



State of Utah

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Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

Air Quality Board
Cassady Kristensen, *Chair*
Kim Frost, *Vice-Chair*
Michelle Bujdoso
Kevin R. Cromar
Randal S. Martin
Sonja Norton
John Rasband
Kimberly D. Shelley
Jeff Silvestrini
Bryce C. Bird,
Executive Secretary

DAQ-059-24

UTAH AIR QUALITY BOARD MEETING
June 5, 2024 – 11:00 a.m.
195 North 1950 West, Room 1015
Salt Lake City, Utah 84116

FINAL MINUTES

I. Call-to-Order

Cassady Kristensen began the meeting at 11:01 a.m.

Board members present: Cassady Kristensen, Michelle Bujdoso, Randal Martin, Jeff Silvestrini, Sonja Norton (attended electronically from 11:13 a.m. to 11:54 a.m.)

Excused: Kim Frost, Kevin Cromar, John Rasband, Kimberly Shelley

Executive Secretary: Bryce Bird

II. Date of the Next Air Quality Board Meeting: July 9, 2024 at 10:00 a.m.

III. Informational Items.

A. Northern Wasatch Front Ozone Attainment Planning. Presented by Ryan Bares.

Ryan Bares, Environmental Scientist at the DAQ, gave an overview of the division's full plan to meet the Clean Air Act (CAA) requirements as an ozone nonattainment area. He began with ozone health impacts and the planning timeline for the Northern Wasatch Front and why it is so important to attain the standard. Mr. Bares spoke about the regional challenges in the Intermountain West, noting the 80% of ozone and ozone forming emissions are naturally occurring or transported to Utah. More than half of anthropogenic emissions driving local ozone formation are difficult to regulate at the state level. A chart was shown on historic trends and there was brief discussions with the Board about reasons for the decrease in concentrations.

Mr. Bares spoke about the CAA requirements for state implementation plan (SIP) approval. He talked about the ozone requirements by classification and the due dates, the 15% reasonable

further progress, and finally what happens with federal sanctions when EPA disapproves a SIP. Next he talked about rules that are in progress to sort of fill the deficiency in the moderate SIP as well as thinking forward to our serious SIP. He then went through several options or proposed rules that staff are working on to get us closer to attainment. In closing, Mr. Bares talked about real world solutions to more effectively reduce ozone. In particular, we want to find a viable way of fulfilling our reasonable further progress requirements for the moderate SIP. Utah is working to find a pathway to allow for past volatile organic compounds reductions to count towards ozone planning efforts. In discussion, staff responded to questions or comments from the Board. [See handout of full presentation.]

B. Air Toxics. Presented by Leonard Wright.

C. Compliance. Presented by Harold Burge, Rik Ombach, and Chad Gilgen.

D. Monitoring. Presented by Bo Call.

Bo Call, Air Monitoring Section Manager at the DAQ, stated that the annual monitoring network plan is out for public comment and available for review on the division's webpage. In response to a question about locations of the photochemical assessment monitoring stations (PAMS), Mr. Call responded that there are currently five sites located at Red Butte, Bountiful, Erda, the Technical Support Center, Hawthorne, and one more about to be up and running at the Monticello Academy.

The school district for the Hawthorne site has no plans to develop the site and has indicated to DAQ that the monitor should be good at that location for a while. Also, the EPA recently did site visits earlier this year of several monitoring sites and so far all the sites met EPA's criteria. Staff does recognize that changes may need to be made in the future at sites, such as Smithfield, due to construction or trees.

E. Other Items to be Brought Before the Board.

Ms. Bujdoso asked if we are submitting the recommendations to the Governor for attainment status and nonattainment area. Mr. Bird replied yes, and that the yearlong process is starting. Becky Close, Policy Section Manager at the DAQ, added that the designation recommendation is due February 7, 2025, which is based on the years 2021, 2022, and 2023.

Meeting ended at 12:21 p.m.

Board members had lunch followed by a site visit with staff to the Chevron refinery tank farm.

Minutes approved: July 9, 2024

Northern Wasatch Front Summertime Ozone

Ryan Bares



UTAH DEPARTMENT of
ENVIRONMENTAL QUALITY
**AIR
QUALITY**

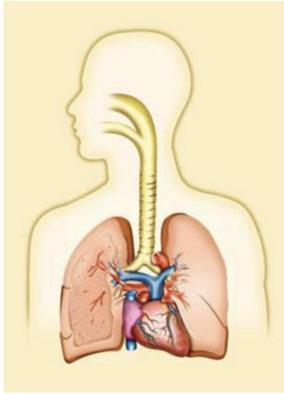
What is ozone?



**NO_x + VOC +
Sunlight and Heat
= ozone**

Significant human health
impacts

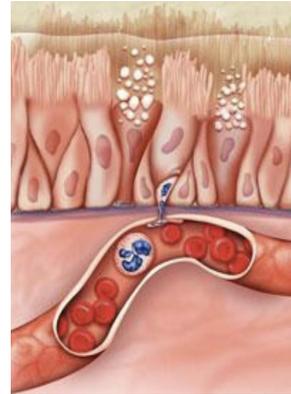
Health Impacts of Ozone



Ozone is a powerful oxidant that can irritate the airways.

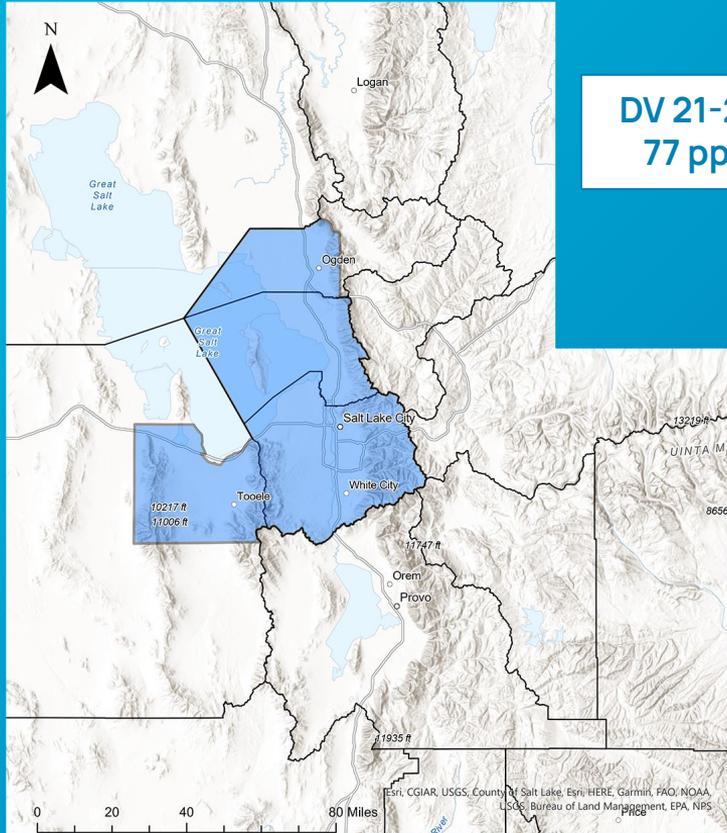


Ozone can cause the muscles in the airways to constrict, trapping air in the alveoli. This leads to wheezing and shortness of breath.



With inflammation, the airway lining is damaged. It has been compared to the skin inflammation caused by sunburn.

Northern Wasatch Front Ozone Nonattainment Area



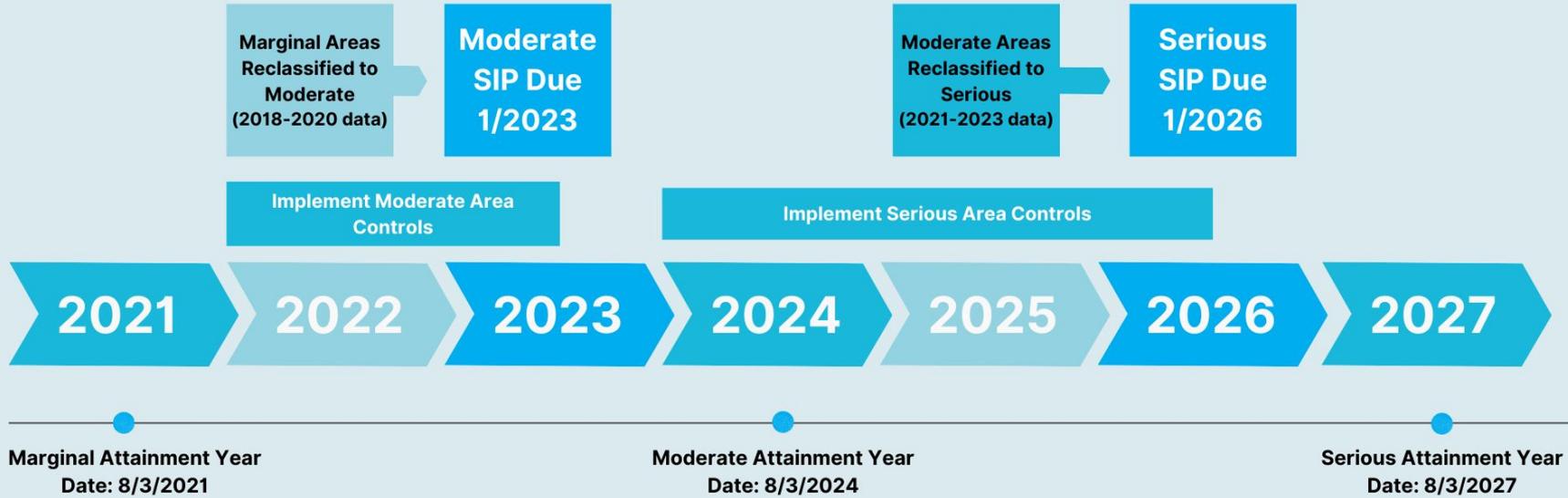
Pollution

The Northern Wasatch Front is not meeting the 2015 NAAQS for ozone: 70 ppb.

Creating a Plan

The State submitted a moderate State Implementation Plan (**SIP**) and has started the process of planning for a serious SIP. Redesignation to serious expected early 2025.

Northern Wasatch Front Ozone Planning Timeline



Why is it so important to attain the standard?

There are serious consequences if the area fails to meet SIP requirements and/or attain the health-based standard.



Reduce ozone to protect public health and improve quality of life along the Wasatch Front



Potential freeze to federal highway funds



Federal plan could be far more strict (FIP)



“Bump up” in NAA classification will require even more costly controls



Ozone in the West

Regional Challenges

Intermountain West Ozone Challenges

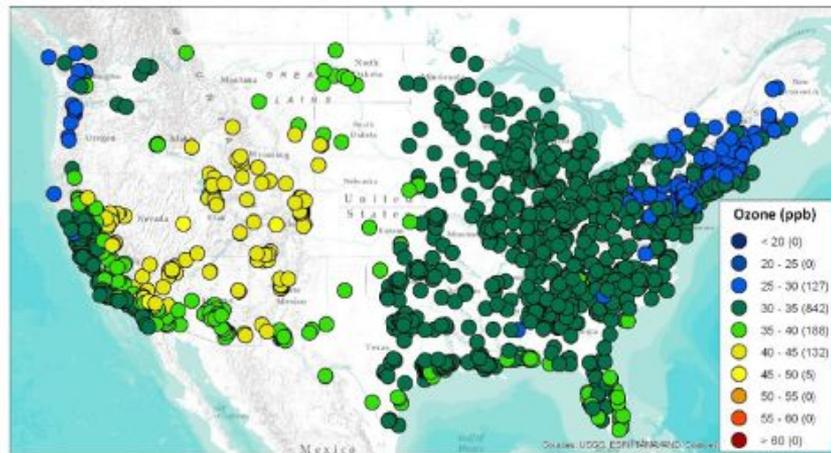
Utah faces a range of challenges when working to reduce ozone:

- High elevation
- Natural emissions of VOCs
- Transported pollutants
- Wildfire emissions
- Utah is one of the fastest growing states in the nation

~ 80% of ozone and ozone forming emissions are naturally occurring or transported to Utah.

Summertime average background concentrations can be as high as 50 ppb.

Background Ozone in the Intermountain West

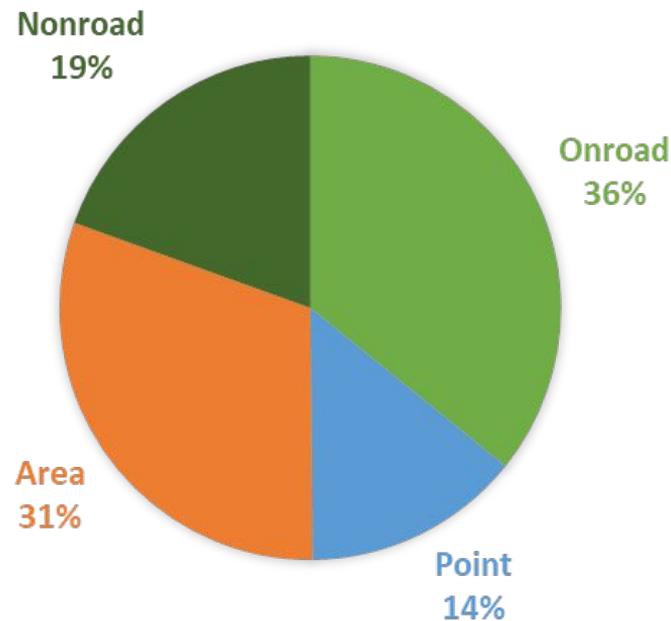
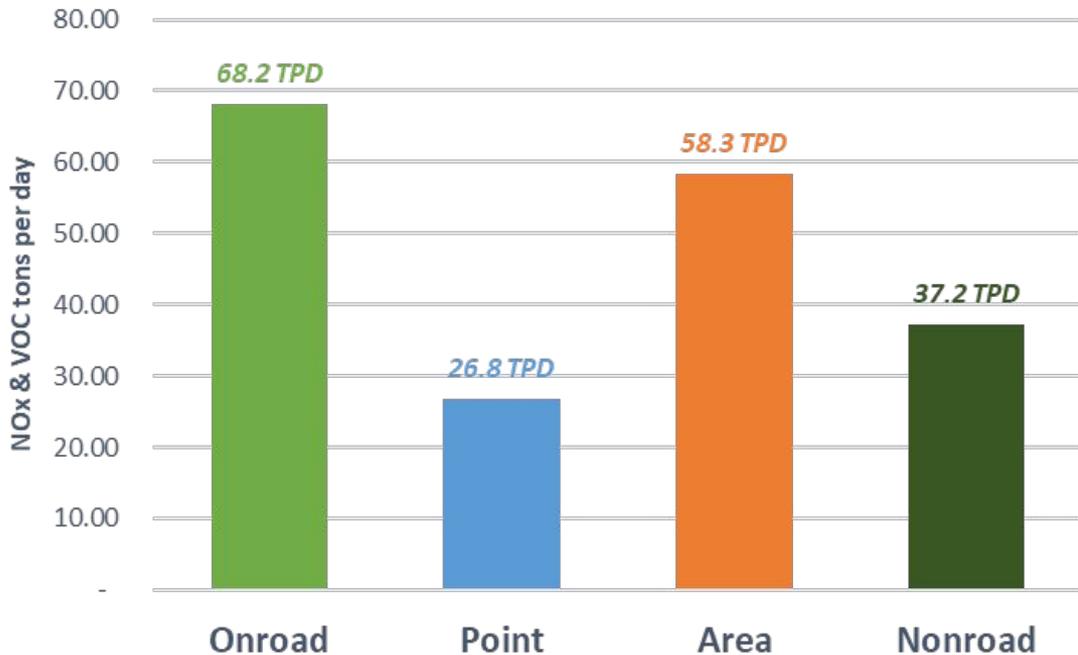


CMAQ estimates of average background (USB) ozone at monitoring locations across the U.S. in 2007

EPA modeled background ozone concentrations in the continental United States. This demonstrates the effect of elevation and transport on background ozone concentrations in the west.

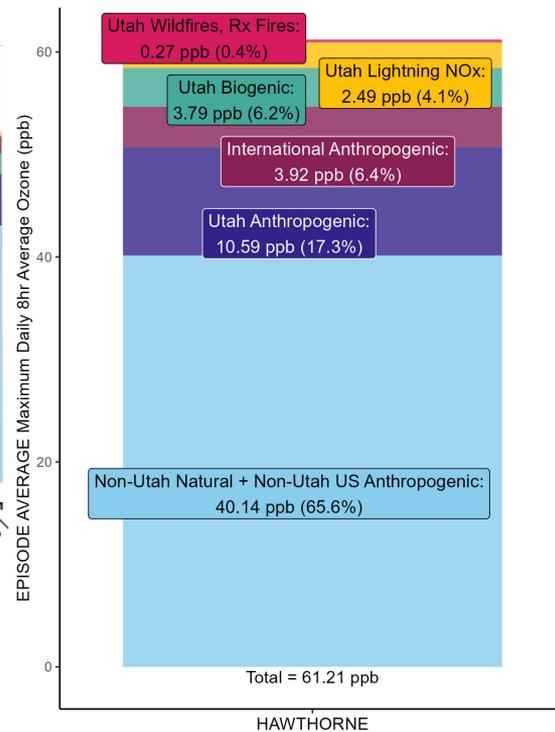
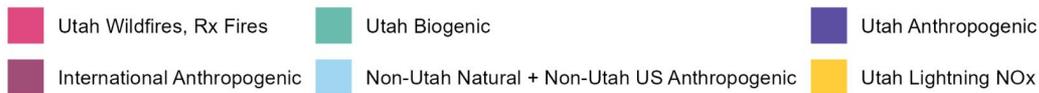
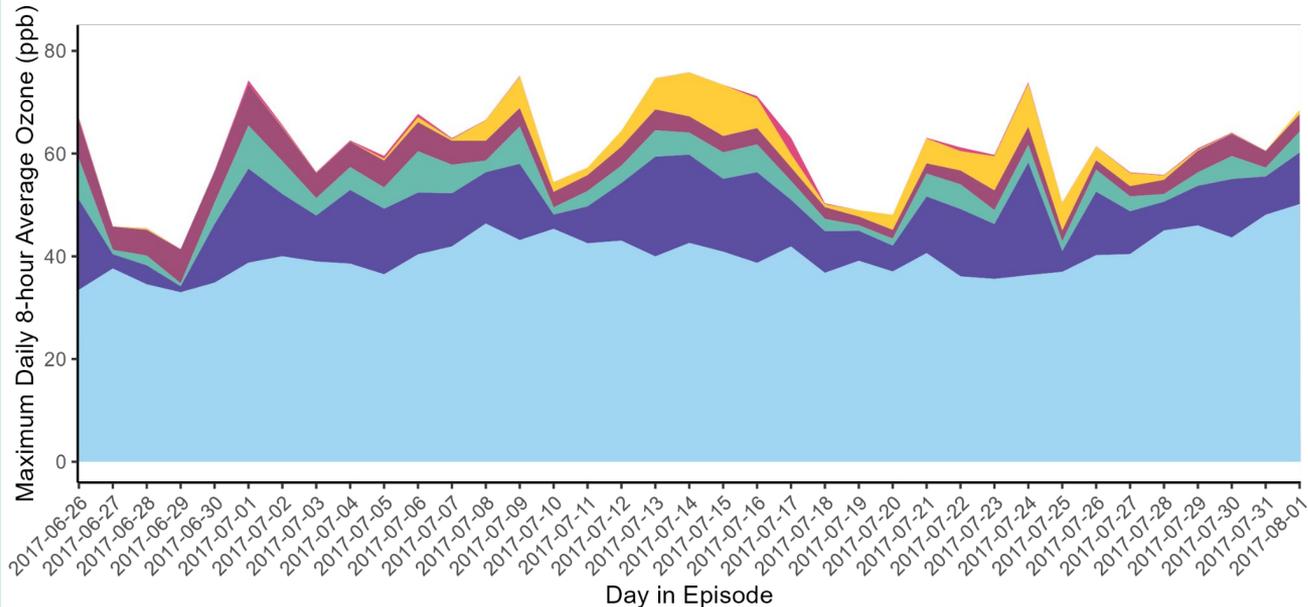
“background ozone can exceed 60 ppb in the intermountain west”

Man-Made NOx and VOC Emissions in the Northern Wasatch Front on an average “ozone season” day



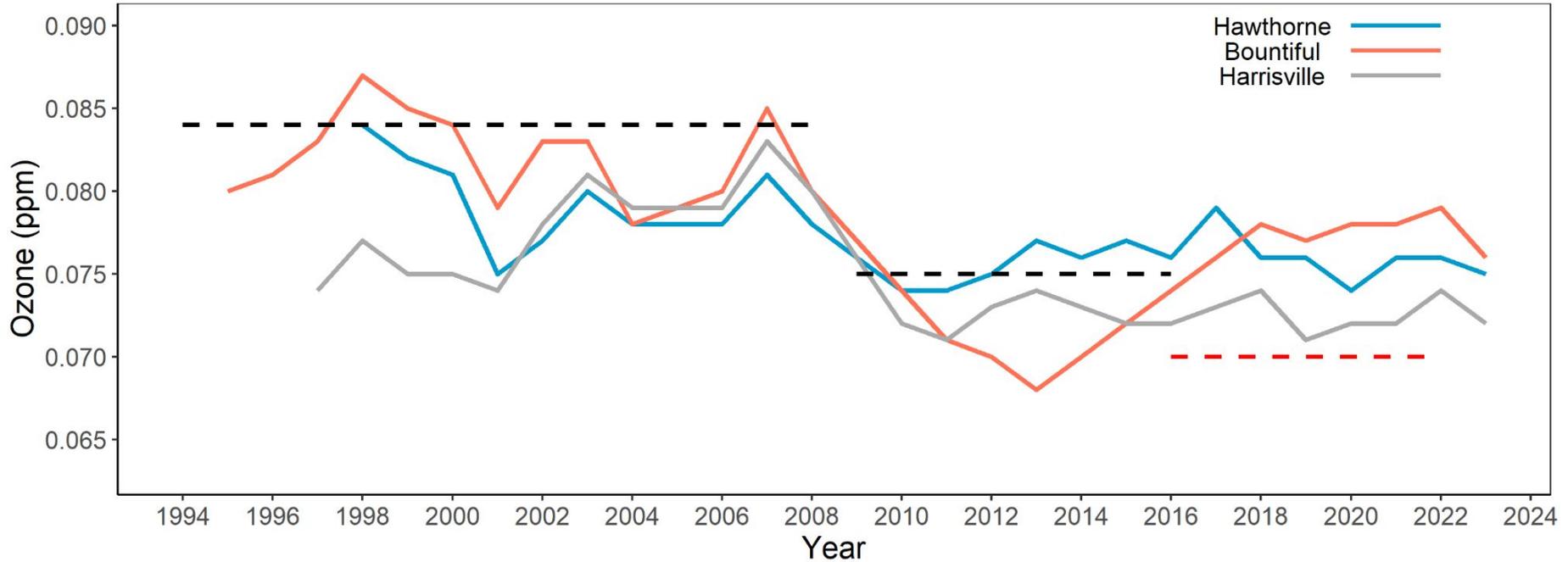
More than half of anthropogenic emissions driving local ozone formation are very difficult to regulate at the state level

Ozone Source Contributions

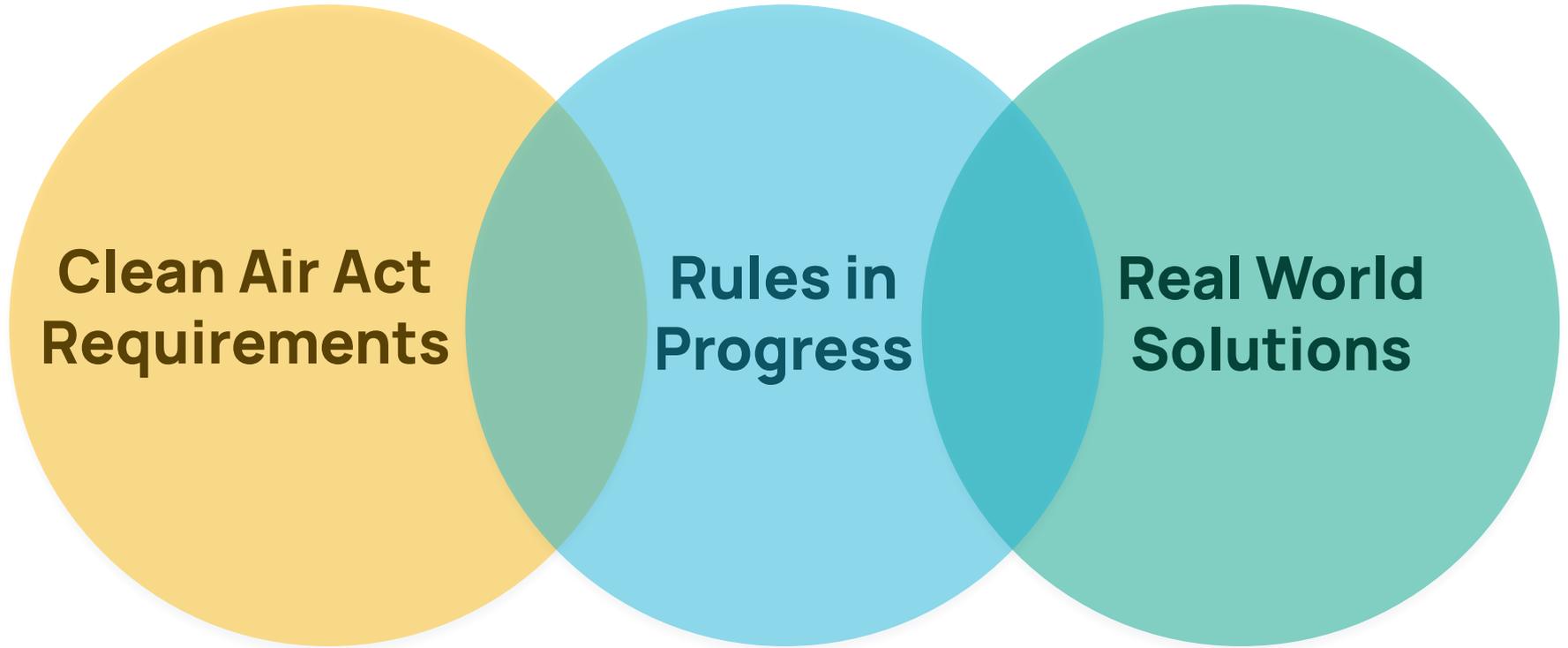


Historic NWF Ozone Concentrations

3 Year Average 4th Highest Ozone Concentration



Ozone Attainment Plan



 Clean Air Act 179B

Ozone Attainment Plan

Clean Air Act Requirements

Requirements for SIP approval

Rules in Progress

Rules with short and long term outcomes that meet CAA requirements and get area closer to attainment

Real World Solutions

Results from studies will inform future policy to more effectively reduce ozone



Clean Air Act 179B

Prevent serious nonattainment and allow time for real world solutions

Ozone Attainment Plan

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Real World Solutions



Clean Air Act 179B



Ozone Requirements By Classification

2015 OZONE NAAQS

Initial Designation/Classification Aug. 2018
 Areas are reclassified (i.e. "bumped-up")
 to the next highest classification
 within 6-months of
 failing to attain

EXTREME
 Attainment Date Aug. 2038
 SIP due Jan. 2034

SEVERE (15, 17)
 Attainment Date Aug. 2033,35
 SIP due Jan. 2029, 2031
 Reformulated Gasoline required

SERIOUS
 Attainment Date Aug. 2027
 SIP due Jan. 2026

MODERATE
 Attainment Date Aug. 2024
 SIP due Jan. 2023

MARGINAL
 Attainment Date Aug. 2021

		NSR Offset	Major Source Threshold
	TRAFFIC CONGESTION CONTROLS (if appropriate)	1.5:1	10 tpy
	CLEAN FUELS REQUIREMENT FOR BOILERS		
	PENALTY FEE PROGRAM FOR MAJOR SOURCES	1.3:1	25 tpy
	VMT GROWTH DEMONSTRATION (& TCMs if needed)		
	VMT REPORTING		
	NSR REQUIREMENTS FOR EXISTING SOURCE MODS	1.2:1	50 tpy
	CLEAN FUELS PROGRAM OR SUBSTITUTE MEASURE FOR LARGER POP. AREAS		
	MODELED DEMO OF ATTAINMENT		
	MILESTONE DEMONSTRATIONS and CONTINGENCY MEASURES FOR RFP		
	3% ANNUAL RFP UNTIL ATTAINMENT	1.15:1	100 tpy
	ENHANCED I/M for larger population areas		
	CONTINGENCY MEASURES FOR FAILURE TO ATTAIN		
	ENHANCED MONITORING PLAN		
	BASIC VEHICLE I/M for larger population areas		
	15% VOC ROP or 15% VOC/NOx RFP (OVER 6 YEARS)	1.1:1	100 tpy
	VOC/NOx RACT for MAJOR/CTG SOURCES		
	ATTAINMENT DEMONSTRATION		
	NONATTAINMENT NEW SOURCE REVIEW PROGRAM	1.1:1	100 tpy
	EMISSIONS STATEMENTS		
	BASELINE EMISSIONS INVENTORY (EI)		
	PERIODIC EMISSIONS INVENTORY UPDATES		

Reasonable Further Progress 15%

“The state must identify and implement emission reduction strategies equal to or greater than 15% [VOCs] of the 2017 baseline inventory”

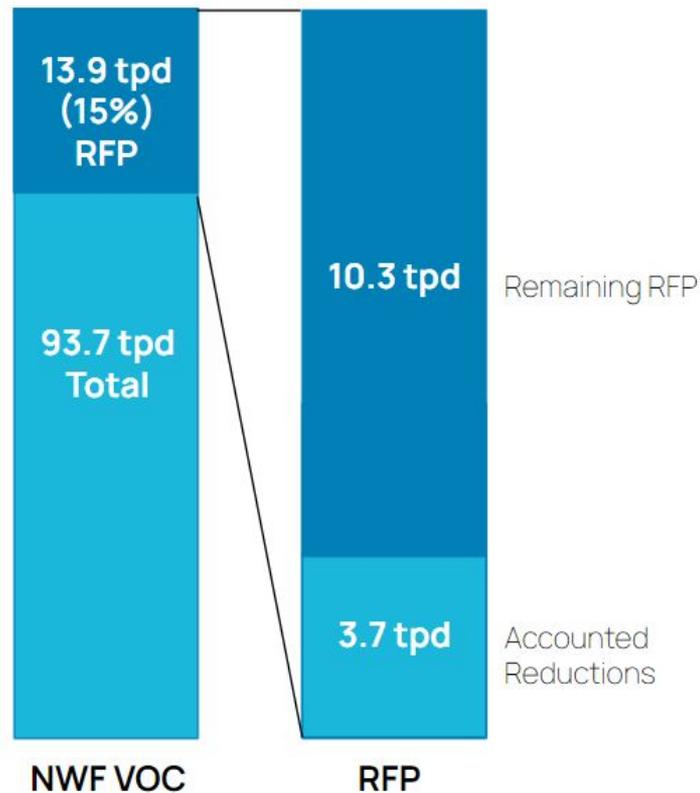
The moderate SIP submitted October 2023 does not fulfill the RFP requirement.

Disapproval will impact federal highway funds.

UDAQ is working to find solutions by substituting NOx reductions.

Under a serious NAA designation, RFP will be an additional 3% per year of reductions.

Northern Wasatch Front Anthropogenic VOC Emissions



Federal Sanctions

What happens when EPA disapproves a SIP?

1. **Transportation Conformity Freeze** - Immediately

Certain transportation projects can proceed, but no new transportation projects can be implemented.

2. **Large Industry Offsets** - 18 months

Large industry emissions offsets of 2:1 start, meaning it becomes very challenging for existing sources to expand or for new industry to move into the NAA.

3. **Highway Funding Sanctions & Transportation Conformity Lapse** - 2 years

Without an approved SIP, a conformity lapse will occur meaning that transportation plans cannot be updated to include new projects. All projects, including transit projects cannot proceed even if state and local funds are used.

4. **Federal Implementation Plan (FIP) Deadline** - 2 years

EPA must promulgate a Federal Implementation Plan (FIP) two years after a SIP disapproval.

Ozone Attainment Plan

**Clean Air Act
Requirements**

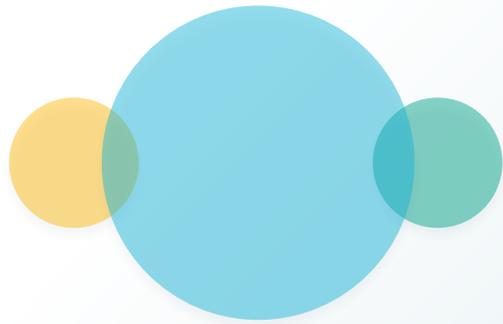
**Rules in
Progress**

Rules with short and long term outcomes that meet CAA requirements and get area closer to attainment

**Real World
Solutions**



Clean Air Act 179B



Rules in Progress

Rules with short and long term timelines that meet CAA requirements and get uarea closer to attainment

Short Term (1-3 Years)

- Gas dispensing rule
- Locomotive inventory reporting
- Small 2-stroke lawn equipment
- Major Source RACT Updates

Long Term (3+ Years)

- Refinery tank controls
- Warm mix asphalt
- Composting
- Metal recycling
- Industrial baking
- Halogen reductions (HB 220)
- Non-road equipment rules (SB 136)
- Low volatility gasoline (CAA required)

R307-328: Gasoline Transfer and Storage

Counties:
Salt Lake, Utah,
Tooele, Davis and
Weber Counties.

VOC Reductions:
214.96 tpy
0.59 tpd

**Installation of CARB
CP-207 certified:**

**Dripless Nozzles
&
Low Permutation
Hoses**

**Compliance
Schedule**

May 1, 2026

Advanced Notice of Proposed Rulemaking:

April 8, 2024



Locomotive Reporting

- Will require switcher and locomotive trains that stay within Utah to report annually to UDAQ.
- Provide data needed to understand emissions from these engines and improve inventories.

S.B. 136 Final Report- November 2023

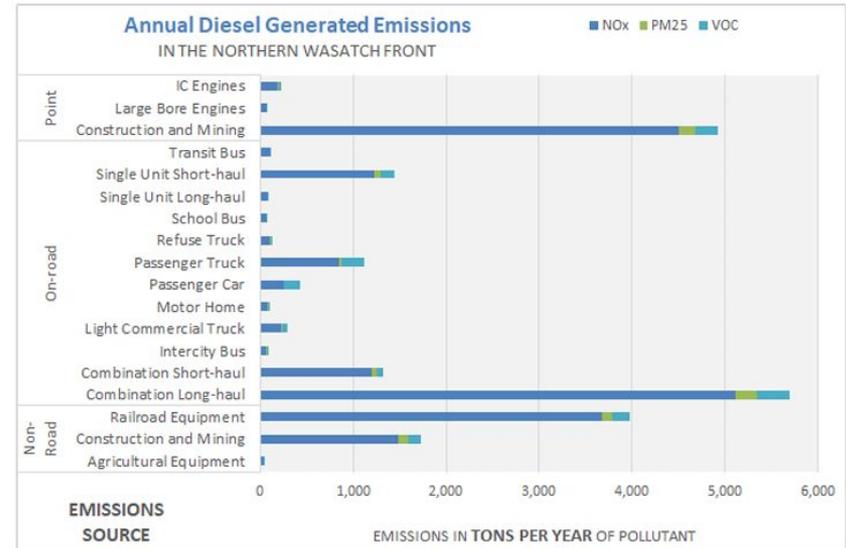


Figure 6: Northern Wasatch Front Diesel Emissions (TPY) by Source Type



Refinery Storage Tanks

- Controls for storage tanks at petroleum refineries.
 - Early stages examining emissions and controls options.
 - Examining rules implemented in other NAAs.
 - UDAQ has started early stakeholders engagement and collaboration.
- External Floating Roof, Internal Floating Roof, and Fixed Roof Tanks.
- Doming, best practices, and inspection and monitoring strategies.
- Planning an extensive stakeholder engagement process including individual source meetings and stakeholder workshops.



Photo credit: Wikipedia

Reasonably Available Control Technology

Review and Update RACT for major sources

- 20 Major Sources \geq 50 tpy VOC or NO_x.
- Initial completeness review finished for all submitted RACTs.
- All but one RACT have been returned by sources.
- Compile controls, costs, compare emission points across all major sources.

Ozone Attainment Plan

**Clean Air Act
Requirements**

**Rules in
Progress**

**Real World
Solutions**

Results from studies will inform future policy to more effectively reduce ozone

 Clean Air Act 179B

NO_x Substitutions

Table 1: VOC and NO_x reduction in the NWF NAA through ozone and PM_{2.5} SIPs.

	RFP Requirements	2017 - 2023 moderate ozone SIP (% RFP)	2010 - 2020 PM _{2.5} SIP (% RFP)
VOC (tpd reduced)	14.0 tpd	3.7 tpd (25%)	35.7 (255%)
NO _x (tpd reduced)	NA*	21.3 tpd (152%)	35.45 (254%)

*EPA has not yet allowed NO_x substitutions under its current interpretation of ozone implementation rule.

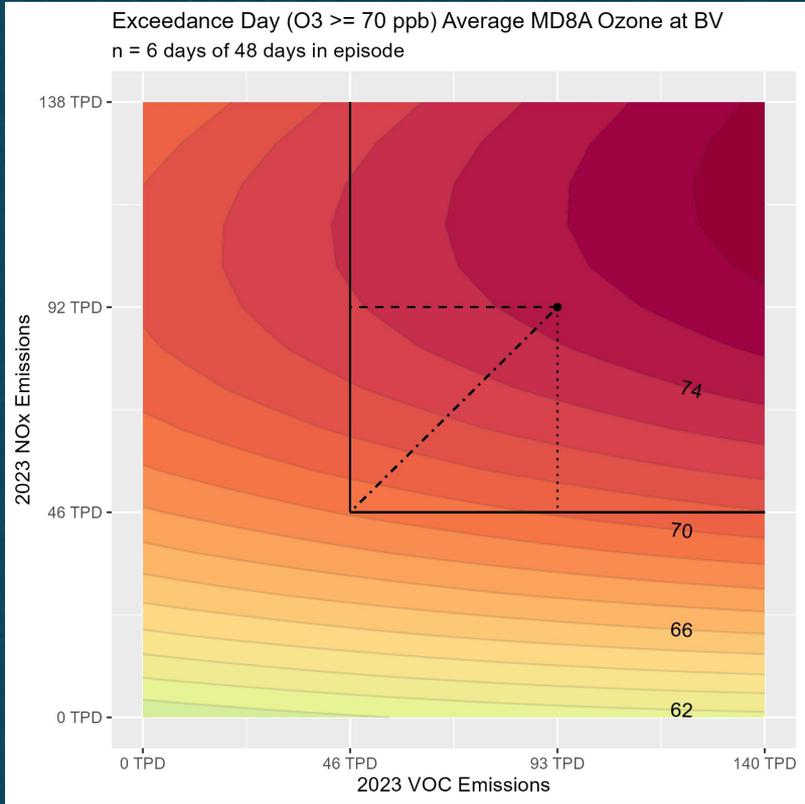
Outstanding moderate ozone RFP reduction requirements: 10.3 tpd VOC emissions

Utah is working to find a pathway to allow for past VOC reductions to count towards ozone planning efforts.

Pathway to Attain

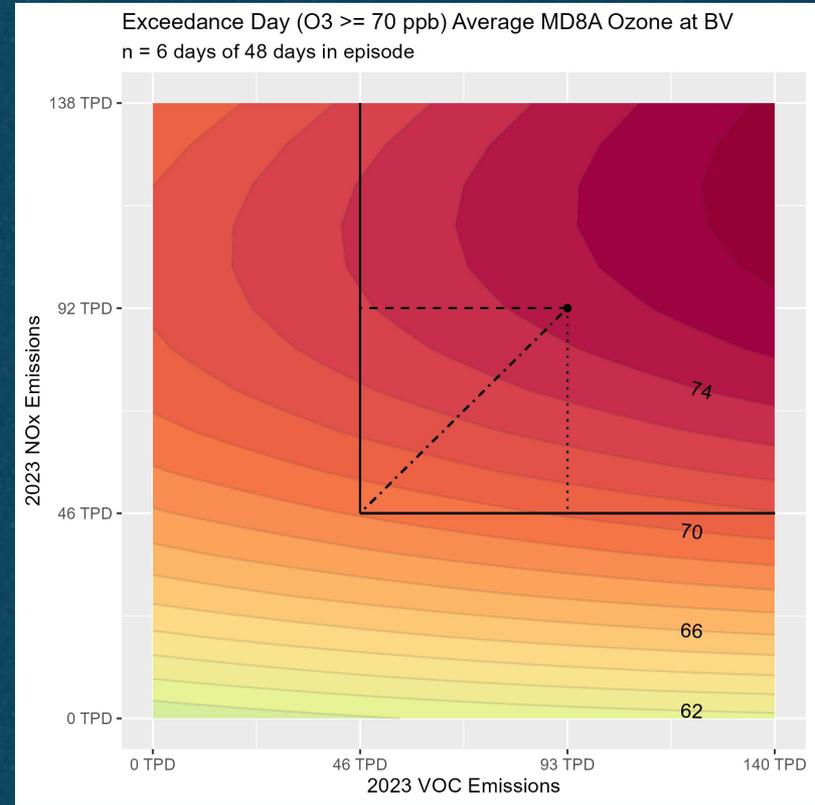
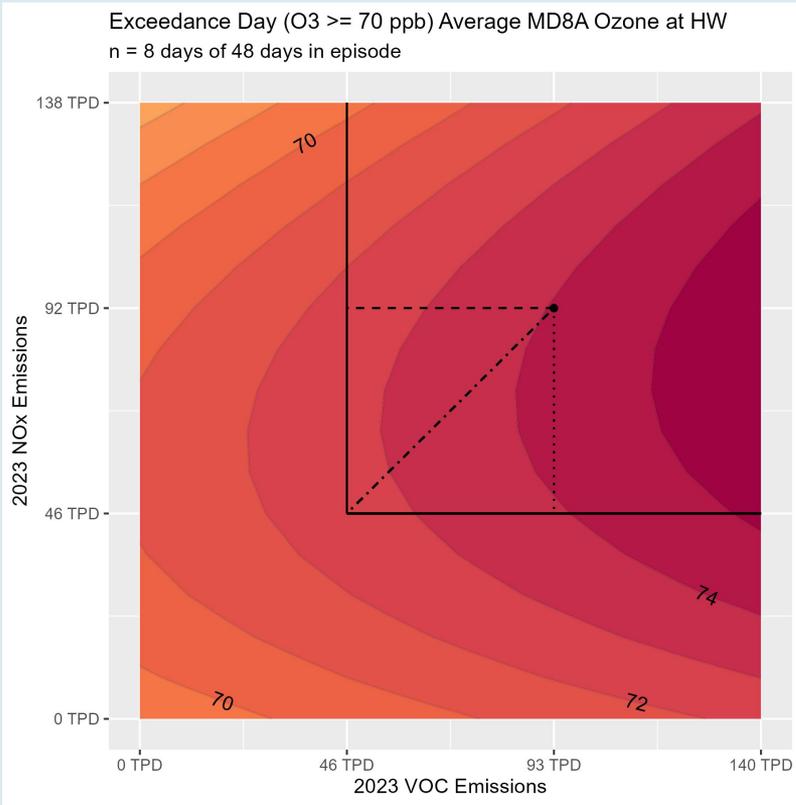
In the NWF, reductions in NO_x emissions can provide as great or greater an improvement in air quality when compare to VOC reductions.

A paired NO_x and VOC reduction approach is the most reasonable pathway to attaining the standard.



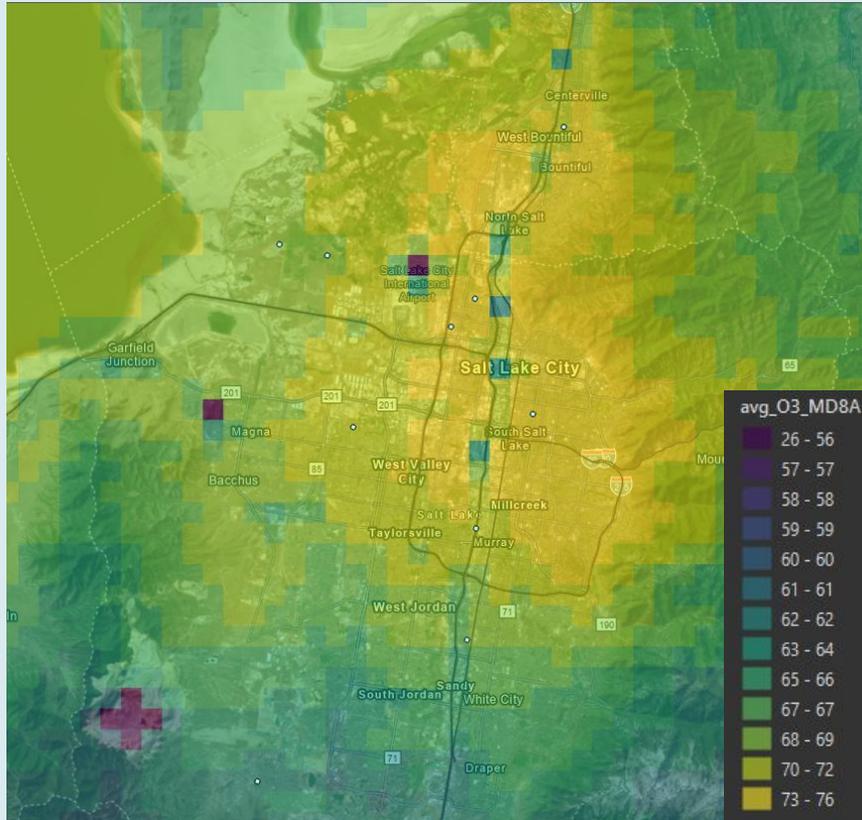
8-hour ozone isopleths representing NO_x and VOC reductions and the resulting predicted ozone concentrations at Bountiful monitoring station in the NWF NAA. Analysis was conducted using CAMx version 7.1 High-Order Decoupled Direct Method (HDDM) and demonstrates the sensitivity of the NWF NAA to changes in anthropogenic NO_x and/or VOC reductions.

Pathway to Attain



8-hour ozone isopleths representing NO_x and VOC reductions and the resulting predicted ozone concentrations at Bountiful monitoring station in the NWF NAA. Analysis was conducted using CAMx version 7.1 High-Order Decoupled Direct Method (HDDM) and demonstrates the sensitivity of the NWF NAA to changes in anthropogenic NO_x and/or VOC reductions.

Pathway to Attain



8-hour ozone grid cells represented as the average MD8A ozone value over exceedance days (highest value each day). Maxima may not occur at exactly the same time period.

Utah Focused Scientific Advancements

**Utah Summer
Ozone Study
(USOS)**

July 2024

**Photochemical
Assessment
Monitoring**

**Updated
Photochemical
Modeling**



NOAA DHC-6-300 twin otter plane

Photo from UWFPS NOAA study

Winter 2017

— Multi-State Transportation Letter

Governor Cox sent a multi-state letter to President Biden

- **4 Western States:**
 - Utah - led effort
 - Colorado
 - Wyoming
 - Arizona
- **Focused on transportation funding challenges and provided a list of solutions that these states agree would improve the implementation of CAA ozone standards throughout the Intermountain West:**
 - Improving Exceptional Events framework;
 - Common sense reforms to Renewable Fuel Standards;
 - Work to approve “outside of the box solutions”;
 - Improve the process of assisting and approving projects;
 - Revisit transportation project definitions;
 - Work with states on protecting highway funding for transportation projects that reduce emissions; and
 - Work with states to approve CAA 179B submissions for non-border states

Boundary Adjustment

- Utah has submitted a request to expand the boundary of the NWF NAA
- Anticipate that EPA will act on this request upon redesignation from moderate to serious in early 2025

Request for Adjustment of the Northern Wasatch Front Ozone Nonattainment Area Boundary for the 2015 8-hour Ozone National Ambient Air Quality Standard

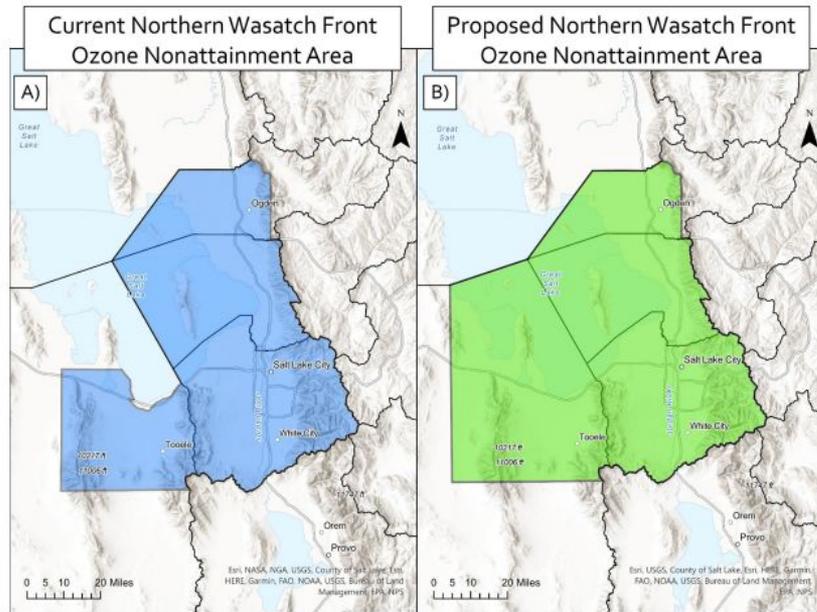
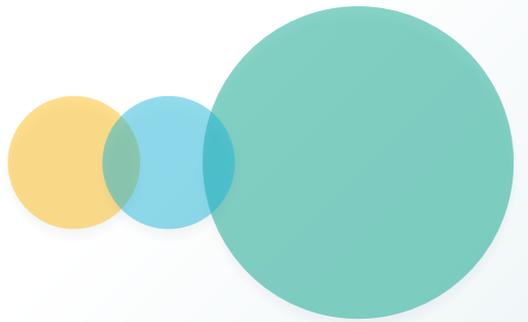


Figure 1: A) Current NWF NAA. B) Proposed NWF NAA.



Utah's Real World Strategies

- Work to meet requirements with the SIP planning tools that reduce emissions and show reasonable progress.
- Multistate letter/congressional actions to amend the prescriptive provisions of the Clean Air Act and EPA's implementing regulations.
- Work with EPA to find a pathway for substituting NO_x emissions for VOC emissions for RFP requirements.
- Prepare a modeling demonstration of the impact of international transported emissions under CAA 179B(b).

Ozone Attainment Plan

**Clean Air Act
Requirements**

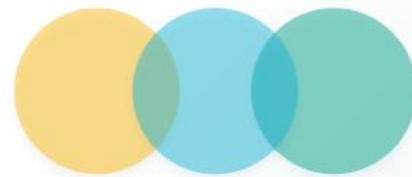
**Rules in
Progress**

**Real World
Solutions**



Clean Air Act 179B

Prevent serious nonattainment and
allow time for real world solutions



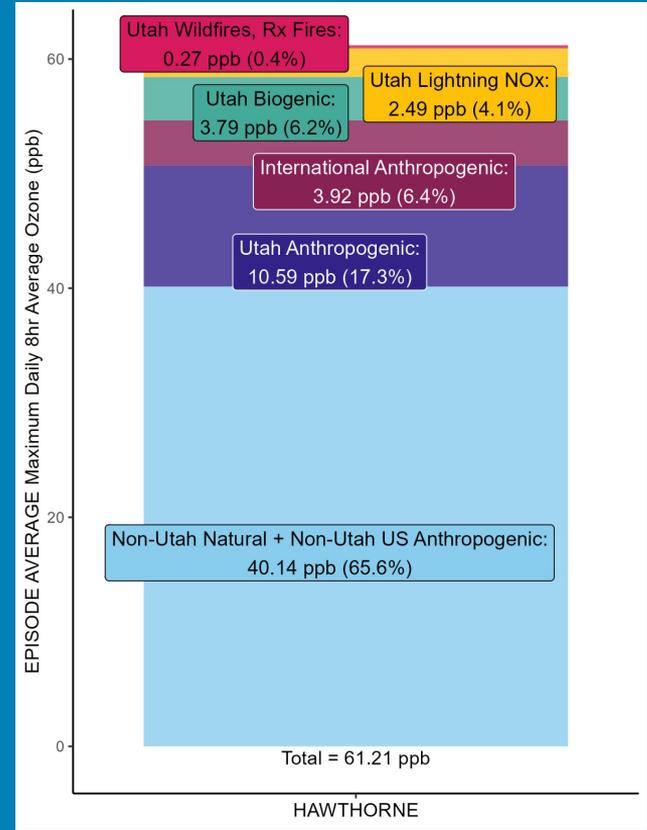
Clean Air Act 179B

CAA Section 179B

- Demonstration showing that the area would have attained the standard but for international contributions.
- Submit demonstration to EPA end of Fall, 2024 before area is reclassified to serious.
- Modeling funded by the legislature is being conducted by Ramboll and is expected to be completed by September 1, 2024.

Table 74: Future design values (FDV), source contribution estimates for international anthropogenic emissions (IAE) and adjusted future design values (FDV adj) at monitoring locations within the northern Wasatch Front non-attainment area.

Site	Site ID	County	FDV (ppb)	IAE (ppb)	FDV_adj
Bountiful	490110004	Davis	71	4.54	66
Hawthorne	490353006	Salt Lake	72	4.50	67
Herriman	490353013	Salt Lake	71	3.81	67
Erda	490450004	Tooele	70	4.06	65
Harrisville	490571003	Weber	70	3.12	66



CAA Section 179B

UDAQ is developing a 179B(b) for the NWF NAA for a Fall 2024 submission to EPA.

An approved 179B would not:

- Negate the requirement to reduce emissions and attain the standard.
- Remove sanctions from disapproved moderate SIP elements.

An Approved 179B would:

Give the state greater flexibility in how it approaches attaining the standard:

- What emission reductions are targeted;
- What programs are required; and
- Timeframe for implementation.

Opportunity for the State to remain on the record regarding the significant challenges facing it under current, and future, ozone NAAQS.

Ozone Attainment Plan

Clean Air Act Requirements

Requirements for SIP approval

Rules in Progress

Rules with short and long term outcomes that meet CAA requirements and get area closer to attainment

Real World Solutions

Results from studies will inform future policy to more effectively reduce ozone

Rules help meet 15% requirement

Research to find what rules are most effective



Clean Air Act 179B

Prevent serious nonattainment and allow time for real world solutions

Questions?



Ryan Bares



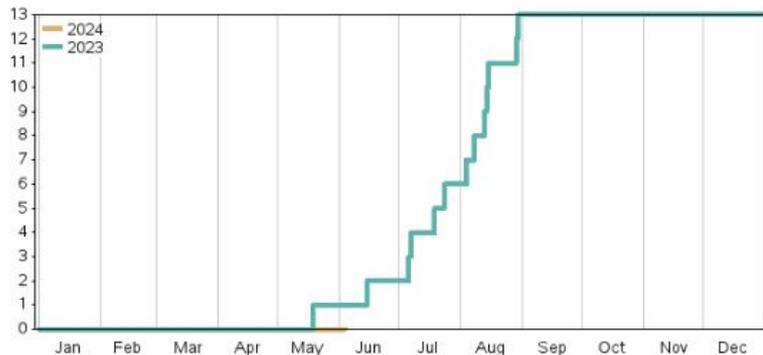
rbares@utah.gov



UTAH DEPARTMENT of
ENVIRONMENTAL QUALITY
**AIR
QUALITY**

Cumulative Number of Days 8-hr Ozone Daily Max > 0.070 ppm

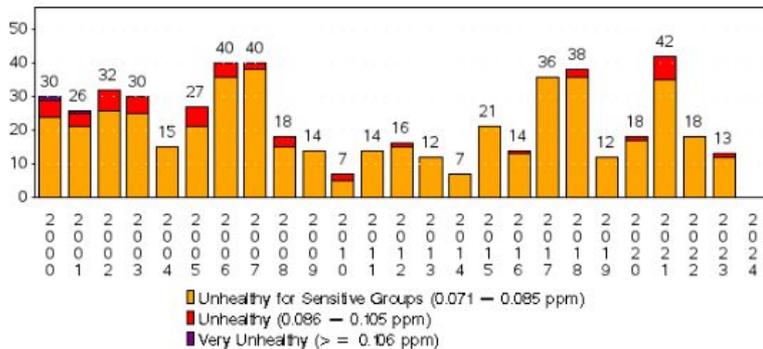
2024 vs. 2023
in Salt Lake City, UT



Note: Based on ALL sites
Source: U.S. EPA AirData <<https://www.epa.gov/air-data>>
Generated: June 5, 2024

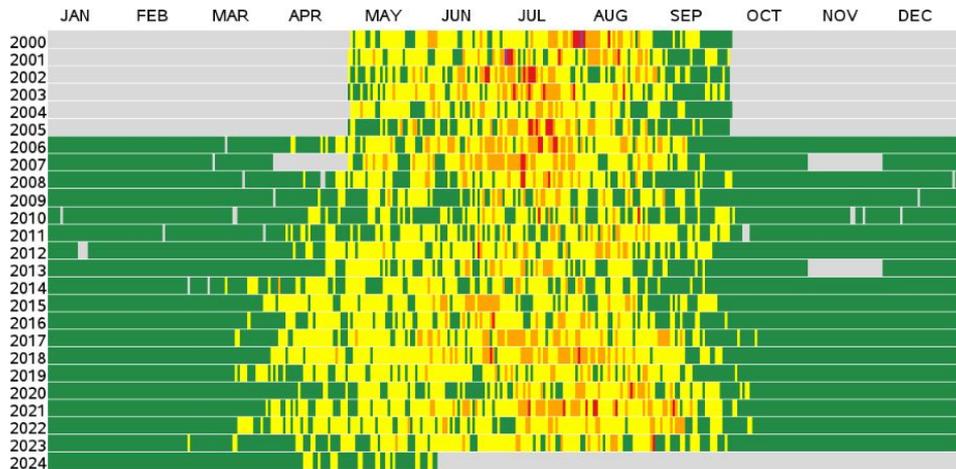
Number of Days 8-hr Ozone Daily Max > 0.070 ppm

2000-2024
in Salt Lake City, UT



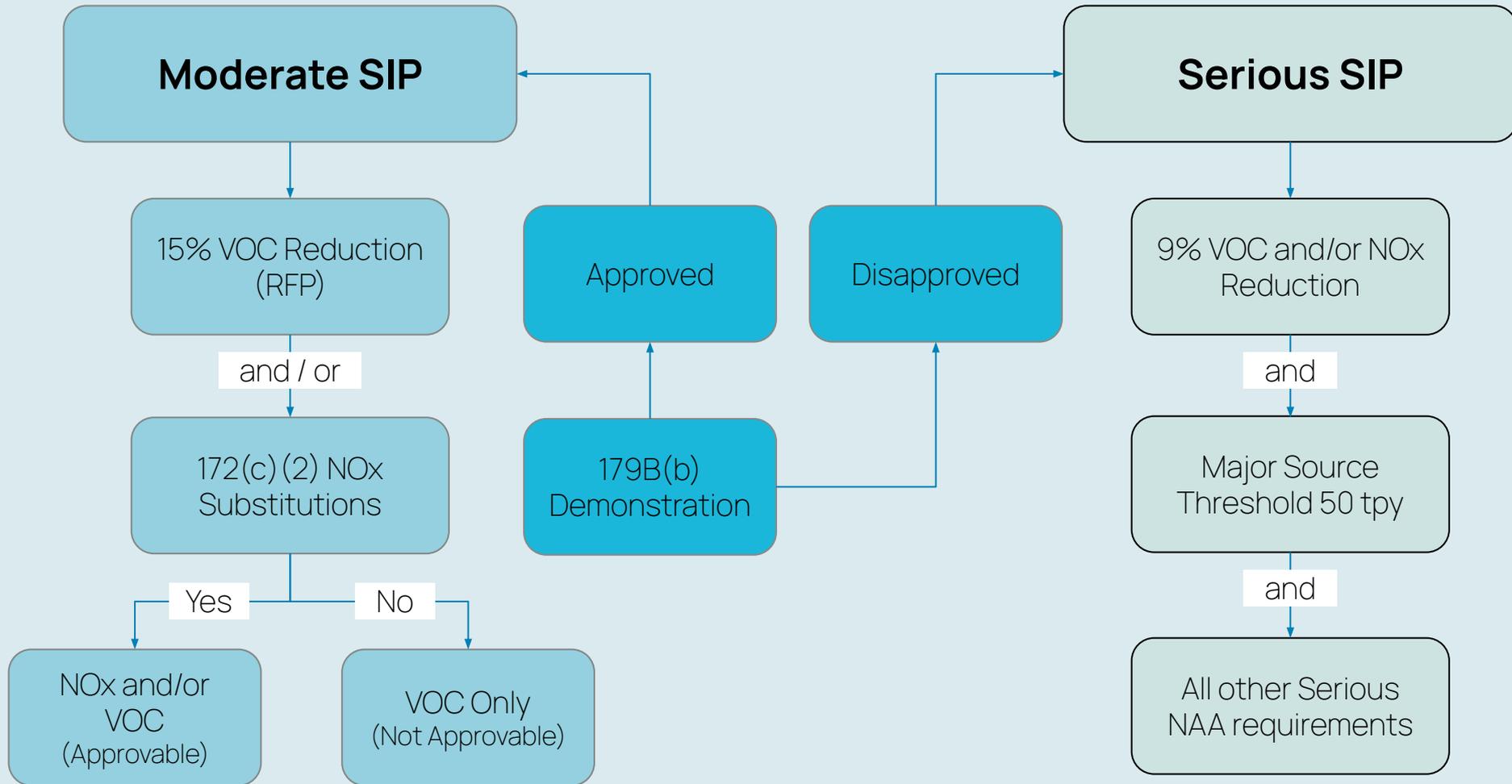
Ozone Daily AQI Values, 2000 to 2024

Salt Lake City, UT



AQI Category

- Good (<=0.054 ppm)
- Moderate (0.055-0.070 ppm)
- Unhealthy for Sensitive Groups (0.071-0.085 ppm)
- Unhealthy (0.086-0.105 ppm)
- Very Unhealthy (0.106-200 ppm)
- Hazardous (>=0.405 ppm 1-hour)



How have other states avoided sanctions?

After a SIP is submitted with known deficiencies, states have continued to identify additional SIP strengthening strategies. These are documented through rulemaking and revisions to the submitted SIPs.

EPA actions to begin sanction clocks require notice to the states and publication in the Federal Register. EPA also takes time to consider state's submissions with usually up to a year to make determinations and take action. States have focused efforts on reasonable progress, and demonstrating that the state is actively working to improve the basis of the SIPs. This could include:

- Actions to identify and quantify additional emission reduction strategies that impact the inventory, including incentive programs and public outreach and education.
- Rules that identify permanent, quantifiable and enforceable regulations on a portion of the inventory of air pollutant precursor emissions.
- Additional air quality model improvements to identify precursor emissions.
- Evaluations of other CAA provisions such as 179B International Contribution demonstrations.
- Exceptional Event demonstrations to exclude the impacts of natural and exceptional events such as wildfires and stratospheric intrusion.

[Status of Active Sanctions Clocks Under the Clean Air Act as of April 23, 2024](#)