# MEMORANDUM

Date: March 5, 2020

To: The Honorable Chairman and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator

Re: **Ozone Air Quality Summary**

Attached is an update from Environmental Quality Director Ursula Nelson (Attachment 1) regarding the status of Pima County ozone air quality. Attachment 2 is a PowerPoint presentation with additional information. In summary, the latest air monitoring data shows an ozone "design value" of 0.069 parts per million (ppm) which meets the EPA air quality standard of 0.070 ppm; however, we are very close to exceeding the standard.

A nonattainment designation carries with it the requirement to develop a State Implementation Plan outlining what strategies the area will implement in order to reduce ozone levels to return to compliance with the standard. Nonattainment will result in additional controls required for some new businesses, businesses planning expansions and existing businesses since additional controls on vehicles are limited. Arizona Department of Environmental Quality estimates that additional regulatory controls potentially place a $250 million or more, annual economic burden on the Phoenix area if ozone attainment is not achieved by 2024. Although it is difficult to compare the potential impact on Tucson businesses if the area were designated as nonattainment, it is nevertheless indicative of the likelihood of a significant financial impact on the area economy. In addition, specially formulated gasoline may be considered for the area.

Nonattainment also places a requirement for some new or expanding business to obtain "emission offset" whereby the business would need to purchase emission credits to offset their emission increases. The Phoenix area businesses have seen significant challenges and expenses in the purchase of such offsets.

CHH/lab

Attachments

c: Jan Lesher, Chief Deputy County Administrator
Carmine DeBonis, Jr., Deputy County Administrator for Public Works
Francisco García, MD, MPH, Deputy County Administrator and Chief Medical Officer, Health and Community Services
Bob England, Director, Pima County Health Department
Ursula Nelson, Director, Environmental Quality

# ATTACHMENT 1

PIMA COUNTY
ENVIRONMENTAL QUALITY

# M E M O R A N D U M

DATE: February 26, 2020

TO: C.H. Huckelberry
County Administrator

FROM: Ursula K. Nelson
Director

RE: **Ozone Air Quality Update**

This memorandum provides the latest update regarding the Tucson area's ozone air quality. Our March 2, 2016, memorandum (copy attached) contained information regarding the most recent EPA health-based ozone air quality standard and data and that the region met that standard. Since that date, we have continued to monitor ozone levels as required. The latest data shows an ozone "design value" of 0.069 parts per million (ppm) which meets the EPA air quality standard of 0.070 ppm; however, we are very close to exceeding the standard.

EPA is charged with reviewing and updating air quality standards once every five years. Once the standard is updated, which may include leaving the standard at the current level, EPA makes a determination of attainment or nonattainment for regions throughout the country. EPA is currently reviewing the latest health studies to determine whether or not changes to the current standard are needed in order to be protective of public health and the environment. The health of thousands of individuals in Pima County are affected on the days when ozone is elevated, often causing increased use of medicines and/or visits to health care providers.

As described in the March 2, 2016, memorandum, a nonattainment designation carries with it the requirement to develop a State Implementation Plan outlining what strategies the area will implement in order to reduce ozone levels to return to compliance with the standard. The largest human-caused source of the compounds that create ground-level ozone air pollution in Tucson is cars and trucks. Nonattainment will result in additional controls required for some new businesses, businesses planning expansions and existing businesses since additional controls on vehicles are limited.

According to a recent ADEQ Budget Challenges publication (copy attached), "more than 50% of pollutants that create ground level ozone in the Phoenix area originate from vehicles; less than 8% is contributed by industry. Since the majority of regulatory tools are directed at businesses, ADEQ estimates that additional regulatory controls potentially place a $250 million or more annual economic burden on the Phoenix area if ozone attainment is not achieved by 2024." Although it is

difficult to compare the potential impact on Tucson businesses if the area were designated as nonattainment, it is nevertheless indicative of the likelihood of a significant financial impact on the area's economy.

Identifying the most effective air quality control strategies to reduce ozone is a complicated process. We would first need an accurate emissions inventory to identify sources of volatile organic compounds (VOCs) and oxides of nitrogen (NOx). These two compounds are the precursors that react to form ozone under certain weather conditions, especially hot, dry summer days. PDEQ was able to develop a basic emissions inventory with a $75,000 EPA grant, but further refinement and continued updating would be required. The data from the emission inventory is then used in a sophisticated computer model. Different control strategies could be evaluated for their ability to reduce ozone by exploring various scenarios with this model. Since ozone is not directly emitted but is generated under certain weather conditions, the software required to do this analysis is complex and would require special training to run. Adding these skills to PDEQ would require several additional staff just for the emissions inventory work. The software modeling could be contracted out or a partnership with the UofA may be feasible. Regardless, there would be a cost that could approach several hundred thousand annually to conduct the work needed to determine the most cost effective control strategies.

PDEQ currently receives a grant from ADEQ of approximately $250,000 annually to conduct education and outreach work. Since these funds are extremely minimal given the amount of work required, PDEQ has developed the attached Education and Outreach Plan to identified areas of collaboration to increase the resources working on this effort. This includes working with the Pima County Health Department on air quality and public health messages, as well as working with other jurisdictions to increase the number of voices spreading the information. Historically, PDEQ has worked closely with PAG on the ADEQ funded Trip Reduction Program but PAG has refused to forward our air quality information to major employers and reduced the amount of work and outreach in this area in the past few years.

There are several areas of synergy between air quality and active transportation demand management (ATDM). Possible strategies that would help improve air quality by reducing transportation emissions include support for real-time trip routing applications that allow drivers to select the least congested route, trip shifting to less congested times and the use of alternate modes (e.g., transit, bike, carpooling, scooters, walking). Many of these ATDM strategies fit within the education and outreach currently done by PDEQ.

Pima County is participating in TEP's Integrated Resource Plan (IRP) since TEP is uniquely situated in our community to help promote electric vehicles. The IRP should reflect an increased

investment in electric vehicle charging infrastructure and incentives. Pima County Fleet Services and Facilities Departments are working on an electric vehicle pilot project with TEP. Increased use of electric vehicles will reduce pollution from gasoline powered vehicles.

In summary, Pima County is currently designated as "attainment" (meeting) the federal air quality standard for ozone but is very close to exceeding the standard. A nonattainment designation will require development of a State Implementation Plan by PDEQ staff detailing actions to reduce ozone levels. Such actions will likely be costly for area businesses. PDEQ is implementing a Public Education Plan to inform the public about individual actions they can take to help reduce air pollution.

We are available at your convenience to discuss this further.

Attachments: March 2, 2016 Memorandum on Ozone
ADEQ Budget Challenges publication
Education and Outreach Plan

UKN/vlm

c: Carmine DeBonis, Jr., Deputy County Administrator
Francisco Garcia, Deputy County Administrator
Jan Lesher, Chief Deputy County Administrator
Bob England, Director, Pima County Health Department

PIMA COUNTY
ENVIRONMENTAL QUALITY

# M E M O R A N D U M

**DATE:** March 2, 2016

**TO:** C. H. Huckelberry
Pima County Administrator

**FROM:** Ursula Nelson
Director

**RE:** Ozone Air Quality Standard: Pima and Maricopa Counties

This memorandum is in response to your March 1 correspondence requesting information about the status of Maricopa County with respect to the ozone standard. Maricopa County has been nonattainment for ozone for many years, although they are making progress and improving.

The U.S. EPA has established different ozone standards through the years depending on the most recent health impact information. This periodic health review resulted in the October 2015 revision of the standard to make it more protective of public health. However, once an area is designated as nonattainment for a standard, it must come into attainment even if the standard is later modified.

Maricopa County has not attained the 2008, 8-hour ozone standard, and they will be bumped up from marginal to moderate nonattainment for that standard shortly. They will likely be nonattainment for the new 2015 ozone standard. Because of their nonattainment status, Maricopa County has more stringent and expensive air quality controls for their stationary sources, mostly focused on volatile organic compounds (VOCs). They also have controls for oxides of nitrogen ($NO_x$). Both VOCs and $NO_x$ are precursors for ozone formation. For mobile sources, Maricopa County relies on federal measures that are established nationally but they do have a more stringent vehicle emissions inspection program than Pima County, a more restrictive Travel Reduction Program for businesses, and they also have more expensive cleaner burning gasoline. Nonattainment areas such as Maricopa County have more stringent regulations and a nonattainment permitting process for air quality permits. The sources would also need to "offset" their emissions. This means that increases for specific air pollutant emissions must be "offset" by a greater decrease in that same air pollutant within the air district. The biggest issue that has arisen in Maricopa County as a result of nonattainment is the lack of VOC and $NO_x$ offsets. This has caused challenges for new industry sources wishing to relocate within the area as well as expansions at existing sources.

Given the current air quality data, Pima County will likely be classified as attainment of the 2015 ozone standard of 70 parts per billion (ppb). This means we will not be required to implement additional air quality controls. However, since our current ozone levels are 69 ppb, just barely below the standard, and the 2016 ozone season hasn't begun, it is possible that our air quality could go nonattainment this year. We do not have the resources to conduct an emissions inventory or air quality modeling to perform analyses to provide a basis for predicting future air quality levels and determining best control strategies. If future ozone levels rise, Pima County would be reclassified as nonattainment and be required to implement additional air quality controls.

We are available to address any additional questions.

UKN/RG/vb

cc: John M. Bernal, Deputy County Administrator for PW
Dr. Francisco Garcia, Health Department Director and Chief Medical Officer
Nanette Slusser, Assistant County Administrator for PW Policy

ADEQ
Arizona Department of Environmental Quality
azdeq.gov

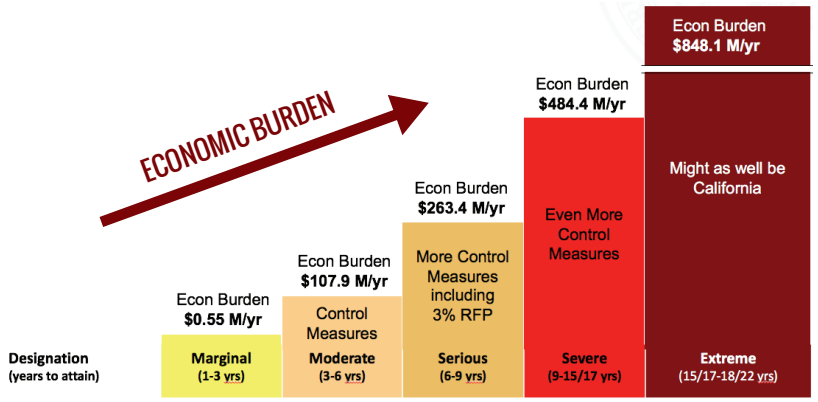
# ADEQ BUDGET CHALLENGES

Publication Number: FS-20-03

## Ozone Pollution (NO new money)

- **8th** in nation for most people at risk for ozone-polluted cities | *American Lung Association (2018)*
- **45th** in nation for urban air quality | *2019 McKinsey Report and U.S News and World Report*

## Figure 1 - Ozone Regulation Escalates Over Time




- **More than 50%** of the pollutants that create ground level ozone in the Phoenix area originate from vehicles driving on our roads
- **Less than 8%** is contributed by industry

### What is the problem?

The vast majority of the regulatory tools are directed towards job creating businesses and NOT towards vehicles. Additional regulatory controls potentially place a $250 million or more annual economic burden on businesses if ozone attainment is not achieved by 2024. Because vehicles are the vast majority of the problem, imposing additional regulatory burden on businesses.
*(See figure 1)*

### What do we need?

Your support to reallocate existing ADEQ funds consistent with the Governor's budget to accelerate ozone precursor mitigation.

1. $1.2 million (400,000/year) Vehicle Emissions Inspection (VEI) fund appropriation increase to fund a 3-year remote testing pilot program newly authorized in 2019 by HB2452
2. $1.7 million VEI fund appropriation increase to permanently correct a long-standing under appropriation for a federally mandated VEI contract
3. $700,000 VEI fund appropriation to increase participation in federally mandated Travel Reduction Program
4. $993,000 restoration of Air Quality Fee (AQF) fund appropriation to restore a one-time decrease in FY20

## Water Quality Assurance Revolving Fund

The Water Quality Assurance Revolving Fund (WQARF) is the state's Superfund program, cleaning up some of the most polluted hazardous waste sites in Arizona. Generally, this work is funded by responsible parties who pay for cleanup of their portion of the contamination. This is a more fair and equitable approach compared to the EPA's heavy-handed Superfund approach, which can hold one business accountable for all cleanup, regardless of their contribution.

However, this also means the state pays for portions of clean up where no financially viable party can be identified. These are known as "orphan" shares. Without sufficient funds, ADEQ will be forced to halt work on existing hazardous waste site cleanups and will be unable to address new sites or emerging contaminants such as PFAS threatening private and public wells in Tucson.

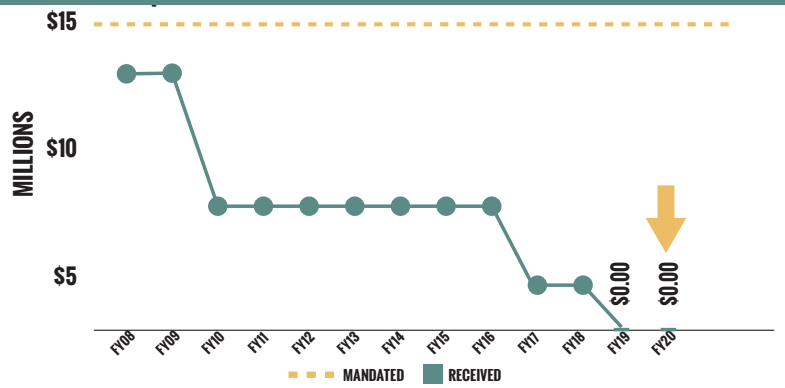
### What do we need?

Your support to fully fund WQARF consistent with the Governor's budget with the mandated $15 million from the Corporate Income Tax is essential. For FY19 and FY20, ADEQ received $0 from CIT and has funded work through cost savings in other programs, impacting our overall ability to protect public health and the environment across Arizona.

*(See figure 2)*

# ADEQ BUDGET CHALLENGES

## Figure 2 - Corporate Income Tax Revenue for WQARF 2008-2020




## Waters of Arizona

The vast majority of Arizona surface waters are currently protected under federal law from contamination associated with some industrial and construction activities. The federal government is planning to significantly deregulate these protections. Arizona is one of only a handful of states without an existing comprehensive regulatory structure to provide protection absent federal law. As a result, ADEQ will undertake development of a regulatory framework to protect these waters, known as Waters of Arizona.

**Generate an estimated $13.5 billion in revenue annually from outdoor recreation and provide invaluable habitat for Arizona's wildlife**

### What do we need?

We request your support for a one-time $1 million general fund appropriation consistent with the Governor's budget to be utilized to conduct a comprehensive collaborative stakeholder process necessary to craft an equitable, feasible and protective Waters of the Arizona program ready for legislative consideration in 2021.

## Indirect Fund Expenditure Authority (NO new money)

ADEQ's Indirect fund has received a nearly flat appropriation (1.6% increase) over the past 5 years, well short of inflationary increases. Central service costs (building rental, insurance, etc.) alone have increased 26% since FY17. In previous years, ADEQ relied upon a $6.5 million Underground Storage Tank (UST) fund special expenditure authority provided by the legislature to offset Indirect funding shortfalls.

### The problem?

Demand to address direct environmental impacts utilizing UST funds has increased, and any money left over is no longer sufficient to offset Indirect fund shortfalls.

### What do we need?

We request your support for a $3 million increase in Indirect fund expenditure authority consistent with the Governor's budget to ensure ADEQ will be able to maintain both administrative efficiencies and respond to emerging environmental issues.

## myDEQ (NO new money)

myDEQ is an online environmental permitting and reporting portal meeting customer demand for radical simplicity to comply with complex federal and state regulations. With myDEQ, the environment wins, businesses win, and most importantly, the people of Arizona win with better protection of public health and the environment. Transitioning services online has:

- Allowed for same-day identification of potential violations.
- Increased compliance rates by 60 percent.
- Reduced permit application processing times by an average of 95 percent.
- Saved ADEQ staff 100,000 hours, allowing them to focus on additional efforts to protect public health and the environment.
- More transactions are now happening online than on paper, and over 10,000 facilities are utilizing myDEQ. The annual economic benefit to the State is estimated to be more than $152 million annually.

### The problem?

Previous appropriations to develop myDEQ services have been exhausted. To meet current customer demand, ADEQ plans to add and enhance services, allowing an additional 9,500 customers to conduct real-time business transactions online.

### What do we need?

We request your support to deposit $4.2 Million consistent with the Governors' budget from the UST fund to the Automated Projects fund for development of additional services on myDEQ.


**ADEQ Contact:**

**Amanda E. Stone**
Intergovernmental and Community Affairs Director, ADEQ
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*For translations or other communications aids, please email the Title VI Coordinator at Bingham.lan@azdeq.gov.*

*Para traducciones u otras ayudas de comunicación, envíe un correo electrónico al Coordinador del Título VI al Bingham.lan@azdeq.gov.*

# Pima County Department of Environmental Quality
# Ground-Level Ozone Public Education Plan

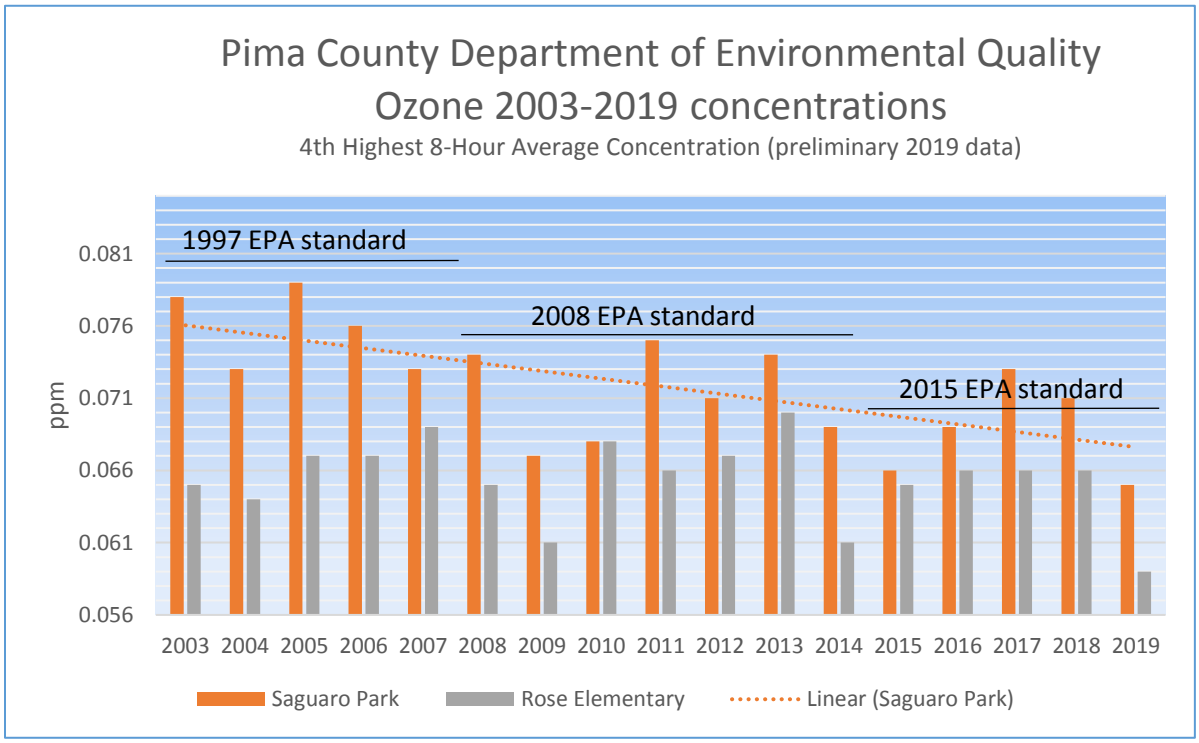
**Objective:**

Protect community health by increasing awareness of:

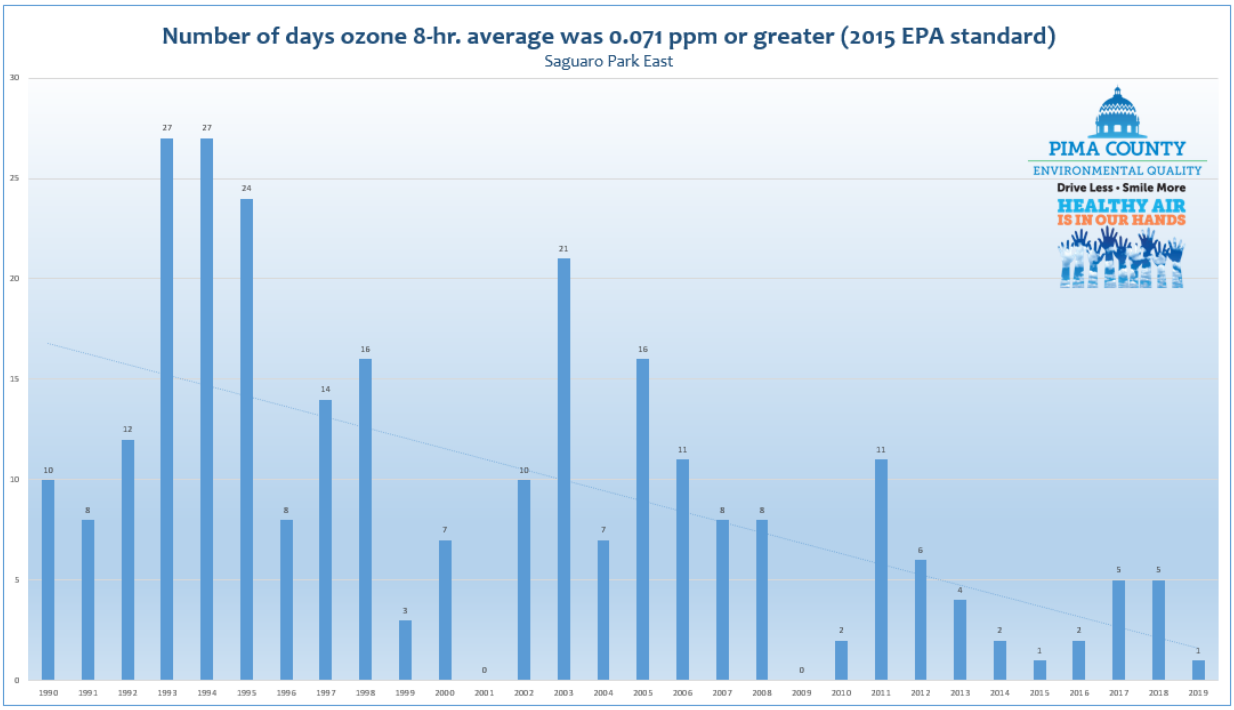
how to access air quality data and forecasts to reduce exposure for those at risk;
ways to minimize exposure when ozone levels are elevated; and
daily actions that can be taken by businesses and residents to reduce ozone precursors.

**Background info:**

- *In 2015, the U.S. Environmental Protection Agency (EPA) strengthened the National Ambient Air Quality Standards (NAAQS) for ground-level ozone to be more protective of public health.*




  - There has been a downward trend in ozone levels in Pima County over the years, but with the more stringent standard, we are now experiencing exceedances.
  - The following graph uses the current 2015 standard to show how many days air quality in Pima County would have exceeded the standard historically, if the more protective 2015 standard had been in place. This trend line is also downward.




- The PDEQ monitor at Saguaro Park East is depicted because it often records the highest ozone levels of all eight ozone monitoring sites due to prevailing afternoon winds that carry pollution to the east side of town.

- *Ground-level ozone is a harmful, colorless gas that forms just above the surface of the planet, as opposed to the ozone layer that is naturally formed at approximately 6 miles above the planet protecting us from solar radiation.*
  - Ground-level ozone is called a "secondary" air pollutant because it is not directly emitted from a source, instead it is created when two primary pollutants (nitrogen oxides - NOx and volatile organic compounds - VOCs) react in intense sunlight and stagnant air.
  - Since the reaction takes place in the atmosphere, ozone often shows up downwind of the sources of the original gases. In Pima County, the PDEQ monitors with the highest readings are often on the east side of town because prevailing afternoon winds carry the pollutant in that direction.
  - During the months of April-September, Pima County has abundant intense sunlight and intermittent stagnant air masses. It is often during these meteorological conditions when PDEQ air quality monitors record elevated ozone levels. Ozone is very weather-dependent. If it is cloudy or windy, ozone levels will usually be low.
  - The emissions that form ozone come from a variety of different sources including industry, electrical generation, on-road and non-road motor vehicles, gas-powered lawn and garden equipment, trains, planes, landfills, wastewater treatment plants, surface coating, gas stations, asphalt, wood burning, and some types of vegetation.
    - Largest *single source* of NOx in Pima County is motor vehicles
    - Largest *single source* of VOCs is biogenic - certain species of plants (Eucalyptus, Oak, Sycamore, Fig, Bottlebrush, etc.) and the second largest source are area sources such as commercial and residential fuel combustion, surface coating, auto body shops, gas stations, asphalt application, etc.

- *High levels of ozone impact community health – can worsen asthma, emphysema, bronchitis, COPD and lead to increased medical care and associated costs.*

    - Ozone acts as an irritant to lung tissue and has been linked to coughing and pain when taking a deep breath, lung and throat irritation, wheezing and difficulty breathing during outdoor exercise or strenuous work, reduced lung function, damage to lung tissue, increased lung infections, increased rate of strokes, premature death and more.
    - Ozone can affect anyone but some people are more sensitive than others. Those most likely to experience health effects include:
        - people with asthma or other lung diseases such as emphysema or bronchitis
        - older adults
        - babies and children
        - people of all ages who exercise or work hard outside
        - those with cardiovascular disease
        - people with reduced intake of certain nutrients such as vitamins C and E.

- *Pima County has exceeded the 2015 EPA National Ambient Air Quality Standard for ozone enough days in recent years to have violated the standard and could be designated as nonattainment by EPA.*

    - Ozone nonattainment is to be avoided due to the cost for businesses and residents –
        - Loss of Gross Regional Product due to sick days for children and adults
        - Increased cost to community for medical visits and additional medications
        - Lost ability to attract new businesses or allow expansion of certain existing businesses, if designated as non-attainment because certain businesses will have restrictions placed on emissions and will need to find "emissions off-sets" of 1:1.10 before they can locate here or expand.
    - The 2015 EPA NAAQS for ozone is 0.070 ppm and in 2018, the 3-year average of the 4$^{th}$ highest daily maximum concentration (which is how the EPA standard is determined) was 0.071 ppm for Pima County. EPA has not taken action to designate Pima County as non-attainment of the standard.
    - After the summer ozone season of 2019, which was mild with only one ozone exceedance day as opposed to five in 2018, the 3-year average dropped below the EPA standard to 0.069 ppm.

- *Residents and businesses can take a variety of actions to reduce the air pollutants that form ground-level ozone.*

    - Share rides, use public transportation, bike, walk on short trips, and combine errands.
    - Avoid engine idling.
    - Refuel vehicle after 6pm during the summer; Tighten gas cap securely.
    - Be sure tires are properly inflated and vehicle is tuned and well-maintained.
    - Conserve energy – set AC no lower than 78 degrees; purchase energy-star equipment.
    - Defer lawn and gardening tasks that use gasoline-powered equipment when ozone is high. Switch to electric, battery or manual landscaping equipment.

**Key messages:**

- Ground-level ozone is harmful to breathe, especially for children, those with heart and lung disease, and the elderly.
- Ozone nonattainment would be costly to local businesses and the community.
- To know when ozone is high, check PDEQ's current air quality data at: pima.gov/deq and get ADEQ 5-day air quality forecasts at: http://azdeq.gov/tucson/forecast. When ozone levels are high, people can limit the amount of contaminated air taken in when outside by:
    - spending more time inside,
    - choosing easier outdoor activities like walking instead of running so breathing is shallower, and
    - planning outdoor activities in the morning and evening when ozone levels are lower.
- "Healthy Air Is In Our Hands" and there are many actions we can take to reduce ozone, including: driving less, idling less, combining trips, taking transit, sharing rides and walking and biking more; keeping tires properly inflated, refueling after 6 p.m., reducing electricity use, avoid planting high VOC trees, and switching from gasoline powered lawn and garden equipment to electric or battery operated equipment.

**Stakeholders:**

| **Target Groups** | **Message** | **Communication Channel** |
|---|---|---|
| Local Jurisdictions | Impacts of ozone nonattainment; Sign up for Air Quality Forecasts and Advisories; Actions that can be taken to reduce ozone | Social Media, presentations, email, articles for newsletters and websites, fact sheets for sharing |
| Schools and School Districts | Sign up for Air Quality Forecasts and Advisories; Health effects on children; Ways to reduce exposure; Actions that can be taken to reduce ozone | Classroom presentations, email, distribution of info to parents, coaches and nurses, articles for newsletters and websites, stories about asthmatic kids, fact sheet, social media |
| Pima County Health Department; U of A Academic Health Department; WIC clients, Smoking Cessation Group, High Schools, School Wellness Association, Libraries | Health effects of ozone on at-risk groups; Ways to reduce exposure; Actions that can be taken to reduce ozone; Sign up for Air Quality Forecasts and Advisories | Presentations, email, distribution of articles for health-related newsletters and websites, brochures, fact sheets, social media |
| Health Care Providers, Assisted Living & Retirement & Rehab. Facilities | Health effects of ozone; At-risk groups; Air Quality Forecasts and Advisories | Presentations, email, distribution of info to health care providers & nurses, articles for newsletters, websites, brochures & fact sheets |

| | | |
|---|---|---|
| Residents | Air Quality Forecasts and Advisories; Health effects on at-risk population; Ways to reduce exposure; Actions that can be taken to reduce ozone | Email, social media, articles for newsletters and website posts, advertising |
| Permitted Businesses | Avoid nonattainment designation to reduce regulatory burden and restrictions on business expansion; Actions that can be taken to reduce ozone by business and employees | Presentations, articles for newsletters and websites, brochures, fact sheets |
| Major Employers | Avoid nonattainment designation to reduce regulatory burden and restrictions on business expansion; Actions that can be taken to reduce ozone by business and employees | Presentations, articles for newsletters and websites, brochures, fact sheets |
| Media | Air Quality Forecasts and Advisories; Impacts of ozone nonattainment; Health effects on at-risk population; Actions that can be taken to reduce ozone | Social media, news releases, provide access to resources/personnel for videos to share on websites |
| TV Meteorologists | Air Quality Forecasts and Advisories; Weather conditions that contribute to ozone creation | Meetings, emails, phone calls to discuss, air quality advisories, news releases |

**Reaching the Community:**

| Method | Message |
|---|---|
| News Releases | Ozone season; ozone advisories; reducing health impacts; actions to reduce ozone; status/updates |
| Enlisting Pima County Departments with community contacts to share information | Sources of ozone; health effects; ways to reduce ozone; signing up for advisories and forecasts |
| Tabling at businesses and community events such as Cyclovia, Cy*glo*via, Bike Fest, Earth Day, School Science nights with engaging activities to promote discussion | Signing up for advisories and forecasts; ways to reduce ozone; ways to protect those at risk |
| Presentations to schools, businesses, community groups | Sources of ozone; health effects; ways to reduce ozone; signing up for advisories and forecasts |
| Articles to share for schools, business and community newsletters | Sources of ozone; health effects; ways to reduce ozone; signing up for advisories and forecasts |
| Promote “Drive Less Pledge” where participants can make a pledge to reduce one of the major sources of emissions that form ozone | Take the Healthy Air Is In Our Hands “Drive Less Pledge” to reduce air pollution and win $100! |
| Social Channels – Facebook, Twitter | Tips; sources of ozone; health effects; ways to reduce ozone; signing up for advisories and forecasts; status/updates throughout the season |
| Purchased advertisements, if funding available | Promote social media posts; radio, TV websites, interior and exterior transit advertising |

**Activity Plan:**

| Activity | Mar | Apr | May | Jun | Jul | Aug | Sep | Person Responsible |
|---|---|---|---|---|---|---|---|---|
| Meet with local TV meteorologists to educate and encourage them to provide air quality reporting on air and on websites | X | X | | | | | | Beth |
| Meet with reporters from print and broadcast media to pitch ozone stories and provide access to info and monitoring sites for interviews, videos and photos | X | X | X | X | X | X | | Beth |
| Meet with local jurisdictions to discuss methods to reach their residents and develop list serve for information distribution | X | X | | | | | | Beth |
| Meet with Health Department staff to plan community outreach during ozone season | X | X | | | | | | Beth |
| Engage health care providers, school districts, retirement communities, businesses, and other reps to help spread the messages throughout their contacts | X | X | X | X | X | X | | Beth & Skye |
| Create & issue messages via social media | X | X | X | X | X | X | X | Beth & Skye |
| Write & issue news releases on ozone topics & air quality advisories & updates, as needed. Provide interviews and background info to media | X | X | X | X | X | X | X | Beth |
| Write & issue articles related to air quality, health & ozone prevention for newsletters & provide to distribution lists | X | X | X | X | X | X | X | Beth & Skye |
| Purchase advertising to reach target audiences as funding is available | X | X | X | | | | | Beth |
| Table at community events and other opportunities to provide info to the public as available | X | X | X | X | X | X | X | Skye & Karen |
| Provide air quality presentations to schools, businesses, community groups, etc. as requested | X | X | X | X | X | X | X | Karen |
| Support community-wide activities that encourage actions to reduce ozone precursors including the PDEQ “Drive Less Pledge” | X | X | X | X | X | X | X | Beth, Karen, Skye |
| Work with EPA to promote National Air Quality Awareness Week through social channels and news releases. | | | X | | | | | Beth, Skye |

**Slogan for communications, advertising and promotional materials:**

**Healthy Air Is In Our Hands**.

Currently used by PDEQ to emphasize the fact that each one of us can make choices on a daily basis that will reduce air pollution.

**Artwork:**

Created by Pima County Communications Office. Provides various actions that can be taken to keep the air healthy and reduce ozone precursors.

# ATTACHMENT 2

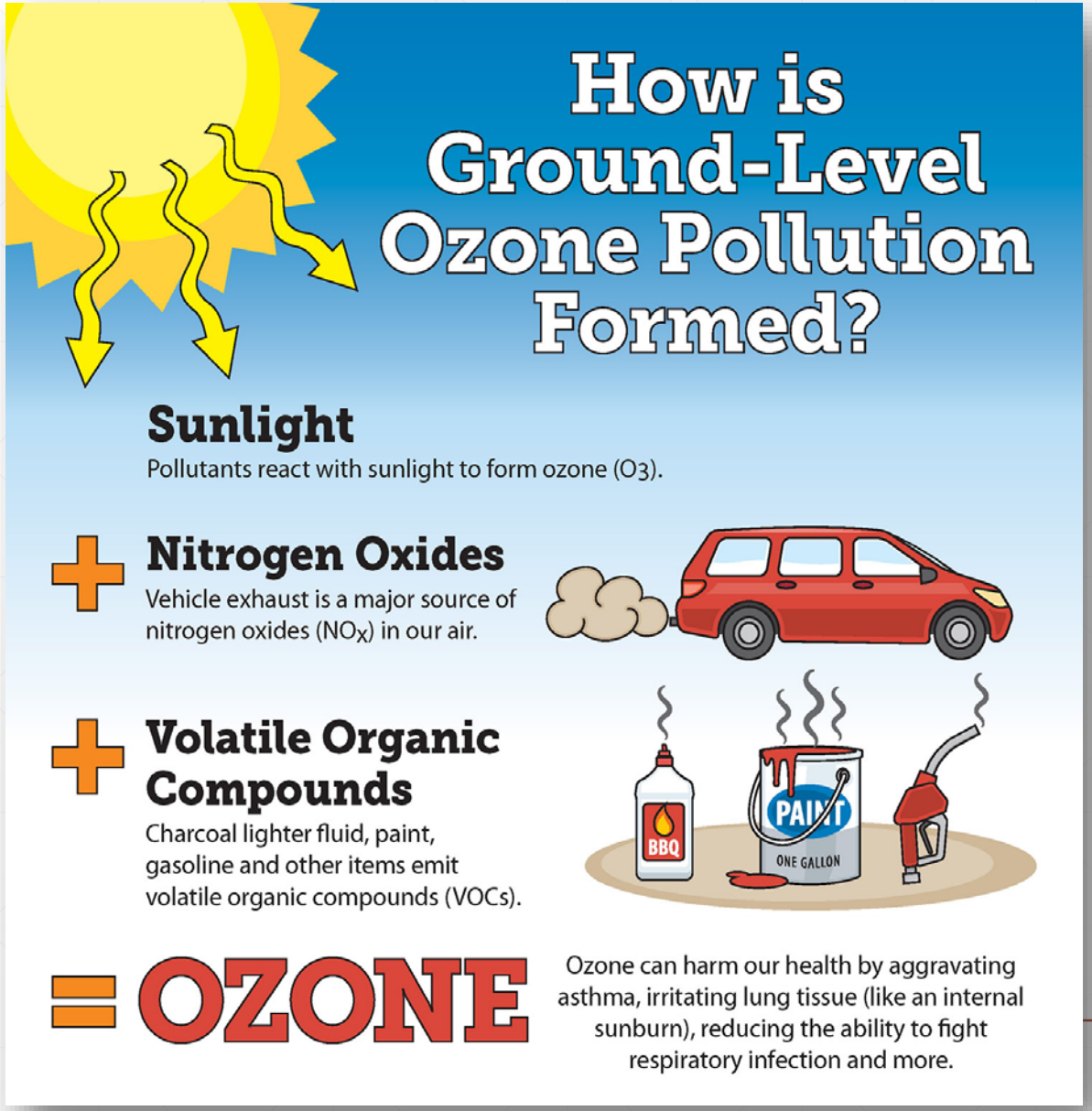
# Status of Ozone Air Pollution in Pima County

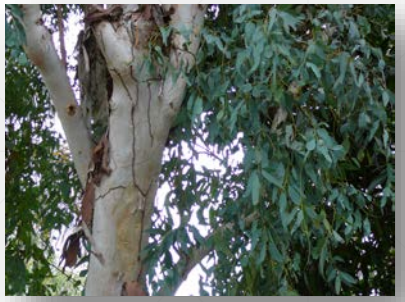
Ursula Nelson
Director
Pima County Department of Environmental Quality
March 2, 2020

# Overview

- How is Ground-Level Ozone Created?
- Sources of Ozone Precursors
- Health Effects of Ozone
- Historic Trends
- Current Status
- Actions to Create Healthier Air

# Understanding Ground-Level Ozone

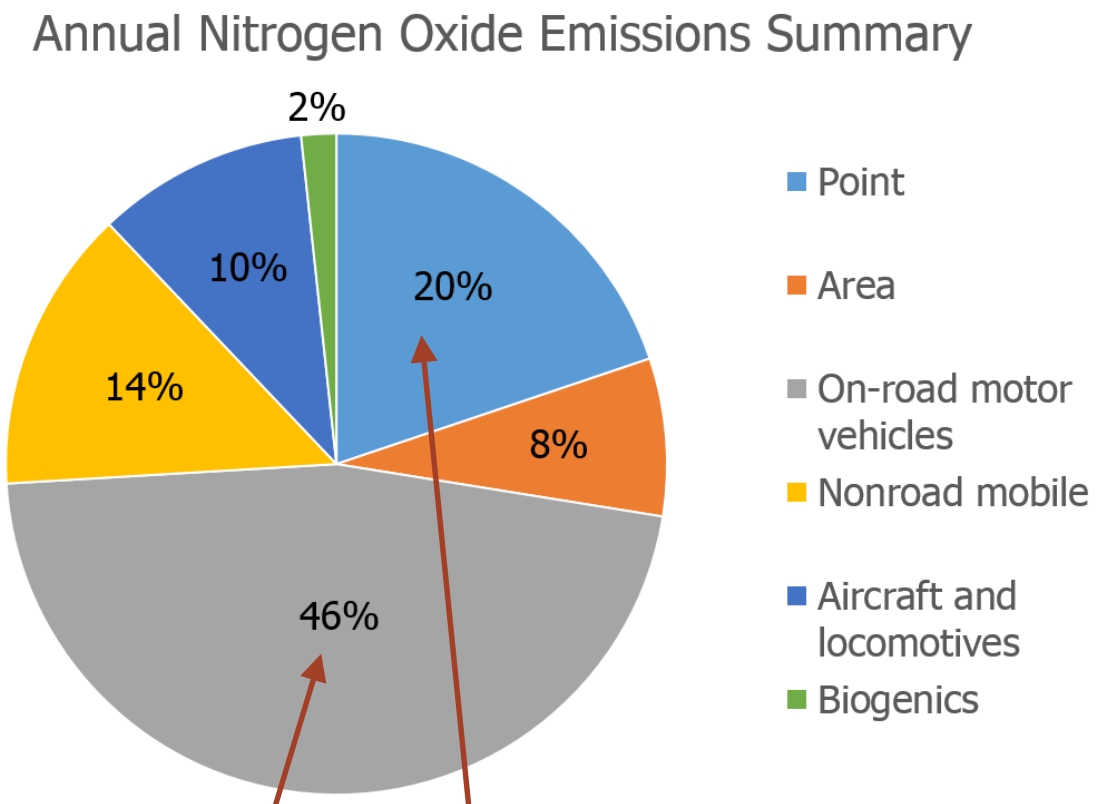


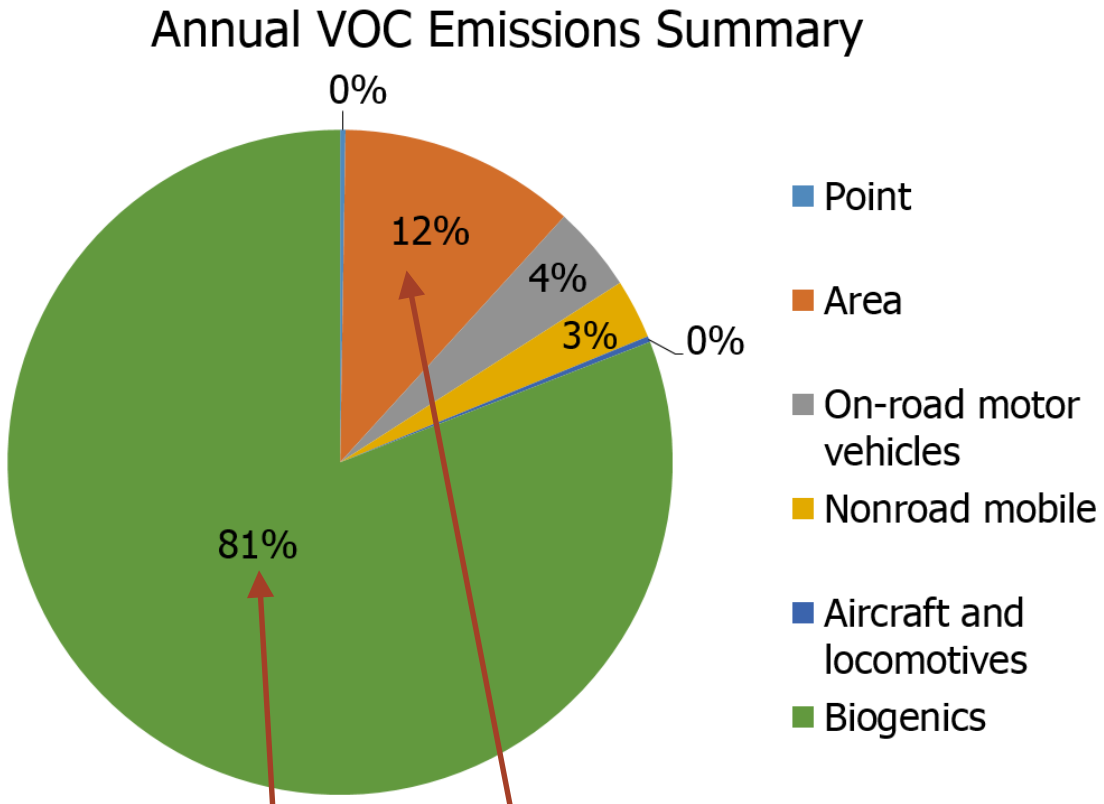



- Ozone is a secondary pollutant
- Diverse sources
- Very complex to control

PIMA COUNTY
ENVIRONMENTAL QUALITY

# Pima County Ozone Emission Inventory
# What sources contribute to ozone formation?




**Largest single source NOx – motor vehicles**

2nd largest source of NOx
Industry/Power Plants

**Largest single source VOC – emissions from plants**

2nd largest source of VOCs
Gas Stations, Dry Cleaners, Auto Body Shops, etc.

# Whhaaat? Did You Say Trees?

| Trees Commonly Available in Arizona December 2017 | Common Name | Tree Physical Characteristics | | | | Tree Environmental Characteristics | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Canopy Size/Shade production (width) (Reference 1,3) | Annual Growth Rate (Reference 1) | Powerline Friendly (height) [SRP/APS recommdation (Reference 5,6) | Root Damage Potential (Reference 1) LOW- MOD- HIGH | Sonoran Desert Native YES- NO | Invasive (Reference 8) NO- YES | BVOC Emissions/Ozone contribution LOW- MOD- HIGH | Allergenic LOW- MOD- HIGH | Water Use LOW- MOD- HIGH | Edible Fruit Producing Trees (Reference 19) |
| Acacia aneura | Mulga | 12-15' | 24" | 15-20 | low(4) | No | No | mod(9) | mod(25) | low(4) | No |
| Acacia craspedocarpa | Hop mulga | 12-15' | 12" | 12-15' | low | No | No | mod(9) | mod(25) | low(22) | No |
| Acacia pendula | Weeping myall | 15-20 | 24" | 20-30 | mod | No | Yes | mod(9) | mod(25) | low(29) | No |
| Acacia salicina | Willow acacia | 25-40' | 36" | 20-40' | low | No | No | mod(9) | mod(25) | low(4) | No |
| Acacia saligna | Blue-Leaf wattle | 15-20' | 36"+ | 20-30' | low | No | No | mod(9) | mod(25) | low(22) | No |
| Acacia shaffneri | Twisted acacia | 25-30' | 12-24" | 20-25' | low | No | No | mod(9) | mod(25) | low(23) | No |
| Acacia stenophylla | Dalby myall, river myall | 10-20' | 36" | 20-30' | low | No | No | mod(9) | mod(25) | low(22) | No |
| Albizia julibrissin | Silk tree | 20' | 36" | 20-35' | mod | No | No | high(9) | low(21) | mod(27) | No |
| Bauhinia lunarioides | Anacacho orchid tree | 8' | 12" | 6-10' | low | No | No | high(9) | low(21) | low(7) | No |
| Bauhinia macranthera | Chihuahuan orchid tree | 15' | 12" | 15' | low | No | No | high(9) | low(21) | low(7) | No |
| Bauhinia variegata * | Purple orchid tree | 20-35' | 12-24" | 20-35' | low | No | No | high(9) | low(21) | mod(30) | No |
| Bauhinia x blakeana | Hong Kong orchid tree | 20-25' | 12-24" | 20-40' | low | No | No | high(9) | low(21) | mod(30) | No |
| Brachychiton populneus | Australian bottletree | 30' | 24" | 30-50' | mod | No | No | low(9) | low(21) | low(28) | No |
| Caesalpinia cacalaco | Cascalote | 10-20' | 12-24" | 10-20' | low | No | No | mod(9) | mod(20) | low(7) | No |
| Callistemon viminalis * | Red bottlebrush | 15-20' | 36" | 15-20' | low | No | No | high(9) | mod(1) | low(28) | No |
| Callitropsis arizonica | Rough-barked Arizona Cypress | 20' | 12-36" | 40-50' | low | Yes(16) | No | low(9) | high(20) | mod(22) | No |
| Celtis reticulata | Netleaf/Western hackberry/Canyon Hackberry | 25-30' | 24" | 25-35' | low | Yes(16) | No | low(9) | mod(26) | low(23) | Yes |
| Cercis mexicana | Mexican redbud | 15-25' | 12-24" | 15-25' | low | No | No | low(9) | low(20) | low(4) | Yes |
| Chamaerops humilis | Mediterranean fan palm | 10-20' | 12" | 10-20' | low | No | No | high(12) | low(1) | mod(7) | No |
| Chilopsis linearis | Desert willow | 10-20' | 24-36" | 15-30' | low | Yes(16) | No | mod(9) | low(21) | low(4) | No |

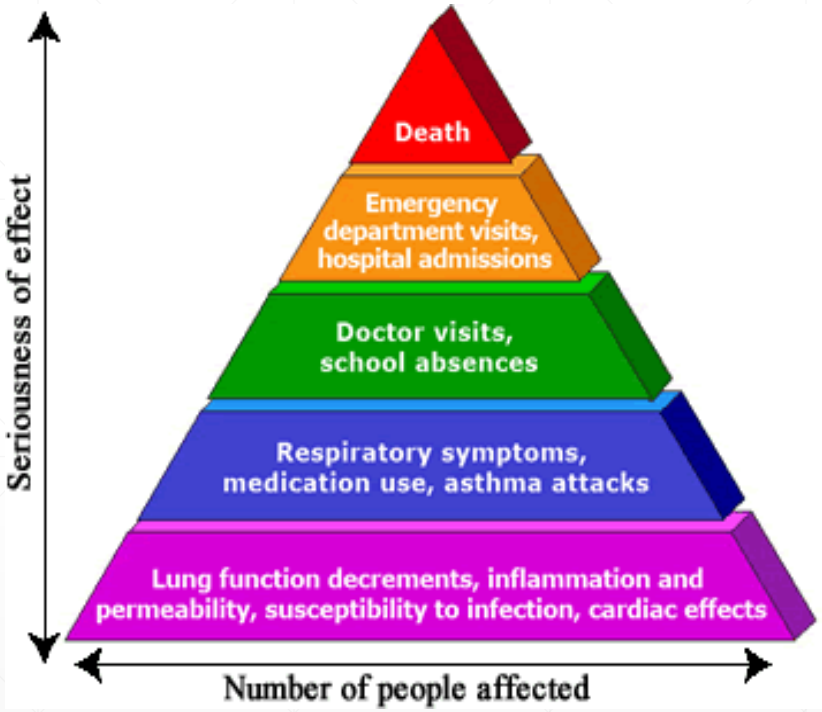
Maricopa County developed an Urban Tree Selection Guide that is available on the Pima DEQ website (www.pima.gov/deq).

The Guide provides information on various characteristics of trees including VOC emissions.

PIMA COUNTY
ENVIRONMENTAL QUALITY

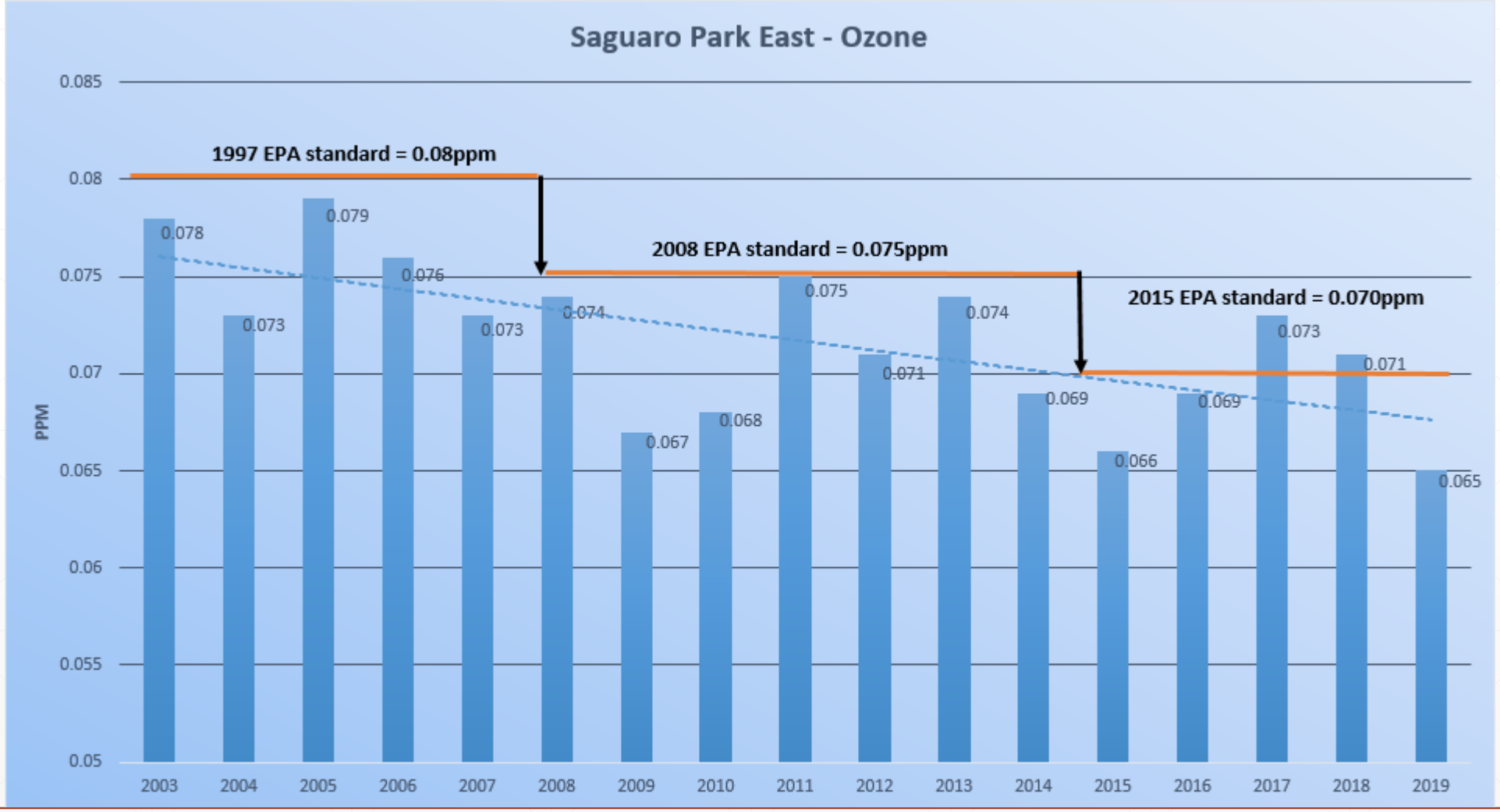
# EPA Health Standard Set to Protect Public Health

- Oxidant that irritates mucus membranes and airways
- Throat irritation, coughing
- Difficulty breathing/chest pain
- Airway and lung inflammation
- Lung tissue damage, reduce lung function
- Make lungs more susceptible to infection
- Worsens asthma, emphysema and bronchitis



# Historic Ground-level Ozone at Saguaro Park East

## (three-year average of the 4th highest 8-hour average in ppm = compliance determination)




(2019 data still preliminary)

PIMA COUNTY
ENVIRONMENTAL QUALITY

# Where is our region regarding the EPA ozone standard?

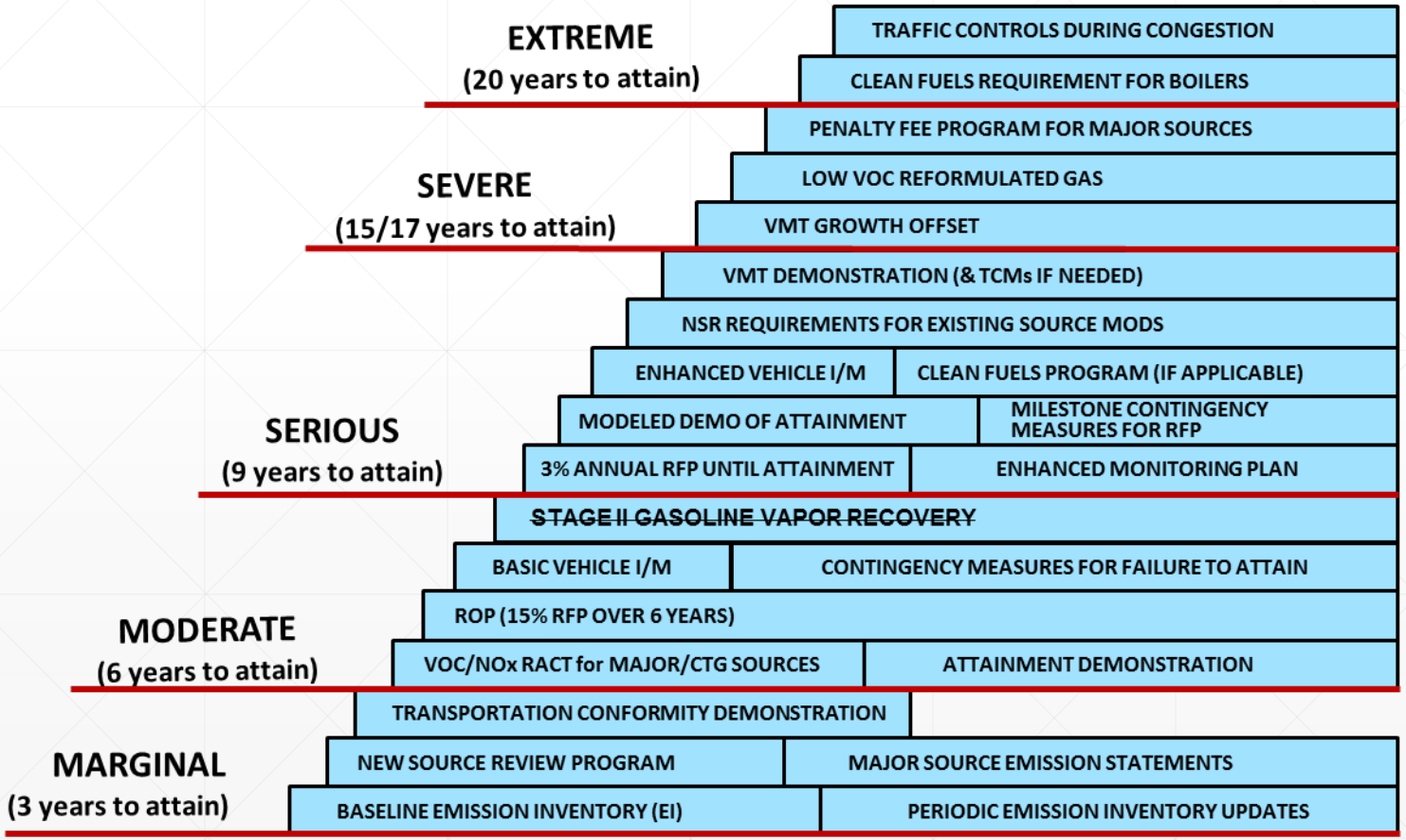
- In April of 2018, EPA determined that Pima County was “in attainment” of the EPA standard, based on three-year average 2014-2016 ozone monitoring data.
- 2016-2018 design value exceeded the standard with 0.071 ppm.
- 2017-2019  preliminary design value is 0.069 ppm.
- Latest data shows that Pima County is in attainment, but just barely.
- EPA is expected to review the current standard this year, as required by the Clean Air Act.
- Expectations are that EPA will not change the 0.070 ppm ozone standard.

# Ozone Standard Status (cont.)

- ***If*** this region were designated as non-attainment of the ozone standard:
  - new source review program
  - 1.1:1 offsets for new sources and existing sources that want to expand
  - analyses and modeling will be needed
  - work with community stakeholders to determine effective control measures
  - coordinate with various agencies to develop a State Implementation Plan to bring the area back into compliance
- The more days our air quality **meets** the EPA standard, the better for our health, economic vitality and the future attainment status of our community.

# State Implementation Plan Basics

## Overview of CAA Ozone Nonattainment Area Planning & Control Mandates by Classification




| NSR offset ratio | Major source threshold |
|---|---|
| 1.5 : 1 Extreme | 10 |
| 1.3 : 1 Severe | 25 |
| 1.2 : 1 Serious | 50 |
| 1.15 : 1 Moderate | 100 |
| 1.1 : 1 Marginal | 100 |

PIMA COUNTY
ENVIRONMENTAL QUALITY

# How do we help keep the air healthy?

PDEQ education messages to the public:

- Drive Less
- Idle Less
- Keep tires properly inflated, maintain vehicle
- Refuel after 6:00 p.m. *during the summer*
- Conserve electricity
- Plant low-VOC emitting trees
- Use low-VOC paints
- Avoid the use of charcoal lighter fluid
- Reduce the use of gas-powered lawn and garden equipment

Healthy Air Is In Our Hands

# County Actions to Address Ozone

- Alternative Transportation Demand Management
  - Trip routing, trip time shifting, promotion of alternative modes (bike, walk, rideshare)
- Participation in TEP Integrated Resource Plan – promote electric vehicles and charging infrastructure
- Reduce energy use, increase solar power
- Idle Reduction for fleet vehicles
- Collection site for PDEQ gas-powered lawn & garden equipment emission reduction program
- Collaboration on educational messages
- Sustainable Action Plan

# Questions?

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