

# EFFECTS OF COVID-19 ON TRANSPORTATION and AIR QUALITY

RISE Coalition Meeting

July 27, 2020

Vivek Thimmavajjhala

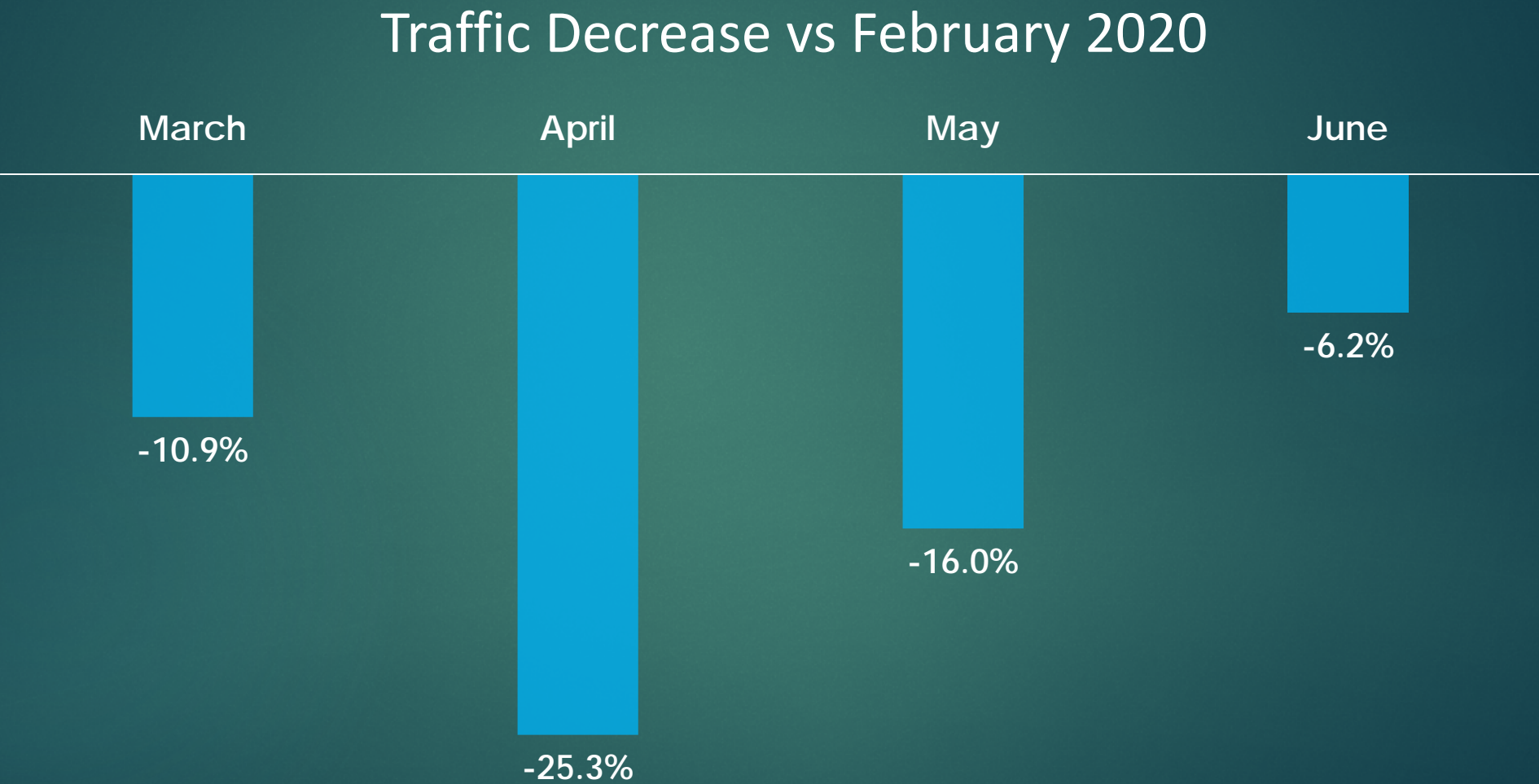


North Central Texas  
Council of Governments

# 1. TRANSPORTATION

(ROADWAY)

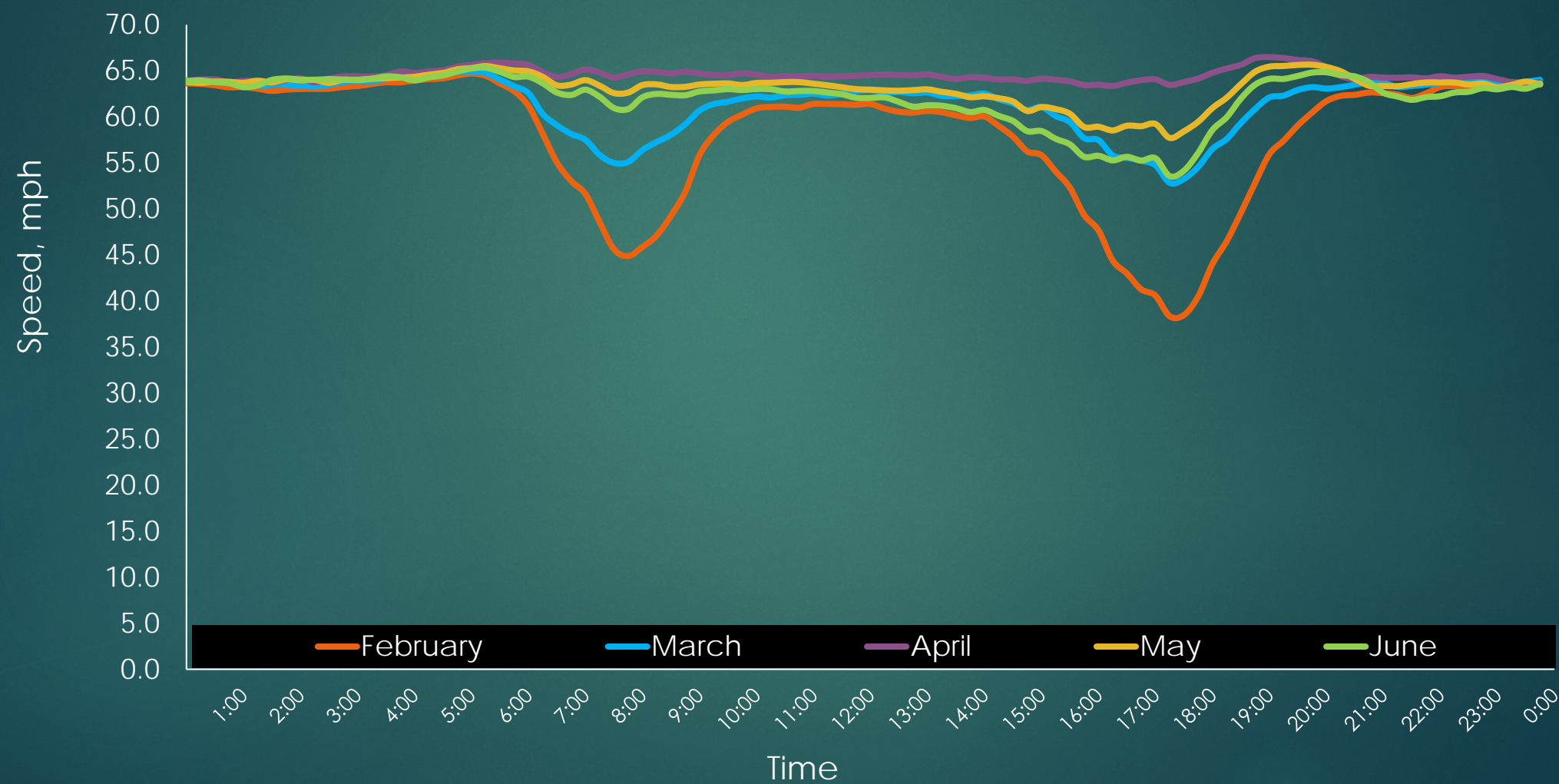
# Freeway Volumes During COVID-19 With Respect to February 2020



Source: Traffic Radars on TxDOT Dallas and Fort Worth Districts

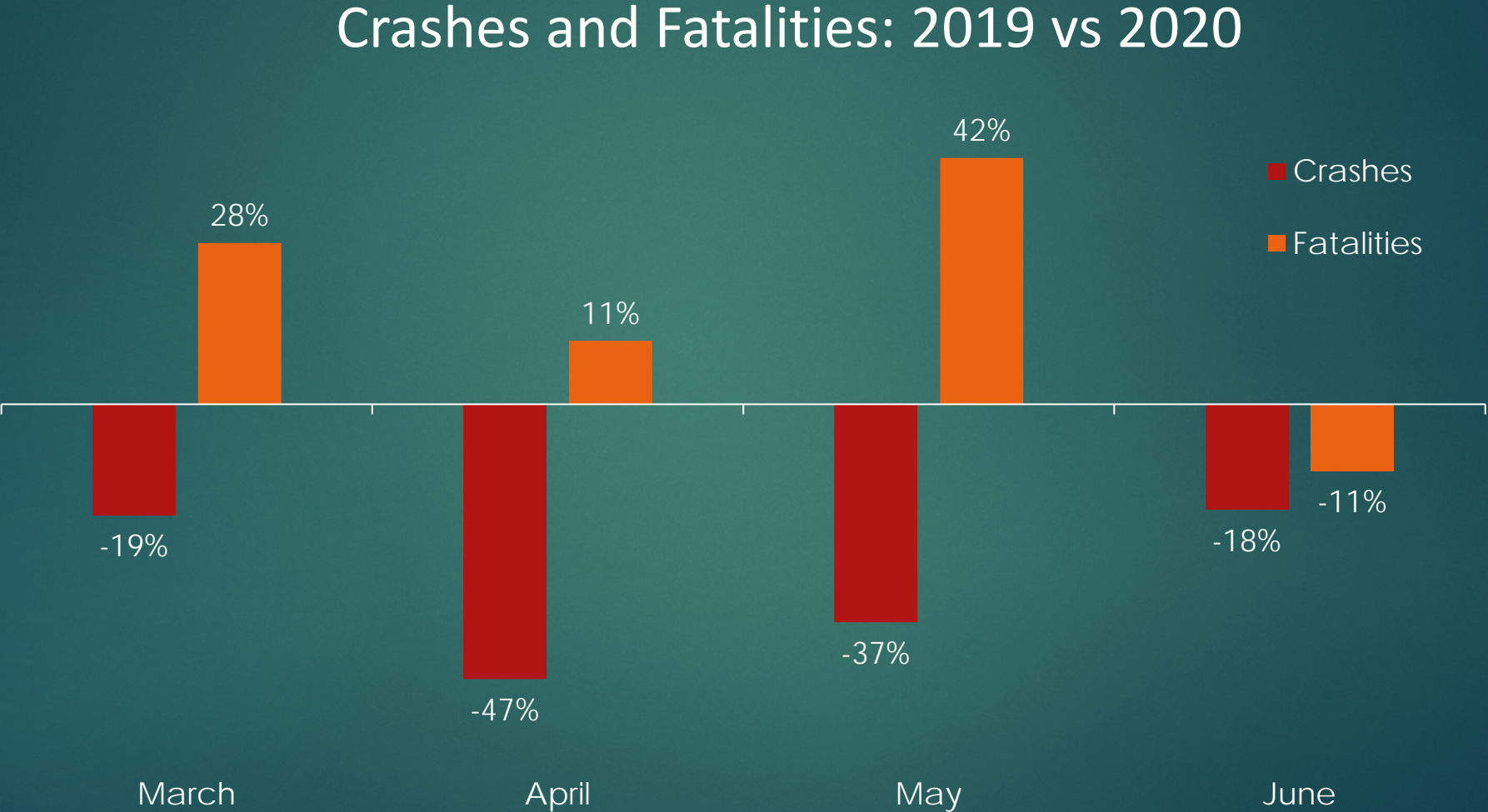
# Average Speed on Freeways By Time of Day

Average Weekday Speeds



Source: INRIX data delivered by FHWA through NPMRDS

# Percentage of Crashes: March and April 2019 vs March and April 2020



## 2. AIR QUALITY

# Regional Air Quality Impacts During COVID-19

- ▶ Emissions from vehicles reduced
- ▶ Lowest frequency of high-level, unhealthy, exposure days to ozone
- ▶ Cleaner air = blue(r) skies
- ▶ Leading to a healthier populous (under review)
- ▶ Real world analysis on local contributions suggest multi-state SIP's to reduce background
- ▶ How Can We Sustain Impacts? (To be determined)
  - Electric and Fuel Cell Vehicles
  - Travel Demand Management (Telecommuting)

Exceedances influenced by meteorological conditions

# North Central Texas Ozone Comparison

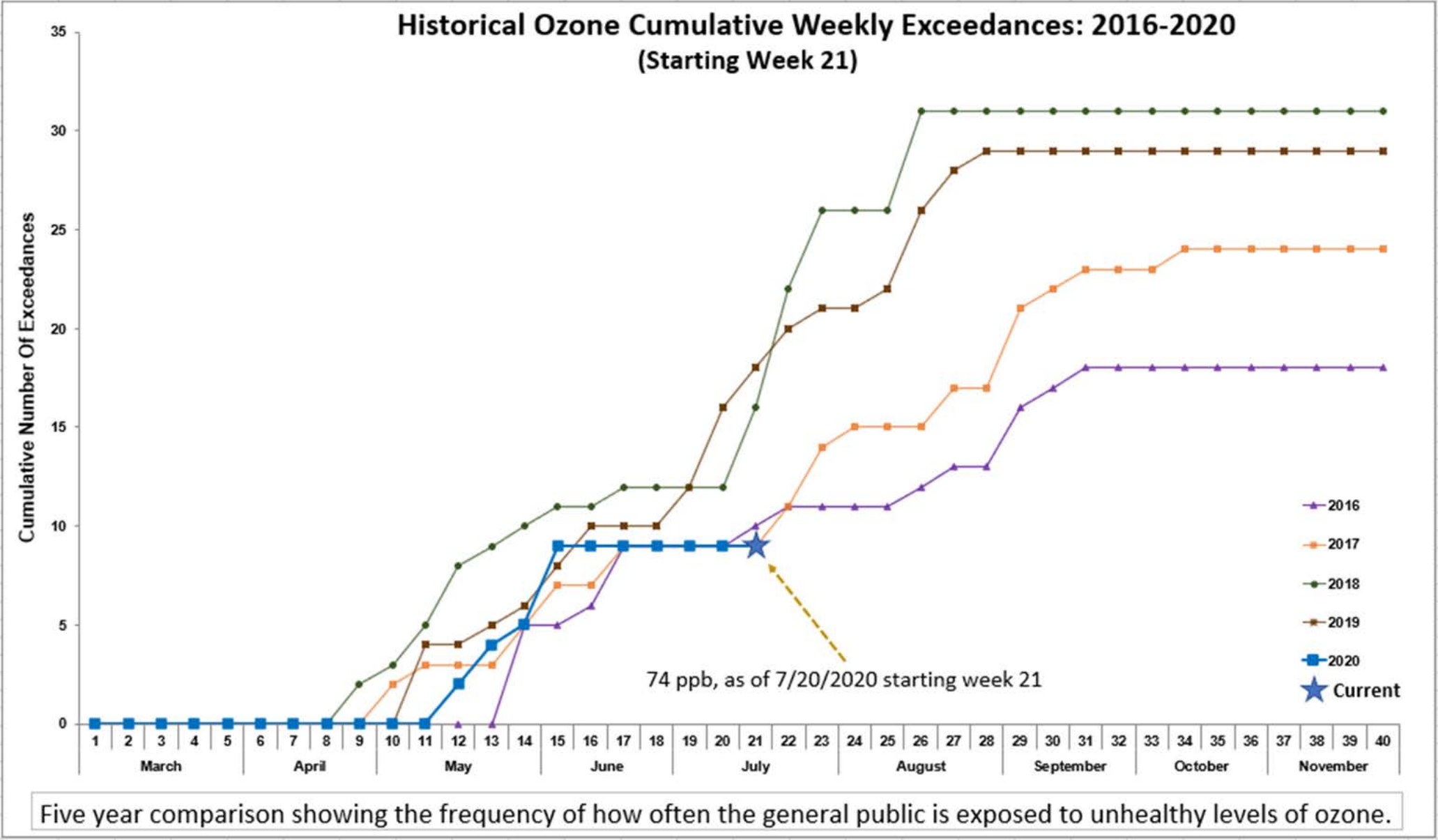
		3 Year Design Value			
2017		2018	2019	2020*	
March	2 yellow days High: 62 at Eagle Mtn Lake	8 yellow days High: 63 at Denton	10 yellow days High: 66 at Cleburne	3 yellow days High: 64 at Pilot Point	
April	10 yellow days High: 68 at Dallas Hinton	16 yellow days 2 orange days High: 81 at Dallas North High: 81 at Dallas Hinton	12 yellow days High: 69 at Greenville	8 yellow days High: 69 at Rockwall High: 69 at Grapevine	
May	15 yellow days 5 orange days High: 80 at Dallas North High: 80 at Dallas Hinton	9 yellow days 6 orange days 2 red days High: 92 at Eagle Mtn Lake	6 yellow days 5 orange days High: 80 at Pilot Point	10 yellow days 3 orange day 1 red day High: 86 at Grapevine Fairway	
June	6 yellow days 4 orange days High: 84 at Cleburne Airport	7 yellow days 2 orange days High: 85 at Dallas North	12 yellow days 5 orange days High: 76 at Frisco High: 76 at Arlington Municipal High: 76 at Cleburne Airport	16 yellow days 5 orange days High: 77 at Eagle Mountain Lake	
July	14 yellow days 3 orange days High: 81 at Cleburne Airport High: 81 at Granbury	14 yellow days 8 orange days 3 red days High: 92 at Grapevine Fairway	6 yellow days 7 orange days High: 83 at Cleburne Airport	12 yellow days High: 69 at Dallas North	

Data Source: TCEQ

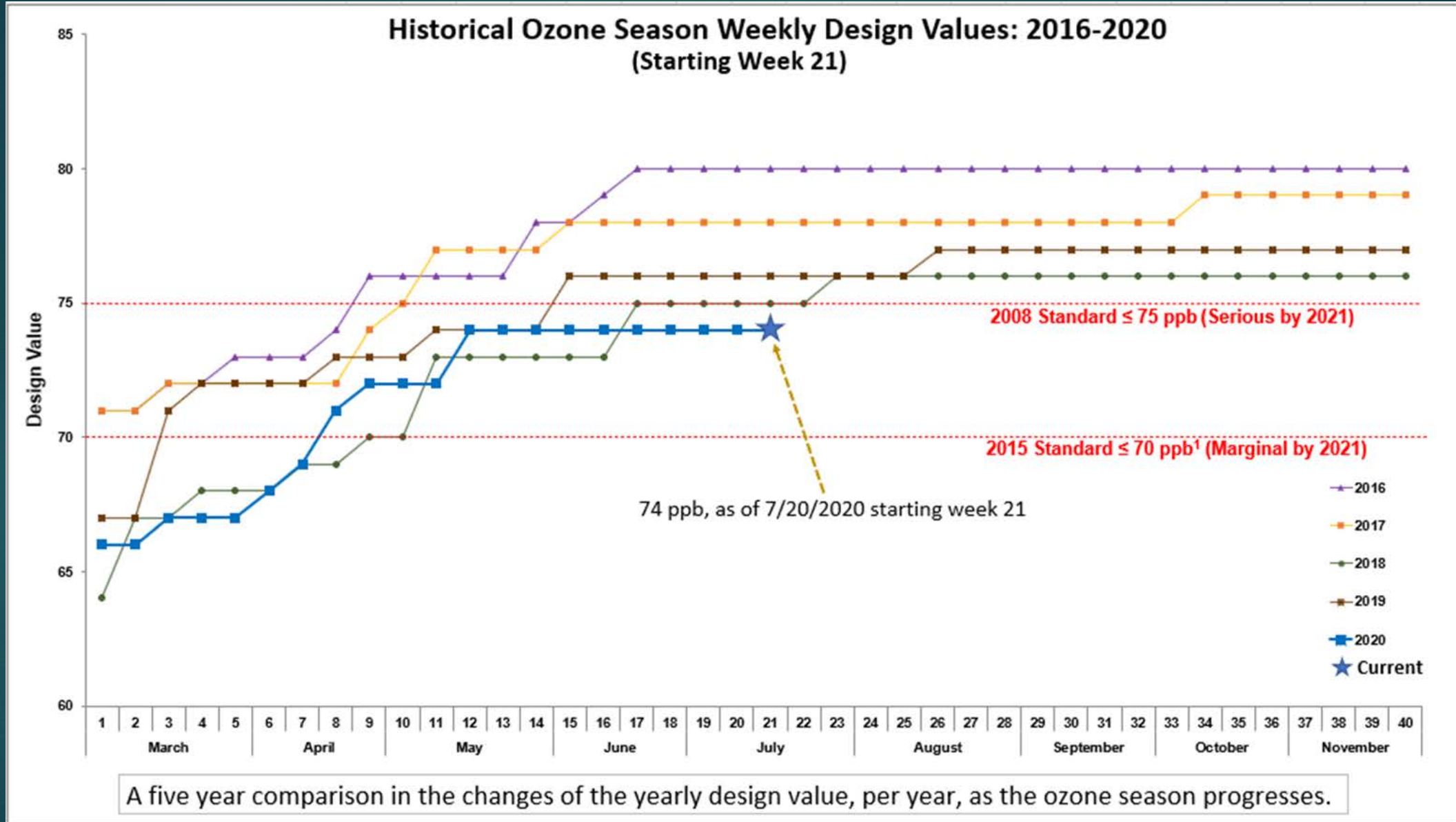
Data Analysis: NCTCOG

\* as of July 23, 2020. At this time last year (July 23, 2019), there were five Yellow days and two Orange days.

# Cumulative Ozone Exceedances, 2016-2020

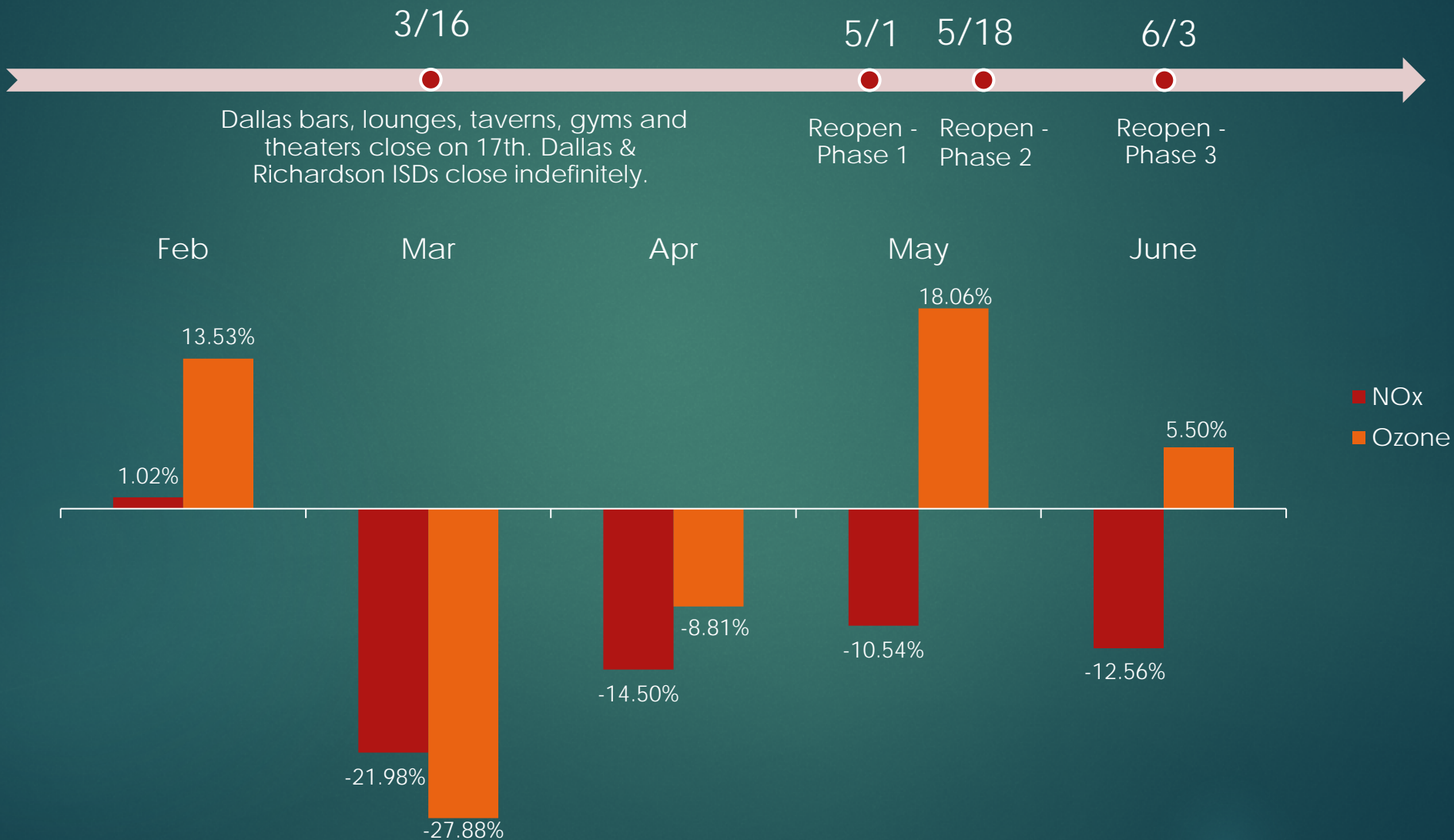


# Weekly Ozone Design Values, 2016-2020



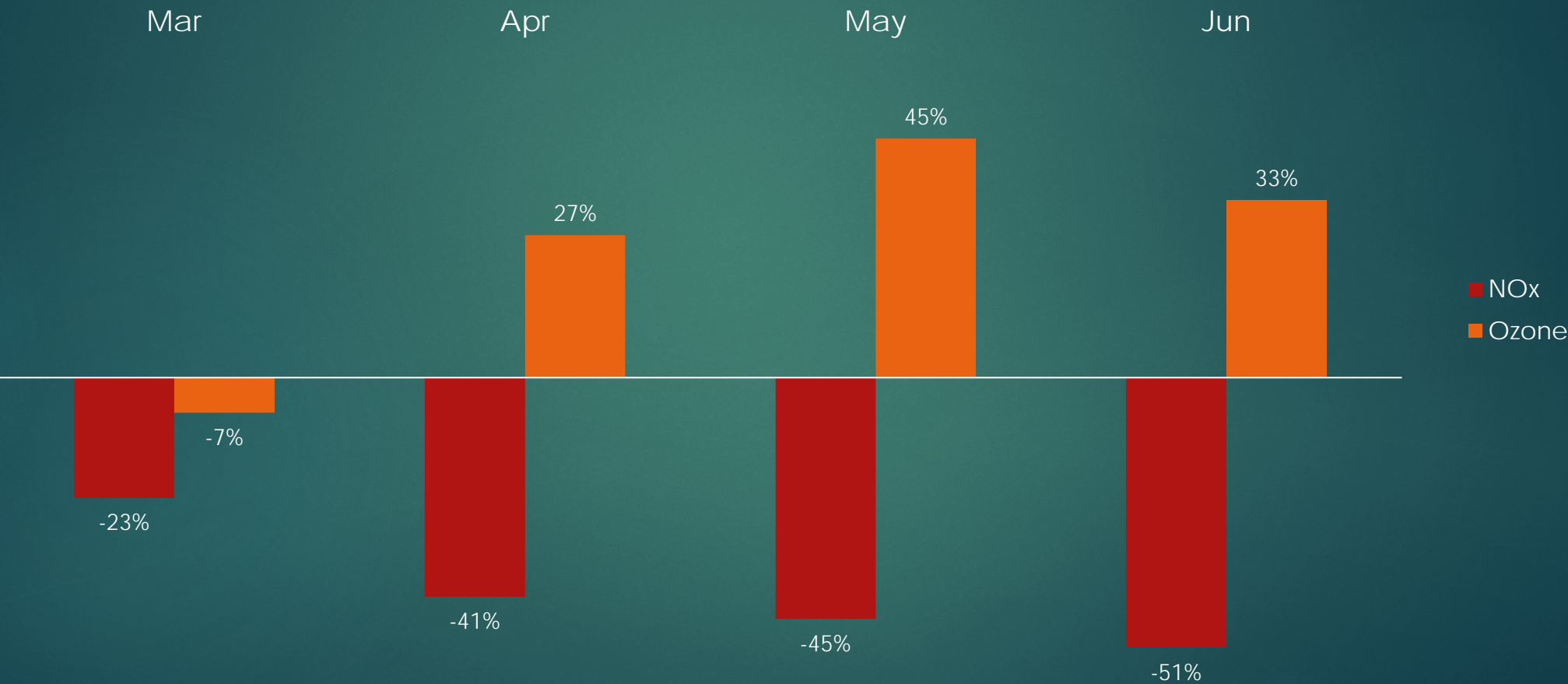
# Regional Monitor Data: Daily Emissions

Change in the Average Daily Emissions (ppb): 2019 vs 2020



# Regional Monitor Data: Daily Average Emission Concentrations

Change in Average Daily Concentrations Compared to February 2020

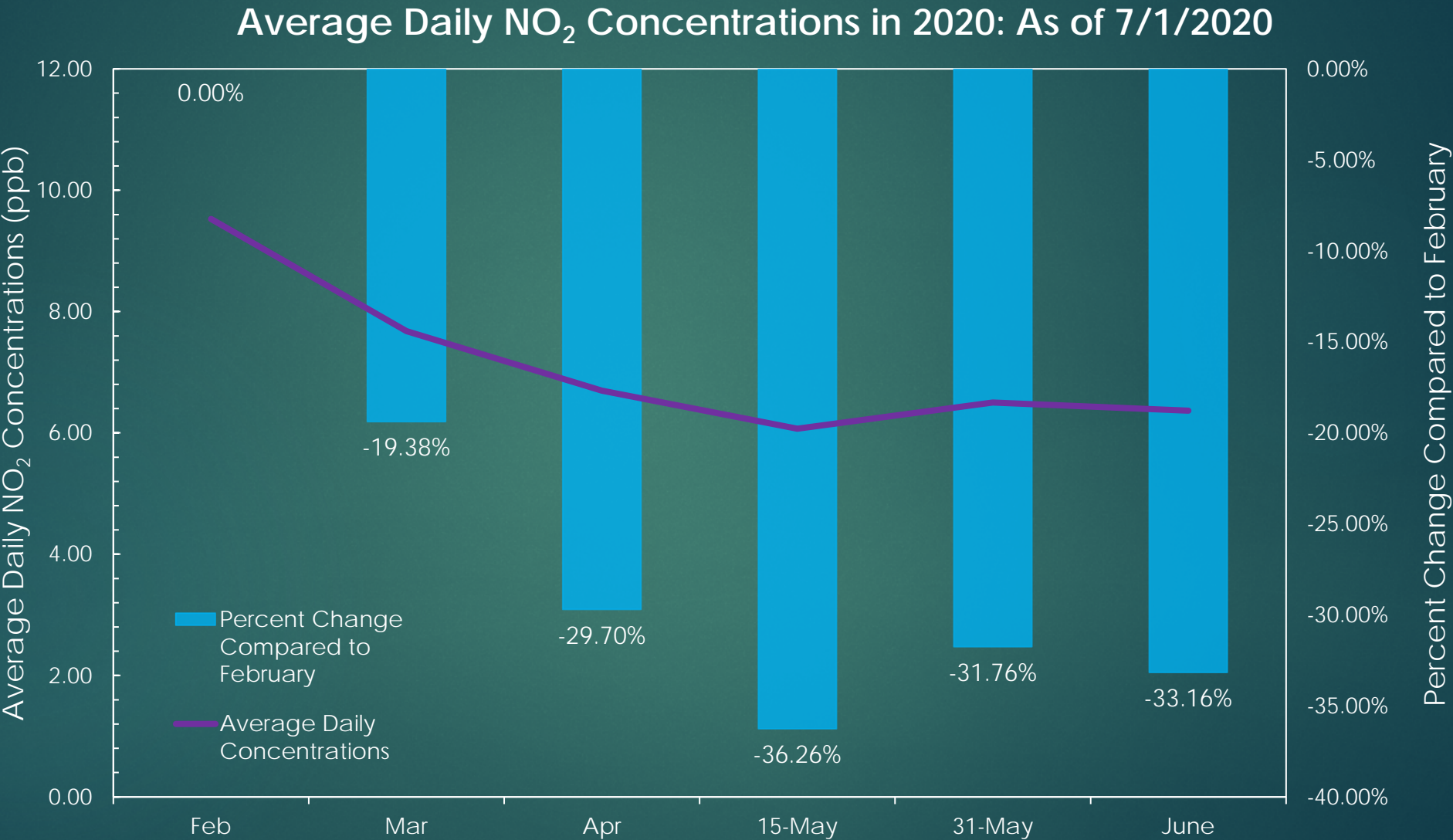


# Regional Nitrogen Dioxide (NO<sub>2</sub>) Tracking

February 2020

Week of March 29, 2020

# Regional Nitrogen Dioxide (NO<sub>2</sub>) Monitor Data



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