Air Quality Index (AQI) Predictor

Sprint 1 Exploratory Data Analysis

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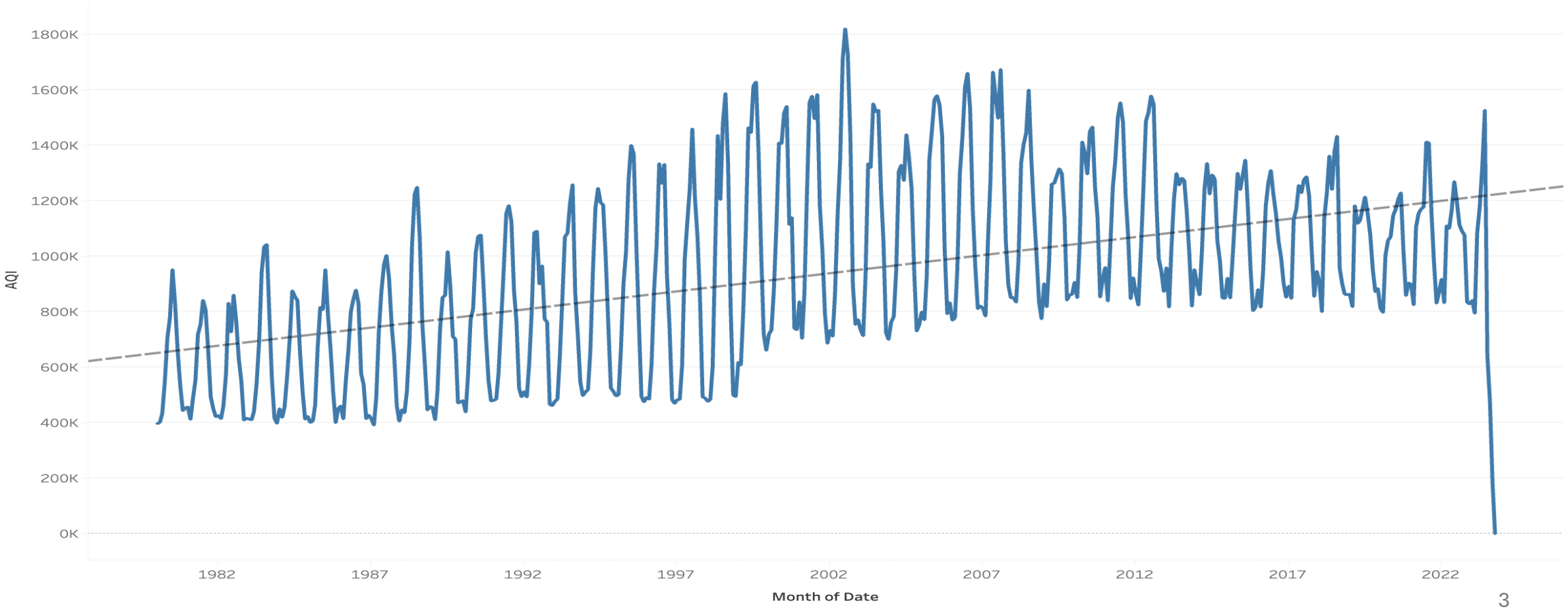
Opportunity – Air Quality Monitoring

- Respiratory sensitivities on the rise
- Global warming & environmental changes

- What will the air we breath look like in the next 5-10 years?

Data Science Solution

- Using a Time series analysis to predict AQI in the next 5-10 years.

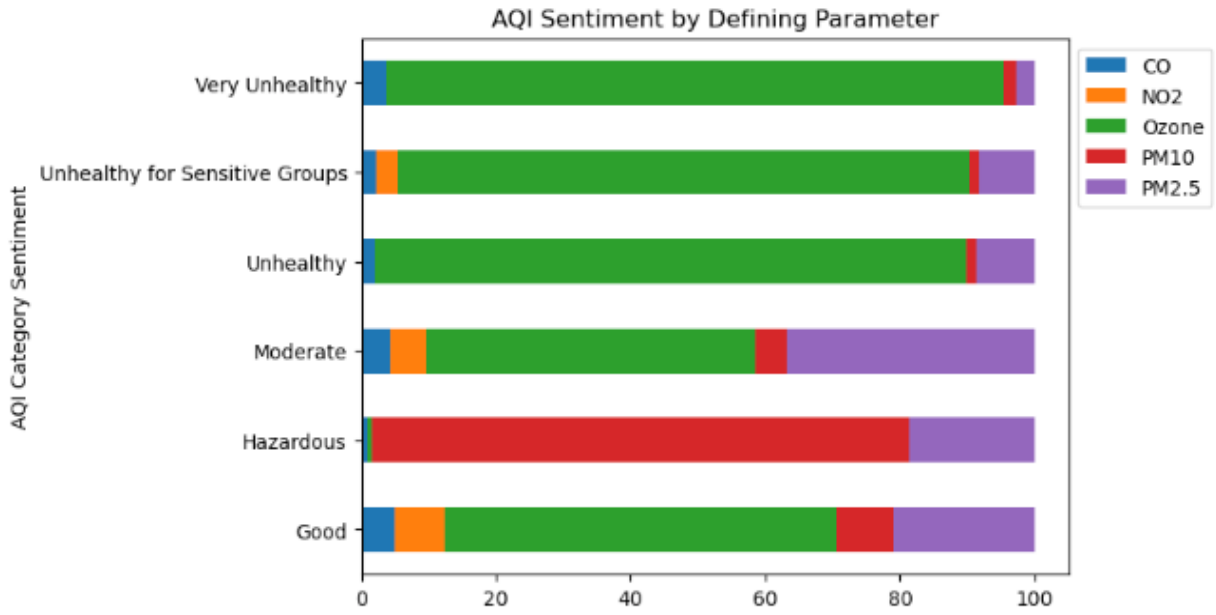


Potential Impact

- Ability to plan/prepare healthy living conditions for susceptible populations.
- Awareness/oversight into comparative environmental regulations by state.

Environmental Protection Agency Dataset – AQI

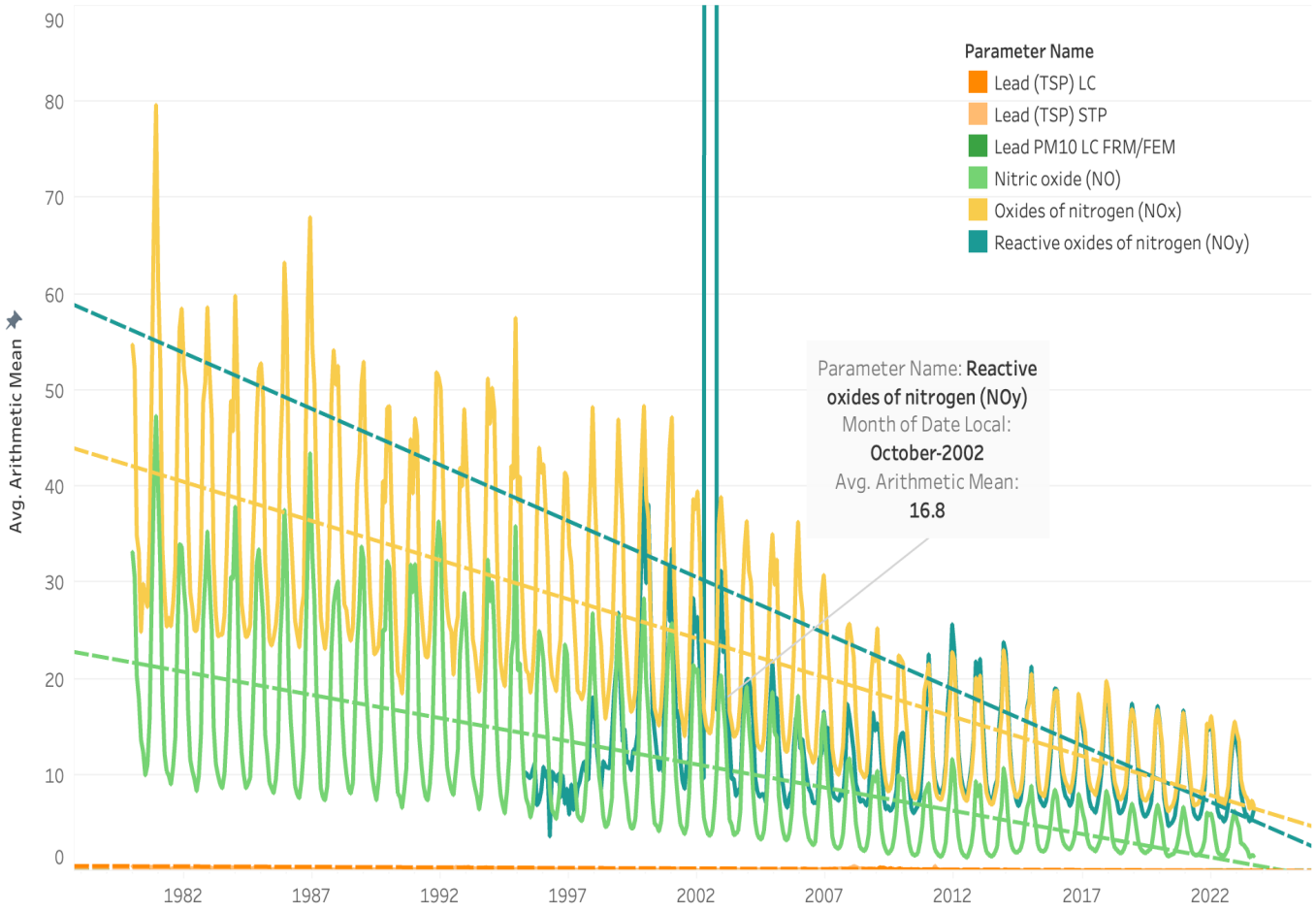
- AQI by location (city, county, state) and day
  - Sentiment
  - Key concentration factor



Contaminant
Ozone (O_3)
Particulate matter ($PM_{2.5}$)
Sulfur dioxide (SO_2)
Nitrogen dioxide (NO_2)
Carbon monoxide (CO)

Daily Monitoring Data

- Daily monitoring data
  - Concentrations of particulates, volatile organic compounds, hazardous products
  - Temperature, pressure, wind, dew point/relative humidity



Next Steps

- Missing values for some parameters/locations
- Reviewing assumptions
- Time series

	Parameter Name											
State Name	Barometric pressure	Dew Point	Lead (TSP) LC	Lead (TSP) STP	Lead PM10 LC FRM/FE..	Nitric oxide (NO)	Outdoor Te mperature	Oxides of nitrogen (..	Reactive oxides of n..	Relative Humidity	Wind Direction - ..	Wind Speed - Resultant
New York	987		0	0		13	49	36	8	73	197	4
Iowa	985	39	0	0		2	50	9	8	73	191	4
Oregon	932	47	0	0	0	10	51	18	17	66	208	4
Idaho	922	36		0	0	9	48	22	15	64	183	5
Massachusetts	1,005		0	0	0	11	53	20	8	70	201	3
Rhode Island	1,010			0	0	8	52	23	9	72	197	3
Missouri	1,913		0	1	0	6	56	14	17	68	189	4
Michigan	987	30	0	0		5	49	15	160	74	195	5
Maryland	998			0	0	10	57	37	7	67	196	4
Utah	1,540	26	0	0	0	4	52	25	24	50	192	5
Georgia	992		0	0		12	62	22	24	74	194	3
Wyoming	823	21		0		1	43	4	2	58	210	6

Appendix - Correlation