



# City of Austin Air Quality Updates

Phoebe Romero, Office of Sustainability

October 16, 2019



# Agenda

- Air Quality Overview
- State of Air Quality Monitoring and Reporting
- Outreach and Alerts
- Current Activities

# **Air Quality Criteria Pollutants**

Ground-  
level ozone

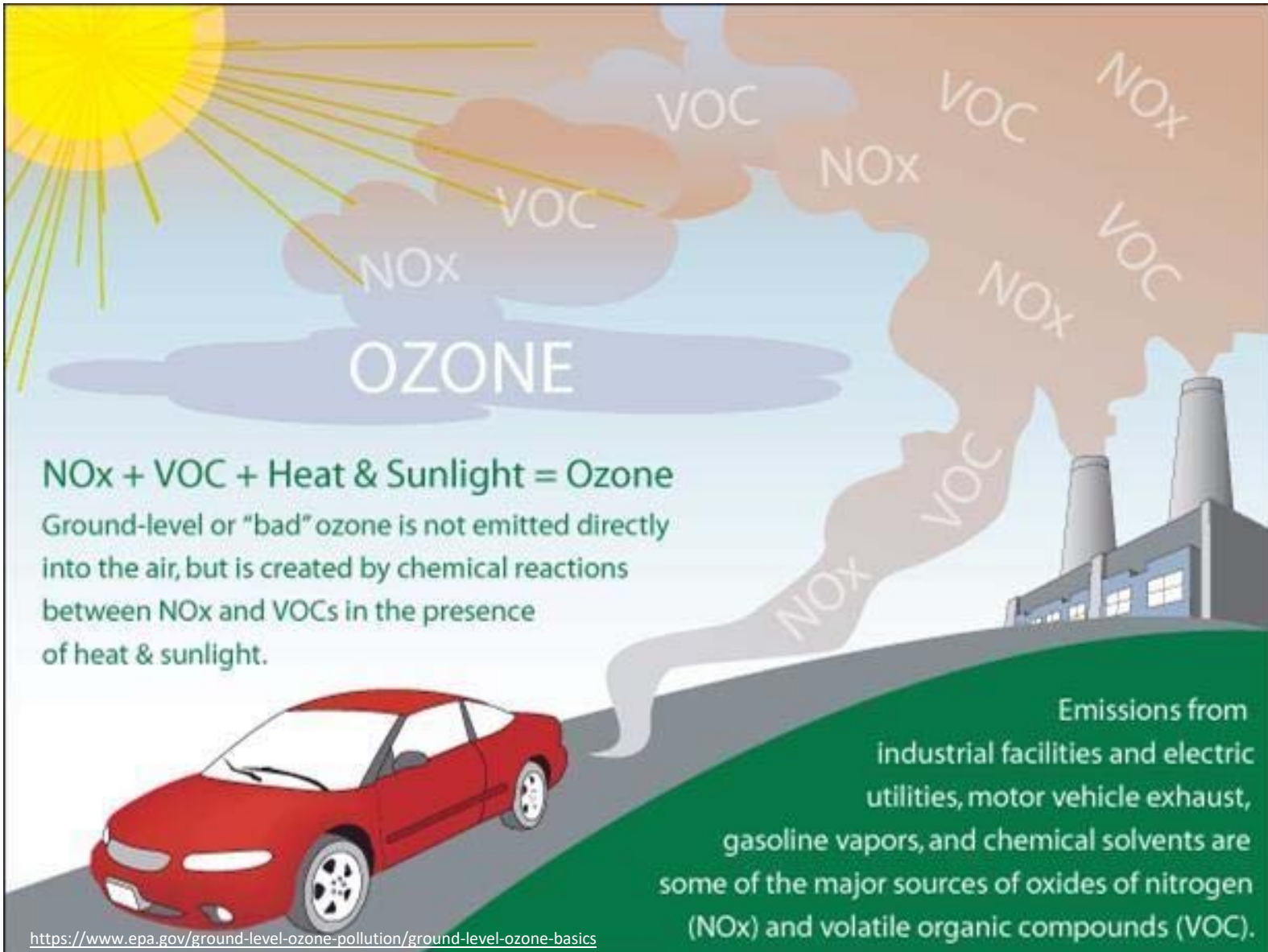
Particulate  
Matter

Carbon  
Monoxide

Lead

Sulfur  
Dioxide

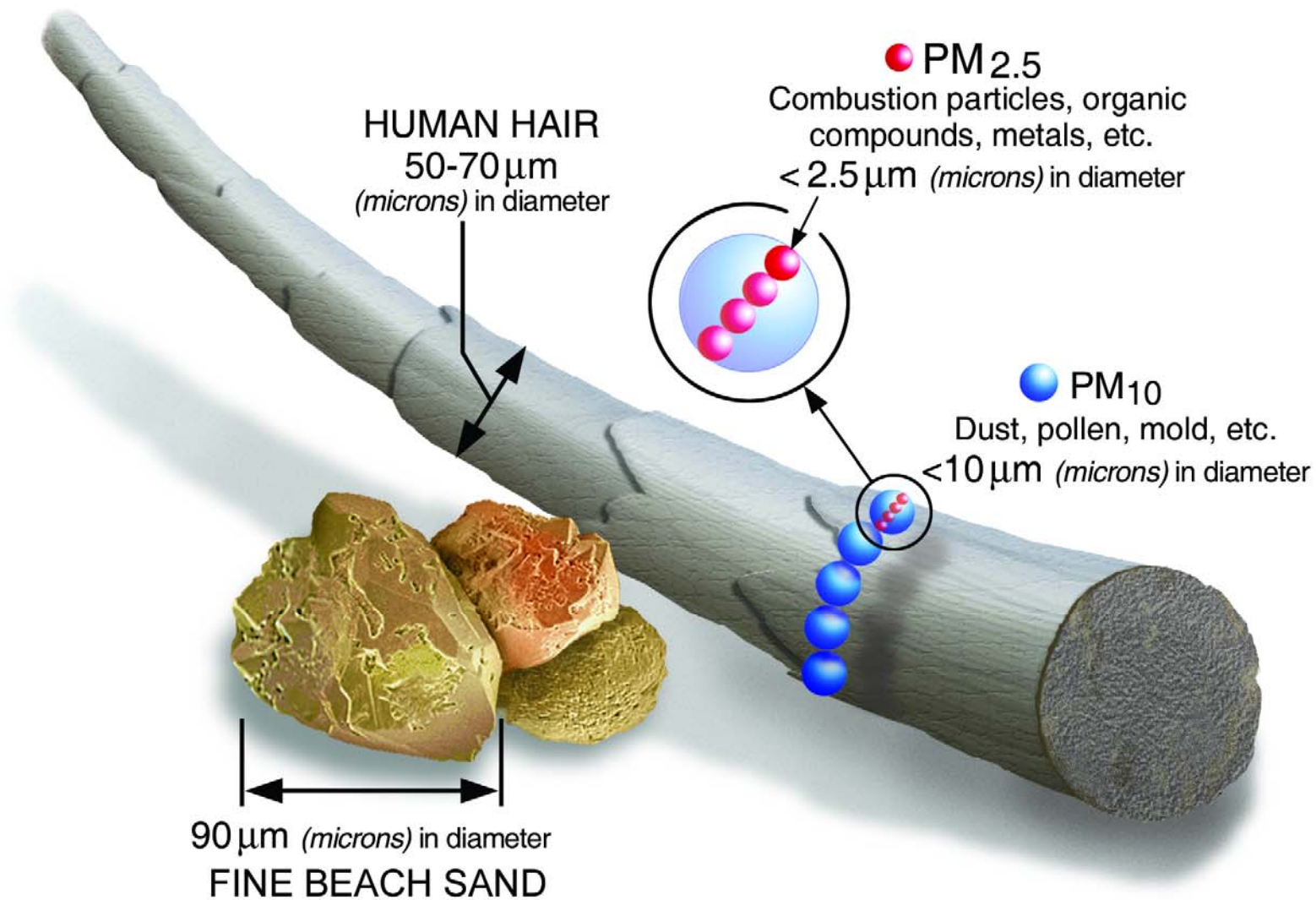
Nitrogen  
Dioxide



**NOx + VOC + Heat & Sunlight = Ozone**

Ground-level or "bad" ozone is not emitted directly into the air, but is created by chemical reactions between NOx and VOCs in the presence of heat & sunlight.

Emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents are some of the major sources of oxides of nitrogen (NOx) and volatile organic compounds (VOC).



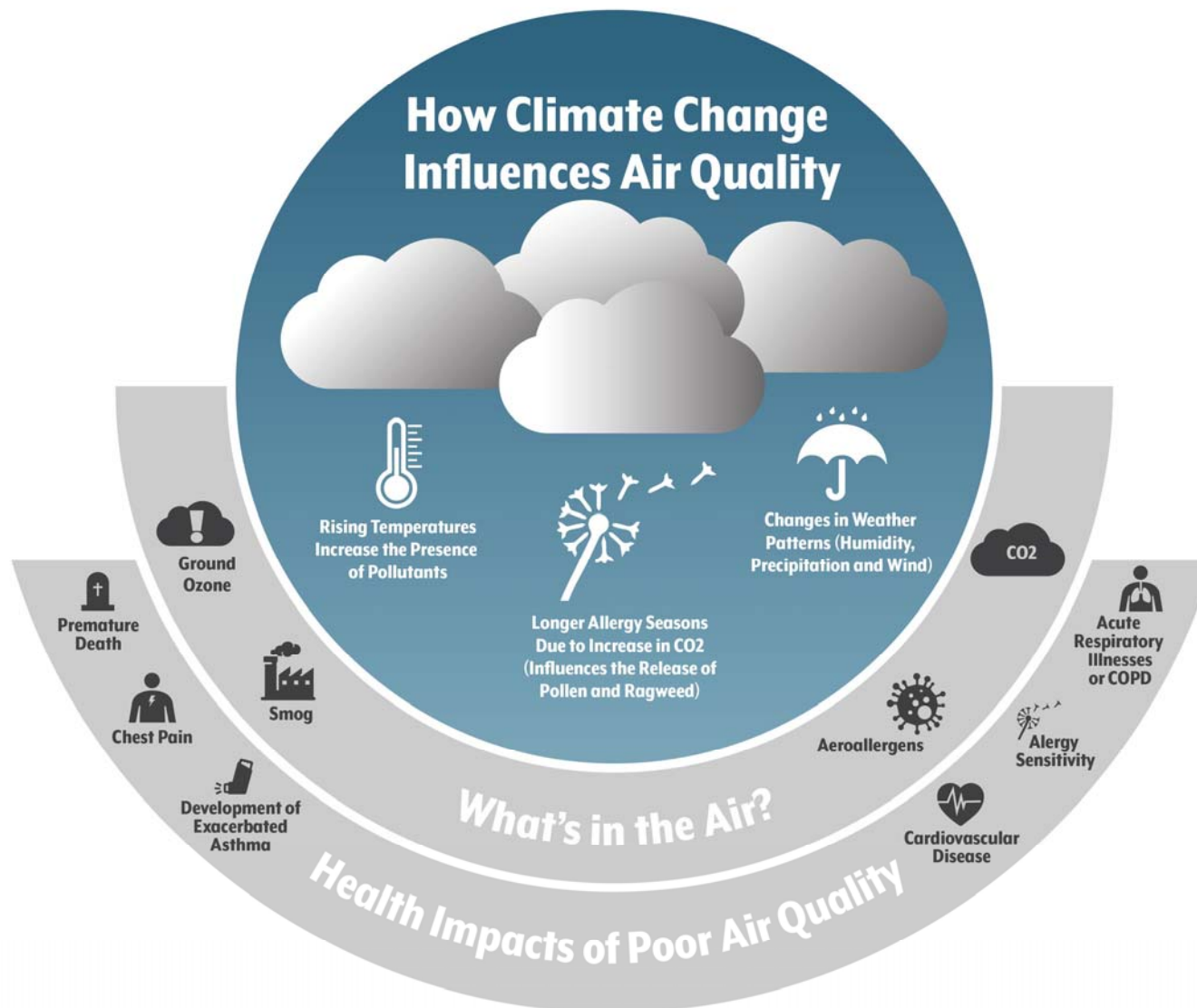
# NOx / Ozone v. CO2 / Climate Change

## NOx and Ozone

- Emissions can immediately impact local human health if the conditions are right (sun, heat, humidity, wind direction)
- The pollutant levels are small comparatively to CO2 and the time frame is daily
- Regulations and control technology have been very effective at reducing emissions while still using fossil fuel

## CO2 and Climate Change

- Direct emissions don't immediately impact local human health
- Emission amounts are very large and CO2 stays in the atmosphere for over 100 years
- Fossil fuels are the issue and there is no add-on "control technology"
- If we have zero CO2 emissions and burn no fossil fuel, air quality issues are non-existent

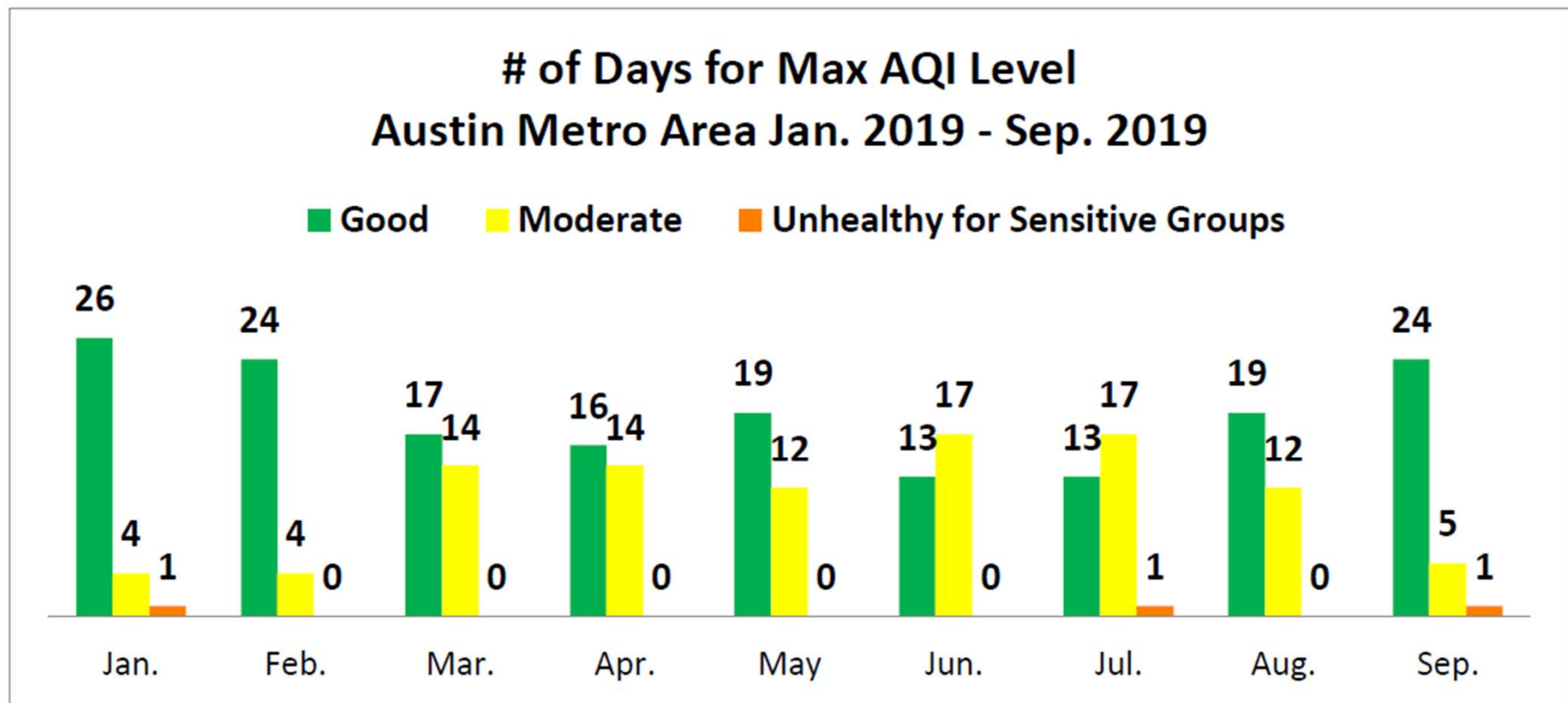


# State of Air Quality Monitoring and Reporting



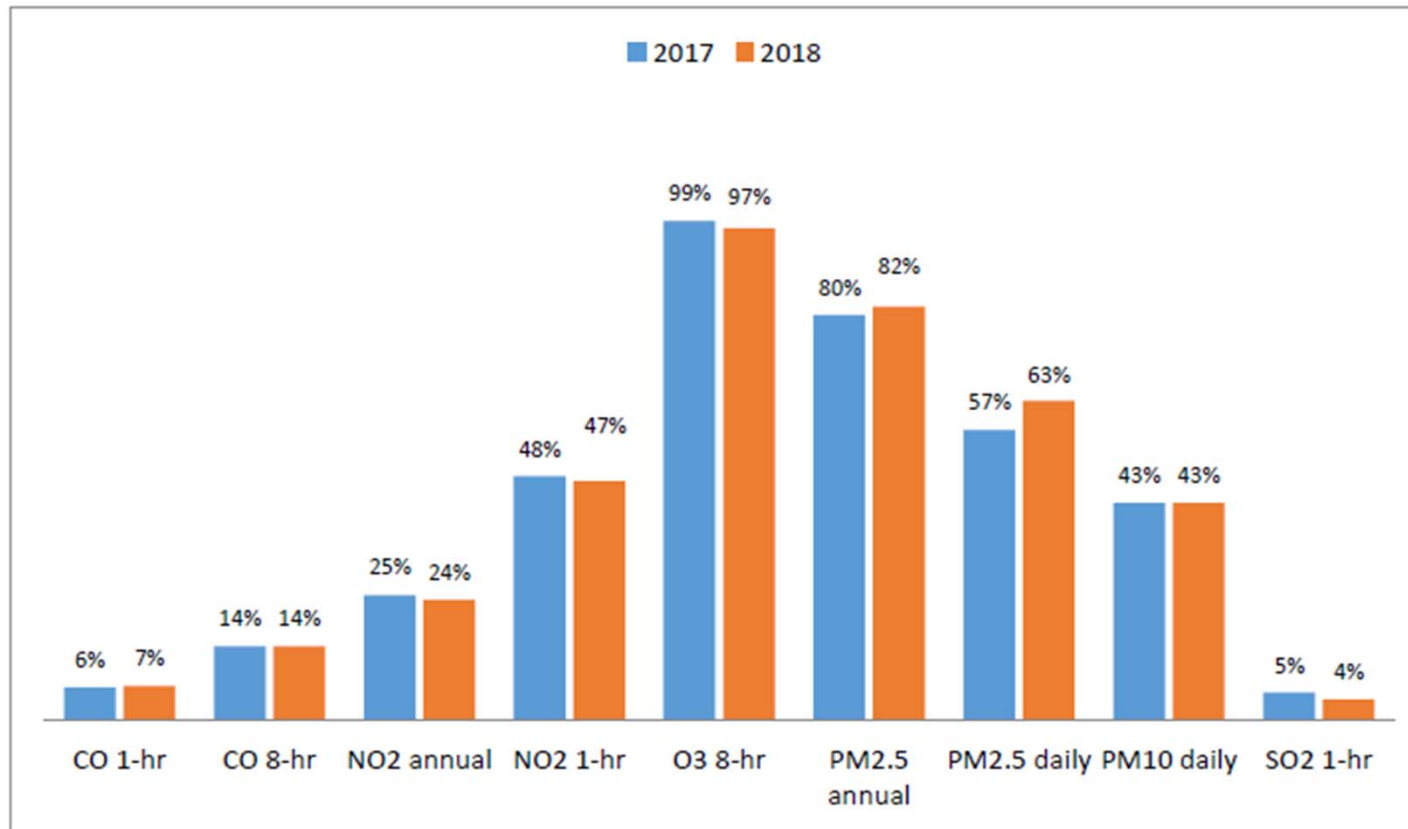
# Air Quality Index (AQI) Summary, 2019

Figure 1. 2019 Air Quality Index (AQI) Summary



# CAPCOG 2018 Air Quality Report

Figure 1-2. Austin-Round Rock-Georgetown MSA Design Values as a percentage of Primary NAAQS



From CAPCOG 2018 Air Quality Report for the Austin-Round Rock-Georgetown Metropolitan Statistical Area

# NO<sub>x</sub> Emissions Sources

Figure 2-2. 2018 O<sub>3</sub> Season Weekday NO<sub>x</sub> Emissions for the Austin-Round Rock-Georgetown MSA (tpd)

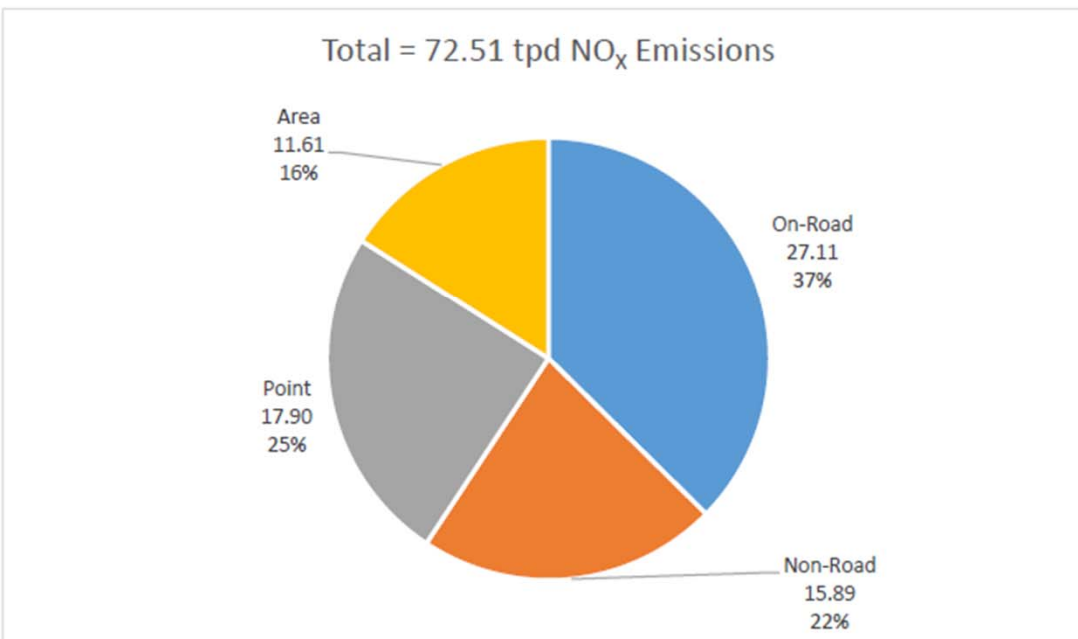


Table 2-2. 2018 Austin-Round Rock-Georgetown OSD Weekday NO<sub>x</sub> Emissions by Source Use Type (tpd)

| Source Use Type              | NO <sub>x</sub> |
|------------------------------|-----------------|
| Motorcycle                   | 0.03            |
| Passenger Car                | 7.88            |
| Passenger Truck              | 5.52            |
| Light Commercial Truck       | 1.62            |
| Intercity Bus                | 0.15            |
| Transit Bus                  | 0.22            |
| School Bus                   | 0.42            |
| Refuse Truck                 | 0.35            |
| Single-Unit Short-Haul Truck | 1.72            |
| Single-Unit Long-Haul Truck  | 0.18            |
| Motor Home                   | 0.17            |
| Combination Short-Haul Truck | 3.38            |
| Combination Long-Haul Truck  | 5.48            |
| TOTAL                        | 27.11           |

From CAPCOG 2018 Air Quality Report for the Austin-Round Rock-Georgetown Metropolitan Statistical Area

# Clean Air Act NAAQS and Localized Air Pollution Issues

- The Clean Air Act requires U.S. EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants that are considered harmful to the public and environment
- While our region is in “attainment” of these standards, only a couple of monitors are used to make this determination
- Hyperlocal air pollution data from mobile monitoring shows that air quality can greatly vary from one end of a block to another
- Environmental Defense Fund working on a Hyperlocal Air Pollution Mapping Guide for cities to understand process
- Potential for use in creating policy around equity and health; exploring this option for Austin



<http://business.edf.org/projects/featured/futurefleets>

# Outreach and Alerts

# Air Quality Program

- Office of Sustainability is responsible for:
  - Managing air quality interlocal agreement with Capital Area Council of Governments (CAPCOG)
    - CAPCOG manages regional air quality monitoring, reporting and outreach activities
  - Participating in Clean Air Coalition and Clean Air Coalition Advisory Council
  - Collaborating with Central Texas Clean Air Force
  - Managing any other external air quality reporting, communications and outreach
  - SPOC for AQ any inquiries
  - Following air quality alerts to notify public via social media on Ozone Action Days



The screenshot displays the Air Central Texas (ACT) website and a corresponding Facebook page. The website header features the ACT logo, a search bar, a language selector set to "U.S. English", and navigation links for "REGIONAL AIR QUALITY", "IMPROVE AIR QUALITY", "RESOURCES", and "ABOUT A". The main banner shows a city skyline with the word "Welcome" overlaid. Below the banner, a "Welcome" section includes a video thumbnail of a hand holding a green calculator labeled "ACT Emissions Calculator" and a text block explaining that ACT is an initiative to reduce air pollution exposure in Bastrop, Caldwell, Hays, Travis, and Williamson Counties through voluntary actions. To the right, the Facebook page for Air Central Texas is shown, featuring 351 likes, a "Like Page" button, and a post from 17 hours ago about a CBS Austin story on vehicle tailpipe emissions.



# Ozone Action Days and Social Media



**Air Central Texas** @AirCentralTexas · Jul 25

Tomorrow is another Ozone Action Day in the Austin Region. Take steps to reduce air pollution by sharing a ride, walking or riding a bicycle, avoiding drive-through lanes, conserving energy, and only driving your vehicle when properly tuned.

Learn more: [aircentraltexas.org](http://aircentraltexas.org)

BE AIR AWARE  
**OZONE**  
action day



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**City of Austin Office of Sustainability** shared a post.

September 6 · 🌐

Head's up! Today's air quality in the Austin area is expected to be unhealthy for sensitive groups. You can help out by conserving energy and driving less.

## Code Orange

**Air Quality is Unhealthy for sensitive groups**

People with heart or lung disease, older adults, and children should reduce prolonged or heavy exertion outdoors.

*Air Aware Tips*  
*Drive Less*

Avoid Traffic  
Reduce Idling  
Combine Errands

**Air Central Texas**

September 6 · 🌐

Air Quality Alert: Today's air quality is forecast to reach an Unhealthy for Sensitive Groups level in the Austin region. Help us prevent air pollution by conserving energy and driving less.

Learn more: <https://airnow.gov/index.cfm...>



City of Austin Government

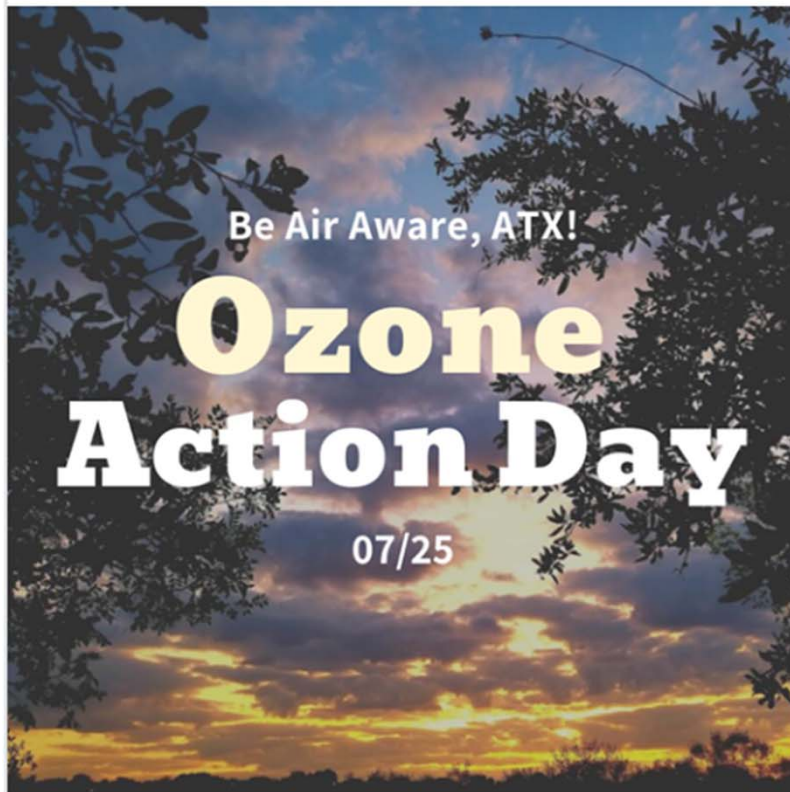
July 24 · 🌐

7/25 EDIT

Attention, #ATX: Today's Ozone Action Day advisory has been extended through tomorrow (7/26) as well. Be Air Aware and safe out there!

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Enjoying today's beautiful weather, Austin? ☀️ Clear skies can be deceiving — tomorrow is an Ozone Action Day. Plan to reduce air pollution by carpooling, walking, biking, + saving energy at home. Sensitive groups should consider staying inside. Be air aware! [bit.ly/2Z9JTif](https://bit.ly/2Z9JTif)



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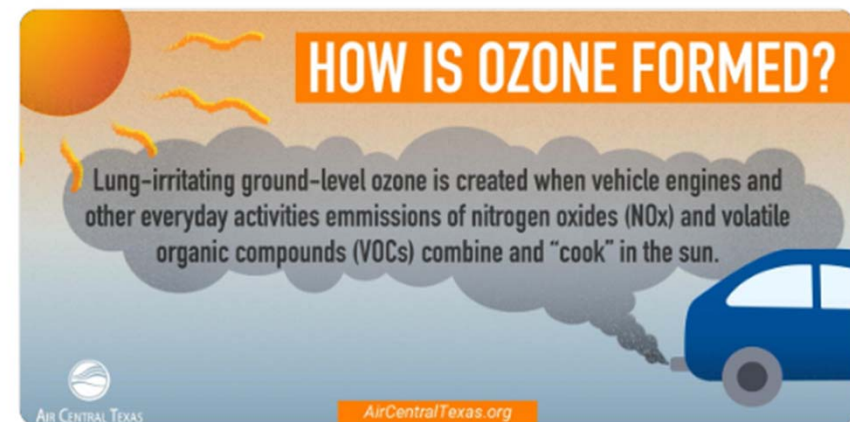
1 Comment 4 Shares

## City page & ATD



ATX Transportation @austinmobility · Jul 25

July 26 is an #OzoneActionDay. Ground-level **ozone** is created when emissions of nitrogen oxides and volatile organic compounds combine and "cook" in the sun. This air pollution can affect people with sensitive respiratory issues. ☹️ Protect Austin by reducing drive-alone trips!



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# Air Quality alerts via email or text

## AirNow EnviroFlash list

Air Quality Notifications

[Subscribe to EnviroFlash](#) [Manage Your Account](#)

Welcome to EnviroFlash! Air quality affects how you live and breathe. Like the weather, it can change from day to day, or even hour to hour. Up-to-date information allows you to make decisions based on air quality forecasts. EnviroFlash comes to you through a partnership between the US EPA and your state or local air quality agency - notifying you about air quality so you don't have to go searching for it!

[Map](#) [Satellite](#)

Today's Forecast

- Good
- Moderate
- Unhealthy for Sensitive Groups
- Unhealthy
- Very Unhealthy
- Hazardous
- Unavailable

Map data ©2019 Google, INEGI Terms of Use

## TCEQ

Forecast is for Ozone, PM2.5, & PM10, and is based on EPA's Air Quality Index (AQI)



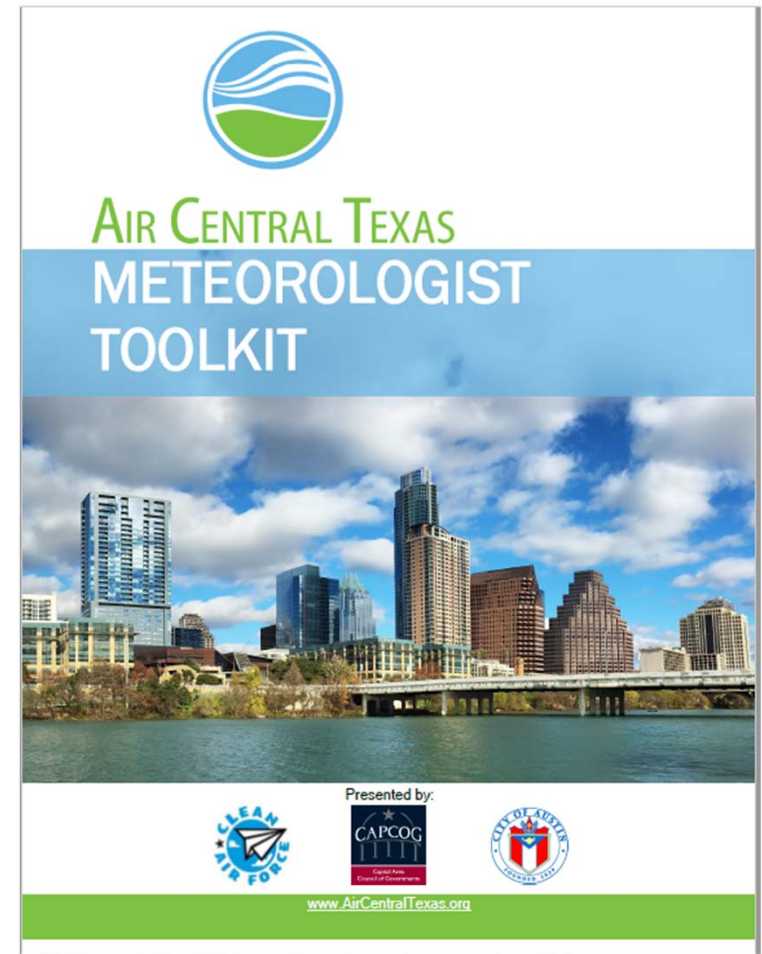
| Forecast Region<br>(Click name for<br>AIRNOW version) | Tue<br>10/08/2019 | Wed<br>10/09/2019 | Thu<br>10/10/2019 | Fri<br>10/11/2019 |
|---|-------------------|-------------------|-------------------|-------------------|
| Amarillo  | Good              | Good              | Good              | Good              |
| Austin  | Good              | Ozone/PM2.5       | Good              | Good              |
| Beaumont-Port<br>Arthur                               | Good              | Ozone/PM2.5       | Good              | Good              |
| Brownsville-McAllen                                   | Good              | Good              | Good              | Good              |
| Corpus Christi  | Ozone             | Ozone             | Good              | Good              |
| Dallas-Fort Worth                                     | Good              | Ozone             | Good              | Good              |
| El Paso   | Good              | Good              | Good              | Good              |
| Houston   | Good              | Ozone*            | Good              | Good              |
| Laredo  | Good              | Good              | Good              | Good              |
| Lubbock   | Good              | Good              | Good              | Good              |
| Midland-Odessa  | Good              | Good              | Good              | Good              |
| San Antonio   | Ozone             | Good              | Good              | Good              |
| Tyler-Longview  | Good              | Ozone             | Good              | Good              |
| Victoria  | Good              | Ozone             | Good              | Good              |
| Waco-Killeen  | Good              | Ozone             | Good              | Good              |

An asterisk (\*) indicates that an Ozone Action Day is or will be in effect for the indicated region.

A caret (^) indicates that levels of PM may exceed the applicable short-term NAAQS. For more information see the following TCEQ websites: [Air Pollution from Particulate Matter](#) and [Voluntary Tips for Citizens and Business to Reduce Emissions](#).

# Institutional toolkits

- Air Central Texas has created a toolkit for meteorologist
  - Air quality basics
  - Recommendations
  - Graphics
  - Resources
- Can explore creating similar toolkits for doctor's offices, hospitals, etc.



## Austin ISD - Environmental Stewardship Advisory Committee

- Just joined ESAC's Air Quality and Transportation group
- Hope to focus on anti-idling, multi-modality and air quality education
- Schools and teachers notified during Ozone Action Days, students inside for recess



# Special Events Ordinance Emissions Management Plan for Tier 4 events

- Special Events Ordinance was adopted in May 10, 2018
- Requires Tier 4 special events (SXSW, Grand Prix, etc.) to provide ACE the following:
  - Waste reduction and diversion plan
  - Plan for bicycle parking and encouraging alternative transportation
  - Emissions Management Plan
- ACE began processing event applications under the new ordinance on April 1, 2019
- Emissions Management Plan is submitted after the event, and applicants are asked to provide description of actions and photos of signage pertaining to:
  - Electricity and Power use
    - Grid electricity/generators
  - Onsite lighting and mobile equipment
  - Anti-idling for on-road vehicles

# C40 Clean Air Cities Coalition

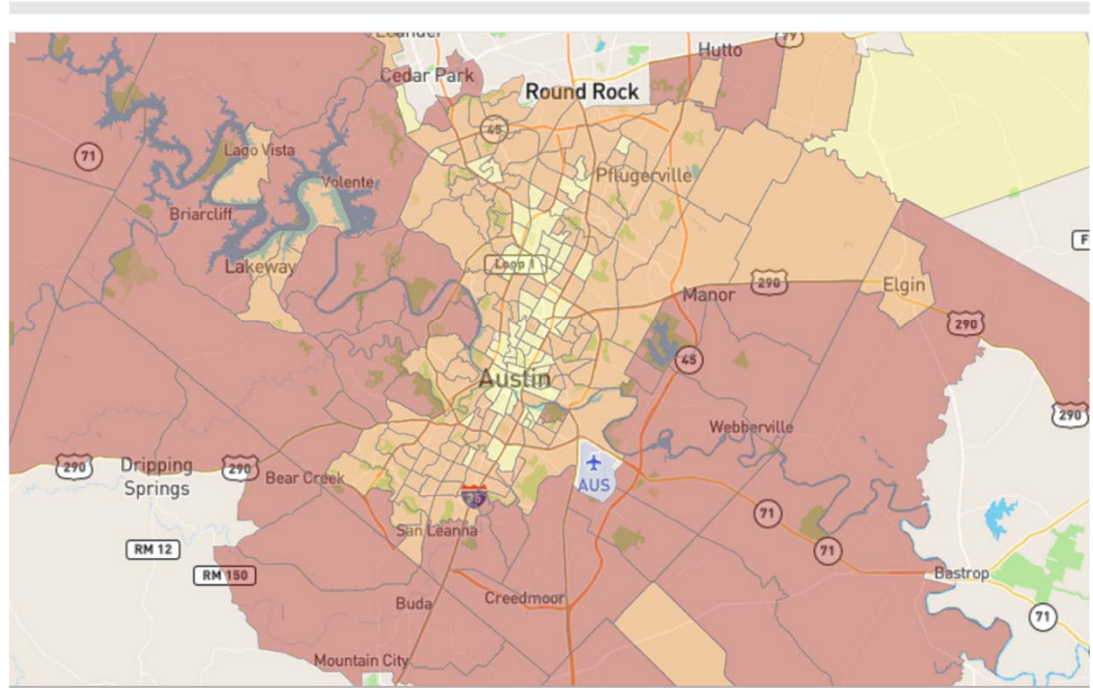
- Establish baseline levels and set ambitious reduction targets that meet or exceed national commitments
- Commitment to implement new policies and programs to address top causes of air pollution by 2025
- Submit annual public report on progress



# ATX Smoke Map

- Two grants:
  - Headwaters Economics – look at grassfires and asthma rates
  - USDN Innovation Fund– make real time smoke map
- Office of Design and Delivery working on a prototype for a real-time smoke tracking application
  - Use ATX Flood as example, but with grassfires
- Goal: Alert vulnerable communities during grassfires and other smoke related events that might contribute to high levels of contaminants and cause issues for vulnerable populations
- ODD has interviewed potential users within the city and community
  - Austin Fire, Austin Police Dept., HSEM, Schools, Hospitals, etc.

**Austin Wildfire and Vulnerable Populations Tool**



<https://headwaterseconomics.org/wildfire/homes-risk/austin-wildfire-population-risk/>



# Parkeon Park & Breathe Monitors Pilot

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- Three pilot monitors installed downtown locations
  - Locations chosen due to high traffic congestion during rush hour
- Measures NO2 and particle pollution
- Parking Department at Austin Transportation overseeing these
- Looking to establish a baseline and potentially examine differences once parking pricing goes into effect
- Identify potential “drop off” areas for non-SOV (scooters, bikes, pedestrian only zone, etc.)



<https://www.parking-net.com/parking-news/cale-access-ab-and-parkeon/flowbird-terminals-air-quality-noise-pollution>



## Questions?

**Phoebe Romero**

Environmental Program Coordinator

Office of Sustainability

[Phoebe.Romero@austintexas.gov](mailto:Phoebe.Romero@austintexas.gov)

512-974-2651