



UTAH DEPARTMENT of
ENVIRONMENTAL QUALITY
**AIR
QUALITY**

AIR QUALITY
UPDATE 02/12/2020

Division of Air Quality



Air Conservation Act

It is the policy of this state and the purpose of this chapter to achieve and maintain levels of air quality which will protect human health and safety, and to the greatest degree practicable, prevent injury to plant and animal life and property, foster the comfort and convenience of the people, promote the economic and social development of this state, and facilitate the enjoyment of the natural attractions of this state. (Utah Code 19-2-101)



Air Pollution Hurts People

Intermountain Healthcare

News Releases

Brief Exposure to Tiny Air Pollution Particles Triggers Childhood Lung Infections, Largest Study of Its Kind Finds

FACT SHEET FOR PATIENTS AND FAMILIES

Air Quality and Pregnancy

What you're pregnant, poor air quality may affect both you and your baby. This handout will help you know what you can do to have a healthier pregnancy.

What we know: Poor air quality has been linked to:

- Baby born too early
- Baby born too small
- Baby with lung problems

What we are still learning: Scientists are trying to learn how air quality may be related to health problems like asthma.

Intermountain Healthcare

Outdoor Air Quality and Heart Disease

Poor air quality is unhealthy for everyone, but especially people with heart disease — such as heart failure or coronary artery disease. The recommendations below relate to where and when you exercise. Follow recommendations related to your specific health condition for best results. For people with heart disease, poor air quality can cause:

NOW

- Heart attack
- More hospital and emergency visits

LATER

- Greater risk of heart attack, stroke, blood clots, and early death

Intermountain Healthcare

Outdoor Air Quality and Adult Lung Disease

Poor air quality is unhealthy for everyone, but especially for adults with lung disease — emphysema, or emphysema. Older people are also at risk because they may have long-term effects. These pages will help you know where and when to exercise. For people with lung disease:

NOW

- Coughing, wheezing
- Trouble breathing
- More severe disease symptoms
- Hospital visits

LATER

- Permanent loss of heart

Intermountain Healthcare

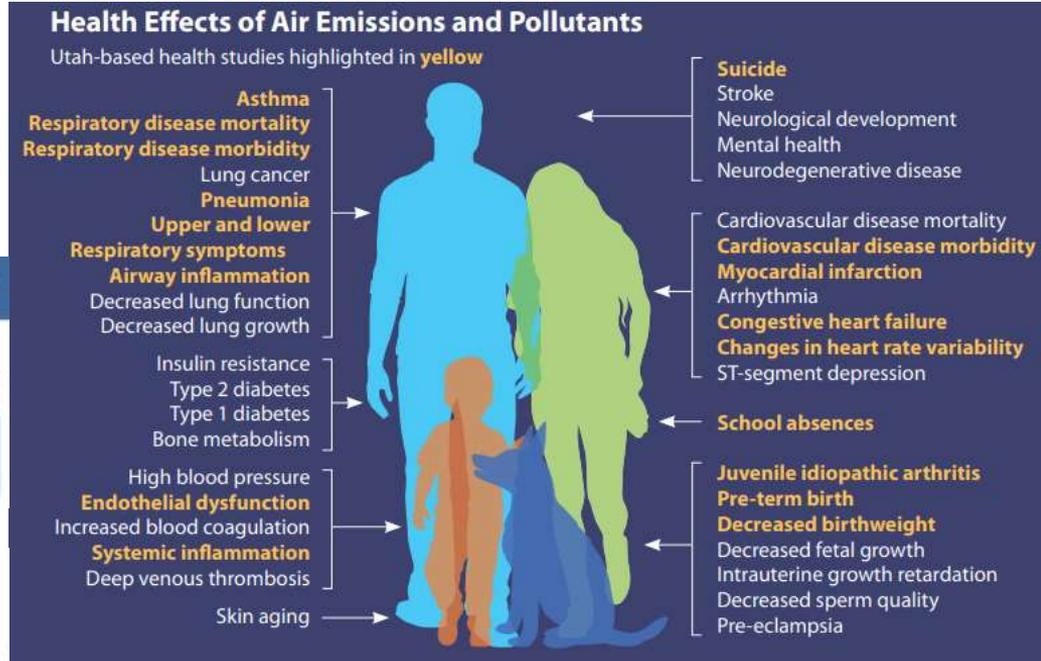
Acute Air Pollution Exposure and Risk of Suicide Completion

Amanda Y. Baklan, Rebekah S. Huber, Hilary Coon, Douglas Gray, Phillip Wilcox, William M. McMahon, Perry F. Remsaw. *Author Notes*

American Journal of Epidemiology, Volume 181, Issue 5, 1 March 2015, Pages 295-303, <https://doi.org/10.1093/aje/kw1341>

Published: 10 February 2015 Article history

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What we do

Air Quality Board

Planning

- Air Monitoring
- Air Quality Policy
- Technical Analysis
- Emissions Inventory

Permitting

- Major New Source Review
- Minor New Source Review
- Operating Permit – CAA Title V sources

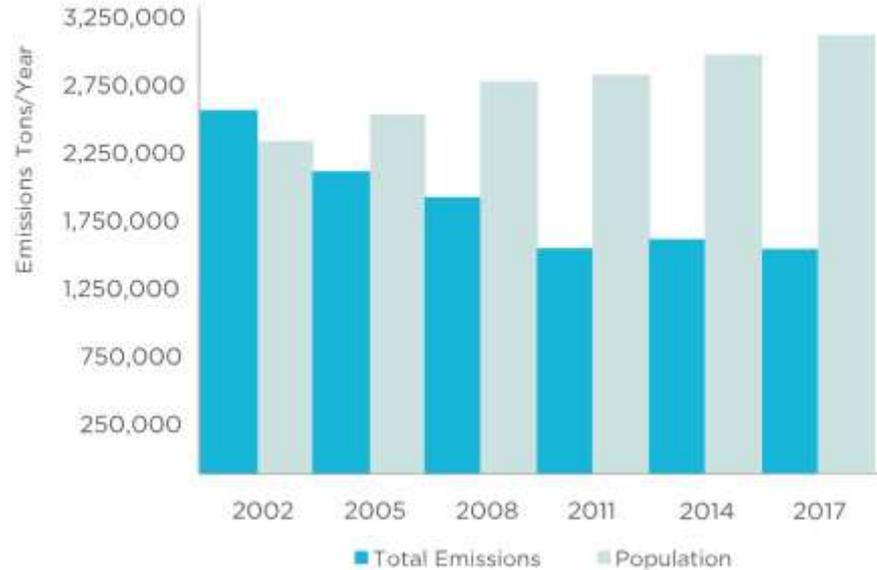
Compliance

- Air Toxics, Lead and Asbestos
- Minor Source Compliance
- Major Source Compliance



Annual Emissions Rate

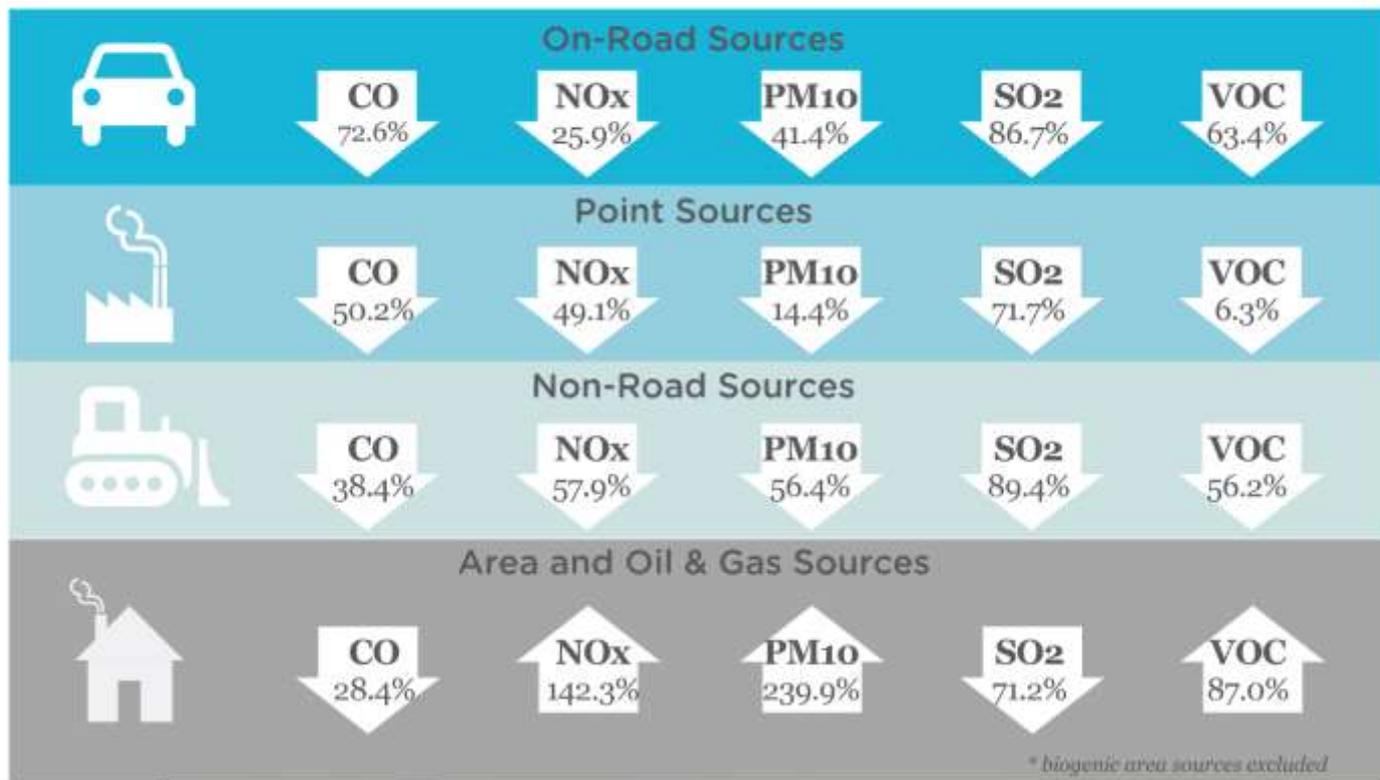
Statewide



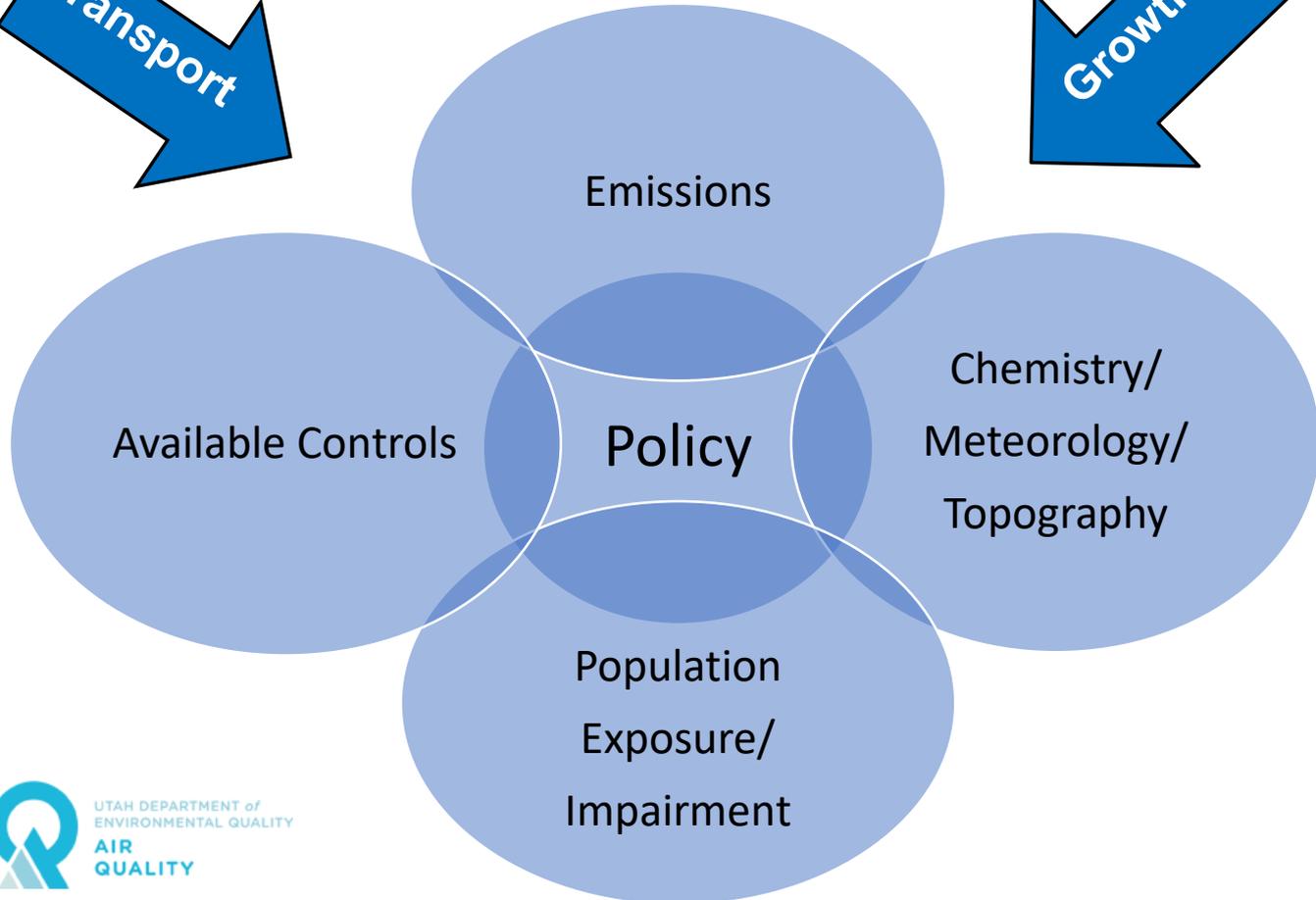
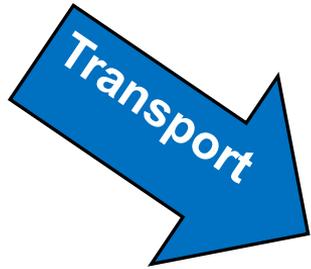
Per capita air emissions have been reduced by 49% since 2002

Emissions Reductions 2002-2017

Statewide



Air Quality



Air Quality Update

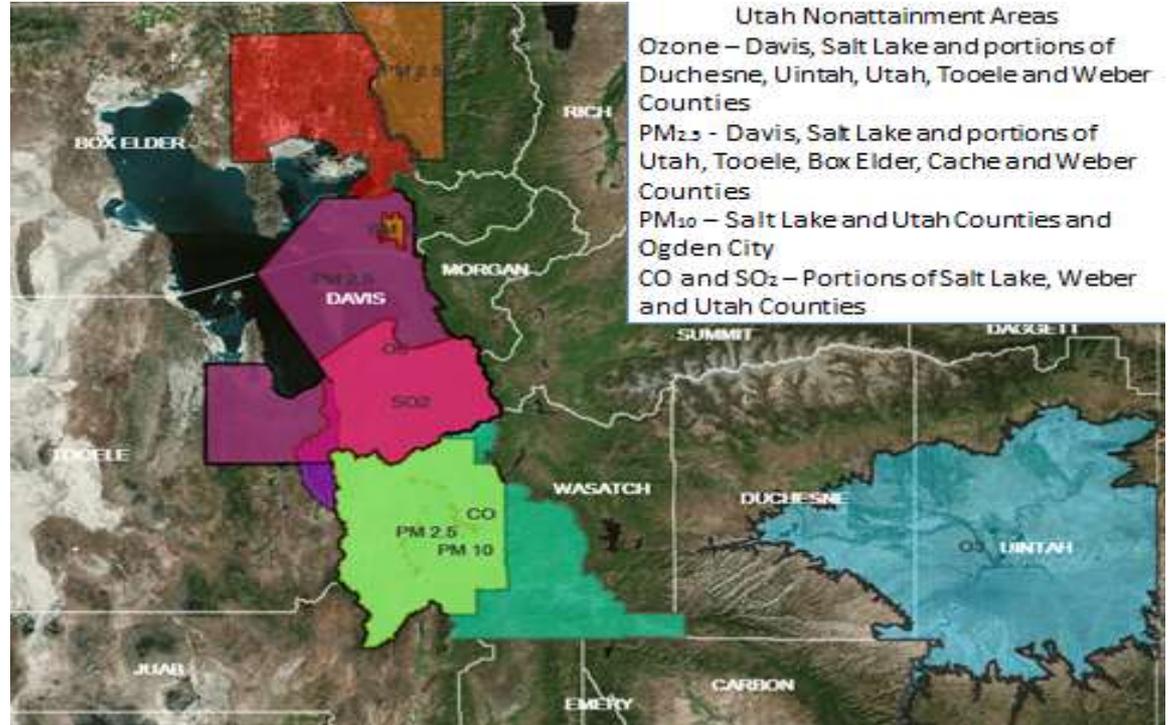
Non-attainment

Focused on meeting federal air quality standards through planning, permitting and compliance

Clean Data Determinations for Logan, Provo and Salt Lake Non-attainment areas

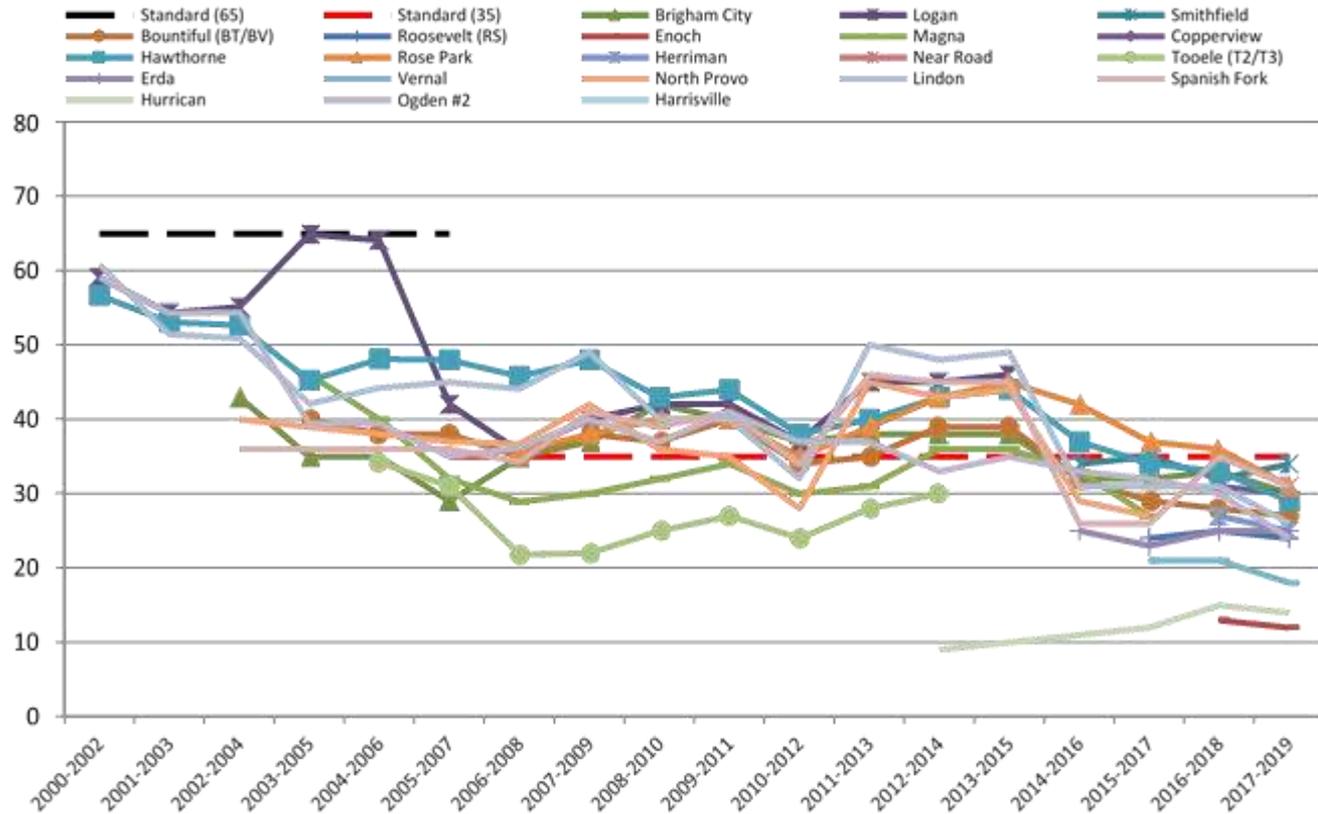
Maintenance Plans

Implementation Plan for Salt Lake, Provo and Logan Non-attainment area

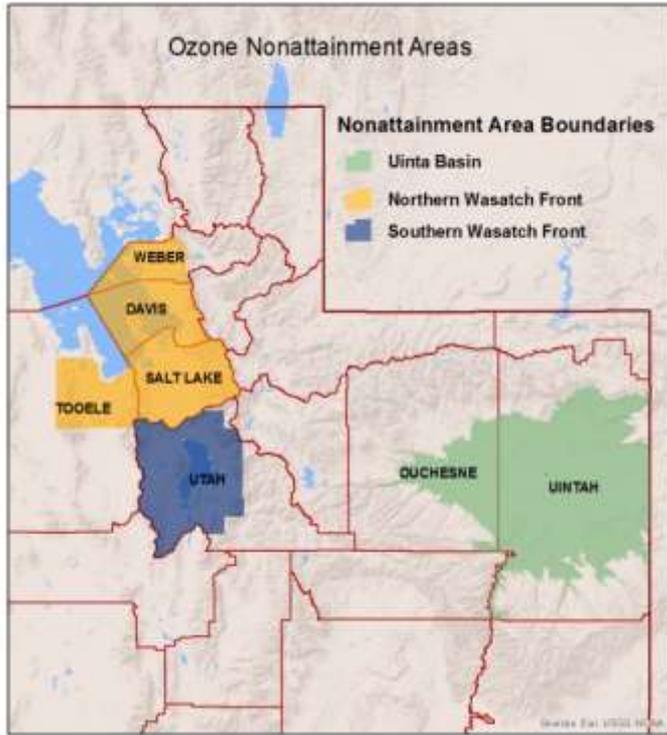


Fine Particulate Matter – PM_{2.5}

- All areas have attained the 2006 PM_{2.5} NAAQS
- All areas have a federally approved Clean Data Determination
- Maintenance plans show continued attainment of the standard to 2035
- 2019 data must still meet standard in order to be redesignated to attainment

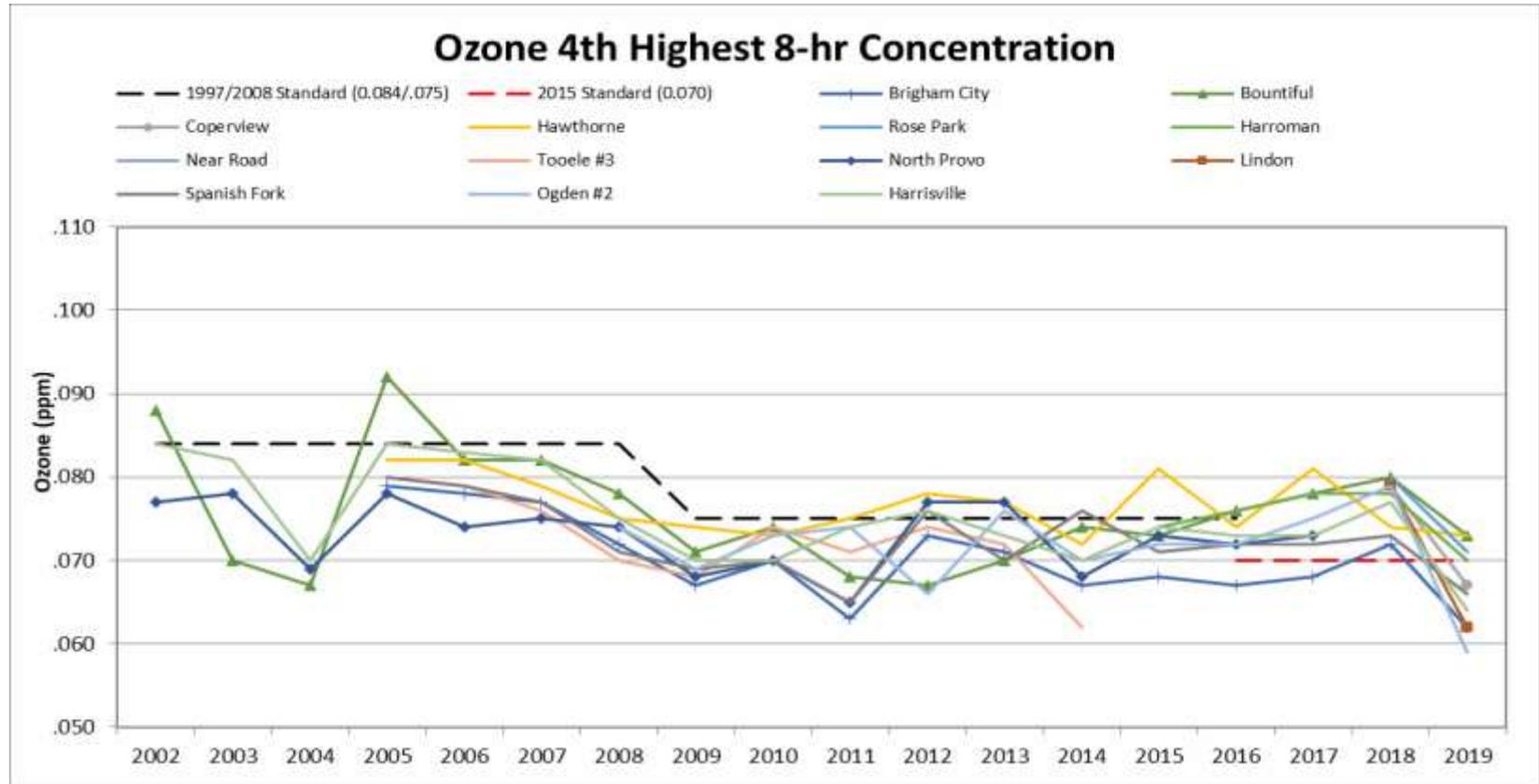


Utah Ozone Nonattainment Area Planning



- EPA designated three nonattainment areas in Utah for the 2015 Ozone Standard.
- Nonattainment areas are currently classified as Marginal.
 - Emissions inventory (submit August 2020);
- If the standard is not met, we will be bumped up to Moderate
- A Moderate SIP requires:
 - 15% reduction of both NO_x and VOCs (Ozone precursors);
 - Vehicle Inspection and Maintenance Program (population threshold);
 - Reasonably Available Control Technology installed on point sources; and
 - Demonstration of attainment by August 2024.

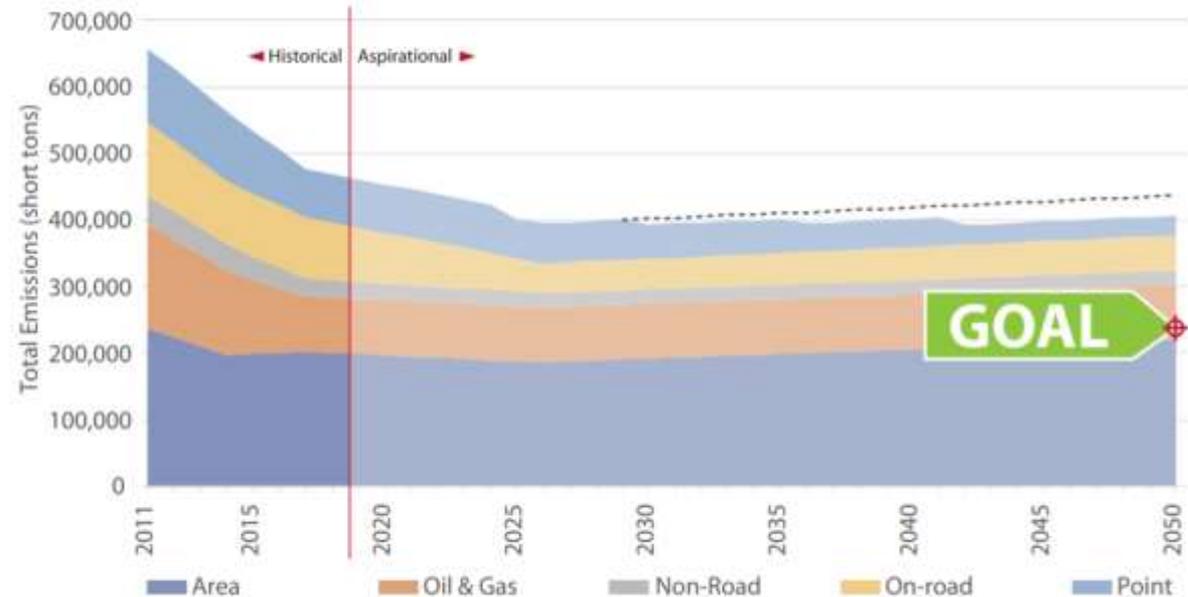
Utah Ozone Nonattainment Area Planning



Gardner Institute Air Quality and Changing Climate

Utah's Air Emissions Baseline

Historical and Projected Air Pollutants (NO_x, VOC, PM₁₀, NH₃, SO₂)



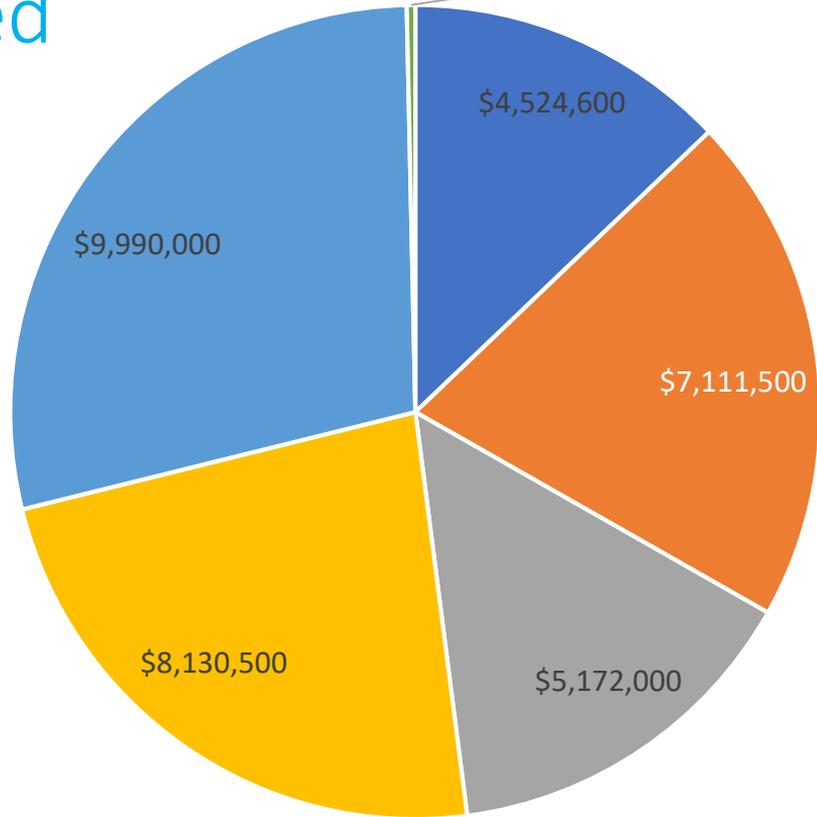
Source: Utah Department of Environmental Quality (historical), and Kem C. Gardner Policy Institute (aspirational)

<https://gardner.utah.edu/utahroadmap/>



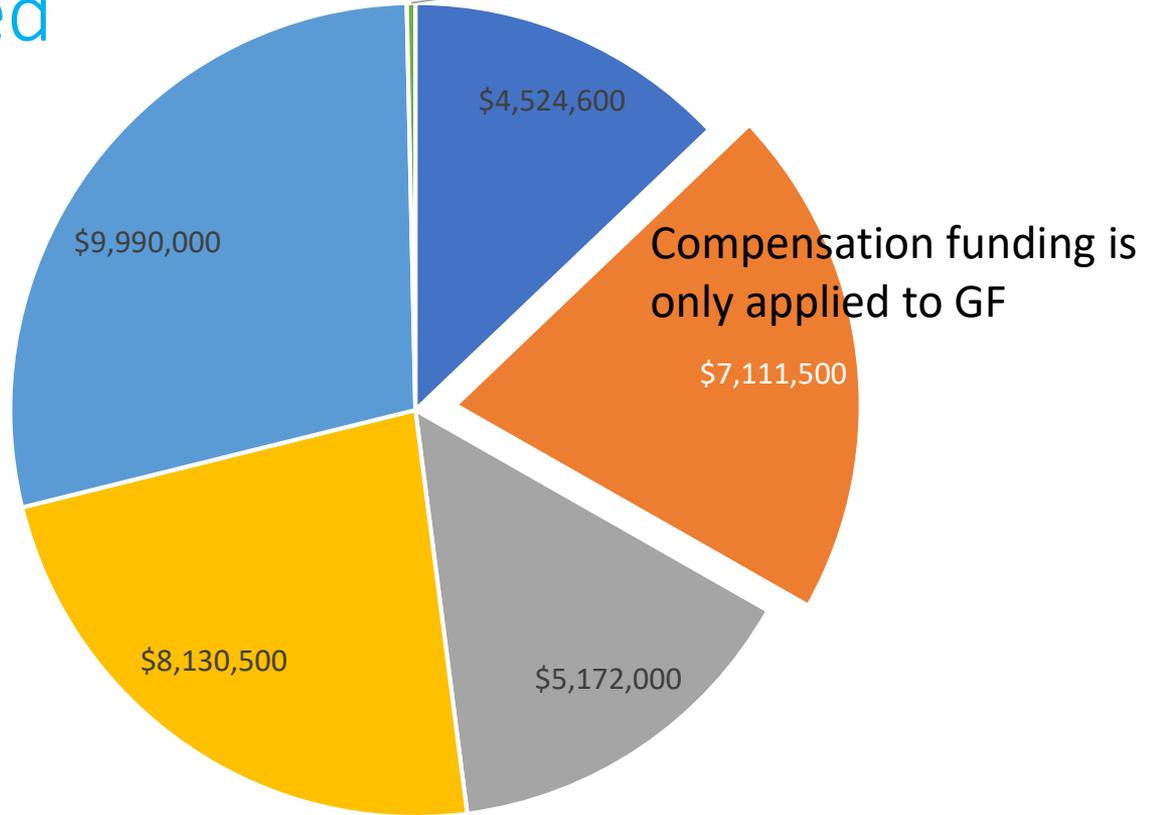
How we are funded

FY 2020 Funding Source \$119,900



How we are funded

FY 2020 Funding Source \$119,900



Permit Fee Changes

Proposed Fee Changes

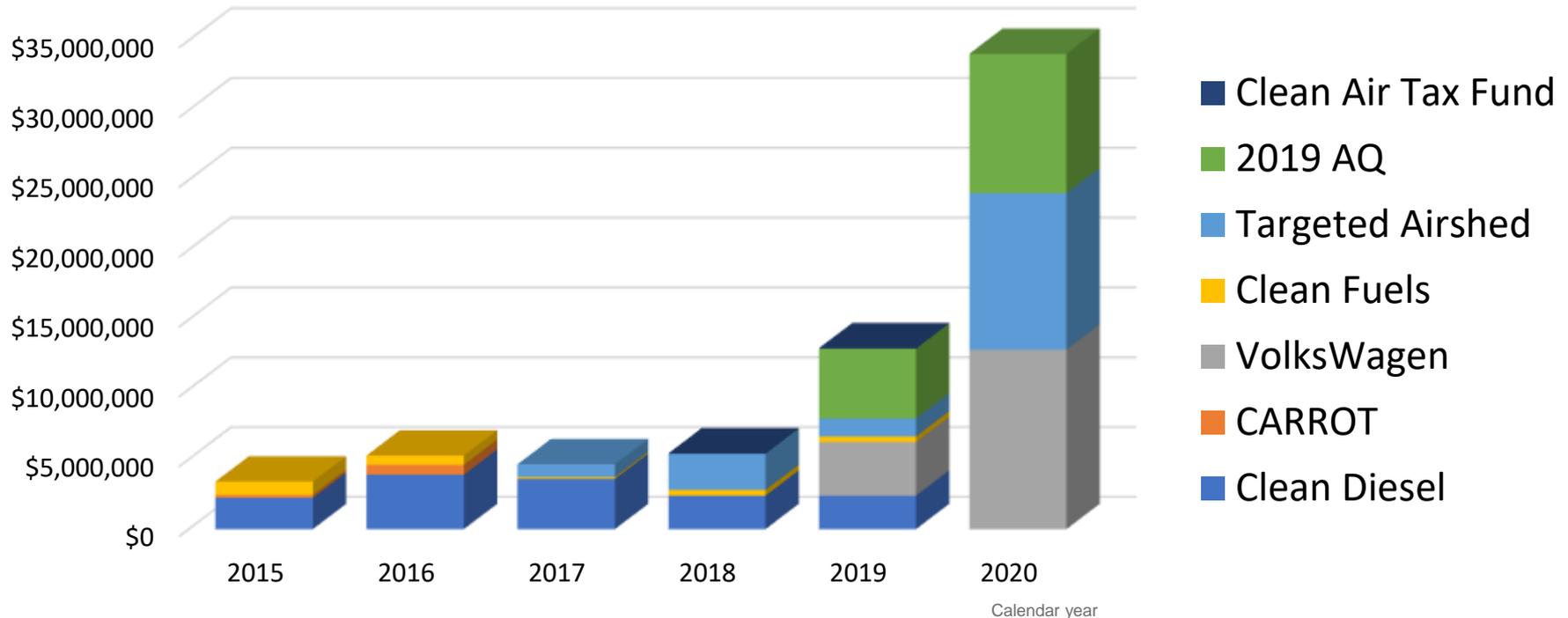
Natural Resources, Agriculture, and Environmental Quality Appropriations Subcommittee | General Session 2020

Dept. of Environmental Quality								
#	Air Quality (NAB)	Old Fee	Old Quantity	New Fee	New Quantity	Fee Change	Est. Revenue Change	Agency Explanation
1	Air Emissions	\$82.75	54,818	\$89.67	48,500	\$6.92	\$335,620.00	<p>Title V of the Clean Air Act Amendments of 1990 (CAAA) requires the state of Utah to develop an Operating Permit Program (OPP), to include a fee system used solely to fund all direct and indirect costs associated with administering the OPP. Section 19-2-109.1 of the Utah Conservation Act authorizes an annual proposal to the Legislature for an emission fee that conforms to the CAAA for each ton of chargeable pollutant. Currently, no other funding options exist for the Operating Permit Program. If the fee request is not approved, the Operating Permit Program would not be 100% funded.</p> <p>The Division of Air Quality (DAQ) is proposing to increase funding with industry-derived fees for the air quality New Source Review program (NSR program). This is to assist in covering past compensation increases not covered by federal funds and increase services to the industry. This increase would have industry pay a larger share of the costs to provide services to them.</p>
2	<20 tons annual emissions	New	New	\$100.00	349	\$100.00	\$34,900.00	
3	20 to 49 tons annual emissions	New	New	\$300.00	726	\$300.00	\$217,800.00	
4	50-99 tons annual emissions	New	New	\$600.00	219	\$600.00	\$131,400.00	
5	100-250 tons annual emissions	New	New	\$1,000.00	250	\$1,000.00	\$250,000.00	
6	>250 tons annual emissions	New	New	\$1,500.00	92	\$1,500.00	\$138,000.00	
7	PBRs with controls	New	New	\$100.00	312	\$100.00	\$31,200.00	
SubTotal : Air Quality (NAB)							\$1,138,920.00	

If approved, new annual permit fees will be billed in January of 2021 and used to cover unfunded personnel cost increases, new permitting activities, and Replace general fund with user fees.

An Investment in Utah's Air Quality

Clean Air Incentive Programs



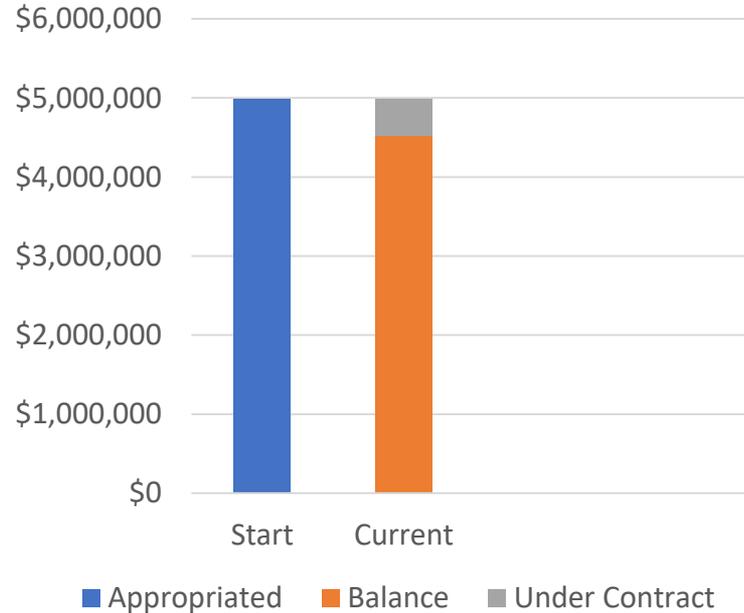
An Investment in Utah's Air Quality

- Data-driven air quality solutions
- Responsive to Utah's growing population
- Two-prong approach
 - State leadership
 - Public engagement
- Funding for projects with the highest potential to improve air quality





EV Charging (2020)



<https://deq.utah.gov/air-quality/workplace-electric-vehicle-charging-funding-assistance-program>

Wood Stove Conversion

Planning Stages Launched July 2019:

- Budget project to increase low-income rebate.
- Build application-processing system to meet the bill objectives.
- Build project relational database for accounting, project tracking and data mining.
- Staged monthly award release Fall 2019 - Summer 2020 in Targeted Area.

Wood Stove



Recycled



Conversion



WS
Conversion(2019&2020)



<https://deq.utah.gov/air-quality/wood-stove-conversion-assistance-program#hb357>

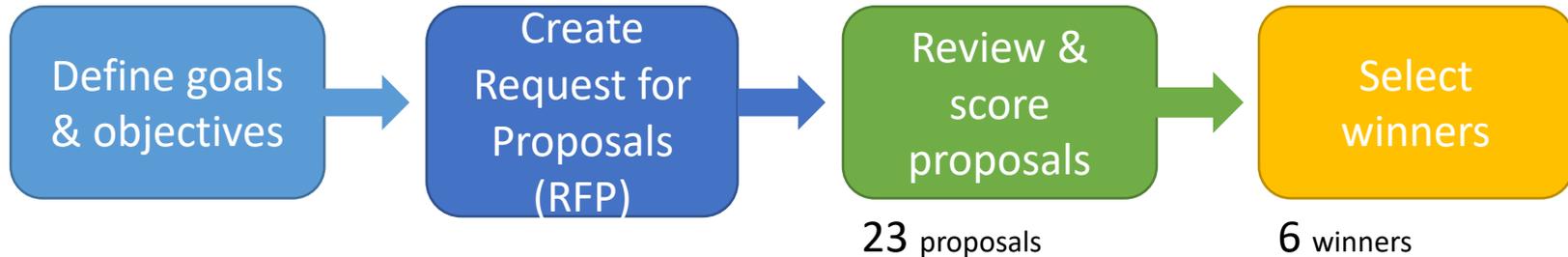
Air Quality Research



UTAH DEPARTMENT *of*
ENVIRONMENTAL QUALITY
**AIR
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Science for Solutions Research Grant

Focus on State regulatory & policy goals
Fair way to distribute funding (\$500,000)

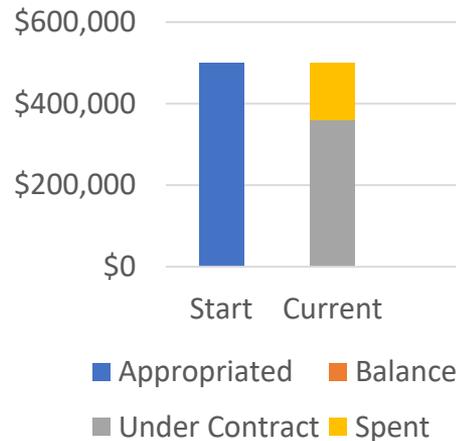


Air Quality Research Projects

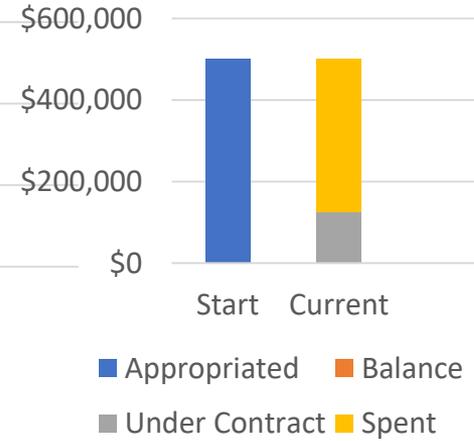
- **Wasatch Front Ammonia and Chloride Observations (WaFACO)**
- **Jordan Narrows Gap Ammonia Transport Study**
- **Ammonia Emission Assessment from Diesel and Gasoline Engines under Utah-Specific Conditions**
- **Aethalometer Study for Estimating Compliance with Wood-burning calls**
- **TRAX Air-Quality Observation Project**
- **Daily Wintertime PM2.5 Speciation at Hawthorne and Smithfield**
- **Bountiful City Dichloromethane and Formaldehyde Source Apportionment Study**
- **Composition of Volatile Organic Compound Emissions from Oil and Gas Wells in the Uinta Basin**
- **Air Quality Research Roadmap (AiR2)**

Future collaboration during the FY 2020 funding cycle and beyond

2019 Research



2020 Research



<https://deq.utah.gov/air-quality/current-research>

2020 Research



Model Performance Improvement

- Investigating Sources of Ammonia Uncertainty in Modeling the Salt Lake City PM_{2.5} Nonattainment Area
- Improving WRF/CMAQ Model Performance using Satellite Data Assimilation Technique for the Uintah Basin
- Improving volatile organic compound emission estimates for the Uintah Basin

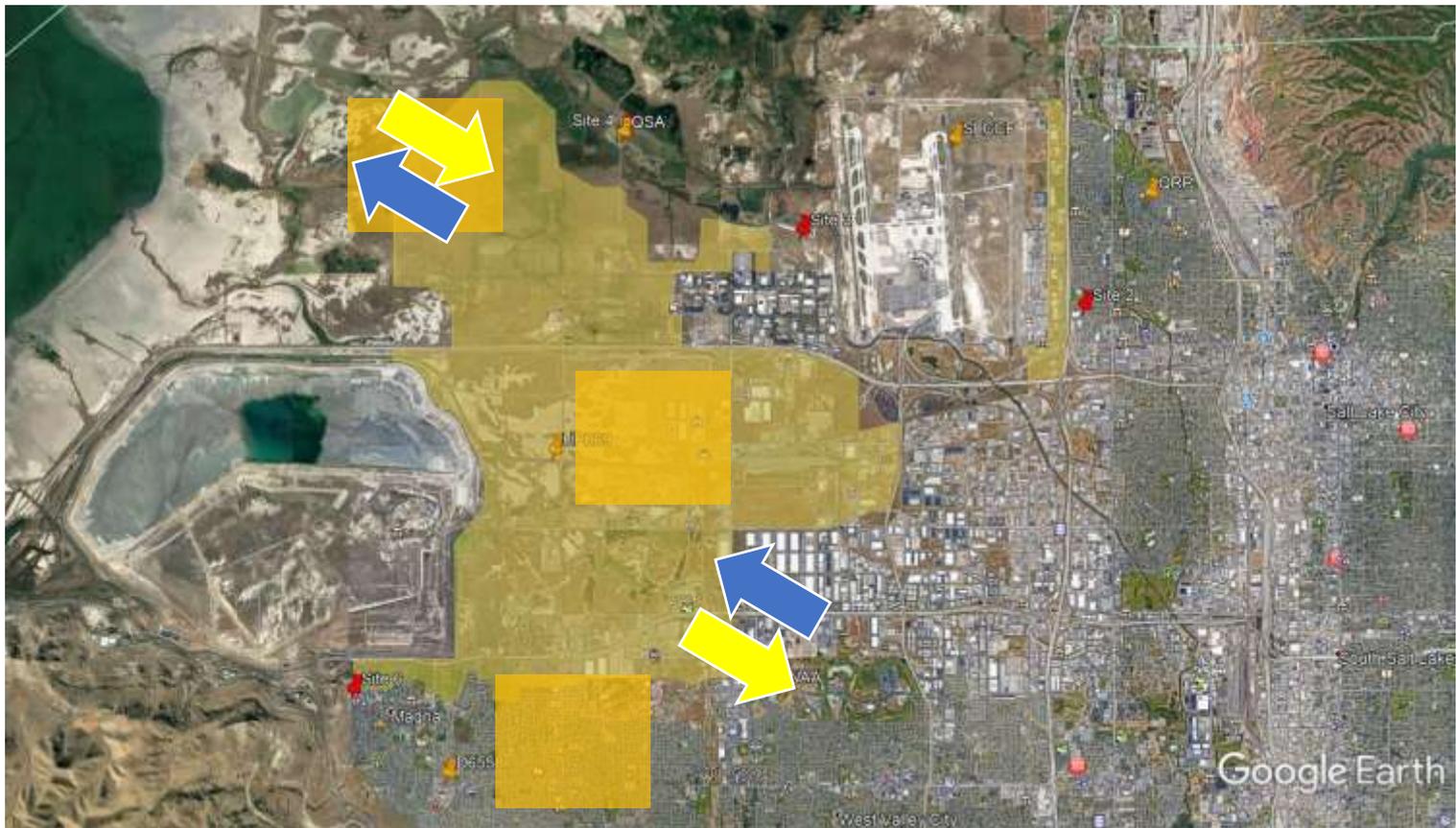
Pollution Transport

- The Red Butte Canyon Air Mass Exchange and Pollution Transport Study
- The Red Butte Canyon Ozone Network: leveraging existing infrastructure to probe background concentrations, canyon flows and stratospheric oxidant exchange

Dust Storm Impacts

- Characterizing Air Quality Impacts from Exceptional Events along the Wasatch Front





Winter Winds

Yellow arrows: Daytime

Blue arrows: Nighttime

Yellow overlay: Inland Port region

Orange overlay: Possible monitor location

Inland Port Analysis



Other Projects

Dust transport study
June & August



Prescribed fire study
September-December 2020



2021 Governor's Budget Proposal

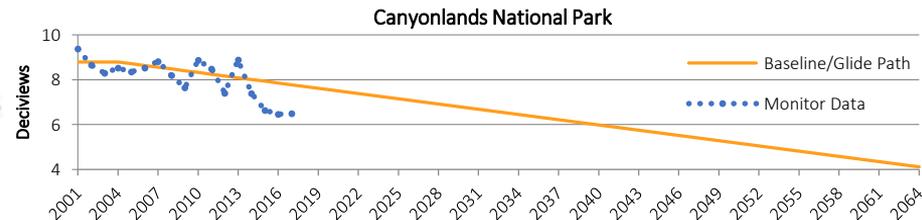
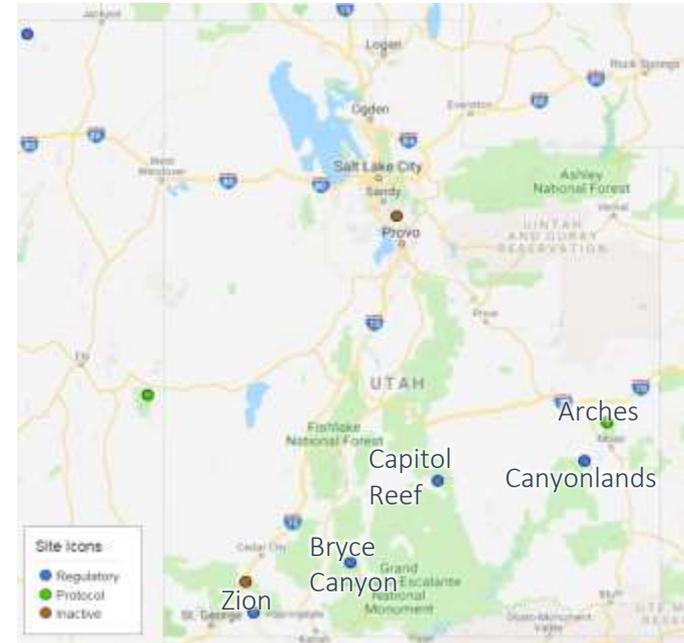
\$34 million transit budget increase by allowing access to Transportation Investment Fund monies through a one-time General Fund transfer in FY 2021 and an ongoing recommended change going forward.

\$66 million for electric car infrastructure, including working with the private sector to significantly increase the number of DC fast charging stations throughout the state

\$3 million match for a Utah State University National Science Foundation grant that focuses on electric vehicle transportation infrastructure buildout

Regional Haze Planning

- Protect visibility in Class I areas
- SIPs for the second planning period due July 2021
- Reasonable Progress is the second round focus
- No BART requirements
- 15 western states working together to complete inventories and modeling
- Currently Utah is working with sources to evaluate potential control measures
- Work over the past 19 years has resulted in visible progress at all five Class I areas in Utah



Agencies Scroll All/None

- State **National Park Service**
- National Forest Service
- Fish & Wildlife Service
- Division of Air Quality
- Bureau of Land Management
- Bureau of Indian Affairs
- Air Sciences Inc.

Date Filter

Specified Date

Enable/Disable

Year All/None

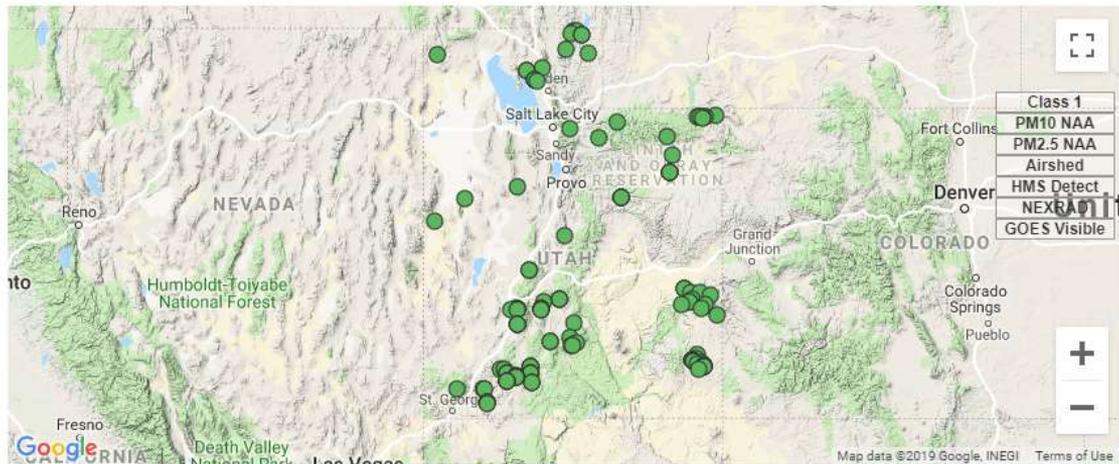
- 2020**
- 2019
- 2018
- 2017
- 2016
- 2015

Statuses All/None

- Under Review
- Revision Requested
- Pending Approval
- Approved**
- Disapproved

Toolbar

- Approve Selection
- Disapprove Selection



Search table

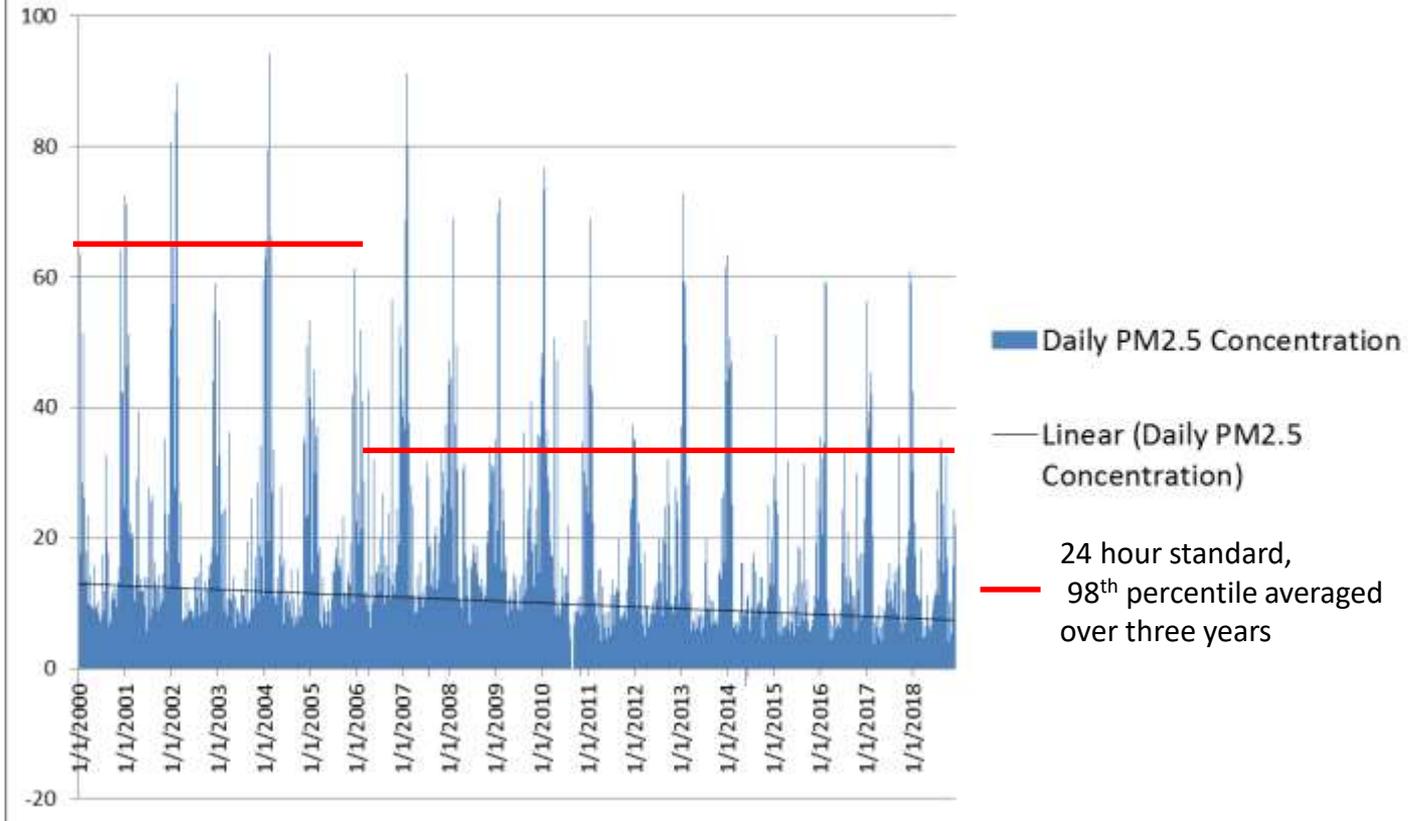
Burn Project	Start Date	End Date	Submitted	Agency	Last Reviewed	Reviewed By	Status	Submitted By
ZIP1301	2019-02-05	2019-02-11	2019-02-04 10:24:36	National Park Service	2019-02-04 10:26:05	Paul Corrigan ADMIN	Approved	Paul Corrigan ADMIN
ZIP1301	2019-04-19	2019-04-25	2019-04-09 10:23:15	National Park Service	2019-04-09 15:04:17	Paul Corrigan ADMIN	Approved	Greg Bartin
ZIP1301	2019-05-03	2019-05-10	2019-05-01 10:23:20	National Park Service	2019-05-01 16:35:48	Paul Corrigan ADMIN	Approved	Greg Bartin

Enhanced Smoke Management Program

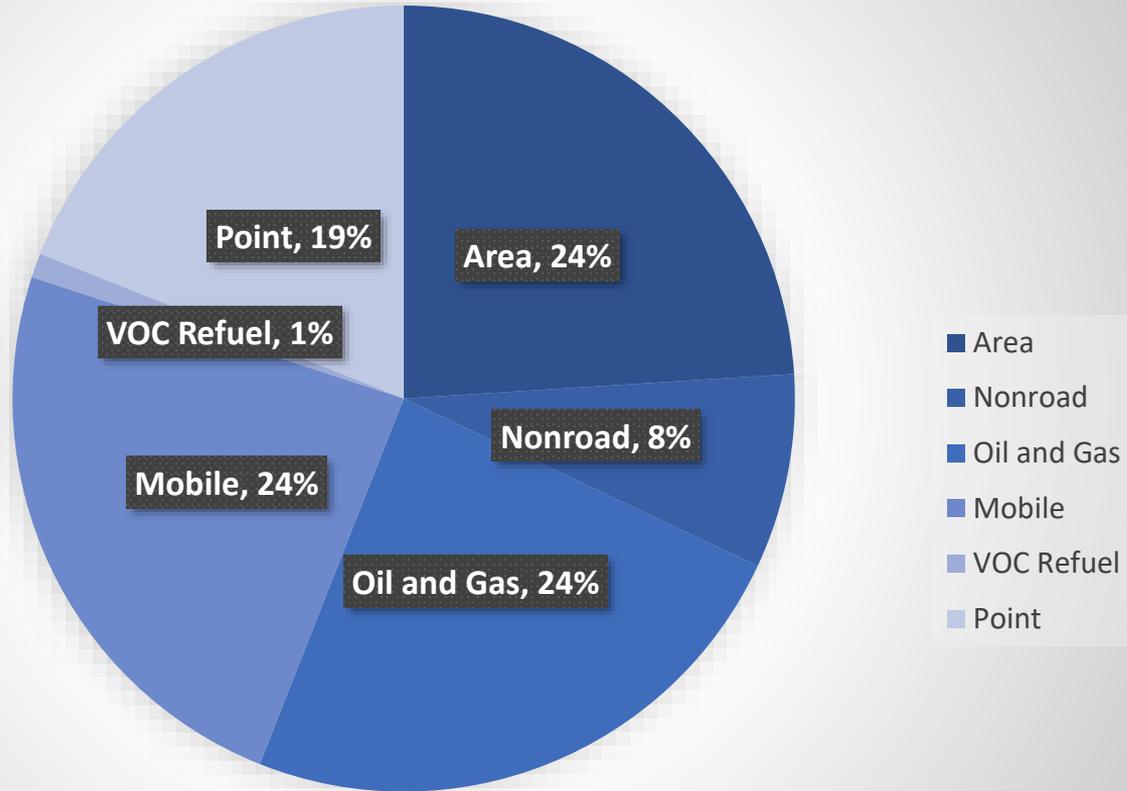


Salt Lake City

Daily PM2.5 Concentration, ug/m3

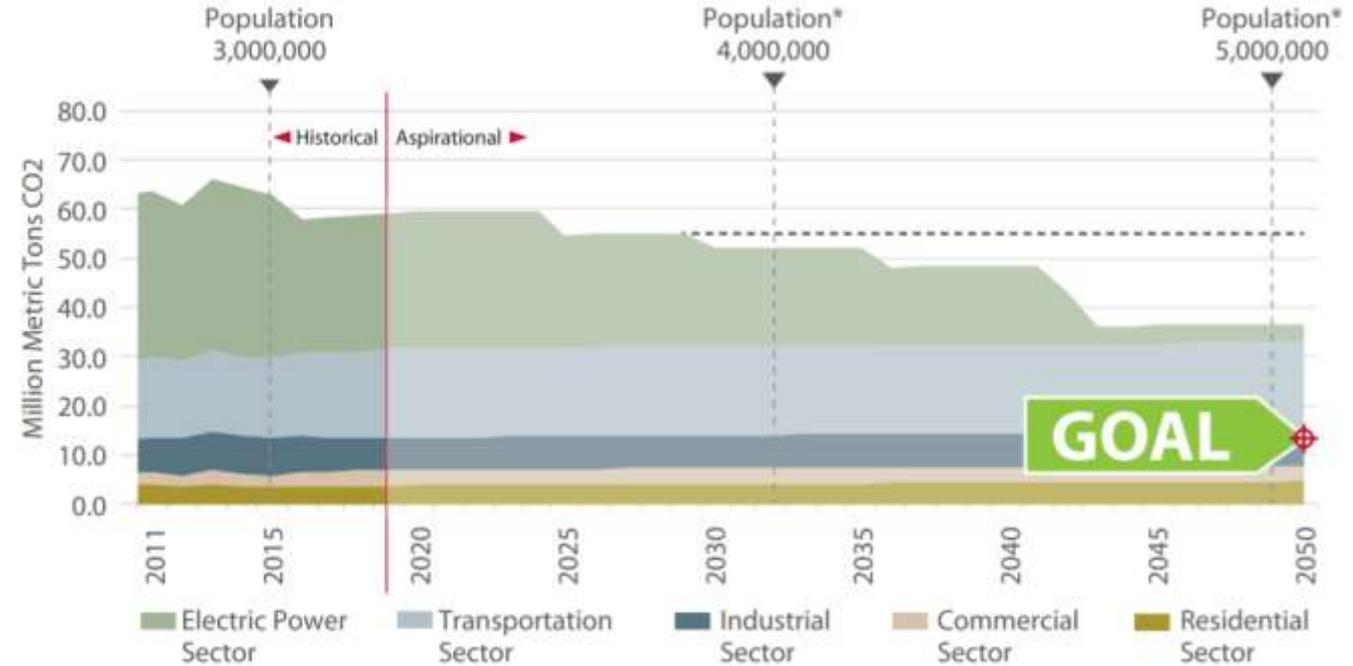


2017 Statewide Anthropogenic Emissions by Source



Gardner Institute Air Quality and Changing Climate

Utah's Carbon Dioxide Emissions Baseline Historical and Projected Statewide CO₂ Emissions



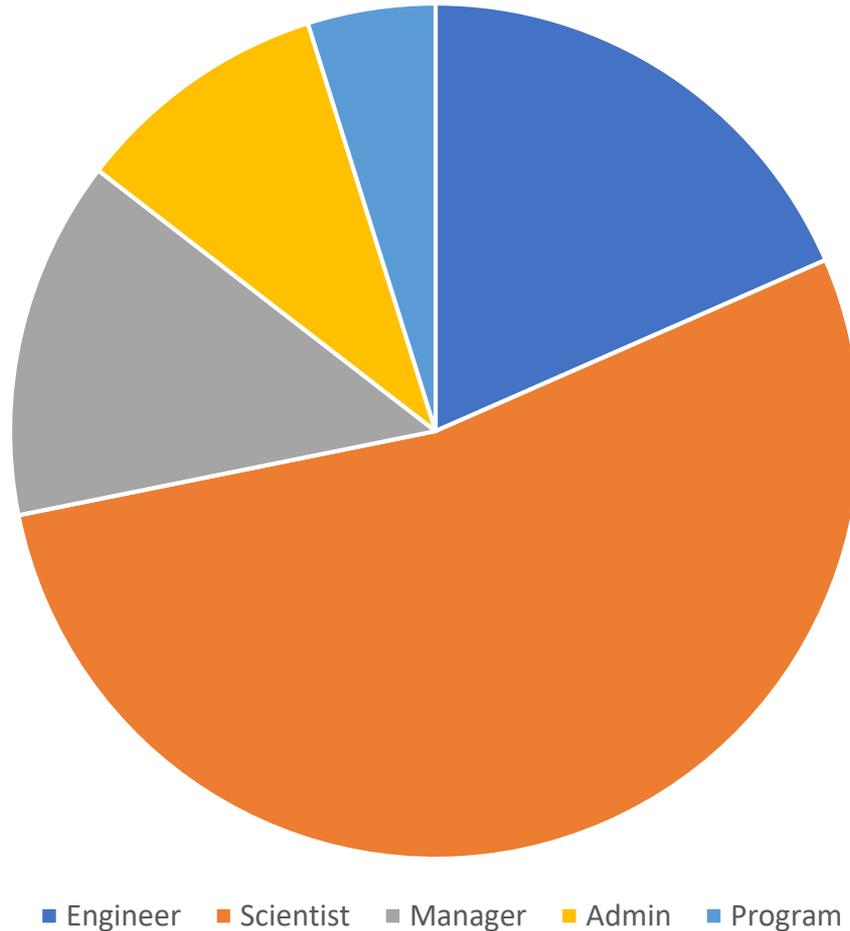
Source: US Energy Information Administration (EIA) based on the combustion of fossil fuel (historical), and Kem C. Gardner Policy Institute (aspirational)

Update on Utah's VW Settlement

Utah's Total Settlement		\$35,177,506	
Trustee Administrative Costs	1.4%	\$34,685,021	
	\$492,485.09		
Eligible Mitigation Action Category	Environmental Mitigation Plan Percentage Commitment	\$ Amounts	Status
Class 8 Local Freight Trucks	73.5% (with increased incentive for all-electric that would include 100% funding for EV infrastructure)	\$25,493,490	*50 applications received from government entities, totaling \$66,821,184
Class 4-7 Local Freight Trucks			*379 vehicle/engine replacement projects to evaluate
Class 4-8 School, Shuttle, or Transit Bus			*Anticipate making award announcements next month
Light-Duty Zero Emission Vehicle Supply Equipment (EV Charging Equipment)	11%	\$3,815,352	*19 awards to government entities announced (see list below) *Awardees have three years to complete projects
Diesel Emission Reduction Act (DERA) Option	7%	\$2,634,327	*Funds will be used to match EPA's State Clean Diesel allocations for ten years *First funding request will include \$869,421 for FY17, FY18, and FY19
Administrative Costs (for all categories, except DERA)	8.5%	\$2,724,309	
Total	100.0%	\$34,667,479	

Who we are

DAQ Staff

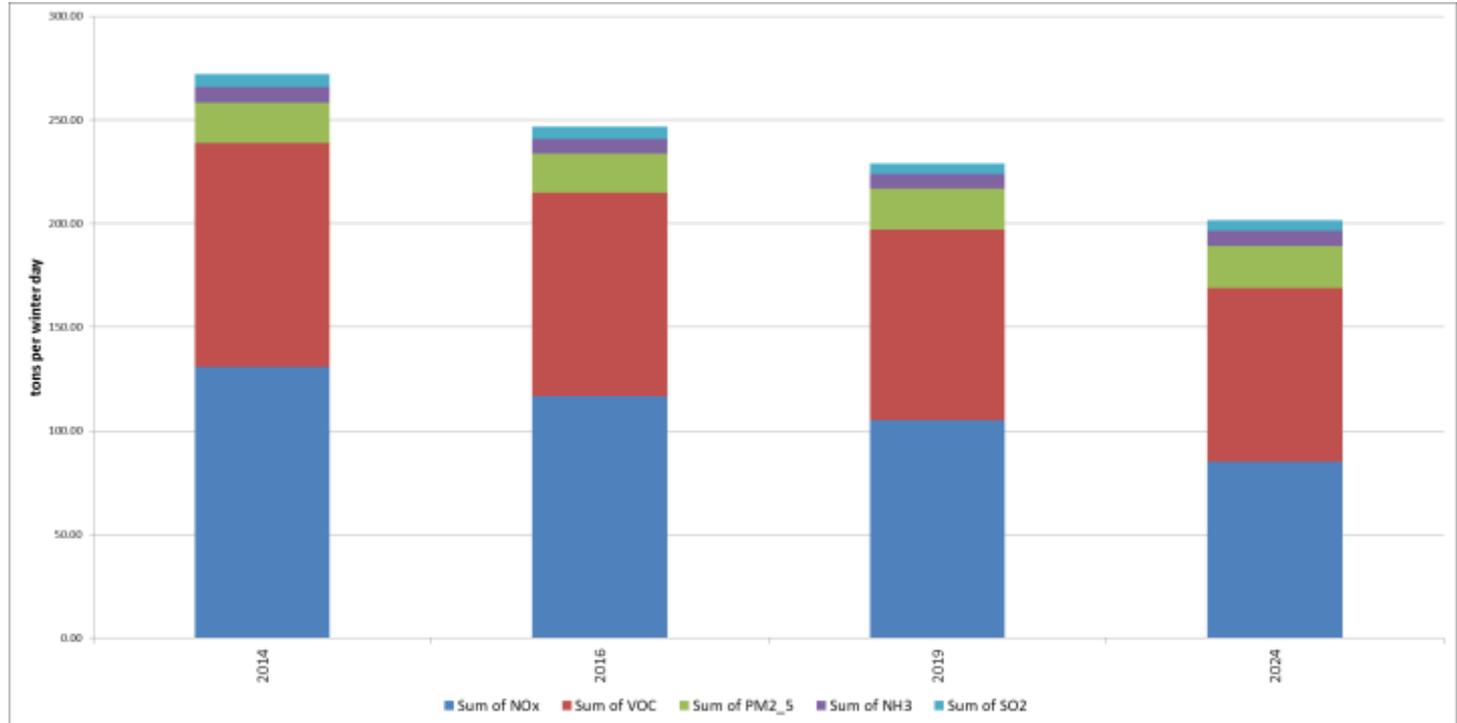


Total Emissions 2014-2024

Wasatch Front Counties: Utah, Salt Lake, Davis and Weber

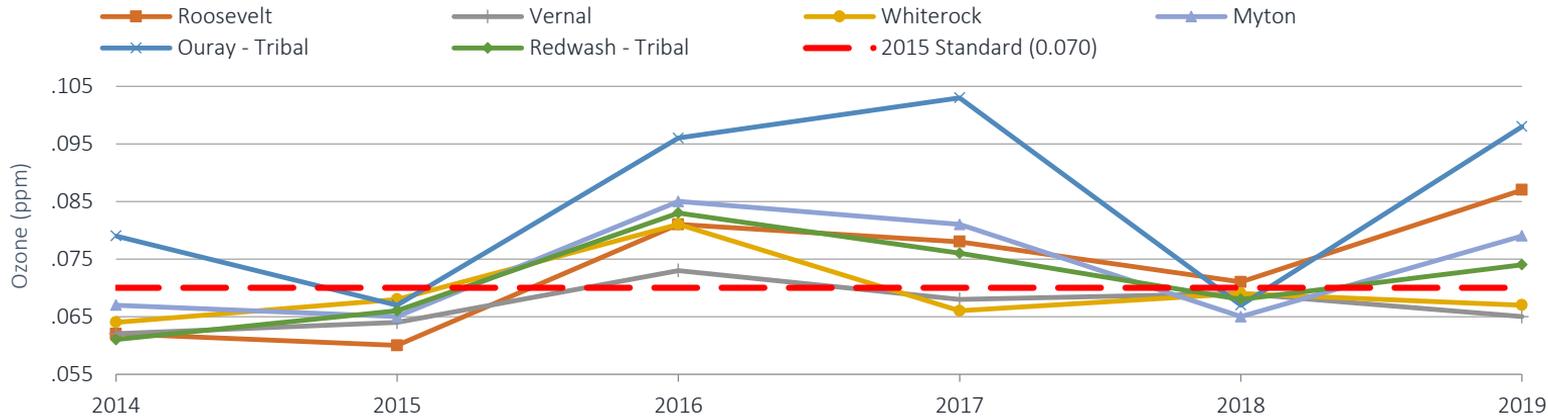
Average Winter Week-Day Emissions

NO_x, VOC, SO₂ and Direct PM_{2.5} (most important contributors)

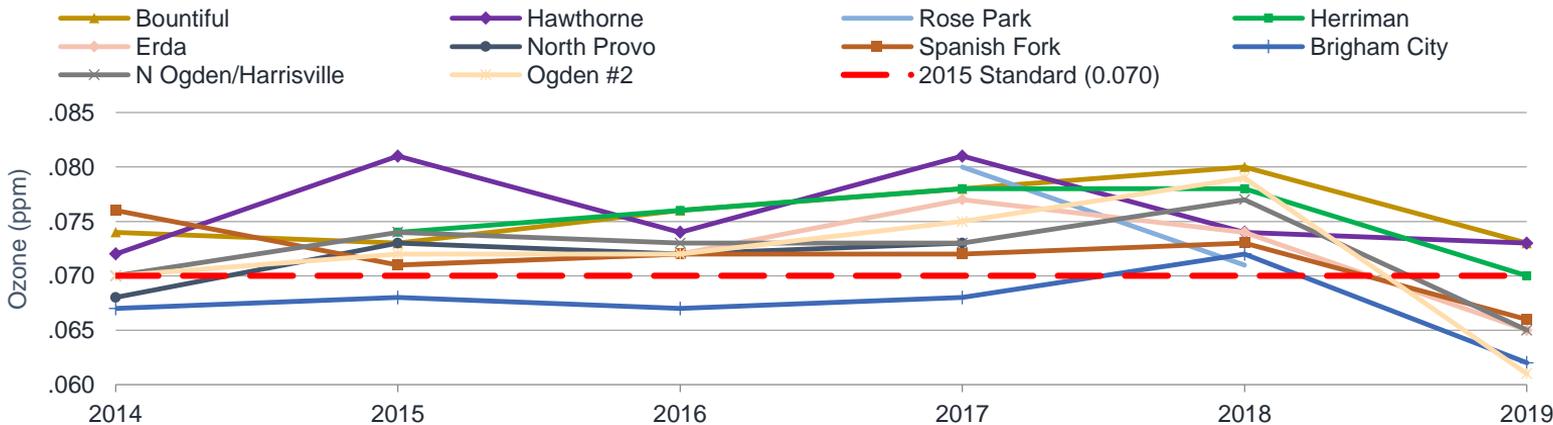


Utah Ozone Nonattainment Area Monitoring

Uinta Basin Ozone
4th Highest 8-hr
Concentration*



Wasatch Front
Ozone 4th Highest
8-hr Concentration*

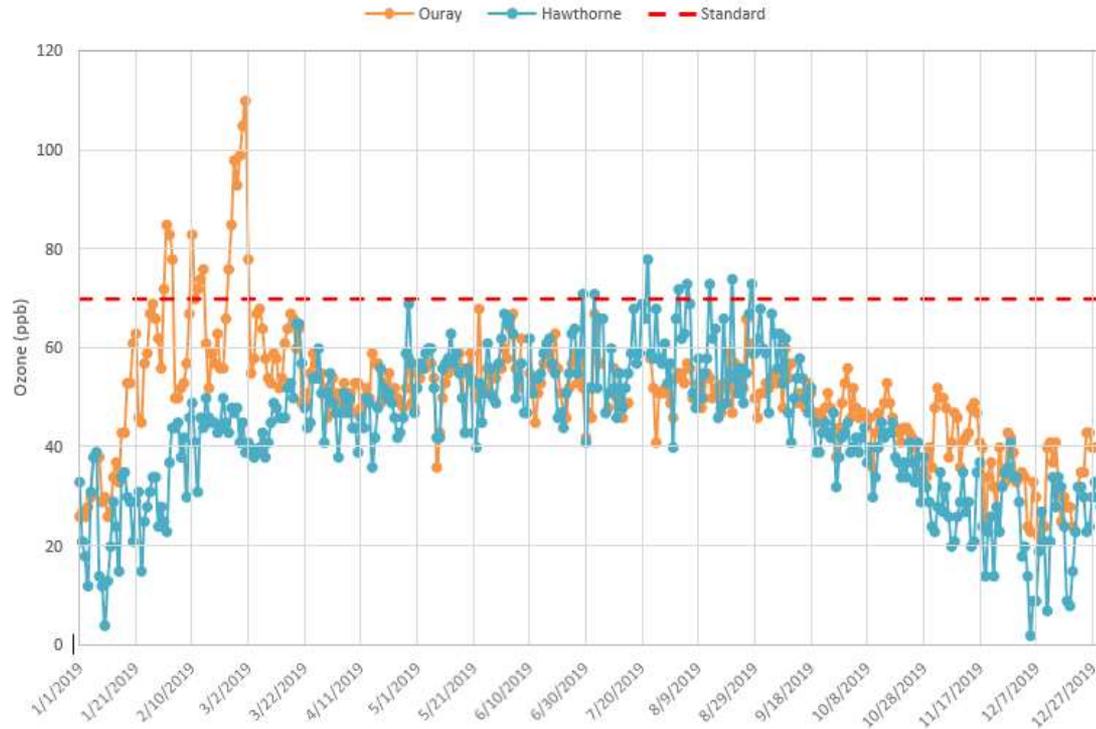


*2019 data not quality assured

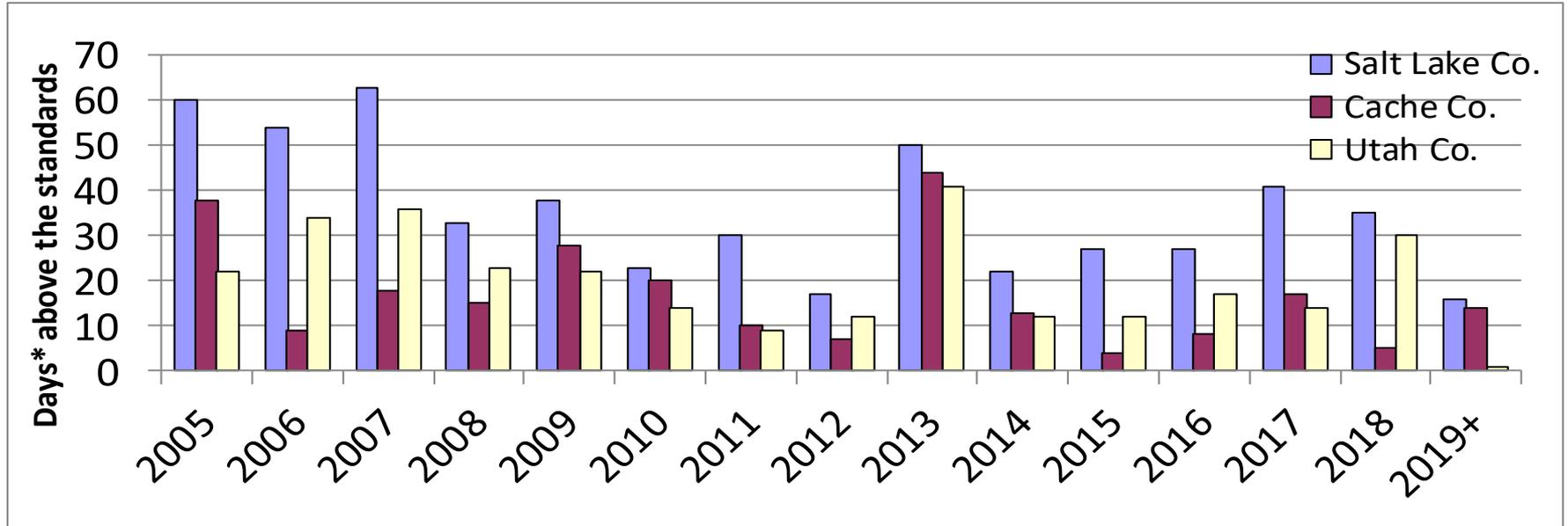


Utah Ozone Nonattainment Area Planning

Daily Maximum 8Hr Average Ozone

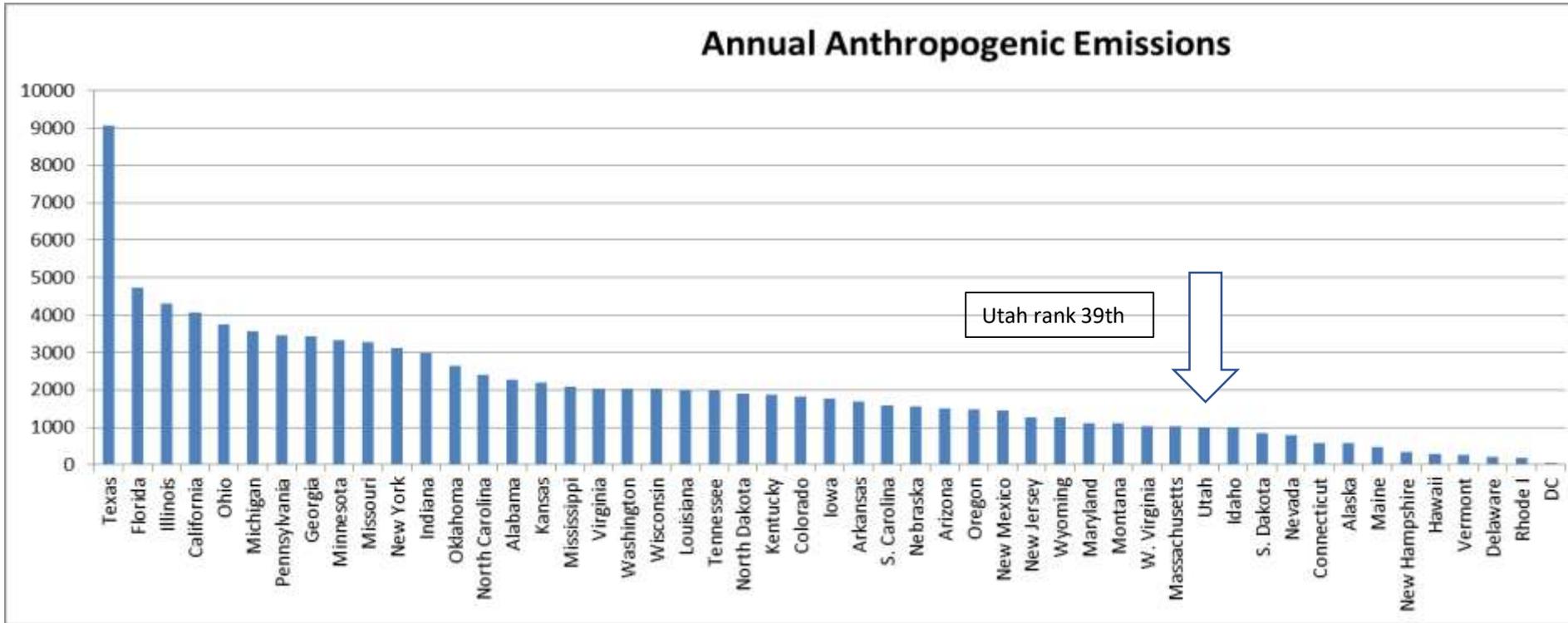


Number of Days That Are and Those That Would Have Been Above the Current Federal Standards Salt Lake, Cache, and Utah County Areas



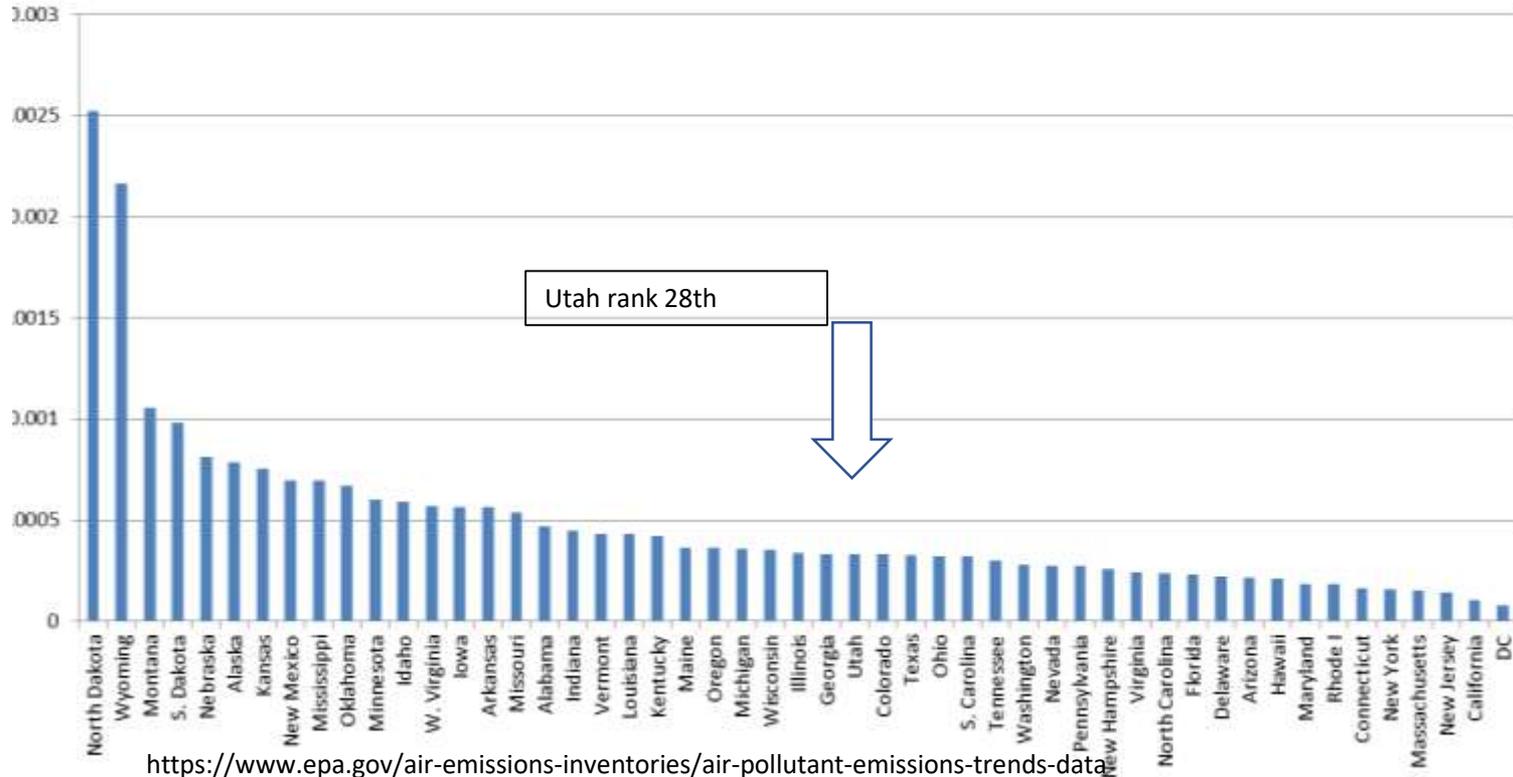
* Days with monitored values above the level of the **current** National Ambient Air Quality Standards combined for PM2.5 and ozone (PM2.5 standard revised in 2006, ozone standard revised in 2015) including data influenced by natural or exceptional events such as fires. + pending final quality assurance

Total Anthropogenic Emissions



Per-capita Anthropogenic Emissions

Annual Per-capita Criteria Pollutant Emissions



<https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data>