Comments from WI DNR [06/20/18]				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
	Exec Summary, p 14, Section 5	*None*	As discussed, significant additional text needs to be added to the document to describe the model's limitations and chronic underprediction of design values at shoreline receptors, with the associated implications of upwind state obligations. While the model's overall performance is within the range generally considered acceptable, the results show that the model performs considerably worse than average on high observed ozone days. The TSD must therefore include a separate discussion/analysis of how well (or not) the model performed on high observed ozone days, since those days are the ones that matter for the purposes of this exercise. Furthermore, if this analysis of model performance on high-ozone days is outside the range considered acceptable, this should be clearly noted and perhaps described as a fatal result that renders the modeling moot for transport purposes. Based on 2018 ozone season-to-date observed data, there is a near-zero chance that the Wisconsin shoreline monitors (Sheboygan and Milwaukee) will achieve the predicted DVFs that the model forecasts. The TSD should note that Sheboygan's 2016-18 draft DVC is 78 ppb; the TSD should then explain how it is a reasonable modeling result that these values will be in the 69-70 ppb range in just 5 years. Similarly, the TSD should provide an	LADCO agrees that there should be some discussion about model performance in the TSD. See the new Section 5.2 on model performance in the document. Our findings support the use of this model for planning because the performance statistics on high days are within an acceptable range. The model performance statistics for 2011 do not support the statements made here about the model performing considerably worse than average on high observed days. Across all AQS monitors in the 12km domain the NMB and NME for MDA8 O3 on all days are 2.31% and 6.14%, respectively; the NMB and NME for days where observed MDA8 O3 >= 60 ppb are -3.3% and 6.72%. The differences in performance at specific monitors for all days vs. high O3 days shows similar trends, with the model actually performing better on high observed days at some sites. In general though, the model does perform slightly worse on higher observed days, but not considerably worse as indicated in this comment. Regarding the discussion on the Wisconsin monitors, LADCO feels that this is best handled by the agency in their weight of

Comments from WI DNR [06/20/18]				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
			explanation for how Milwaukee's will go from 72 ppb in 2016-18 to as low as 62 ppb in that same time frame.	evidence response associated with their iSIP. We added a discussion on LADCO's interpretation of the DV forecasts to the conclusions in the TSD:
	11	*"LADCO replaced the EGU emissions in the EN platform with 2023 EGU forecasts estimated with the ERTAC EGU Tool version 2.7. The ERTAC EGU Tool provided more accurate estimates of the growth and control forecasts for EGUs in the Midwest and Northeast states than the EPA approach used for the "EN" platform. LADCO used the EPA EN Platform emissions estimates for all other inventory sectors."*	The ERTAC workgroup will likely be reaching out in late June for updated EGU controls. A note on the upcoming ERTAC update in the TSD text might be helpful, along with potential impacts to the modeling results from such updates, and whether/when LADCO plans to perform an additional modeling run with the new ERTAC version.	Added to section 3.5.1: "Differences between the EPA and ERTAC EGU emissions forecasts arise from alternative forecast algorithms and from the data used to inform the model predictions. The EPA engineering approach EGU forecast from the 2023 EN modeling used Continuous Emissions Monitoring (CEM) data available through the end of 2016. ERTAC EGU 2.7 used CEM data from 2011 and state-reported changes to EGUs through May 2017. The ERTAC EGU Committee periodically updates the model forecasts to integrate the most recent information on current and future year energy system changes. A new 2011-based forecast to 2023 that considers the actual EGU emissions to-date will be released by the end of summer 2018. While the timing of the release of this EGU emissions forecast will not be available for a new CAMx

Comments from WI DNR [06/20/18]				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
				simulation to support the 2015 O_3 NAAQS transport SIPs, the results from this forecast will certainly produce different CAMx estimates of future air quality and design values. The ERTAC EGU 2.7 emissions used for the modeling reported in this TSD represent the best available information on EGU forecasts for the Midwest and Eastern U.S. available during Spring-early Summer 2018. As new ERTAC EGU inventories become available, LADCO will consider simulating these data with CAMx to evaluate the changes to future year air quality from differences in ERTAC EGU emissions forecasts. "
	16	*"to calculate future year design values (DVFs) for monitors in the Midwest and Northeast U.S. As we used a base year of 2011, we estimated the base year design values (DVCs)"*	Since "DVF" and "DVC" are not generally recognized acronyms, consider including the "F" and "C" as subscripts to make it clearer that these are a type of design value: DV_f and DV_c.	EPA uses DVF in their recent TSDs. See: https://www.epa.gov/sites/production/files/2017-05/documents/aq_modeling_tsd_final_csapr_update.pdf For clarity, DVF replaced with DV_{2023} and DVC replaced with $DV_{2009\text{-}2013}$
	21	*"For 194,953 AQS data pairs, the Pearson correlation coefficient for the LADCO and EPA simulations is 0.99969 and*	It would be instructive to also discuss the slope of the best-fit lines and, in particular, mention that the LADCO model predicts slightly lower MDA8 values. You can then state that such minor differences between models and model runs will be	Added the following text: "The LADCO simulation has a small negative mean bias (MB) across both the AQS (MB: -0.29 ppb) and CASTNet

Comments from WI DNR [06/20/18]				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
		the coefficient of determination (R^2) is 0.999, indicating that the two simulations produced very similar results. The comparison of predicted O_3 concentrations at the rural CASTNET monitors shows similar correspondence between the runs (R^2 = 0.999).”	largely washed out when applying the RRF approach to predicting future DVs. (The same comment holds true for the other plots of this type: Figures 12, 25)	(MB: -0.2 pbb) networks, indicating that, on average, the LADCO 2011 simulation estimated lower ozone than the EPA 2011 simulation.” Added to the end of the last paragraph in that section: “Using a common computing platform and applying the RRF approach for forecasting design values will ensure that LADCO’s future year ozone estimates are not contaminated by numerical differences due to computing architecture.”
	24	*“This plot highlights that only two Lake Michigan shoreline monitors, Sheboygan Co., WI and Allegan Co., MI are at or near maintenance of the 2015 O_3 NAAQS. A third monitor in Wayne Co., MI is also forecast to be near maintenance status.”*	Figure 14 shows the average DVFs, which only tell you about the nonattainment areas, not about the maintenance area. Only a plot of maximum DVFs would show which sites are at or near maintenance.	Updated the text to: “This plot highlights that all monitors in the region are forecast to be in attainment of the 2015 O_3 NAAQS in 2023. Only two Lake Michigan shoreline monitors, Sheboygan Co., WI (69.3 ppb) and Allegan Co., MI (67.1 ppb) are forecasted to be within 9% of not attaining the 2015 O_3 NAAQS. A third monitor in Wayne Co., MI (67.7 ppb) is forecast to be with 5% of nonattainment status. “
	29	*“While all of the LADCO states, with the exception*	Based on Table 6, WI does NOT have a CSAPR-significant linkage to any of the Northeast	Updated the text to:

Comments from WI DNR [06/20/18]				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
		of MN, have CSAPR-significant linkages to the maintenance monitors in the Northeast, OH has the largest single contribution to a monitor outside of the LADCO region (2.88 ppbV at Harford, MD)."	maintenance monitors. Please revise text accordingly.	"While all of the LADCO states, with the exception of MN and WI, have CSAPR-significant linkages to the maintenance monitors in the Northeast…"
	38-39	*"Sec. 5.4.1 Alternative Power Sector Modeling (all text in section)"*	It would be helpful for LADCO to state more explicitly in the text in this section (and possibly Sec. 2.5.2 LADCO 2023 Emissions Summary) why the different EGU emission inputs in LADCO's modeling (compared to EPA) lead to lower DVFs. LADCO also mentioned on the 6/13 call that state- and county-level EGU info may be added to the final document; this would provide useful additional context.	Added the following paragraphs to the end of sec 5.4.1: "The differences between the LADCO and EPA 2023 O_3 forecasts are the result of differences in the EGU NOx and SO_2 emissions used for the two simulations. The differences in NOx emissions produce both higher and lower O_3 in the LADCO 2023 simulation relative to EPA, depending on where the emissions changes occur and on the ozone formation regime (i.e., NOx or VOC-limited conditions) impacted by the emissions. The LADCO simulation generally forecasted higher fine particulate matter ($PM_{2.5}$) in 2023, primarily from aerosol sulfate (SO_4). Figure 30 shows differences in June 11 daily maximum MDA8 and aerosol SO_4 between the LADCO and EPA 2023

Comments from WI DNR [06/20/18]				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
				CAMx simulations. This figure illustrates the correspondence of the spatial patterns of the differences, where the regions of lower O_3 match with the regions of higher SO_4 in the LADCO simulation. This correspondence indicates that there are radiative impacts on photolysis from including more SO_2 emissions in the LADCO simulation. In other words, the higher SO_2 emissions forecasts produce higher SO_4 in the LADCO simulation. This additional aerosol loading in the LADCO simulation attenuates the incoming solar radiation, which in turn impacts photolysis and results in less O_3 formation. The combination of changes to direct O_3 precursor emissions (NOx) and radiative forcers (SO_2 and SO_4) resulted in overall lower DVs_{2023} in the LADCO simulation relative to the EPA simulation. Additional work is needed to isolate the changes from each of these processes individually on O_3 formation. LADCO is designing an experiment to deactivate the aerosol feedbacks to O_3 formation in CAMx. The results of this simulation will allow us to quantify the extent to which the lower DVs_{2023} forecasted by LADCO are from NOx emissions impacts versus

Comments from WI DNR [06/20/18]				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
				the radiative impacts from SO_4."
	39	*"The LADCO simulation (y-axis) predicts slightly lower O_3 concentrations across all sites (AQS NMB = -0.89%, CASTNET NMB = -0.4%)."*	Please define NMB. (Is it normalized mean bias?) Would this be a useful metric to include elsewhere in this report?	Added a footnote to the page: "NMB = Normalized Mean Bias, measure of the overall difference between the modeled and observed concentrations at grid cells that contain monitoring sites"
	43 & 48	*Tables 7, 8 and 10 for Milwaukee monitor*	Please add description of how/why the EPA modeling data for the Milwaukee monitor listed in these tables differs from EPA's results.	LADCO worked with EPA to resolve these differences in the LADCO calculations; the data are updated in the TSD and are now consistent with the EPA values. We also added narrative on how differences in the completeness criteria used by EPA and LADCO will lead to the differences in the future year DVs.

Comments from Mat Hollinger, IDEM, 06/14/2018				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
1	14		Table 2 is never explained in the body of the text.	The following text has been added to section 2.5.2: "Table 2 presents the total 2023 O_3 season (May 1 – September 30) emissions for the major criteria pollutants. LADCO state and regional total emissions are presented in both of these tables."

Comments from Mat Hollinger, IDEM, 06/14/2018				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
				"The total 2023 O3 season emissions are presented in Table 2 as a record of the emissions used in the LADCO 2023 CAMx simulation."
2	20	For the rest of the states, such as New England, most of the Southeast, and the West, we grouped them into single tracers for computational efficiency.	In Figure 5, the southeast one color. But in Table 6, I see MS is listed. Perhaps this MS should be MO? Also in Table 6, list KY before SE.	Updated Table 6 to reflect that the source region is MO and moved the KY row above the SE row.
3	24	The RRF plot indicates that the largest reductions (25-30%) in DVFs are forecasted to occur in Chicago, Louisville, Cincinnati, and North Carolina.	The reductions do not look as great in Louisville as they do in the other three cities. Cleveland looks to have greater reductions. This would indicate that the lakeshores could see greatest reductions.	Updated text: "The RRF plot indicates that the largest reductions (25-30%) in DVs_{2023} are forecasted to occur in Chicago, Cleveland, Cincinnati, around Chesapeake Bay, and North Carolina."
4	28		It is difficult to read some of the numbers in the map. This occurs with any map zoomed into Lake Michigan.	The maps were expanded in the document to make them easier to read.
5	43		Are the last two columns of Table 7 based on monitor observations? If so, there wouldn't be a 3x3 avrg or max.	"3x3" removed from the table header row. Displaying the average and max observed concentrations in the period
6	9	LADCO simulated May through September 2011 as individual months using 10-day model spin-up periods for each month.	Do we know if there would be a major difference in modeling results if the months were ran consecutively?	While we didn't do this modeling experiment for this study, it's well-established that CAMx and CMAQ simulations converge on the same answer after ~5-day spin up period relative to a

Comments from Mat Hollinger, IDEM, 06/14/2018				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
				continuous simulation. Given the short amount of time that LADCO had to complete these runs and the subsequent analyses, our best option was to run the months in parallel with 10-day spin up periods for each block.
7	12	Table 1	The absolute difference in the 2023 EGU NOx emissions for LADCO is only 1158 tons per year. The other regions absolute differences for the other regions are much greater. So are the other regions driving the modeling differences?	This simulation indicates that both NOx and SO2 are having impacts on ozone. Greater EGU NOx decreases in 2023 from ERTAC relative to EPA produce lower ozone in the LADCO run through oxidation chemistry. Lesser EGU SO2 decreases in 2023 from ERTAC relative to EPA lead to more SO4 in the LADCO run, which attenuates photolysis and leads to lower ozone through photochemistry.
8	16	• Only days with modeled MDA8 >= 60 ppb are used	Probably should state that at least 5 days with MDA8 >= 60 PPB are needed to calculate.	Changed text to: "At least 5 days with modeled MDA8 >= 60 ppb are needed to retain the monitor for the future year DV calculation"
9	17		In Tables 3 and 4: What is the difference in bias and bias%? I would initial think that bias% is just bias*100. Could it be NMB%?	There are only two values here: modeled and obs, so using a mean metric doesn't apply. Bias is absolute bias and bias% is normalized bias. The headers in the tables have been changed to: ABS BIAS and NORM BIAS; then these metrics are defined beneath the table:

Comments from Mat Hollinger, IDEM, 06/14/2018				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
				ABS BIAS = MOD-OBS; NORM BIAS = (MOD-OBS)/OBS
10	20	In Section **Error! Reference source not found.** LADCO presents alternative design values and source apportionment modeling results for different transport modeling flexibilities.	Is there a plan to present SA results for the NO Water cells (available on Google Drive) method and the bias filtering in the TSD? Also, are the SA based on the top 10 modeled days?	We assume you are referring to the contribution assessments (CSAPR linkages) that are based on the source apportionment modeling. LADCO has a spreadsheet on the TSD Google Drive that compares the state linkages for water/no water cells (see: https://docs.google.com/spreadsheets/d/1-r7w9Xs9IJrmgN7g5C-fvRnfCBVDdEjC1NnvRojX4uM/edit#gid=135654140) LADCO does not currently have plans to calculate the linkages for the bias filtered results, but we could explore this product if the LADCO states would like to use it for their iSIPs. See the description of the 8-step process for calculating contributions in EPA (2016). LADCO followed the exact same approach to develop the contribution linkages presented in the TSD.
11	21	**Error! Reference source not found.** shows a timeseries comparison of MDA8 O_3 for the EPA and LADCO 2011 simulations at a single monitor location. Each data point on this	It might be beneficial to show the time series plots for those monitors that modeled as maintenance in an appendix. It will show that the LADCO computing cluster can reproduce EPA results at the monitors of most concern.	Additional plots added to the appendix, and the following text added to the end of the model performance discussion: "Timeseries plots comparing the LADCO 2011, EPA 2011, and observations for

Comments from Mat Hollinger, IDEM, 06/14/2018				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
		figure represents the daily MDA8 for the two simulations at the Chiwaukee Prairie monitor in southeastern Wisconsin. This figure also shows a very close correspondence between the EPA (blue line) and LADCO (red line) simulations relative to the observations (black line).		the rest of the high O_3 monitors listed in Table 5 are provided in the Appendix (Figure 38 through Figure 47)."
12	23	**Error! Reference source not found.** shows the difference in O_3 season maximum (LADCO – EPA) between the two simulations. Cool colors indicate that the EPA simulation forecasts higher O_3 than the LADCO simulation; warm colors indicate higher O_3 in the LADCO forecast. In general, the EPA simulation predicts higher O_3 in the Midwest, Northeast, Gulf Coast, and Pacific Coast states; the LADCO simulation predicts higher O_3 in the Four Corners region and Central Arkansas.	The figure shows LADCO-EPA, so cool colors show a positive difference, which would mean that LADCO results are high in those areas. Seems like that either the map is EPA-LADCO, or the color bar needs to be reversed so that cooler colors are negative.	Plot corrected.
13	29	These linkages are derived from the standard EPA attainment test	EPA stated in the latest memo that contributions are based on the top 10 future year modeling days.	Text updated to:

Comments from Mat Hollinger, IDEM, 06/14/2018				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
		that includes water cells in the 3x3 matrix surrounding each monitor.	Is this the same approach taken with the LADCO modeling? If so, would it be better to show contribution maps from the average of the top 10 future year modeling days rather than the season maximums?	"These linkages are derived from the relative contribution factor (RCF) approach presented in EPA (2016) and are based on attainment test calculations that include water cells and do not include any filtering for model biases." The point of these contribution maps was to show the maximum extent, or footprint, of the ozone tracers for each source region. The EPA source contribution methodology is not as simple as the top 10 future year modeling days. First, it is based on the top 10 days around specific monitors. The top 10 days will be different across the domain. It also utilizes a cutoff of 60 ppb. In cases where no cells are >= 60 ppb, it uses the top 5 highest modeled concentrations. LADCO will investigate updating these plots in a future version of the TSD to better represent the source region impacts during periods that are most applicable to the attainment test.
14	29	The states with contributions that equal or exceed 1% of the 2015 O_3 NAAQS (0.70 ppbV) are highlighted with yellow	EPA wants 1% of the NAAQS, states want 1 ppb, the SIL value. A compromise could be projected non-attainment sites get 1%, projected maintenance sites get 1 ppb. Just a thought.	Thanks for the idea. The contribution table is updated to highlight 1 ppb contributions as distinct from the 1% contributions.

Comments from Mat Hollinger, IDEM, 06/14/2018				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
		shading.		
15	30	The O_3 tracer from offshore sources shown in **Error! Reference source not found.** has relatively small impacts on O_3 in the LADCO states.	We may want to highlight the influence of offshore sources on the Northeast region.	Text updated to: "While the O_3 tracer from offshore sources shown in **Error! Reference source not found.** demonstrates relatively small impacts on O_3 in the LADCO states (< 4 ppb), it does indicate that this source has a notable impact on O_3 along the coast of the Mid-Atlantic and Northeast states (~10-20 ppb). "
16	48		In Table 8: 12 monitors shown, 11 have DV's that change based on water vs no water. 8 of them have DV'S that move in the same direction in both LADCO and EPA modeling. AQS ID's 90013007, 360810124, and 260050003 do not move in the same direction.	This is an interesting point and LADCO thinks that it's expected. The two runs give different answers and depending on which cells are included/excluded in the DV calculations, one should expect to get different outcomes. It would take some investigative work to pin down why the direction of the changes differ between these runs. LADCO can pursue this if the states feel that they are interested in knowing why/how this happens.
17	48		Table 8 seems to suggest that it would be best to use the water cell results over the no water.	For all of the LADCO state monitors listed in this table, the DVs are either lower or unchanged when water is considered in the attainment test calculation.
18	49		Model bias filtering removes the CT monitors as maintenance monitors, buts adds the Richmond, NY monitor into maintenance. Five monitors to	The relative contribution factor (RCF), which is the basis of the linkages, would not change in this case. In other words, the

Comments from Mat Hollinger, IDEM, 06/14/2018				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
			four monitors. However, the max values for the four maintenance monitors that remain after filtering increased. So what's better: five monitors with lower max values, or four monitors with higher max values? It might depend on the linkages.	RCFs used in the standard "unfiltered" contribution calculations would be used here as well. You could pretty easily calculate the linkages by scaling the "water" linkages by the ratio of the bias filtered/unfiltered future year DVs.
19	11	Full documentation for the ERTAC Emissions model and 2.7 simulations are available through the MARAMA website[1]	IDEM appreciates the inclusion of the reference for full documentation of ERTAC model and simulations through MARAMA. This reference is important for CAMD and other entities' access to the model's input files.	Noted.

Comments from Holly Kaloz, Ohio EPA, 06/18/18				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
1	Header (p5-57)	LADCO 2015 O3 NAAQS Transport Modeling Protocol	Header still indicates this is the modeling protocol.	Fixed header in document Section 3
2	12-15	Table 1 shows the annual NOx and SO2 EGU emissions for the base year (2011), ERTAC EGU 2023, and the EPA EN 2023 inventories.	Presenting data for SO2 is irrelevant for ozone transport. Although generally not harmful and may be interesting to readers for other purposes, it may be misleading for any readers who are not well informed. *Also mentioned in several other locations in pp 12-15	Additional analysis of the LADCO 2023 O_3 projections relative the EPA 2023 EN modeling shows that there are connections between SO_2 and O_3. The SO_2 emissions lead to changes in particulate SO_4, which impact photolysis by altering the radiative balance in the model. As such, LADCO feels that including SO_2 is relevant not only for demonstrating the differences in the emissions inventory between the LADCO and EPA runs, but also because there are O_3 chemistry impacts related to SO_2.

Comments from Holly Kaloz, Ohio EPA, 06/18/18				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
3	15	Table 2 (in entirety).	It is unclear exactly what is represented in this table and there is no discussion of it in the text. Is this for all sectors or just ERTAC? Also, similar to the comment above, presenting data for CO, SO2, NO3 and PM2.5 is irrelevant for ozone transport.	CAMx is a "one-atmosphere" model and all of the input emissions have some relevance to each other, either directly or indirectly. Further, including all of the emissions species presents a comprehensive summary of a key input to the model. The following text has been added to section 2.5.2: "Table 2 presents the total 2023 O_3 season (May 1 – September 30) emissions for the major criteria pollutants. LADCO state and regional total emissions are presented in both of these tables." "The total 2023 O3 season emissions are presented in Table 2 as a record of the emissions used in the LADCO 2023 CAMx simulation."
4	26	LADCO generated these results with SMAT-CE using the standard US EPA attainment test configuration (top 10 modeled days, 3x3 cell matrix around the monitor, including water cells).	Suggest explicitly stating whether the modeling results presented and analyzed in section 5.2 include a 15% bias filter or not. As this is discussed in the section 3 (and then later in section 5.4.3) it was not immediately clear whether the results in section 5.2 included the bias filter.	Text added: "Note that these results are not filtered for model biases. The bias filtered attainment test results are presented in Section 5.5.3"

Comments from Holly Kaloz, Ohio EPA, 06/18/18				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
5	26	Figure 14 shows the LADCO DVFs zoomed in on the Lake Michigan region. This plot highlights that only two Lake Michigan shoreline monitors, Sheboygan Co., WI and Allegan Co., MI are at or near maintenance of the 2015 O 3 NAAQS. A third monitor in Wayne Co., MI is also forecast to be near maintenance status.	Figure 14 indicates it shows average DVFs. It is unclear how this figure highlights monitors at or near maintenance, as maintenance is based on the maximum, not average, DVFs. In addition, only 2 monitors appear yellow while the text mentions 3 monitors near maintenance status.	Updated the text to: "This plot highlights that all monitors in the region are forecast to be in attainment of the 2015 O_3 NAAQS in 2023. Only two Lake Michigan shoreline monitors, Sheboygan Co., WI (69.3 ppb) and Allegan Co., MI (67.1 ppb) were forecast to be within 9% of not attaining the 2015 O_3 NAAQS. A third monitor in Wayne Co., MI (67.7 ppb) was forecast to be within 5% of nonattainment status. "
6	31	These linkages are derived from the standard EPA attainment test that includes water cells in the 3x3 matrix surrounding each monitor.	Similar comment to #4 above; suggest explicitly stating whether the modeling results presented and analyzed in section 5.3 include a 15% bias filter or not.	Updated text to: "These linkages are derived from the relative contribution factor (RCF) approach presented in EPA (2016) and are based on attainment test calculations that include water cells and do not include any filtering for model biases."
7	35	Table 6, rows for SE and WRAP source regions.	For each of the SE and WRAP source regions, source apportionment results indicate the states within the area collectively contribute significantly to maintenance monitors. Depending on how we decide to address maintenance monitors, this may be problematic as U.S. EPA recommends states which are contributing significantly coordinate with each other. We may need to demonstrate in	Interesting point. We based the LADCO source mapping on an analysis of the EPA 2023 EN transport modeling which showed that none of these states, individually, contributed to NAA monitors in the Midwest or Northeast.

Comments from Holly Kaloz, Ohio EPA, 06/18/18				
No.	**Page**	**Existing Text in Draft**	**Reviewer Comment**	**Response**
			some way why no single state within the SE or WRAP regions is expected to, on its own, contribute significantly.	
8	51	It should be noted that the bias filtering has more of an impact on the DVFs when water cells are included in the attainment test calculations (these results are not shown here).	Should this be "when water cells are <u>not</u> included"? Suggestion based on previous statement (p. 50 "We applied the bias filtering to the attainment test calculations that include water cells.") and the header row in table 9. Also, this statement to the effect that results not shown had more of an impact begs the question as to what, specifically, the impact was, and why it was not included.	No, this statement is correct. The point of this bias filtering flexibility was to demonstration whether applying a bias filter to the model has any significant impacts on the attainment test. LADCO did not feel there was added value in including the "No Water" bias filtered results in the TSD. We have included these results in the electronic docket of files associated with the TSD. Added the following text for clarity: "It should be noted that the bias filtering has slightly more of an impact on the DVs_{2023} when water cells are included in the attainment test calculations. The results that demonstrate the impact of the bias filtering when water cells are excluded are not shown here."
9	51	Table 9, New Haven monitor row.	Row is incomplete.	LADCO does not have a complete AQS monitoring database for the New Haven monitor. We are missing the data that we used to calculate the bias filtered top 10 modeled days for this monitor. Row removed from the table.