

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 8

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Ref: 8P-AR

Bryce Bird, Director Utah Division of Air Quality P.O. Box 144820 Salt Lake City, Utah 84114-4820

> RE: EPA Region 8 Comments on Utah's Proposed Moderate Area Ozone State Implementation Plan and Part H Revisions for the 2015 Ozone National Ambient Air Quality Standard for the Northern Wasatch Front Nonattainment Area (Proposed Amendments to R307-110-13 and R307-110-17)

Dear Mr. Bird:

Thank you for the opportunity to provide comments on the State of Utah's proposed revisions to the State Implementation Plan (SIP) (Sections IX.D.11, IX.H.31, and IX.H.32) and accompanying Technical Support Documents (TSD) for the Northern Wasatch Front (NWF) Nonattainment Area (NAA) under the 2015 ozone National Ambient Air Quality Standard, which were approved for public comment by the Utah Air Quality Board on April 5, 2023, with comments due July 17, 2023.

Our preliminary comments are in the enclosure to this letter. EPA appreciates that many of the chapters of Utah's draft SIP revisions were shared with U.S. Environmental Protection Agency (EPA) Region 8 before the proposed SIP was put out for public comment, with the exception of the attainment demonstration and 179B(a) chapters, and thus a number of these comments have already been shared or discussed with the State. However, we would like to reiterate our comments on the following items:

- The SIP submission was due to EPA by January 1, 2023, and is still outstanding.
- The emissions inventory methodology is not sufficiently supported in the SIP narrative or TSD.
- The Reasonably Available Control Technology (RACT) chapter's reliance on Utah PM2.5 SIP sections IX.H.11 and IX.H.12, which have only recently been proposed for approval, could impact this SIP until these sections have been finalized.
- Control Technique Guidelines are insufficiently addressed for RACT.
- Only a quarter of the emissions reductions required under reasonable further progress (RFP) requirements are demonstrated.
- Attainment year modeling shows that the future design value exceeds the standard by several parts per billion.
- The 179B(a) demonstration relies on several of the same arguments that EPA

disagreed with in the previous 179B(b) disapproval on October 7, 2022.¹

- Motor vehicle emissions budgets cannot be greater than the future year SIP mobile source emissions inventory.
- Contingency measures are not creditable if implemented before a triggering event.

Our preliminary assessment is that the proposed 2015 ozone NWF NAA SIP needs additional development and analysis, as detailed in the enclosed comments, so that the 2015 ozone NWF ozone SIP can be fully approved by the EPA. However, we will not reach any final conclusions until after the State formally submits the 2015 ozone NWF SIP and after we conduct our own notice and comment rulemaking.

We want to acknowledge the tremendous efforts of the Utah Division of Air Quality toward developing the proposed 2015 ozone NWF ozone SIP. Additionally, we commend the effort that the State has put into addressing environmental justice concerns and complying with Title VI of the Civil Rights Act. We are impressed with the forward thinking of the State in its air quality planning and emissions reductions efforts.

As always, we are here to provide any assistance needed and look forward to working with you to help address the issues identified in this letter. If you have any questions, please contact me at 720-391-2147, or your staff may contact Amanda Brimmer at <u>brimmer.amanda@epa.gov</u>.

Sincerely,

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Adrienne Sandoval Director, Region 8 Air and Radiation Division

Enclosure: EPA Region 8 Comments on Utah's Proposed Moderate Area Ozone State Implementation Plan for the 2015 Ozone National Ambient Air Quality Standard for the Northern Wasatch Front Nonattainment Area.

¹ U.S. EPA, Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Areas Classified as Marginal for the 2015 Ozone National Ambient Air Quality Standards, Final Rule, 87 FR 60897, Oct. 7, 2022.

ENCLOSURE

<u>EPA Region 8 Comments on Utah's Proposed Moderate Area Ozone State</u> <u>Implementation Plan for the 2015 Ozone National Ambient Air Ouality Standard for</u> <u>the Northern Wasatch Front Nonattainment Area¹</u>

Before we address specific elements of the draft State Implementation Plan (SIP), we note that that this SIP is late to the U.S. Environmental Protection Agency (EPA). The date to submit Moderate Area SIPs for the 2015 Ozone National Ambient Air Quality Standard (NAAQS) was January 1, 2023.² The EPA strongly encourages the State to submit the Moderate SIP as soon as possible.

Comments on specific elements of the SIP and their corresponding Technical Support Documents (TSD) are organized by SIP chapter in the remainder of this document.

Chapter 1 Background and State Implementation Plan Requirements

No comments at this time.

Chapter 2 Northern Wasatch Front (NWF) Monitoring Network

No comments at this time.

Chapter 3 Baseline and Future Year Emissions Inventories and TSDs

Because of the volume of comments on this chapter, they have been placed in an appendix to this document (see Appendix A).

Chapter 4 Reasonably Available Control Technology (RACT) Analysis and Nonattainment New Source Review (NNSR)

4-1 Lacking acceptable level of detail related to CTG/ACT evaluation The proposed SIP does not include sufficient information in chapter 4 or in the TSD related to the evaluation and adoption of rules associated with applicable Control Technique Guidelines (CTG) and Alternative Control Techniques (ACT). It is also

¹ Utah Department of Environmental Quality, Proposed Moderate Area Ozone State Implementation Plan for the 2015 Ozone National Ambient Air Quality Standard for the Northern Wasatch Front Nonattainment Area, April 2023, <u>https://documents.deq.utah.gov/air-quality/planning/DAQ-2023-002575.pdf.</u>

² U.S. EPA, Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Areas Classified as Marginal for the 2015 Ozone National Ambient Air Quality Standards, Final Rule, 87 FR 60897, Oct. 7, 2022.

unclear whether all CTG sources were evaluated, or if only major sources with applicable CTGs were assessed. CTGs should be listed individually, with State rules identified that comply with each CTG. CTGs should also be listed individually for sources the State is making a negative declaration for, with supporting documentation confirming that no such sources operate in the Nonattainment Area (NAA).

4-2 Additional analysis to support RACT

In EPA's 2015 SIP Requirements Rule, we state that "[c]onsistent with the EPA's prior guidance (80 FR 12279; March 6, 2015), when determining what is RACT for a particular source or source category, air agencies should also consider all other relevant information (including recent technical information and information received during the state's public comment period) that is available at the time they develop their RACT SIPs."³ Consistent with this recommendation, the proposed RACT chapter will need to include a comparison to other State rules or additional analysis to substantiate compliance with a CTG as being representative of RACT-level controls. The Moderate Area Ozone SIP for the Denver Metro and North Front Range Nonattainment Area, State Implementation Plan for the 2008 8-Hour Ozone is an example of an approvable CTG analysis and negative declarations.⁴

4-3 Certification of Nonattainment New Source Review (NSR) Permitting

We recommend including a copy of the State rule that contains the relevant nonattainment NSR provisions. Further, we recommend including a crosswalk comparing the requirements of Nonattainment NSR programs at 40 CFR 51.165 for ozone nonattainment areas with the corresponding State rule provision that sufficiently meets federal requirements.⁵

4-4 References to PM2.5 SIP

The particulate matter (PM2.5) SIP conditions referenced in certain major stationary source RACT tables are contained within Utah's PM2.5 SIP sections IX.H.11 and 12, which have only been proposed for approval.⁶ Until we have issued a final rule approving these sections into the SIP, the references could change, which would the references affect how the major source RACT tables. To avoid such an effect, the references in the table could be revised to be more general, but there's no specific requirement or guidance on how to best reference another SIP section. We recommend that the Utah Division of Air Quality (UDAQ) be prepared to revise these tables if

³ U.S. EPA, Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements, Final Rule, 83 FR at 63007, Dec. 6, 2018.

⁴ Colorado Department of Public Health and Environment (CDPHE), Moderate Area Ozone SIP for the Denver Metro and North Front Range Nonattainment Area, State Implementation Plan for the 2008 8-Hour Ozone National Ambient Air Quality Standard, Adopted Nov. 2016, Chapter 6 – Reasonably Available Control Technology (RACT) Analysis, <u>https://raqc.egnyte.com/dl/uJJfKleU67/FinalModerateOzoneSIP_2016-11-29.pdf</u>.

⁵ See Pennsylvania certification showing an example of certifying the existing Nonattainment NSR program for the 2008 ozone standard, <u>https://www.regulations.gov/document/EPA-R03-OAR-2017-0735-0002</u>.

⁶ U.S. EPA, Approval and Promulgation of Implementation Plans; State of Utah; Salt Lake City and Provo, Utah PM2.5 Redesignations to Attainment and Utah State Implementation Plan Revisions, Proposed Rule, 85 FR 71023, November 6, 2020.

appropriate based on changes to the PM2.5 sections.

4-5 US Magnesium is currently outside of the ozone NAA boundary

While modeling indicates that this facility likely contributes to the NWF NAA and reductions from this source is an important part of the State's strategy to attain the ozone standard, since it is technically outside of the current NAA boundary, we want to ensure that emissions from this source are not included in the NAA point source emission inventory. If this source is brought into the NAA at a later date, RACT should include all sources of NOx and VOC from this facility, not just VOC.

4-6 Possible future comments on individual RACT analyses

Due to the number of individual RACT analyses conducted for this SIP, EPA staff have not been able to review them all in detail. Upon SIP submittal, staff will be reviewing each of the RACT analyses and will follow up with the State at that time.

4-7 Reporting requirements may need to be more stringent

To ensure that SIPs are enforceable by citizens, appropriate recordkeeping and reporting provisions need to be included in SIP rules. A recent EPA Region 8 action related to Colorado's SIP may provide the State some insight into what we will be looking for related to recordkeeping requirements in State regulations that are included in SIPs. See 88 FR 29829 (May 9, 2023).

Chapter 5 Reasonably Available Control Measures (RACM) Analysis

5-1 Insufficient Nonattainment Areas and EPA Resources Evaluated

The proposed SIP states on page 94 that the state compared "existing Utah administrative rules to other EPA SIP-approved rules of the three western air districts that were moderate nonattainment for the 2008 ozone standard — Imperial County, CA, Mariposa County, CA, and Phoenix-Mesa (Maricopa County), AZ. EPA would like to see the State look at more than just these three western states for possible control measures as well as resources provided by EPA.⁷ Of particular support to the State may be EPA's Menu of Control Measures (MCM), which is a living document that is updated as new data becomes available.⁸

5-2 Consideration of Transportation Control Measures as RACM

The proposed SIP doesn't address whether the State looked at CAA section 108(f) Transportation Control Measures (TCM). Existing EPA guidance provides some help in identifying the type of measures that might be considered. The thrust of this guidance is that section 108(f) TCMs are not presumptively RACM, but these should be considered in assessing whether they have applied RACM.

⁷ Suggest looking at page 7-32 of Colorado's SIP referenced in footnote number 4.

⁸ U.S. EPA, Menu of Control Measures, Sept. 2022, <u>https://www.epa.gov/air-quality-implementation-plans/menu-control-measures-naaqs-implementation</u>.

Chapter 6 Inspection and Maintenance (I/M) Program & TSDs

6-1 Applicability of basic I/M test

The proposed SIP states on page 108, "Utah County is not required to perform a basic test." This is not necessarily correct. Utah County is part of the Southern Wasatch Front (SWF), which is a Marginal ozone nonattainment area and is therefore not required to demonstrate effectiveness with this submission. However, the County may be requested to submit performance standard modeling comparing program characteristics against Basic standard requirements on its next submittal of a revision to the Southern Wasatch Front (SWF) ozone SIP/first 10-year maintenance plan. We recommend rephrasing the statement above to account for this possibility.

6-2 Updated I/M testing compliance factors now available

The proposed SIP states on page 109, "The compliance data is from EPA prepared compliance data dated 2/21/2019." Since this modeling exercise had been completed, 2020 I/M testing compliance factors have become available (EPA prepared compliance data dated 8/12/2021)." This is likely for the best given program data from 2020-2022 may be non-representative due to COVID-related program adjustments. This is also stated on page 3 of the I/M PSM TSD. The statement should have a citation of the origin of data, date retrieved, etc.

The proposed SIP also states on page 109, "These inputs were chosen to meet EPA and Department of Transportation guidance on updating local planning assumptions every 5 years." The connection between guidance for planning assumptions used in conformity decisions and data selection for I/M summary and evaluation is unclear. The EPA expects that the State will use latest information for SIP development. A summary of the latest information could be provided.

6-3 I/M Technical Support Documents

Comments 6-3-1 through 6-3-3 are related to the NWF I/M TSD.⁹

6-3-1 Clarification related to counties evaluated

(1) The NWF I/M TSD states on page 2, "Utah SIP Section X Parts A, B, C, D, and E [...] for the I/M Program Requirements for Davis, Salt Lake, and Weber Counties." EPA understands that the document references Section X, Part D (Utah County I/M program provisions) for purposes of analyzing relevant NWF I/M programs in the context of the reciprocity arrangement between all county I/M programs, which provides that an inspection in one county will be valid in all others. The State should clarify in some way that "Part D" is for Utah County and that, although Utah County is not within the NWF NAA, the county and Part D are included in this summary and in the Performance Standard Modeling (PSM) to demonstrate

⁹ UDAQ, NWF Inspection and Maintenance (I/M) Program 2015 Ozone NAAQS Moderate Ozone SIP, Technical Supporting Document (TSD), <u>https://documents.deq.utah.gov/air-quality/planning/DAQ-2023-002421.pdf</u>.

the overall compliance of all programs that provide I/M services to the NWF NAA.

(2) The NWF I/M TSD states on page 8, "Each county specific I/M program details utilized within MOVES 3.0.3 are included in the Table 1 to Table 4." This sentence is unclear. Please clarify its meaning.

(3) Several portions of section 2.0 restate information, and deal exclusively with Salt Lake County's program, rather than including details of all of the county I/M programs of the NAA.

6-3-2 Performance standards

(1) The NWF I/M TSD states on page 2, "40 CFR Section 51.351 Enhanced I/M Performance Standard provisions." The TSD should cite the Basic program performance standard, as is done in later sections of the TSD. Utah will be comparing the designated area's I/M programs' performance to the performance of the Basic program standard outlined in the CFR. That performance standard should be mentioned here.

(2) The State should discuss how the PSM TSD methodology either followed or diverged from published EPA guidance on I/M program performance standard modeling in the 'program evaluation' section. If methodology diverges, the State should explain how and why. It is unclear whether guidance document EPA-420-B-22-034 (2022) was followed. This comment also applies to the PSM TSD.

(3) The I/M TSD would benefit from greater discussion of coverage table inputs, especially compliance rate and compliance factor calculation, and could point to the illustration of that work in the PSM TSD.

6-3-3 Updated I/M testing compliance factors now available

(1) The NWF I/M TSD states on page 7-8, "Compliance factors were compiled utilizing local 2017 I/M EPA data covering: Total Vehicles tested, Total Failures, Waivers, and Failure Rate for the following testing procedures: Two Speed Idle, on-board diagnostic (OBD), and Gas Cap. The compliance data is from EPA prepared compliance data dated 2/21/2019." It is not clear whether the compliance factor calculated from 2017 data or 2019 data.

(2) The NWF I/M TSD also states on page 7, "These inputs were chosen to meet EPA and Department of Transportation guidance on updating local planning assumptions every 5 years." See earlier comment, 6-2.

Comment 6-3-4 relates to the I/M Performance Standard Modeling TSD.¹⁰

6-3-4 Performance standards

Similar to previous comment 6-3-2(2), the document should reference the PSM guidance and discuss the reasons for any departure from it (e.g., basic performance standard template in that guidance uses different IMProgramID codes than that seen in this TSD appendix).

Chapter 7 Reasonable Further Progress (RFP)

7-1 Shortfall of VOC emissions reductions for RFP

The proposed SIP does not meet the required reductions of 15 percent VOC emissions to be achieved between January 2018 and December 2023. EPA has been working with the State since 2021 to try to identify sufficient reductions to meet this requirement for a Moderate NAA and recognizes the efforts the State has made under other NAAQS to reduce VOCs. Unfortunately, these prior reductions cannot be credited towards this 15% VOC requirement for the 2015 ozone NAAQS.

For areas that cannot meet this requirement, the CAA allows an "RFP waiver" (see CAA 182(b)(1)(A)(ii)). This provision requires the tightening of the major source threshold for VOC sources to 5 ton per year (tpy), which will necessitate the implementation of RACT for 5 tpy and above sources as well as major source NNSR permits and the related requirement for offsets for construction or modification of such sources. Additionally, the State will need to demonstrate to the satisfaction of the Administrator that the plan for the area includes the measures that are achieved in practice by sources in the same source category in nonattainment areas of the next higher category (i.e., Serious). Without a waiver or other alternatives, EPA may be required to disapprove this SIP element, which would lead to a transportation conformity freeze until this element is remedied. The transportation conformity freeze would be effective on the date of the disapproval (see 40 CFR 93.120(a)(2) and 40 CFR 93.101).¹¹

Chapter 8 Attainment Demonstration and Weight of Evidence

8-1 Final Design Values excluding wildfire days not calculated correctly Table 68 does not calculate the final design value correctly for values that exclude wildfire events in 2016 and 2017. Per EPA's guidance, the adjusted base design value should carry one decimal to the right when applying the relative response

 ¹⁰ UDAQ, 2023 Existing Basic Inspection and Maintenance (I//M) Performance Standard Modeling Technical Support Document, Feb. 2023, <u>https://documents.deq.utah.gov/air-quality/planning/DAQ-2023-001726.pdf</u>.
 ¹¹ See CAA section 182(b)(1)(A)(i) and 40 CFR 51.1310(a)(4)(i) for RFP requirements for Moderate nonattainment areas for the 2015 ozone NAAQS.

factors (RRF).¹²

Table I shows the values in Table 68 on page 126 of the SIP. Table II shows the correct calculation, which results in a wildfire-adjusted modeled design value of 73 parts per billion (ppb) instead of 72 ppb for the Hawthorne site, and 72 ppb instead of 71 ppb for the Bountiful and Herriman sites.

Site	Site ID	County	Base DV	RRF	Future DV	FDV
Bountiful	490110004	Davis	75	0.9593	71.9	71
Hawthorne	490353006	Salt Lake	75	0.9698	72.7	72
Herriman	490353013	Salt Lake	74	0.9686	71.7	71
Erda	490450004	Tooele	73	0.9673	70.6	70
Harrisville	490571003	Weber	72.7	0.9676	70.3	70

 Table I - Pulled from Table 68

Site	Site ID	County	Base DV	RRF	Future DV	FDV
Bountiful	490110004	Davis	75.7	0.9593	72.6	72
Hawthorne	490353006	Salt Lake	75.7	0.9698	73.4	73
Herriman	490353013	Salt Lake	74.7	0.9686	72.3	72
Erda	490450004	Tooele	73.0	0.9673	70.6	70
Harrisville	490571003	Weber	72.7	0.9676	70.3	70

Table II - Adjusted Future DV Calculations

8-2 Attainment demonstration modeling exceeds NAAQS by 2-3 ppb

In EPA's 2018 guidance on demonstrating air quality goals for ozone, we state that the basic criteria required for an attainment demonstration based on weight of evidence (WOE) are as follows:

1) A fully-evaluated, high-quality modeling analysis that projects future values that are close to the NAAQS.

2) A description and explanation of each of the individual supplemental analyses, preferably from multiple categories. Analyses that utilize wellestablished analytical procedures and are grounded with sufficient data should be weighted accordingly higher.

3) A written description as to why the full set of evidence leads to a conclusive determination regarding the future attainment status of the area that differs from the results of the modeled attainment test alone.

While EPA does not specify an exact value for what may constitute "close to the NAAQS," it is generally agreed that approximately 1 ppb over NAAQS is the acceptable limit for an attainment demonstration using WOE.¹³ The proposed SIP

 ¹² U.S. EPA, Modeling Guidance for Demonstrating Air Quality Goals for Ozone, PM2.5, and Regional Haze, Nov.
 2018, Pg. 102, <u>https://www.epa.gov/sites/default/files/2020-10/documents/o3-pm-rh-modeling_guidance-2018.pdf</u>.
 ¹³ U.S. EPA, Approval and Promulgation of Implementation Plans; Texas; Attainment Demonstration for the Dallas/Fort Worth 2008 Ozone Nonattainment Area, Proposed Rule, 83 FR 19483, Pg. 19489.

is exceeding the NAAQS by 2-3 ppb at its highest monitors, which likely exceeds the 70 ppb standard by too great an amount to permit a successful WOE demonstration.

8-3 Data not compelling for wildfire contributions to ozone on 9/2/2017.

EPA recognizes the comprehensive and detailed analysis of wildfire smoke, surface monitoring data, meteorological information, and back trajectory information that Utah completed for the wildfire technical support document. EPA acknowledges that the analysis shows that both distant and regional wildfire smoke impacted the Wasatch Front during August 31st to September 2nd and September 4th-6th in 2017. However, these episodes appear to have involved conditions suitable for substantial ozone production from local ozone precursors, and it is difficult to determine if there was a substantial wildfire enhancement in addition to the local production, especially for September 2nd when ground concentration of PM2.5, CO and brown carbon were not substantially enhanced compared to typical levels. Thus, EPA recognizes that there may have been some impact from wildfires, but we do not find the data compelling for substantial wildfire contributions to ozone for 9/2/2017, with 9/5/2017 and 9/6/2017 not being particularly compelling either. In future SIP submittals, EPA recommends that Utah also perform photochemical modeling to estimate the wildfire contribution to ozone on exceedance days. This will be helpful for analyzing the relative contributions of local anthropogenic emissions and wildfire contributions to the exceedance.

Given the uncertainty in the wildfire contributions on these days, EPA calculated the modified design values when including only September 2nd (see Table III) in the baseline ozone design value, and when including September 2nd, 4th and 5th (see Table IV). Depending on the number of days included, the future design values vary from 72 ppb in the Utah analysis, to 73 ppb if September 2 is included, to 74 ppb if September 2, 5 and 6 are included. EPA has not determined that the Utah analysis is incorrect, but rather that there is uncertainty in the estimates of wildfire contributions and that there is a range of possible future design values that could be considered in the weight of evidence analysis. As noted above, in future modeling demonstrations, additional photochemical modeling to quantify the wildfire contributions could provide useful additional evidence for the exclusion of wildfire impacted days from the baseline design value.

Site	Site ID	County	Base DV	RRF	Future DV	FDV
Bountiful	490110004	Davis	75.7	0.9593	72.6	72
Hawthorne	490353006	Salt Lake	76.3	0.9698	74.0	74
Herriman	490353013	Salt Lake	75.0	0.9686	72.6	72
Erda	490450004	Tooele	73.0	0.9673	70.6	70
Harrisville	490571003	Weber	72.7	0.9676	70.3	70

Table III – Adjusted Future DV Calculations including 9/2/2017

Site	Site ID	County	Base DV	RRF	Future DV	FDV
Bountiful	490110004	Davis	76.3	0.9593	73.2	73
Hawthorne	490353006	Salt Lake	76.3	0.9698	74.0	74
Herriman	490353013	Salt Lake	76.0	0.9686	73.6	73
Erda	490450004	Tooele	73.0	0.9673	70.6	70
Harrisville	490571003	Weber	72.7	0.9676	70.3	70

Table IV – Adjusted Future DV Calculations including 9/2/2017, 9/5/2017, and 9/6/2017

8-4 Herriman monitor appears to be omitting 7/14/2017 and 9/3/2017 in adjusted base year design value when omitting wildfire days.

It appears that 9/3/2017 and 7/14/2017 have been omitted from the 4th maximum calculations for the Herriman monitor. When 9/2/2017, 9/5/2017, and 9/6/2017 are omitted from the 2017 values, the 4th max should be 75 ppb on 7/14/2017, and not 74 ppb on 8/16/2017. While this adjustment is important, it would not change the adjusted future design value after truncation. If there is an explanation for why these days have been omitted, please include it in the exceptional event TSD to make this clearer.

Chapter 9 179B(a) Prospective Demonstration

9-1 Similar concerns about 179B(a) demonstration as prior disapproved 179B(b) demonstration

The proposed SIP includes a CAA section 179B(a) prospective international transport demonstration, and also addresses several areas of concern that the EPA cited in its decision not to approve the previous 179B(b) prospective international transport demonstration. Comments 9-2 through 9-4 discuss the specific concerns EPA has identified. Additionally, section 9.2 of the SIP ends with an incomplete sentence, and it appears that some discussion of the results is missing here or might be addressed in the Section 9.3 Ozone Source Apportionment Modeling Results.

9-2 Use of OSAT vs APCA for source apportionment

The proposed SIP includes model source apportionment results using the Ozone Source Apportionment Tool (OSAT) in Comprehensive Air quality Model with extensions (CAMx) v7.1 for the 2023 attainment modeling scenario. There are two types of source apportionment tools available in CAMx: either OSAT or the Anthropogenic Precursor Culpability Analysis (APCA). The OSAT tool attributes ozone production to either VOC or NOx depending on which precursor is limiting for ozone production. For example, if ozone production is more sensitive to changes in VOC emissions at a given time, the ozone production is attributed to VOC emissions sources. Under VOC sensitive conditions, when biogenic VOC reacts with anthropogenic NOx, OSAT attributes ozone to biogenic VOC even though the anthropogenic NOx emissions are essential for ozone production and ozone levels could be reduced through NOx emissions reductions. EPA recommends the use of APCA tool for source apportionment studies because APCA attributes ozone production to the anthropogenic precursor when ozone is produced by reactions between anthropogenic and biogenic precursors. The APCA results are more useful than OSAT results for identifying the anthropogenic emissions sources that can be controlled to reduce ozone.

9-3 Concerns with source apportionment interpretation

Model error and bias is another important factor that should be considered when interpreting model source apportionment results. If a model underestimates ozone production, it might not accurately quantify source contributions to ozone. For example, if a particular emissions sector is missing or underestimated in the model, the OSAT and APCA tools will underestimate the importance of the sector to ozone production. This is a concern in the Wasatch Front modeling where the model seems to underestimate the production for ozone from local emissions sources.

There are several challenges in interpreting the source apportionment results in SIP Section 9.3. The proposed SIP presents results based on the total modeled ozone concentrations without correction for model bias. Typically, EPA would recommend first applying model relative response factors to correct for model bias, and then evaluating source apportionment using the bias corrected model results. For example, in Figure 21, the average modeled ozone on exceedance days was 66.38 ppb at the Hawthorne monitor, which is considerably less than the modeled 2023 ozone design value of 74.3 ppb. A topic of particular concern is that the model seems to perform well for regional background levels but underestimates local ozone production in the Northern Wasatch Front. Thus, if the model bias is caused by an underestimate of local ozone production, the CAMx OSAT results would underestimate the local contribution to ozone by 8 ppb. The EPA SMAT bias corrections technique, which increase all source categories proportionally to correct for model bias, might not accurately estimate the relative contributions to ozone from individual sources.

This was also a problem in the previous external source apportionment modeling performed by Ramboll that was submitted as part of the Utah 179B(b) retrospective demonstration. Ramboll also observed that their model performed well for regional background ozone but underestimated local ozone sources, and Ramboll noted that the bias correction technique would cause overestimates of the international transport contribution. Utah did not perform the standard bias correction to avoid artificially inflating the estimate of the international transport contribution, and EPA believes this is the correct approach. However, the local ozone contribution is likely underestimated by as much as 8 ppb in this approach, and the model source contribution analysis likely overestimate the international contribution relative to the local contribution to ozone. Currently, the text and associated calculations do not explicitly address the bias and implications, and EPA recommends adding discussion of possible underestimates of local ozone sources and Utah's ongoing efforts to improve the model accuracy. In summary, it remains challenging to develop reliable source apportionment results for the Northern Wasatch Front when the model underestimates ozone on exceedance days. EPA is committed to working with Utah in efforts to improve the model

performance to generate more reliable source apportionment results.

9-4 Subtraction of international contribution conflicts with EPA guidance In Section 9.4 the proposed SIP estimated what the future design value would be but for the presence of international emissions by subtracting the OSAT source contribution estimate for international anthropogenic emissions from the future design value calculated in the attainment demonstration. EPA guidance for CAA section 179B demonstrations does not recommend a simple subtraction of the international contribution from the future design value. Instead, EPA recommends evaluation of the relative contributions of domestic and international contributions, and states that a strong 179B demonstration would show a large international contribution relative to the domestic contribution. In cases where the domestic contribution to ozone is large relative to the international contribution, local emissions reductions are likely to continue to be effective for reducing ozone exposure.

In the Northern Wasatch Front modeling results, even with uncertainty in the source apportionment results, underestimation of local ozone production, and the use of OSAT instead of APCA, the model still shows that local ozone sources are larger than international sources. In future source apportionment studies, EPA recommends using the APCA source apportionment tool, quantifying both local and total domestic contributions to ozone, and continuing efforts to improve the model performance for ozone in the Northern Wasatch Front.

The text suggests that the 7% contribution on exceedance days is "a significant additional contribution ... considering that only 18.5% of the overall ozone contributions are attributed to in-state anthropogenic emissions." The 179B guidance states, "When results show that international contributions are larger on exceedance days and meaningfully larger than domestic contributions, the weight of evidence will be more compelling."¹⁴ In this work, the OSAT covers just one month and so excludes the nonexceedance days that have the largest international contribution (i.e., in spring). This makes the difference between 7% and 6% somewhat misleading, especially given the small contributions on both nonexceedance and exceedance days.

The 179B guidance also suggests that a demonstration will be more compelling when international anthropogenic contributions are large compared to the US anthropogenic contribution (i.e., not just the in-state contribution). The 18.5% in-state contribution for the NAA excludes the upwind US sources that are covered under the CAA. For example, the Cross-State Air Pollution Rule (CSAPR) OSAT modeling estimates that other State contributions to Hawthorne on top 10 days were approximately 5 ppb, or an additional 7%. If interstate transport contribution in the Utah modeling is consistent

¹⁴ U.S. EPA, Guidance on the Preparation of Clean Air Act Section 179B Demonstrations for Nonattainment Areas Affected by International Transport of Emissions, Dec. 2020, Pg. 44, <u>https://www.epa.gov/sites/default/files/2020-01/documents/draft_179b_guidance-final_draft_for_posting.pdf</u>.

with the EPA modeling, the upwind US states would add to the original 19.2% at Hawthorne to make the US anthropogenic contribution 26.2%. That still excludes the potential for larger US contributions from Utah sources associated with the model lowbias. If the low-bias is associated with US sources (upwind or in-state) then the US contribution is currently underestimated by the model. The difference between the top 10 days and the DV could easily represent another 4 ppb or 6%. Thus, a reasonable interpretation is that US anthropogenic sources contribute between 26 and 32% of overall ozone on exceedance days. In that context, a difference between 7% and 6% is not particularly large.

Chapter 10 Transportation Conformity and Motor Vehicle Emission Budget

10-1 Inconsistent mobile model versions referenced

The proposed SIP states on page 152, "During the SIP development process, the WFRC coordinated with the Interagency Consultation Team (ICT) workgroup and developed ozone SIP motor vehicle emissions inventories using the latest planning assumptions and tools for traffic analysis and the EPA-approved Motor Vehicle Emission Simulator (MOVES2014a) emissions model." Here and in the following sentence, *MOVES2014a* is mentioned as the model version used to develop SIP inventories and budgets. See comment 3-2-1 in Appendix A for the correct model version that should be referenced.

10-2 MVEBs higher than mobile source inventory conflicts with EPA guidance The proposed SIP states on page 153, "It is important to note that the MVEBs presented in Table 75 are somewhat different from the on-road mobile emission inventory presented in Table 8. The emissions established for this MVEB were calculated using MOVES3 to reflect an average summer weekday. The totals presented in the summary emissions inventory in section 3, however, represent a summer average-episode-day. Thus, the temporal averaging used to generate these two different products results in slightly different values." The proposed SIP also states on page 152, "For the purpose of this SIP revision, MVEBs for precursor emissions of VOC and NOx are established for the attainment year of 2023, and are based on the projected on-road mobile inventory [...]."

While this second statement is technically correct, the establishment of a total NAA NOx MVEB higher than the inventory (on-road mobile portion) value is not consistent with applicable guidance for conformity and emissions inventory development. Relevant regulatory text also states: "EPA will not find a motor vehicle emissions budget in a submitted control strategy implementation plan revision or maintenance plan to be adequate for transportation conformity purposes unless the following minimum criteria are satisfied [...] The motor vehicle emissions budget(s), when considered together with all other emissions sources, is consistent with applicable requirements for reasonable further progress, attainment, or maintenance (whichever is relevant to the given implementation

plan submission) [...]" (40 CFR 93.118(e)(4)).

While EPA guidance on emissions inventory development and the use of MOVES for EI development and conformity purposes contains language stating that MVEBs may be different from the established inventories of a SIP, the most reasonable reading of this guidance is that MVEBs may be lower than the established mobile source inventory. If the MVEBs are not consistent with the inventory used to attempt to demonstrate RFP and attainment, then the State must show or explain how the distinct MVEBs are consistent with the requirements for attainment and RFP (i.e., by explaining how the higher NOx budget does not injure demonstration of RFP and attainment). It may be easiest to have the MVEBs conform with inventory values.

10-3 MVEBs contingent upon approvable attainment demonstration or RFP

As discussed previously in comment 8-1, EPA may run into issues approving MVEBs if neither the attainment demonstration nor RFP are approvable. To find motor vehicle emission budgets adequate for transportation conformity purposes, the budgets have to meet the adequacy criteria in 40 CFR 93.118(e)(4). Specifically, the motor vehicle emissions budget(s), when considered together with all other emissions sources, must be consistent with applicable requirements for reasonable further progress, attainment, or maintenance. We may be unable to find the submitted MVEBs adequate if the attainment demonstration and RFP demonstration are unapprovable, since MVEBs are tied to attainment as well as to meeting RFP. In this case, the current budgets would remain in place until EPA is able to approve new budgets or find them adequate for conformity purposes.

Chapter 11 Contingency Measures

11-1 Contingency measures not creditable if implemented before triggering event Related to pages 154-155 of the proposed SIP, the contingency measures (CM) included will not approvable if they are implemented prior to a future EPA action determining that the nonattainment area either failed to attain by the Moderate attainment date or failed to meet RFP. "The Act's plain text expressly provides that valid contingency measures become operative only when the triggering conditions set forth in the statute occur, and not any earlier."¹⁵ Additionally, in *Bahr v. EPA*, the Ninth Circuit held that previously implemented measures cannot qualify as contingency measures. ¹⁶ Furthermore, in EPA's final rule disapproving Sacramento Metro SIP submission, we state that "[c]ontingency measures that have already been implemented may not serve as contingency measures even if they provide emissions reductions beyond

¹⁵ Sierra Club v. EPA, 985 F.3d 1055, 1067 (D.C. Cir. 2021).

¹⁶ Bahr v. U.S. EPA, 836 F.3d 1218, 1235-1237 (9th Cir. 2016).

those needed for any other CAA purpose."¹⁷

While it is correct that no rulemaking precludes a state from implementing a CM before it is triggered, when EPA is reviewing a SIP submission, a measure that is already implemented, or that is scheduled to be implemented without being specifically triggered by either of the triggering events described in CAA section 172(c)(9), cannot be used to satisfy the CM requirement. So, unless implementation of these rules is contingent upon one of the two triggering events, they will no longer be creditable towards CMs once they are implemented. This is an important distinction here.

For more explanation on how EPA intends to evaluate CMs, see EPA's recent draft guidance, issued in March 2023.¹⁸

Chapter 12 Environmental Justice (EJ) & Title VI Considerations

12-1 Praise for State's EJ and Title VI work

EPA commends the work the State has done on this topic. This chapter represents a significant and important step forward to consider information that historically has not been considered at all in the context of a submission. EPA specifically appreciates the State's efforts to do a broad demographic analysis using EJ Screen and expand outreach to ensure the State is reaching specifically impacted communities by hosting meetings after business hours and on a Saturday.

While EPA has not yet published guidance for States on how to address EJ and Title VI in SIPs, we encourage the State to consider including the following in a final SIP submission:¹⁹

- Discuss CAA section 110(a)(2)(E)(i) and explain how the measures in the SIP are consistent with necessary assurances that the state's programs do not violate Title VI. Emphasize that the measures are projected to improve air quality throughout the nonattainment area including in the communities specifically identified as certain demographics through the EJ Screen map.
- Additional public engagement should be highlighted and tied back to 110(a)(2)(E)(i).

¹⁷ U.S. EPA, Disapproval of Clean Air Plans; Sacramento Metro, California; Contingency Measures for 2008 Ozone Standards, Final Rule, 88 FR 39179, 39180-39181 (June 15, 2023).

¹⁸ U.S. EPA, DRAFT Contingency Measures Guidance, March 2023, <u>https://www.epa.gov/air-quality-implementation-plans/draft-contingency-measures-guidance</u>.

¹⁹ U.S. EPA, Clean Air Plans; 2012 Fine Particulate Matter Serious Nonattainment Area Requirements; San Joaquin Valley, California, Proposed Rule, 87 FR 60494, Oct. 4, 2022. *See* Pg. 60530 for existing resources that can be used in the interim for Title VI considerations.

Part H.31 & H.32 Emission Limits and Operating Practices (Section IX)

13-1 Possible risk with relying on not yet approved PM2.5 SIP elements for Ozone SIP The ozone SIP RACT requirements in Section IX.H.32 currently rely on unapproved SIP Section IX.H.11 and IX.H.12.²⁰ Section IX.H.12 includes refinery plant-wide caps that may not be appropriate as Best Available Control Measures (BACM), and therefore may not be appropriate as RACT for ozone. In addition, the BACM analysis for the refineries in the Salt Lake City nonattainment area did not address limits, or present detailed BACM analyses for VOC, which is one of the two assumed precursors of ozone. Therefore, further SIP limitations may be warranted for VOC emissions resulting from refinery sources.

²⁰ Utah State Implementation Plan, Emission Limits and Operating Practices, Section IX, Part H.31 and Part H.32, <u>https://documents.deq.utah.gov/air-quality/planning/DAQ-2023-002579.pdf</u>.

APPENDIX A EPA COMMENTS ON CHAPTER 3 - EMISSIONS INVENTORIES

3-1 EPA requests inventory workbooks

Utah's Ozone Inventory Preparation Plan states that "[a] list of the individual data tables and sources of the data used in the calculation processes is included in the supplied Excel input workbook and RStudio script and is available upon request." Please provide to EPA the workbooks for all sources' emissions inventory, or make them available on the state's website upon submittal of the final SIP.

3-2 On-Road Mobile Source Emissions Inventory

3-2-1 Mobile Vehicle Emissions Simulator (MOVES3) model name

The model acronym stands for "<u>Motor</u> Vehicle <u>Emission</u> Simulator", which should be changed in the acronym list and throughout the document where the long-form model title is used. The specification of "2014 Release" is incorrect. Specify MOVES3 version number used for modeling mobile source emissions, or else leave the '3' and release version out of the acronym definition. On first mention of MOVES, cite model and specify release version (within the '3.xx.xx' version series) used for mobile source inventory development.

3-2-2 Agreement needed between Mobile Source Emissions Inventory and Motor Vehicle Emissions Budgets

The emissions values in the on-road SIP emissions inventory in Table 8 and Table 19 should be reconciled with what is in the 2023 on-road mobile source TSD and motor vehicle emissions budgets (MVEB) TSD.²²

Emissions provided in the SIP are higher for volatile organic compounds (VOC) and lower for Nitrogen oxides (NOx) compared to the MVEB (see prior comment 10-2 and Table V below). It appears that that the discrepancy may be due to the SIP emissions inventory (EI) reflecting an episodic emissions scenario (averaging over a 7-day period) and the MVEB reflecting a single summer ozone season weekday. MVEBs may be lower than the established mobile source inventory but should not exceed it. This issue is elaborated upon in comment 10-2.

	NOx (tpd)	VOC (tpd)
Table 8/Table 19 – SIP Ch. 3	35.40	15.32
Table 3 - MVEB TSD	37.58	14.18
Difference	(2.65)	1.00

²² UDAQ, Northern Wasatch Front, UT Nonattainment Ozone Area Motor Vehicle Emissions Budgets Derivations TSD, Feb. 2023, <u>https://documents.deq.utah.gov/air-quality/planning/DAQ-2023-001700.pdf</u>.

Comments 3-2-3 through 3-2-6 are related to the Mobile Source Emissions Inventory TSD.²³

3-2-3 Duplicative posting of 2023 on-road mobile TSDs

There appear to be two TSDs on the website for 2023 on-road mobile sources, dated August 2022 and February 2023.²⁴ Apart from different dates and link names, the documents appear to be identical, so it is not clear why both have been provided. Please clarify.

3-2-4 Clarification needed on 'remaining county' inventory

The proposed SIP on-road TSD states on page 5, "... on-road mobile source summertime 2023 projection ozone emissions inventory for the Northern Wasatch Front, UT Ozone Nonattainment Area covering Davis, Salt Lake, Tooele and Weber Counties and the remaining 25 counties within the state of Utah." Clarify that the remaining county on-road emissions inventory does not form part of what is presented as the NAA EI. The clause about the remaining 25 counties is probably not needed, given the subject of the TSD.

3-2-5 Clarification needed on vehicle population estimation

The proposed SIP on-road TSD states on page 11, "For MOVES vehicle types 21, 31, and 32 (passenger cars and light duty trucks), the department of motor vehicles (DMV) total was multiplied by the MOVES default percentage for these vehicle types. This eliminates vehicle classification discrepancies between the MOVES default and the State classification. The population value for each of the 13 MOVES vehicles classifications were then divided by the 2017 VMT from HPMS to create a vehicle population factor for each vehicle type." It also states that the source type/VMT ratio is used with 2023 projected VMT to gather source type population counts. This is confusing and there appears to be a step missing here.

3-2-6 Inland port VMT estimate methodology

The proposed SIP on-road TSD states on page 6, "In addition, to address the anticipated (but undetermined at this time) development of trucking operations at the Utah Inland Port, the vehicle miles traveled (VMT) for single unit shorthaul and long-haul trucks was increased by 15%, and for combination trucks by 30%."

It is unclear if this adjustment is currently being used in regional conformity analyses or if it is only used for the SIP EI. In the time between Wasatch

²³ UDAQ, 2023 Northern Wasatch Front, UT Nonattainment Ozone Area Summer Projection Ozone Inventory Onroad TSD, Feb. 2023, <u>https://documents.deq.utah.gov/air-quality/planning/DAQ-2023-001699.pdf</u>.

²⁴ UDAQ, TSD for On-Road Mobile Sources: Summertime 2023 Projection Ozone Emissions inventory for the Northern Wasatch Front, UT Nonattainment Area and Surrounding Modeling Domain within Utah, Aug. 2022, https://documents.deq.utah.gov/air-quality/planning/DAQ-2023-001346.pdf.

Front Regional Council (WFRC) forecasting 2024 socio-economic data, has there been any observed increase in class 50 and 60 VMT, particularly any increase attributable to the inland port freight activity? If so, documentation should be provided explaining this.

3-3 Non-Road Mobile Source Emissions Inventory

3-3-1 Further breakout of sources needed in Nonroad TSD²⁵

Snowmobile emissions are discussed at length in the TSD, yet most other nonroad equipment is grouped together. Non-road equipment should be broken out by more source categories; these are not discussed in the TSD. Typically, commercial and lawn and garden equipment are categories with emissions about as large as the rail and aviation categories. They should each be broken out and discussed in detail, including assumptions and projections used. See Table 14 in EPA's emissions inventory guidance, which suggests that inventories for mobile sources, including nonroad sources, should be broken out by county and Source Classification Codes (SCC) or SCC group.²⁶

3-4 Nonpoint/Area Source Emissions Inventory

3-4-1 Further breakout of sources needed

Similar to comment 3-3-1, see Table 14 in EPA's emissions inventory guidance for suggested delineation of nonpoint sources, which should be broken out by county and SCC or SCC group. Additionally, the guidance states that "[f]or county and emissions processes reported that have reductions associated with rules, these summaries should include any control efficiencies or rule effectiveness assumed and actual and/or projected emissions. Projected attainment year emissions summaries may also be required for areas performing modeled attainment demonstrations."

3-4-2 No current TSD linked on State website

There is a TSD noted in a footnote in the SIP narrative (see page 28), but there is not a TSD listed on the State's TSD webpage.²⁷ The TSD linked from the footnote lacks data and detail related to how the area/nonpoint source emissions inventory was developed. Sections appear to be placeholders. Please clarify whether the posted document is intended as the final TSD.

https://www.epa.gov/sites/default/files/2017-07/documents/ei_guidance_may_2017_final_rev.pdf.

 ²⁵ UDAQ, Technical Support Document 2017 Baseline, Episodic and 2023 Projection Ozone Emissions Inventory Non-Road Mobile Source, May 2022, <u>https://documents.deq.utah.gov/air-quality/planning/DAQ-2023-001585.pdf</u>.
 ²⁶ EPA, Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations, May 2017,

²⁷ UDAQ, Area Source Inventories, Updated 08/26/20, <u>https://documents.deq.utah.gov/air-quality/planning/DAQ-2023-001348.pdf</u>; Northern Wasatch Front Moderate Ozone SIP Technical Support Documentation, <u>https://deq.utah.gov/air-quality/northern-wasatch-front-moderate-ozone-sip-technical-support-documentation</u>, <u>support-documentation</u>, <u>sup</u>

3-5 Point source emissions inventory

3-5-1 Lacking acceptable level of detail in SIP narrative and TSD

The proposed SIP discusses the point source emissions inventory on pages 30-31, but the methodology for calculating and projecting point source emissions isn't detailed enough. Given that the source category "other point sources" is 91% of the total NOx emissions and 97% of VOC emissions from the point source category, and 24% of the total NOx inventory for the whole NAA, we recommend that this category be further broken out in the SIP narrative, to help explain what types of facilities are included in "other."

Additionally, on page 31 of the SIP and page 3 of the point source TSD the Kem Gardner institute is mentioned, but not cited. Details of what dataset was used, where it can be referenced, and how it was used are needed.

3-5-2 Not all large point sources are included in RACT chapter and vice versa In Table 1 of the TSD, there are several sources listed under the heading "Wasatch Front" that are not in the RACT chapter. Additionally, not all sources included in the RACT chapter are in Table 1 in the point source TSD. Please clarify which sources in this list are in the NAA and which are not.

3-5-3 Discrepancy in boiler emissions totals

In section 7.5.2 of the SIP, it is estimated that boilers emit 8.55 tons per day (tpd) of NOx emissions in the NAA, which is several times higher than the NOx totals for 2-5 million British thermal units (MMBtu) boilers listed in Table 12 plus 5+ MMBtu boilers listed in Table 16. This needs to be corrected or explained. Also, please confirm and discuss whether 5+ MMBtu boilers listed in Table 16 and Table are included in Table 1 in the point source TSD.

3-5-4 Summer day emissions inventory

While the point source emissions inventory is provided in tons per day in this chapter, the TSD provides the information in tons per year and does not explain how the State determined a tons per day estimate from this information. Additionally, when the baseline (i.e., 2017) emissions provided in Chapter 4 of the SIP are summed, they total to 6,671 tons per year (tpy) for NOx and 2,686 tpy for VOC, which divided by 365 is 18.28 tpd and 7.36 tpd respectively. When this is compared to the total for the non-EGU point sources in Chapter 3, Table 7, it totals 20.43 tpd and 5.85 tpd respectively, which is roughly 2 tpd higher for NOx and 2 tpd lower for VOC. Thus, the importance of providing more detail on what sources are included in these totals as well as how annual emissions were adjusted to get summer day emissions. It would be helpful to confirm for which point sources Continuous Emission Monitoring System (CEMS) data was used.