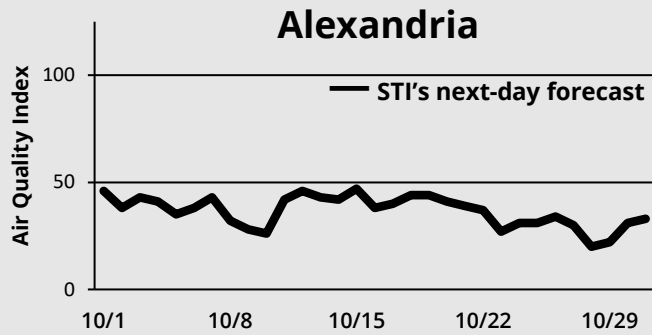
Highest AQI Days For Ozone

115	October 1	67	October 14	64	October 2	50	October 15
Ozone	Thibodaux	Ozone	Baton Rouge	Ozone	Baton Rouge	Ozone	Baton Rouge

Ozone Forecasts and Observations, October 2020

Observational ozone data are not measured for Alexandria. No bars are shown for monitors or dates for which data were not available.

0	50	100	150	200	300	500

AQI AIR QUALITY INDEX — Good | Moderate | Unhealthy For Sensitive Groups | Unhealthy | Very Unhealthy | Hazardous

Louisiana Department of Environmental Quality

602 N Fifth Street
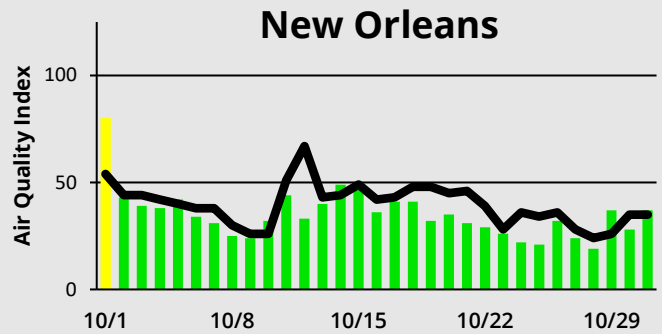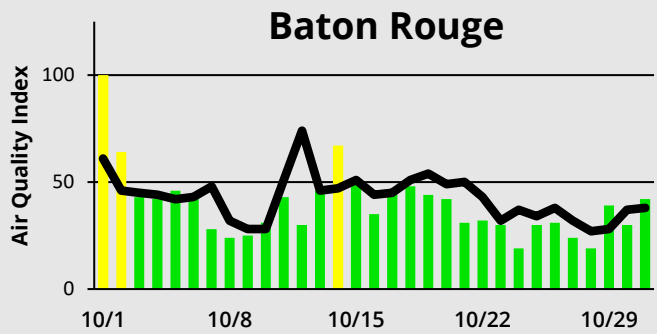Baton Rouge LA 708082

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PM₂.₅ Forecasts and Observations, October 2020

Alexandria

Monroe

Baton Rouge

New Orleans

Lafayette

Shreveport

Lake Charles

Thibodaux

Observational PM₂.₅ data are not measured for Monroe or Alexandria. No bars are shown for monitors or dates for which data were not available.

AQI — AIR QUALITY INDEX

| 0 | 50 | 100 | 150 | 200 | 300 | 500 |

| Good | Moderate | Unhealthy For Sensitive Groups | Unhealthy | Very Unhealthy | Hazardous |
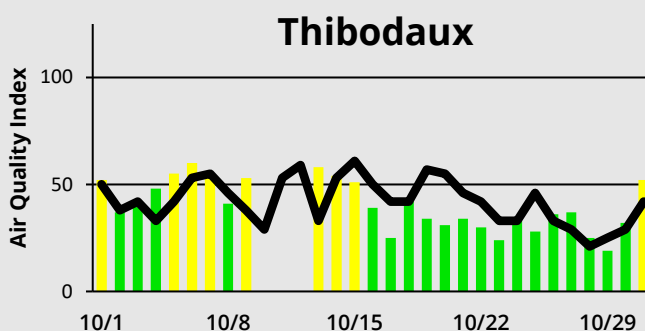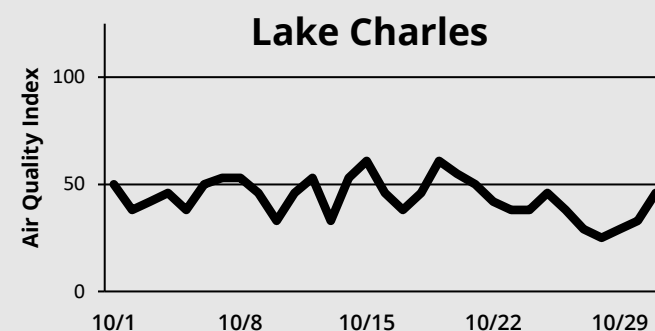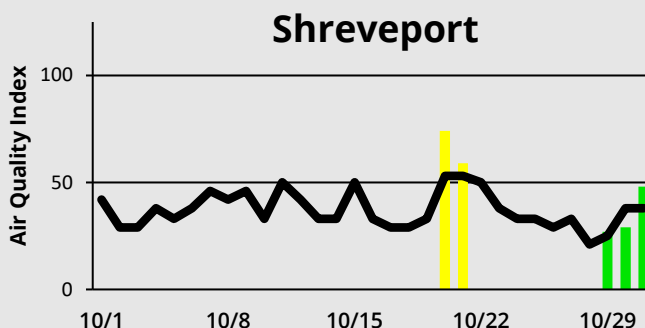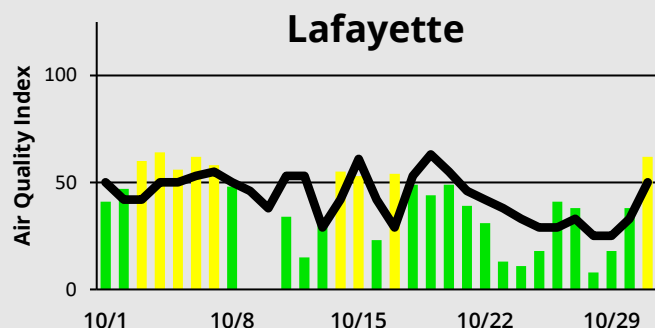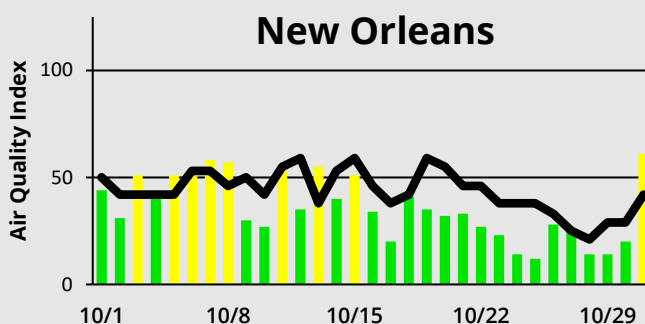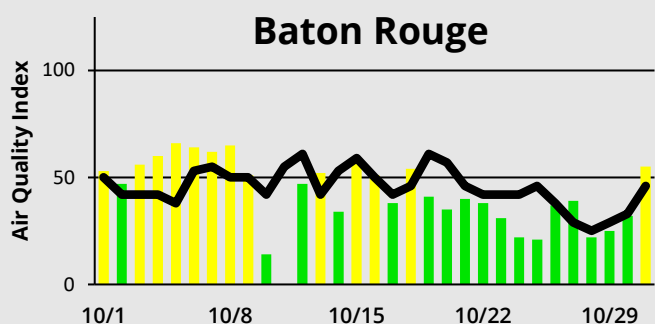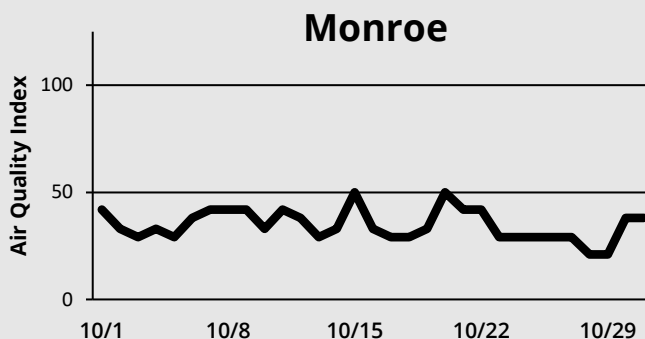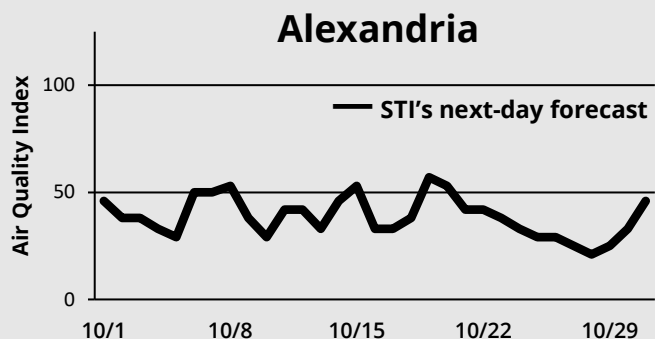
Louisiana Department of Environmental Quality

602 N Fifth Street
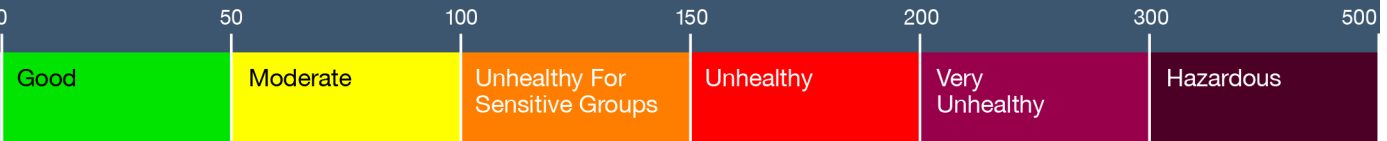Baton Rouge LA 708082

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Meteorological and Air Quality Summary

Temperatures were above average for most Louisiana forecast cities in October 2020, while precipitation was above average in most locations. Particle pollution accounted for 84% of the Moderate or higher AQI days during the month, as periods of light winds limited pollutant dispersion, and days with fog and high humidity enhanced particle production. Particle concentrations were further increased in locations close to regional agricultural fires. Ozone production was limited due to decreased daylight hours and the seasonal trend of gradually cooling temperatures. As a result, two of the three Moderate or higher ozone AQI days this month were observed on October 1 and 2. During this period, sunny skies and warm temperatures supported ozone formation, while light northwesterly winds hindered mixing and dispersion. Furthermore, ozone development on these days was enhanced by smoke transport from agricultural fires.

October 2020	Alexandria	Baton Rouge	Lafayette	Lake Charles	Monroe	New Orleans	Shreveport
Average temperature (Average temperature departure from normal) (°F)	68.0 (+0.8)	71.3 (+2.0)	71.1 (+0.8)	70.2 (0.0)	65.9 (-0.3)	74.1 (+2.8)	66.2 (-0.2)
Highest Temperature (°F) (Day)	89 (7,11)	90 (7)	88 (7,12)	87 (12,21)	88 (7,21)	89 (7,12)	90 (11)
Lowest Temperature (°F) (Day)	41 (31)	44 (31)	45 (31)	45 (29,31)	40 (31)	52 (31)	39 (29)
Precipitation (Precipitation departure from normal) (inches)	13.55 (+8.37)	9.93 (+5.23)	5.26 (+0.03)	10.69 (+5.79)	10.44 (+5.66)	4.68 (+1.14)	1.78 (-3.18)
Number of days with 0.5 inches of precipitation or more	4	2	3	2	5	3	2
Number of clear days (as defined by the National Weather Service)	13	16	10	13	16	12	14
Average wind speed (mph)	6.2	7.0	6.3	8.2	5.9	8.4	6.4

Red: warmer-than-normal temperatures. Blue: colder-than-normal temperatures.
Green: wetter-than-normal conditions. Brown: drier-than-normal conditions.

Meteorological data courtesy of the National Weather Service, w2.weather.gov/climate/index.php.
The National Weather Service does not report preliminary monthly climate data for Thibodaux.

Year-to-Date Ozone

Count of Ozone Observations in Each AQI Category

Category	Alexandria	Baton Rouge	Lafayette	Lake Charles	Monroe	New Orleans	Shreveport	Thibodaux
Top small values		4	1	21	6 / 8		9	3 / 2
Moderate (yellow)		41	25	16		26		15
Good (green)		260	279	268	291	279	296	285
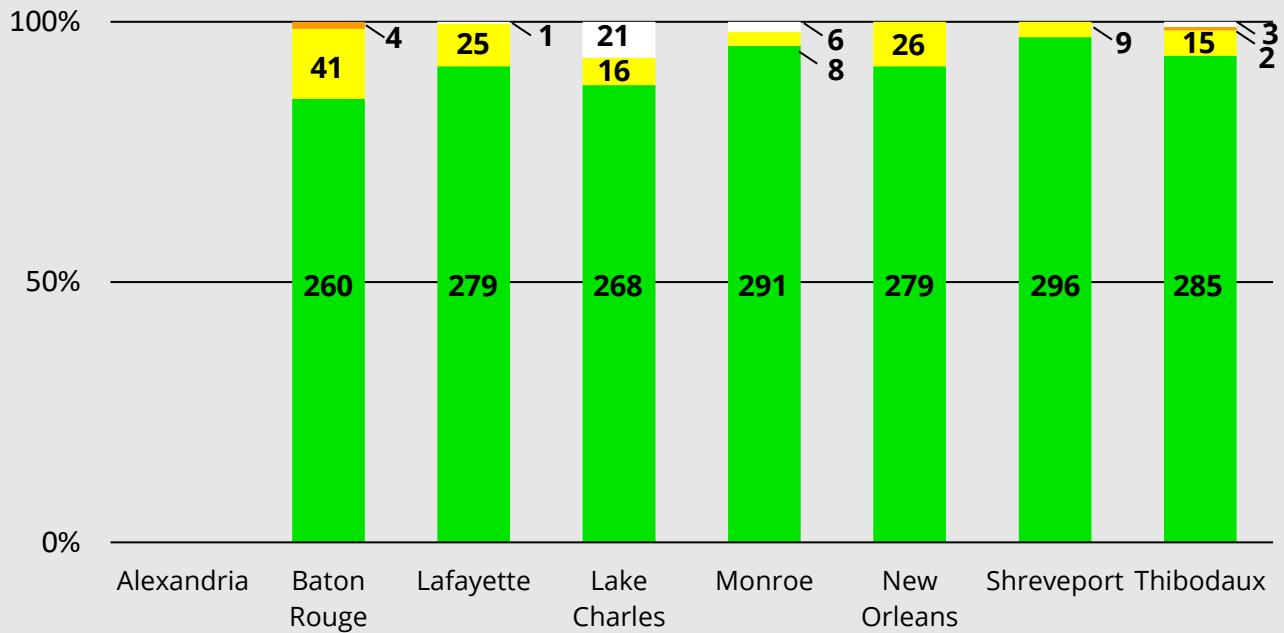
Count of Ozone Forecasts in Each AQI Category
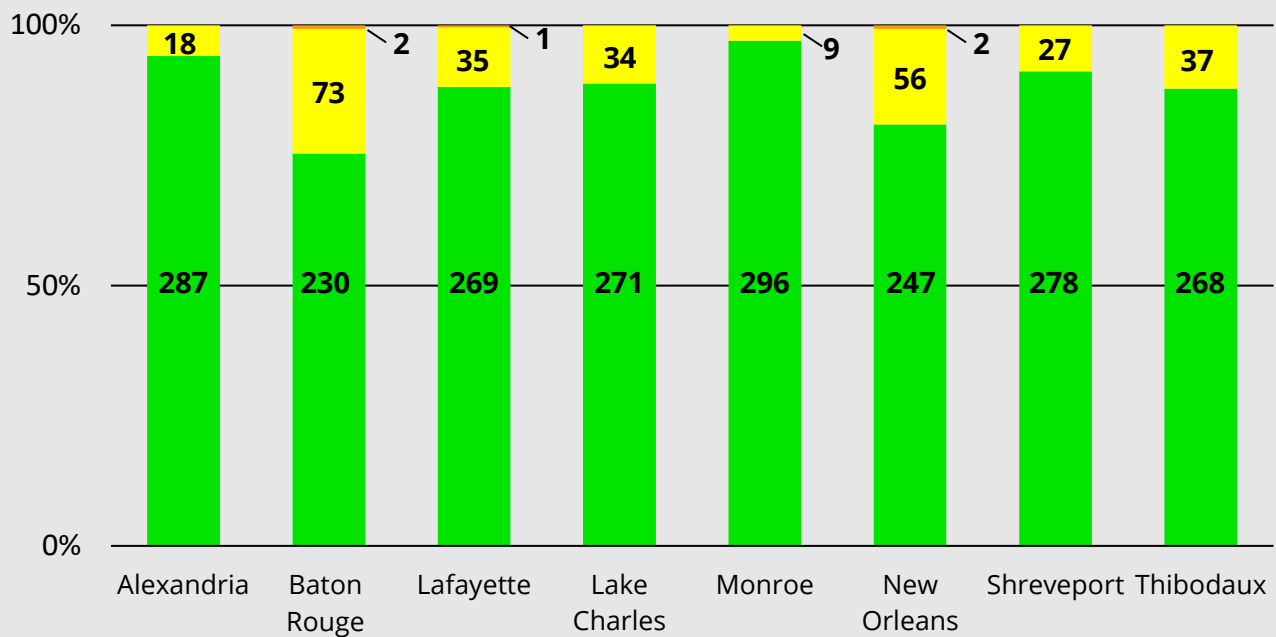
Category	Alexandria	Baton Rouge	Lafayette	Lake Charles	Monroe	New Orleans	Shreveport	Thibodaux
Top small values		2	1		9	2		
Moderate (yellow)	18	73	35	34		56	27	37
Good (green)	287	230	269	271	296	247	278	268

Observational ozone data are not measured for Alexandria.

AQI — AIR QUALITY INDEX

Missing	Good	Moderate	Unhealthy For Sensitive Groups	Unhealthy	Very Unhealthy	Hazardous

0   50   100   150   200   300   500

Year-to-Date PM₂.₅

Count of PM₂.₅ Observations in Each AQI Category

Observations chart — values by city:
- Baton Rouge: 236 (green), 64 (yellow), 1, 4
- Lafayette: 235 (green), 55 (yellow), 14, 1
- Lake Charles: 165 (green), 70 (yellow), 69, 1
- New Orleans: 235 (green), 70 (yellow)
- Shreveport: 230 (green), 31 (yellow), 43, 1
- Thibodaux: 243 (green), 59 (yellow), 3

Cities (x-axis): Alexandria, Baton Rouge, Lafayette, Lake Charles, Monroe, New Orleans, Shreveport, Thibodaux
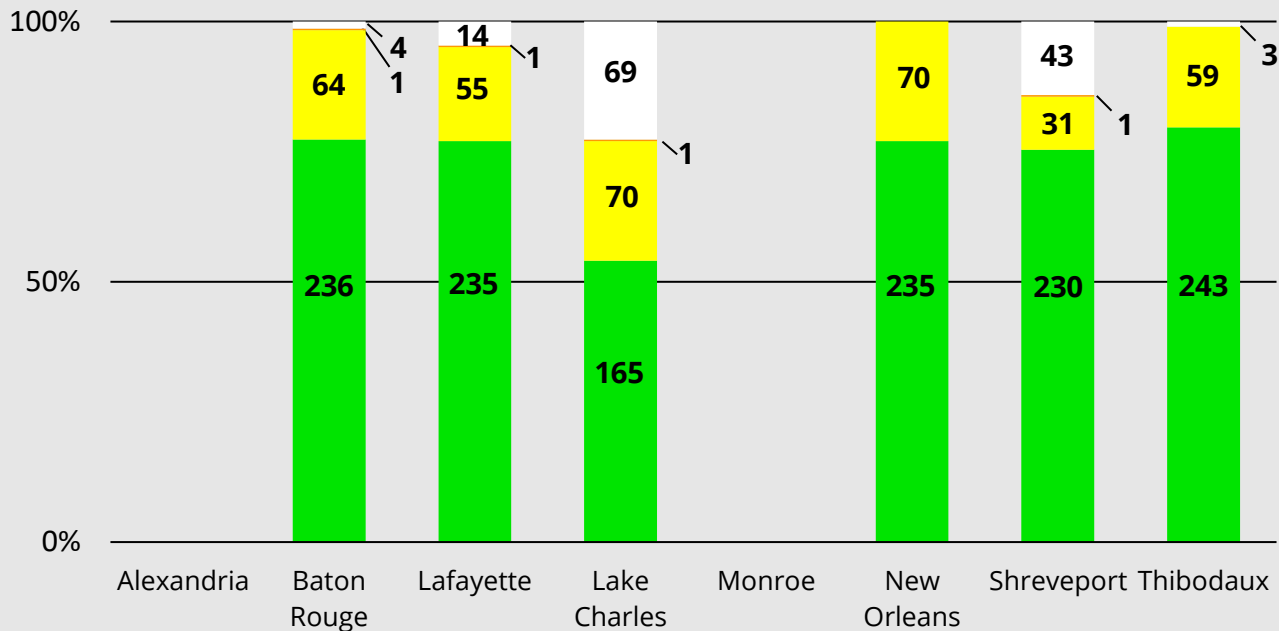
Count of PM₂.₅ Forecasts in Each AQI Category
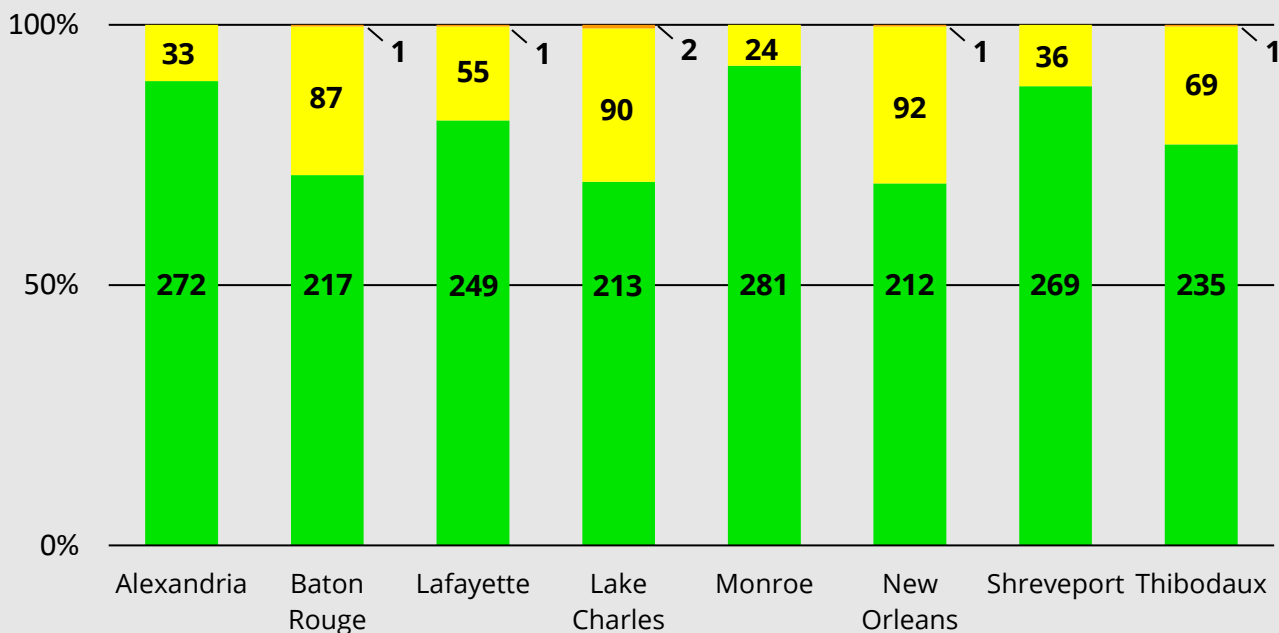
Forecasts chart — values by city:
- Alexandria: 272 (green), 33 (yellow)
- Baton Rouge: 217 (green), 87 (yellow), 1
- Lafayette: 249 (green), 55 (yellow), 1
- Lake Charles: 213 (green), 90 (yellow), 2
- Monroe: 281 (green), 24 (yellow)
- New Orleans: 212 (green), 92 (yellow), 1
- Shreveport: 269 (green), 36 (yellow)
- Thibodaux: 235 (green), 69 (yellow), 1

Cities (x-axis): Alexandria, Baton Rouge, Lafayette, Lake Charles, Monroe, New Orleans, Shreveport, Thibodaux

Observational PM₂.₅ data are not measured for Monroe or Alexandria.

AQI scale: 0 – 50 – 100 – 150 – 200 – 300 – 500

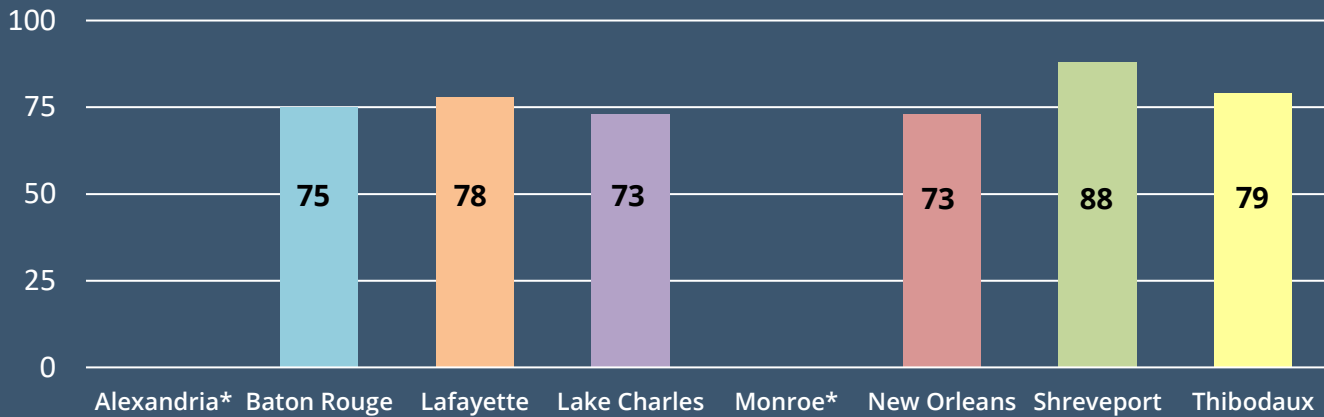| Missing | Good | Moderate | Unhealthy For Sensitive Groups | Unhealthy | Very Unhealthy | Hazardous |

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

Next-day forecasting performance statistics for 2020 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

	Baton Rouge	Lafayette	Lake Charles	Monroe	New Orleans	Shreveport	Thibodaux
Alexandria*	81	92	89	96	86	91	89

Percent Correct—PM$_{2.5}$

Alexandria*	Baton Rouge	Lafayette	Lake Charles	Monroe*	New Orleans	Shreveport	Thibodaux
	75	78	73		73	88	79
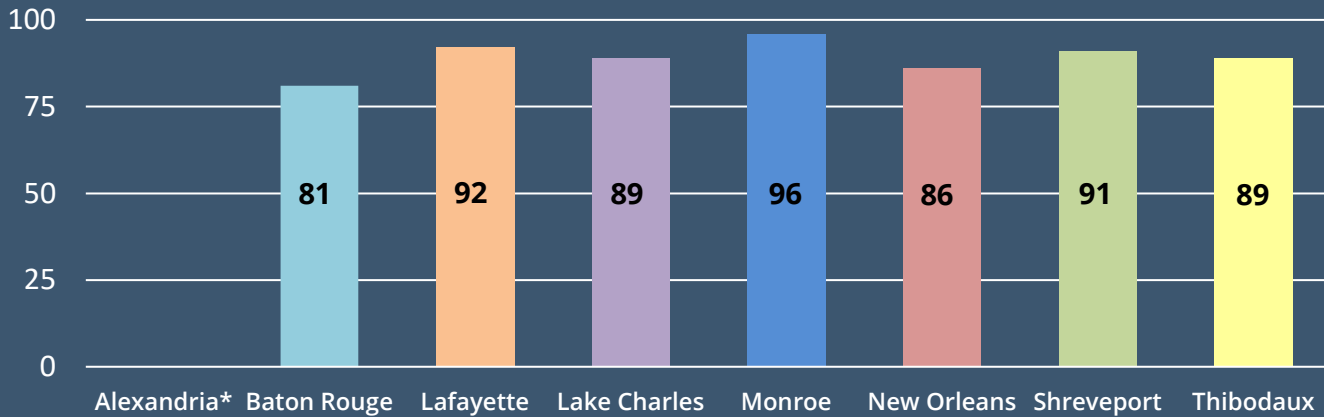
Observational PM$_{2.5}$ data are not measured for Monroe, and ozone and PM$_{2.5}$ data are not measured for Alexandria.

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