

# Air Quality Memorandum

**REPORT NO.** 24

**DATE** August 12, 2008

**SUBJECT** CONFORMITY ANALYSIS FOR THE AMENDED 2030 REGIONAL TRANSPORTATION PLAN AND THE 2009-2014 TRANSPORTATION IMPROVEMENT PROGRAM.

**ABSTRACT** The Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFTEA-LU) and the Clean Air Act Amendments (CAAA) require that all regionally significant highway and transit projects in air quality non-attainment and maintenance areas be derived from a “conforming” Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP). A conforming Plan or Program is one that has been analyzed for emissions of controlled air pollutants and found to be within emission limits established in the State Implementation Plan (SIP). This conformity analysis is made by the Wasatch Front Regional Council (WFRC), as the Metropolitan Planning Organization for the region, and submitted to the Federal Highway Administration and the Federal Transit Administration for their concurrence. This conformity analysis is being prepared under the final conformity regulations issued jointly by the EPA and USDOT on November 24, 1993, and the March 2006 Final Rule.

This document analyzes the air quality impacts of some amendments to the WFRC 2030 RTP which was found to meet air quality conformity requirements as stated in a letter from FHWA and FTA dated September 30, 2007. Included in this document are an updated conformity determination and a description of the changes to the travel model and the transportation network since the previous conformity determination. For complete documentation of the previous conformity analysis, the methods and procedures of which still apply to this update, please refer to Air Quality Memorandum 21, June 18, 2007.

Based on the analysis presented in this document, the Amended 2030 RTP and the 2009-2014 TIP conform to the State Implementation Plan for all pollutants in applicable non-attainment or maintenance areas. Therefore, all the transportation projects in Weber, Davis, and Salt Lake Counties included in the Amended 2030 RTP and the 2009-2014 TIP are found to conform.

**Wasatch Front Regional Council**

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## A. Amendments to the RTP

Listed below are the projects that have been proposed to be added to the RTP since it was approved by the Regional Council in May 2007 and found to conform by Federal Highway Administration and Federal Transit Administration in September 2007.

### March 2008 Amendments:

1. Upgrade three existing intersections on Bangerter Highway in Salt Lake County to grade separated interchanges in Phase 1. The proposed interchanges are located at 6200 South, 7800 South, and 600 West. The travel model capacity of Bangerter Highway was not changed as a result of this project since most of Bangerter Highway still operates with signalized at-grade intersections.
2. Move the Phase 2 interchange on Bangerter Highway at Redwood Road to Phase 1.
3. Move the Phase 2 railroad structure project at 14600 South to Phase 1.
4. Add a fixed guideway transit corridor on 5600 West from I-80 on the north and eventually connecting with the Mid Jordan LRT line (already included in the plan) on the south. The transit corridor on 5600 West was modeled as bus rapid transit (BRT), but the technology for the corridor is yet to be determined and could be either bus rapid transit, streetcar, or light rail.

### Current Amendments:

#### **Weber County**

1. **SR-108 (West Haven) – Extend Midland Drive (from Hinckley Drive intersection, ~3650 South/2600 West to 1900 West/SR-126)**

The SR-108 Environmental Impact Statement recommends moving the terminus of the project from the intersection of SR-108 and the Hinckley Drive extension to the intersection of SR-108 and 1900 West/SR-126.

[Amendment: Add to Phase 1 of the RTP, SR-108 from the intersection of the Hinckley Drive extension to 1900 West/SR-126.]

#### **Davis County**

2. **700 South (Layton) – Main Street to Flint Street**

The South Layton Interchange Environmental Impact Statement recommends the interchange connection to the west from Main Street to Flint Street. This project spans the railroad corridor including UTA's FrontRunner and provides a connection to the overflow park and ride lot on the west side of the railroad tracks and helps decrease traffic on Gentile Street.

[Amendment: Move from Phase 2 to Phase 1 of the RTP, the section of 700 South from Main Street to Flint Street.]

3. **Legacy Connector (Farmington) – North Legacy to Legacy Parkway/I-15**

The City of Farmington and UDOT recommend including a project connecting North Legacy and the Legacy Parkway.



[Amendment: Add to Phase 2 of the RTP, a project connecting North Legacy and the Legacy Parkway. This project would include potential north-south alignments between I-15 and the Great Salt Lake on the west side of Farmington City.]

**4. Designate the Denver and Rio-Grande Western Corridor (D&RGW) as a Transit and Trails Corridor – 400 North in West Bountiful to 3300 South and Midland Drive in West Haven**

The Utah Transit Authority (UTA) requested that the portion of the D&RGW corridor they own be designated as a future transit corridor so the right-of-way can be protected and preserved. The corridor is currently designated in the Rails to Trails program and portions are in use as a trail.

[Amendment: Add to the RTP, designate the D&RGW corridor as a transit and trails corridor.]

**Salt Lake County**

**5. 11400 South (South Jordan) – Redwood Road to Bangerter Highway**

The 11400 South Environmental Impact Statement and Record of Decision have cleared this section of the project corridor. UDOT recommends extending the terminus of the project from Redwood Road to Bangerter Highway.

[Amendment: Move from Phase 2 to Phase 1 of the RTP, the section of 11400 South from Redwood Road to Bangerter Highway.]

**6. 5600 West (Herriman) – Herriman Parkway/12600 South to Main Street/13000 South**

The City of Herriman recommends the construction of 5600 West (from Herriman Parkway/12600 South to Main Street/13000 South) in Phase 1. The project on 5600 West would facilitate traffic generated from a new high school and junior high in Herriman.

[Amendment: Move from Phase 3 to Phase 1 of the RTP, the section of 5600 West from Herriman Parkway/12600 South to Main Street/13000 South.]

**7. Frontage Road west of I-215 (West Valley City) – 3500 South to 4100 South**

West Valley City received funding from the state legislature to construct a north-south frontage road on the west side of I-215 from 3500 South Interchange to 4100 South.

[Amendment: Add to Phase 1 of the RTP, the frontage road west of I-215 from 3500 South Interchange to 4100 South.]

**8. 7800 South (West Jordan) – New Bingham Highway to Airport Road/4350 West**

UDOT and West Jordan City recommend reconstruction of 7800 South between New Bingham Highway and Airport Road/4350 West.

[Amendment: Move from Phase 2 to Phase 1 of the RTP, the section of 7800 South from the intersection of New Bingham Highway to Airport Road/4350 West.]



**9. I-215 (Taylorsville) – Grade Separated Interchange at 5400 South**

UDOT and Taylorsville City recommend a grade separated interchange at I-215 and 5400 South, in Phase 1 of the RTP. With preliminary information from the Salt Lake County East-West Corridors Study this interchange would potentially improve east-west travel on both 6200 South and 4700 South.

[Amendment: Add to Phase 1 of the RTP, a grade separated interchange at I-215 and 5400 South.]

**TIP Conformity** – all projects from the RTP.....

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## B. Transportation Modeling

Shown in Table 1 is a summary of the speeds and vehicle miles traveled for the horizon years 2015, 2025, and 2030 in Salt Lake City, Ogden City, and Salt Lake County for the Amended RTP.

**Table 1**  
**Travel Characteristics**

		Base Year		Horizon Year		
		2004	2006	2015	2025	2030
Salt Lake City						
HPMS Weekday VMT						
Freeway		2,315,788	2,508,082	2,921,100	3,335,721	3,677,081
Ramp		77,280	84,551	100,552	116,232	125,083
Arterial & Collector		2,719,261	2,700,463	3,032,964	3,275,502	3,271,736
Local		952,295	949,510	1,035,499	1,155,153	1,188,096
Total		6,064,623	6,242,607	7,090,114	7,882,607	8,261,995
Average Speed						
Freeway - daily		61.6	61.6	59.8	57.7	57.5
Freeway - PM peak		55.9	55.9	51.4	47.0	46.7
Arterial - daily		29.1	29.1	26.5	25.9	25.5
Arterial - PM peak		26.2	26.2	22.9	21.7	21.4
Ogden City						
HPMS Weekday VMT	(1990)					
Freeway	79,724	134,782	128,266	141,561	160,487	162,078
Ramp	8,070	11,016	12,232	13,122	15,614	15,408
Arterial & Collector	773,181	940,504	992,859	1,099,619	1,252,040	1,341,878
Local	246,169	374,869	408,243	459,360	517,259	532,841
Total	1,107,144	1,461,171	1,541,600	1,713,662	1,945,399	2,052,206
Average Speed						
Freeway - daily	64.3	59.2	59.2	66.5	65.9	66.4
Freeway - PM peak	63.3	50.2	50.2	65.5	63.9	65.2
Arterial - daily	33.6	34.2	34.2	33.3	32.8	32.6
Arterial - PM peak	30.8	31.5	31.5	30.2	29.1	28.7



<b>Salt Lake County</b>					
<b>HPMS Weekday VMT</b>					
<b>Freeway</b>	8,902,999	9,810,788	12,544,841	15,867,406	17,348,551
<b>Ramp</b>	340,293	349,741	458,325	554,196	588,360
<b>Arterial &amp; Collector</b>	11,302,074	11,476,734	13,499,676	14,781,028	15,448,199
<b>Local</b>	3,884,629	3,966,892	4,833,423	5,719,418	5,877,483
<b>Total</b>	24,429,995	25,604,155	31,336,264	36,922,049	39,262,593
<b>Average Speed</b>					
<b>Freeway - daily</b>	62.0	62.0	58.8	58.1	57.8
<b>Freeway - PM peak</b>	55.9	55.9	49.7	48.4	48.3
<b>Arterial - daily</b>	31.6	31.6	29.6	29.0	29.0
<b>Arterial - PM peak</b>	27.9	27.9	24.9	24.1	24.3
<b>Davis County</b>					
<b>HPMS Weekday VMT</b>					
<b>Freeway</b>	3,158,085	3,290,771	4,081,808	4,530,969	5,685,974
<b>Ramp</b>	130,014	124,626	144,914	161,482	181,126
<b>Arterial &amp; Collector</b>	2,212,101	2,257,108	2,731,270	3,085,382	2,671,299
<b>Local</b>	1,278,587	1,246,800	1,523,527	1,694,527	1,729,100
<b>Total</b>	6,778,786	6,919,305	8,481,520	9,472,360	10,267,499
<b>Average Speed</b>					
<b>Freeway - daily</b>	62.0	62.0	58.8	58.1	57.8
<b>Freeway - PM peak</b>	55.9	55.9	49.7	48.4	48.3
<b>Arterial - daily</b>	31.6	31.6	29.6	29.0	29.0
<b>Arterial - PM peak</b>	27.9	27.9	24.9	24.1	24.3



## C. Conformity Determination

The following conformity findings for the Amended 2030 Regional Transportation Plan for the Wasatch Front are based on the transportation systems and planning assumptions described in this report and the latest vehicle emissions model approved by EPA (Mobile6.2).

### Salt Lake City CO Conformity

The carbon monoxide maintenance plan for Salt Lake City was approved by EPA effective September 30, 2005 as recorded in the Federal Register (Vol. 70, No. 146, August 1, 2005). The maintenance plan defines a motor vehicle emission budget for the years 2005 and 2019 of 278.62 tons/day. Table 2 below demonstrates that projected mobile source emissions are within the emission budget defined in the maintenance plan for the 2019 budget year. The other years listed in Table 8 are in accordance with requirements of the Conformity Rule (40 CFR Part 93) as noted in the table.

From this demonstration it is concluded that the Amended RTP conforms to the applicable controls and goals of the State Implementation Plan (Maintenance Plan) for Carbon Monoxide in Salt Lake City.

**Table 2**  
**Salt Lake City CO**  
**Conformity Determination**

	<i>b</i>	<i>a</i>	<i>b</i>	<i>c</i>
<b>Year</b>	<b>2012</b>	<b>2019</b>	<b>2025</b>	<b>2030</b>
<b>Budget<sup>#</sup> (tons/day)</b>	278.62	278.62	278.62	278.62
<i>emission rate (grams/mile)</i>	14.34	11.43	10.66	10.46
<i>seasonal VMT</i>	6,516,828	7,254,006	7,720,577	8,095,296
<b>Projection<sup>*</sup> (tons/day)</b>	103.02	91.45	90.77	93.31
<b>Conformity (Projection &lt; Budget?)</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

*a - budget year, b - 10-year rule, c - last year of Plan, d - no budget 5-year rule*

<sup>#</sup> Federal Register August 1, 2005, Vol. 70 No. 146, Table V-2.

<sup>\*</sup> Projection = Emission Rate x seasonal VMT, then divide by 453.5 to convert to pounds, then divide by 2,000 to convert to tons.

### Ogden CO Conformity

The carbon monoxide maintenance plan for Ogden City was approved by EPA effective November 14, 2005 as recorded in the Federal Register (Vol. 70, No. 177, September 14, 2005). The maintenance plan defines a motor vehicle emission budget for the years 2005 and 2021 of 75.36 and 73.02 tons/day respectively. Table 3 below demonstrates that projected mobile source emissions are within the emission budget defined in the maintenance plan for the 2021 budget year. The other years listed in Table 3 are in accordance with requirements of the Conformity Rule (40 CFR Part 93) as noted in the table.

From this demonstration it is concluded that the Amended RTP conforms to the applicable controls and goals of the State Implementation Plan (Maintenance Plan) for Carbon Monoxide in Ogden City.



**Table 3**  
**Ogden City CO**  
**Conformity Determination**

Year	<sup>b</sup> 2012	<sup>a</sup> 2021	<sup>b</sup> 2025	<sup>c</sup> 2030
<b>Budget (tons/day)</b>	75.36	73.02	73.02	73.02
<i>emission rate (grams/mile)</i>	16.60	12.65	12.14	11.77
<i>seasonal VMT</i>	1,590,342	1,797,981	1,887,934	1,991,727
<b>Projection* (tons/day)</b>	29.10	25.08	25.26	25.85
<b>Conformity (Projection &lt; Budget?)</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

*a - budget year, b - 10-year rule, c - last year of Plan, d - no budget 5-year rule*

*# Federal Register August 1, 2005, Vol. 70 No. 146, Table V-2.*

*\* Projection = Emission Rate x seasonal VMT, then divide by 453.5 to convert to pounds, then divide by 2,000 to convert to tons.*

### Ogden PM<sub>10</sub> Conformity

Ogden City was designated a PM<sub>10</sub> non-attainment area in August of 1995 based on PM<sub>10</sub> violations in 1993 or earlier. Since a PM<sub>10</sub> SIP for Ogden has not yet been approved by EPA, it must be demonstrated that Ogden PM<sub>10</sub> emissions are either less than 1990 emissions or less than “no-build” emissions. The analysis years 2012, 2015, 2025, and 2030 were selected in accordance with the requirements of 40 CFR Section 93.119(e).

PM<sub>10</sub> emissions are present in two varieties referred to as primary and secondary PM<sub>10</sub>. Primary PM<sub>10</sub> consists mostly of fugitive road dust but also includes particles from brake wear and tire wear and some “soot” particles emitted directly from the vehicle tailpipe. Secondary PM<sub>10</sub> consists of gaseous tailpipe emissions that later take on a particulate form through subsequent chemical reactions in the atmosphere. Nitrogen oxides are the main component of secondary PM<sub>10</sub> emissions with sulfur oxides a distant second.

As summarized in Tables 4a and 4b, emission estimates for the 2030 RTP satisfy the “Build < 1990” test for primary PM<sub>10</sub> (direct tailpipe particulates and road dust) in Ogden City. The 1990 emission estimates used in the 2003 (or is it 2000???) conformity analysis are used again for this conformity analysis, specifically 4.57 tons/day for the NO<sub>x</sub> precursor budget, and 2.28 tons/day for the direct PM<sub>10</sub> budget. The 1990 primary PM<sub>10</sub> estimate for Ogden City includes emissions from the unpaved access road to the Ogden landfill which was closed in 1998.

For projections of primary PM<sub>10</sub> emissions, no credit was taken for a number of programs adopted since Ogden City last violated the PM<sub>10</sub> standard. These particulate reducing programs include covered load ordinances, increased frequency of street sweeping, and reduced application of deicing and skid resistant materials (salt and sand). Documentation of these programs has been provided by Ogden City but the actual benefits of these programs are not included in the emission projections below. Other areas that have estimated the benefit of these programs have found a silt load reduction of over 30% for effective street sweeping programs and a 5% silt load reduction when limiting the amount of sand and salt applied to the roads. Ogden City has also implemented a number of specific projects that have a positive effect in reducing particulate emissions including



park and ride lots, storm water improvements, shoulder widening and edge striping, and addition of curb and gutter on several projects.

From this demonstration it is concluded that the Amended RTP conforms under the Emission Reductions Criteria for areas without motor vehicle emissions budgets for PM<sub>10</sub> in Ogden City.

**Table 4a**  
**Ogden City PM<sub>10</sub> - NO<sub>x</sub> Precursor**  
**Conformity Determination**

Year	<sup>d</sup> 2012	<sup>b</sup> 2015	<sup>b</sup> 2025	<sup>c</sup> 2030
<b>Budget-1990 (tons/day)</b>	4.57	4.57	4.57	4.57
<i>emission rate (grams/mile)</i>	1.20	0.89	0.44	0.38
<i>seasonal VMT</i>	1,590,342	1,663,050	1,887,934	1,991,727
<b>Projection* (tons/day)</b>	2.10	1.63	0.91	0.82
<b>Conformity (Projection &lt; Budget?)</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

a- budget year, b - 10-year rule, c - last year of Plan, d - no budget 5-year rule

\* Projection = Emission Rate x seasonal VMT, then divide by 453.5 to convert to pounds, then divide by 2,000 to convert to tons.

**Table 4b**  
**Ogden City PM<sub>10</sub> - Primary Particulates\*\***  
**Conformity Determination**

Year	<sup>d</sup> 2012	<sup>b</sup> 2015	<sup>b</sup> 2025	<sup>c</sup> 2030
<b>Budget-1990 (tons/day)</b>	0.73	0.73	0.73	0.73
<i>tailpipe particulate rates (grams/mile)</i>				
<i>Gpm (gasoline particulates)</i>	0.0044	0.0041	0.0038	0.0037
<i>Ec (diesel elemental carbon)</i>	0.0049	0.0027	0.0008	0.0006
<i>Oc (diesel organic carbon)</i>	0.0025	0.0014	0.0004	0.0003
<i>Pbr (brake particulates)</i>	0.0125	0.0125	0.0125	0.0125
<i>Pti (tire wear particulates)</i>	0.0091	0.0091	0.0091	0.0091
<i>road dust particulate rates (grams/mile)</i>				
<i>Freeway road dust</i>	0.5400	0.5400	0.5400	0.5400
<i>Ramp Road dust</i>	0.5400	0.5400	0.5400	0.5400
<i>Arterial road dust</i>	0.8400	0.8400	0.8400	0.8400
<i>Local road dust</i>	0.8000	0.8000	0.8000	0.8000
<i>net emission rate</i>				
- average all road & vehicle types -	0.97	0.96	0.96	0.96
<i>seasonal VMT</i>	1,590,342	1,663,050	1,887,934	1,991,727
<i>Tailpipe Particulates (tons/day)</i>	0.06	0.05	0.06	0.06
<i>Road Dust Particulates</i>	1.64	1.71	1.95	2.06
<b>Projection* (tons/day)</b>	<b>1.70</b>	<b>1.77</b>	<b>2.00</b>	<b>2.12</b>
<b>Conformity (Projection &lt; Budget?)</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

\*\* Includes road dust, elemental carbon, organic carbon, gasoline exhaust particulates, tire wear, and brake wear.

a- budget year, b - 10-year rule, c - last year of Plan, d - no budget 5-year rule

\* Projection = Emission Rate x seasonal VMT, then divide by 453.5 to convert to pounds, then divide by 2,000 to convert to tons.



### Salt Lake County PM<sub>10</sub> Conformity

The PM<sub>10</sub> SIP does not define a budget beyond the year 2003. Therefore, conformity tests are required only for analysis years which are identified in accordance with 40 CFR 93.118. All analysis years after 2003 must meet the 2003 budgets for primary particulates and secondary particulates (see the discussion above under Ogden PM<sub>10</sub> Conformity for an explanation of primary and secondary PM<sub>10</sub> emissions). The State air quality rule R307-310 allows a portion of the surplus primary PM<sub>10</sub> budget to be applied to the secondary PM<sub>10</sub> budget for conformity purposes. Table 5 below shows that budget adjustments were unnecessary for analysis years 2015, 2025, and 2030.

**Table 5**  
**Salt Lake County PM<sub>10</sub> Budgets**  
**Direct (Dust) and Precursor (NO<sub>x</sub>) PM<sub>10</sub> Emissions**  
 (tons/day)

Year	2015	2025	2030
<b>Total PM<sub>10</sub> Budget<sup>#</sup></b>	72.60	72.60	72.60
<b>Direct PM<sub>10</sub> Budget</b>	40.30	40.30	40.30
<b>NO<sub>x</sub> Precursor PM<sub>10</sub> Budget</b>	32.30	32.30	32.30
<b>Direct PM<sub>10</sub> Budget to be Traded</b>	0.00	0.00	0.00
<b>Resulting Direct PM<sub>10</sub> Budget</b>	<b>40.30</b>	<b>40.30</b>	<b>40.30</b>
<b>Resulting NO<sub>x</sub> Precursor PM<sub>10</sub> Budget</b>	<b>32.30</b>	<b>32.30</b>	<b>32.30</b>

<sup>#</sup> WFRC Memo to Jeff Houk of EPA, April 15, 1994.

Table 6a and Table 6b below demonstrate that projected mobile source emissions are within the emission budget defined in the SIP. The years listed in Table 6a and Table 6b are in accordance with requirements of the Conformity Rule (40 CFR Part 93) as noted in the tables.

From this demonstration it is concluded that the Amended RTP conforms to the applicable controls and goals of the State Implementation Plan for PM<sub>10</sub> in Salt Lake County.



**Table 6a**  
**Salt Lake County PM10 - NOx Precursor**  
**Conformity Determination**

Year	<sup>b</sup> 2015	<sup>b</sup> 2025	<sup>c</sup> 2030
<b>Budget<sup>#</sup> (tons/day)</b>	32.30	32.30	32.30
<i>emission rate (grams/mile)</i>	0.77	0.32	0.27
<i>seasonal VMT</i>	30,679,903	36,167,399	38,468,168
<b>Projection* (tons/day)</b>	25.94	12.80	11.28
<b>Conformity (Projection &lt; Budget?)</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

a- budget year, b - 10-year rule, c - last year of Plan, d - no budget 5-year rule

# WFRC Memo to Jeff Houk of EPA, April 15, 1994.

\* Projection = Emission Rate x seasonal VMT, then divide by 453.5 to convert to pounds, then divide by 2,000 to convert to tons.

**Table 6b**  
**Salt Lake County PM10 - Primary Particulates\*\***  
**Conformity Determination**

Year	<sup>b</sup> 2015	<sup>b</sup> 2025	<sup>c</sup> 2030
<b>Budget (tons/day)</b>	40.30	40.30	40.30
<i>tailpipe particulate rates (grams/mile)</i>			
<i>Gpm (gasoline particulates)</i>	0.0044	0.0041	0.0038
<i>Ec (diesel elemental carbon)</i>	0.0049	0.0027	0.0008
<i>Oc (diesel organic carbon)</i>	0.0025	0.0014	0.0004
<i>Pbr (brake particulates)</i>	0.0125	0.0125	0.0125
<i>Pti (tire wear particulates)</i>	0.0091	0.0091	0.0091
<i>road dust particulate rates (grams/mile)</i>			
<i>Freeway road dust</i>	0.5400	0.5400	0.5400
<i>Ramp Road dust</i>	0.5400	0.5400	0.5400
<i>Arterial road dust</i>	0.8400	0.8400	0.8400
<i>Local road dust</i>	0.8000	0.8000	0.8000
<i>net emission rate</i>			
- average all road & vehicle types -	0.85	0.84	0.83
<i>seasonal VMT</i>	30,679,903	36,167,399	38,468,168
<i>Tailpipe Particulates (tons/day)</i>	1.01	1.06	1.15
<i>Road Dust Particulates</i>	27.82	32.25	34.12
<b>Projection* (tons/day)</b>	<b>28.83</b>	<b>33.31</b>	<b>35.27</b>
<b>Conformity (Projection &lt; Budget?)</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

\*\* Includes road dust, elemental carbon, organic carbon, gasoline exhaust particulates, tire wear, and brake wear.

a- budget year, b - 10-year rule, c - last year of Plan, d - no budget 5-year rule

# WFRC Memo to Jeff Houk of EPA

\* Projection = Emission Rate x seasonal VMT, then divide by 453.5 to convert to pounds, then divide by 2,000 to convert to tons.



**Salt Lake and Davis County Ozone Conformity: 1-hour standard**

The 1-hour ozone standard was revoked on June 19, 2005. However, a subsequent court decision ruled that areas with emission budgets under the 1-hour ozone standard must continue to show conformity to those budgets.

**Table 7a**  
**Salt Lake County Ozone - NOx Precursor**  
**Conformity Determination**

	<i>b</i>	<i>a</i>	<i>a</i>	<i>c</i>
<b>Year</b>	<b>2012</b>	<b>2015</b>	<b>2020</b>	<b>2030</b>
<b>Budget<sup>#</sup> (tons/day)</b>	54.03	62.11	69.19	69.19
<i>emission rate (grams/mile)</i>	<i>0.91</i>	<i>0.63</i>	<i>0.37</i>	<i>0.22</i>
<i>seasonal VMT</i>	<i>29,727,151</i>	<i>31,796,292</i>	<i>34,625,782</i>	<i>39,825,825</i>
<b>Projection (tons/day)</b>	29.89	22.23	14.16	9.48
<b>Conformity (Projection &lt; Budget?)</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

*a - budget year, b - 10-year rule, c - last year of Plan, d - no budget 5-year rule*

<sup>#</sup> Utah State Implementation Plan, Ozone Maintenance Provisions, September 9, 1998, Table 8, p. 43.

**Table 7b**  
**Salt Lake County Ozone - VOC Precursor**  
**Conformity Determination**

	<i>b</i>	<i>a</i>	<i>a</i>	<i>c</i>
<b>Year</b>	<b>2012</b>	<b>2015</b>	<b>2020</b>	<b>2030</b>
<b>Budget (tons/day)</b>	48.25	53.71	59.15	59.15
<i>emission rate (grams/mile)</i>	<i>0.70</i>	<i>0.56</i>	<i>0.41</i>	<i>0.31</i>
<i>seasonal VMT</i>	<i>29,727,151</i>	<i>31,796,292</i>	<i>34,625,782</i>	<i>39,825,825</i>
<b>Projection (tons/day)</b>	23.04	19.63	15.50	13.79
<b>Conformity (Projection &lt; Budget?)</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

*a - budget year, b - 10-year rule, c - last year of Plan, d - no budget 5-year rule*

<sup>#</sup> Utah State Implementation Plan, Ozone Maintenance Provisions, September 9, 1998, Table 8, p. 43.



**Table 7c**  
**Davis County Ozone - NOx Precursor**  
**Conformity Determination**

	<i>b</i>	<i>a</i>	<i>a</i>	<i>c</i>
<b>Year</b>	<b>2012</b>	<b>2015</b>	<b>2020</b>	<b>2030</b>
<b>Budget (tons/day)</b>	13.72	15.41	16.44	16.44
<i>emission rate (grams/mile)</i>	<i>1.01</i>	<i>0.72</i>	<i>0.45</i>	<i>0.30</i>
<i>seasonal VMT</i>	<i>8,239,599</i>	<i>8,727,119</i>	<i>9,236,520</i>	<i>10,584,323</i>
<b>Projection (tons/day)</b>	9.18	6.90	4.61	3.44
<b>Conformity (Projection &lt; Budget?)</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

*a - budget year, b - 10-year rule, c - last year of Plan, d - no budget 5-year rule*  
 # Utah State Implementation Plan, Ozone Maintenance Provisions, September 9, 1998, Table 8, p. 43.

**Table 7d**  
**Davis County Ozone - VOC Precursor**  
**Conformity Determination**

	<i>b</i>	<i>a</i>	<i>a</i>	<i>c</i>
<b>Year</b>	<b>2012</b>	<b>2015</b>	<b>2020</b>	<b>2030</b>
<b>Budget (tons/day)</b>	10.44	11.35	12.00	12.00
<i>emission rate (grams/mile)</i>	<i>0.73</i>	<i>0.60</i>	<i>0.45</i>	<i>0.35</i>
<i>seasonal VMT</i>	<i>8,239,599</i>	<i>8,727,119</i>	<i>9,236,520</i>	<i>10,584,323</i>
<b>Projection (tons/day)</b>	6.63	5.76	4.61	4.10
<b>Conformity (Projection &lt; Budget?)</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

*a - budget year, b - 10-year rule, c - last year of Plan, d - no budget 5-year rule*  
 # Utah State Implementation Plan, Ozone Maintenance Provisions, September 9, 1998, Table 8, p. 43.



**Ozone Conformity: 8-hour standard (new 2008 standard – 75 ppb)**

EPA designations of non-attainment areas under the new 8-hour ozone standard are anticipated in 2010. The Wasatch Front Area will likely be designated as a non-attainment area under this standard. Within a year of the official designations, WFRC will be required to show conformity with this new standard. Initially, conformity will be based on future ozone related emissions being less than 2002 levels. Once the State Division of Air Quality prepares a new section of the State Implementation Plan (SIP) to meet the new ozone standard, WFRC will need to show conformity to the mobile source emission budgets in the SIP.

A conformity determination for ozone is not required for this RTP. However, for discussion purposes a projection of ozone precursor emissions (NO<sub>x</sub> and VOC) are presented in the graphs below to illustrate that ozone related emissions from on-road mobile sources are expected to continue their declining trend of the last several years thus making ozone conformity a reasonable expectation for transportation plans developed after 2010.



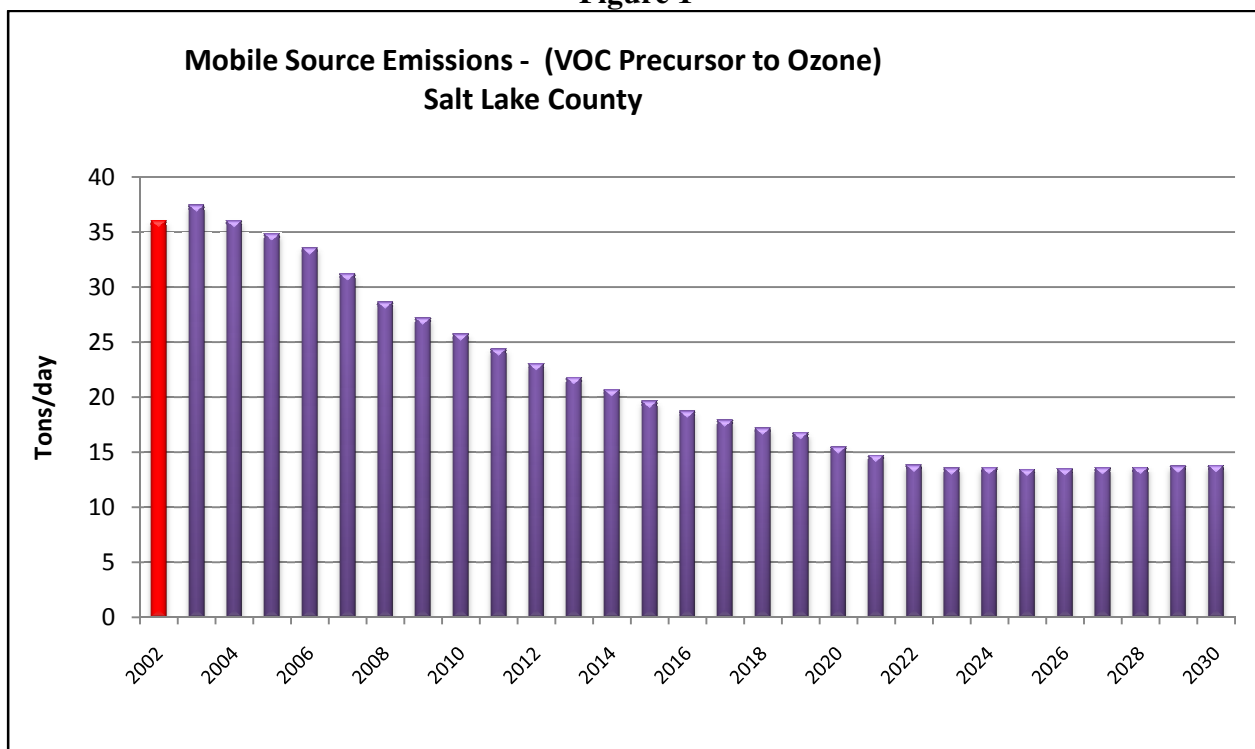
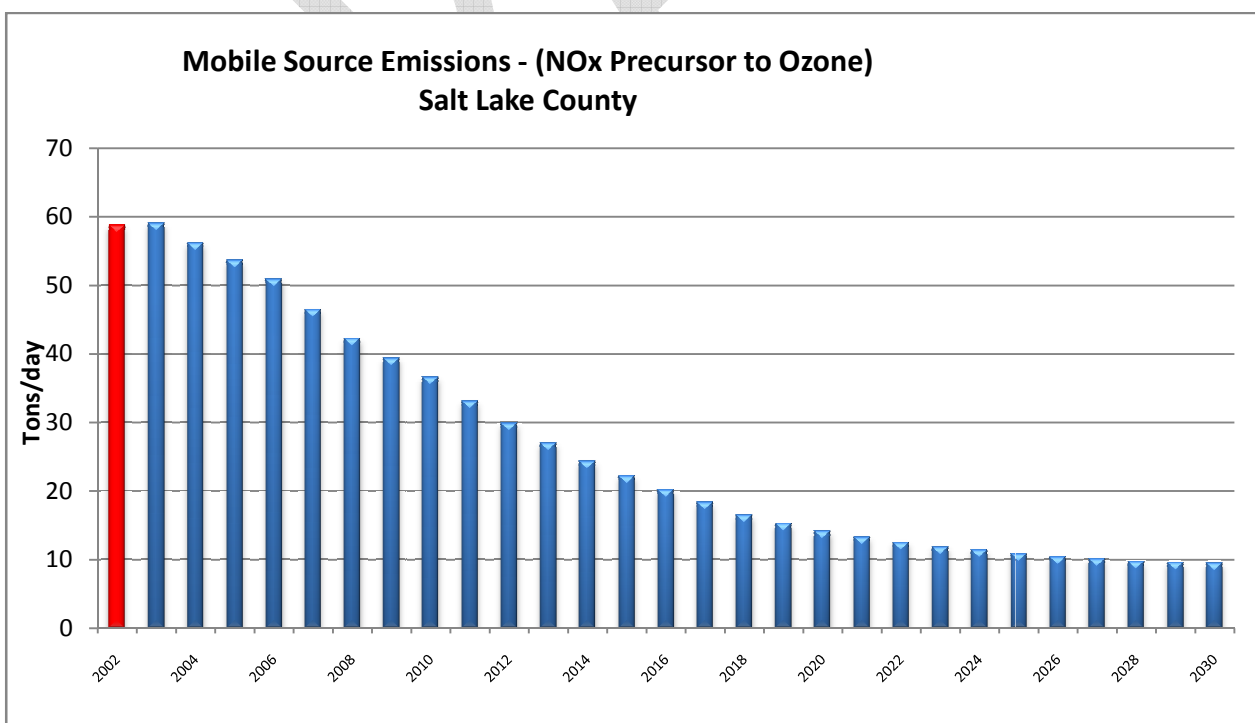
**Figure 1****Figure 2**



Figure 3

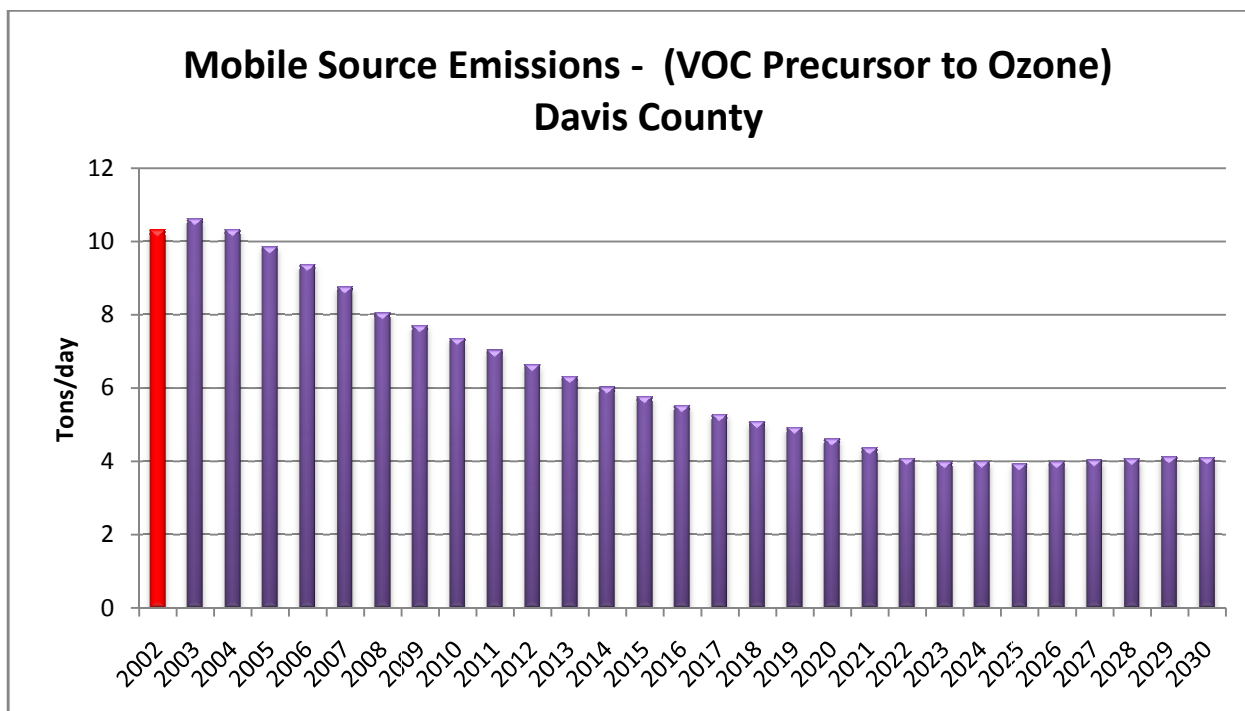


Figure 4

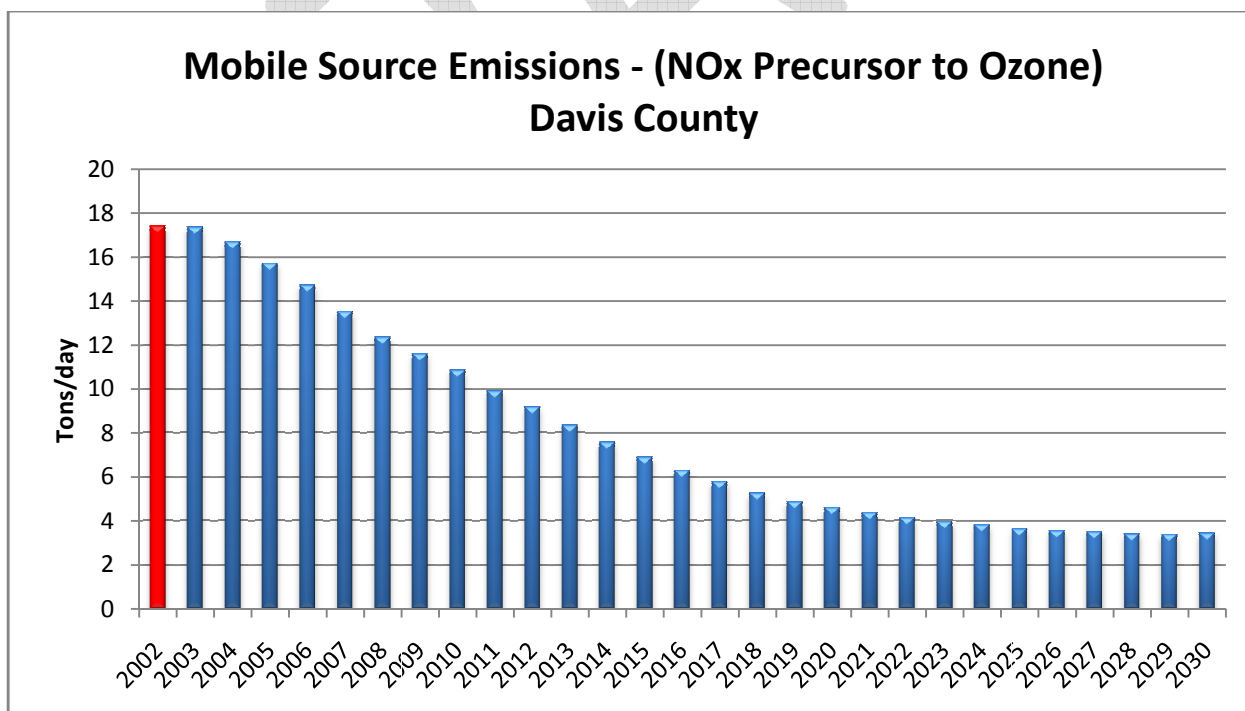




Figure 5

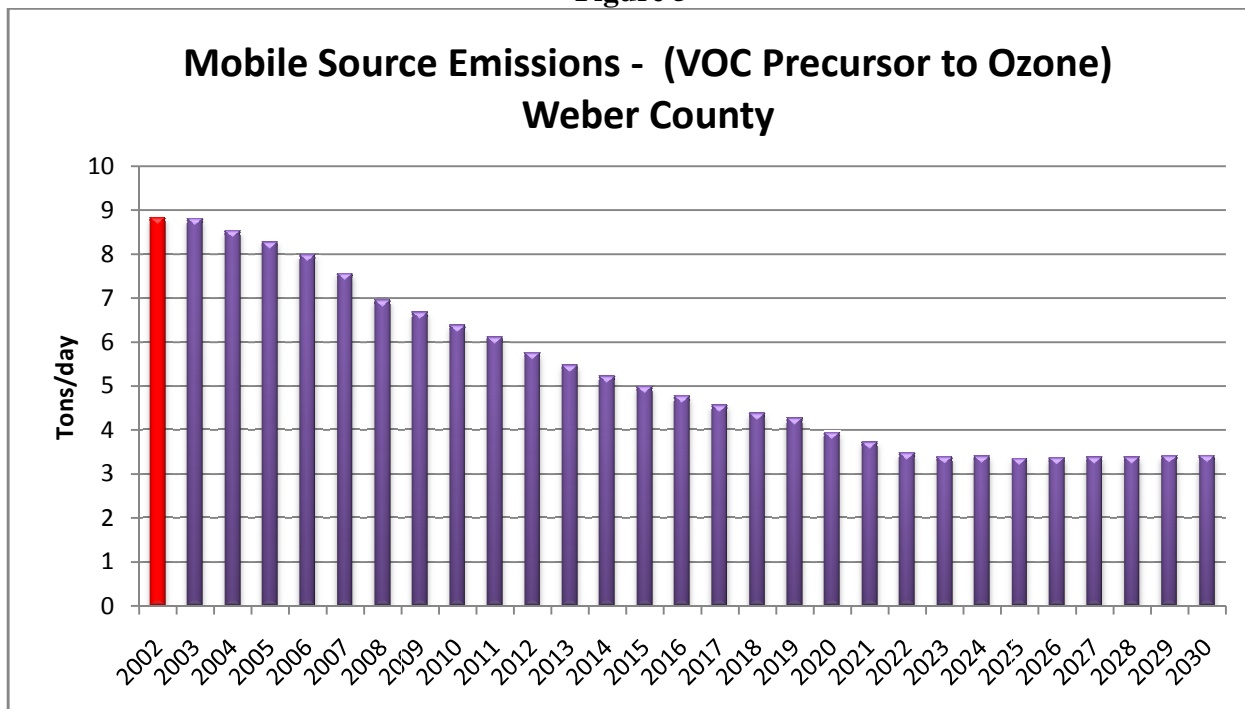
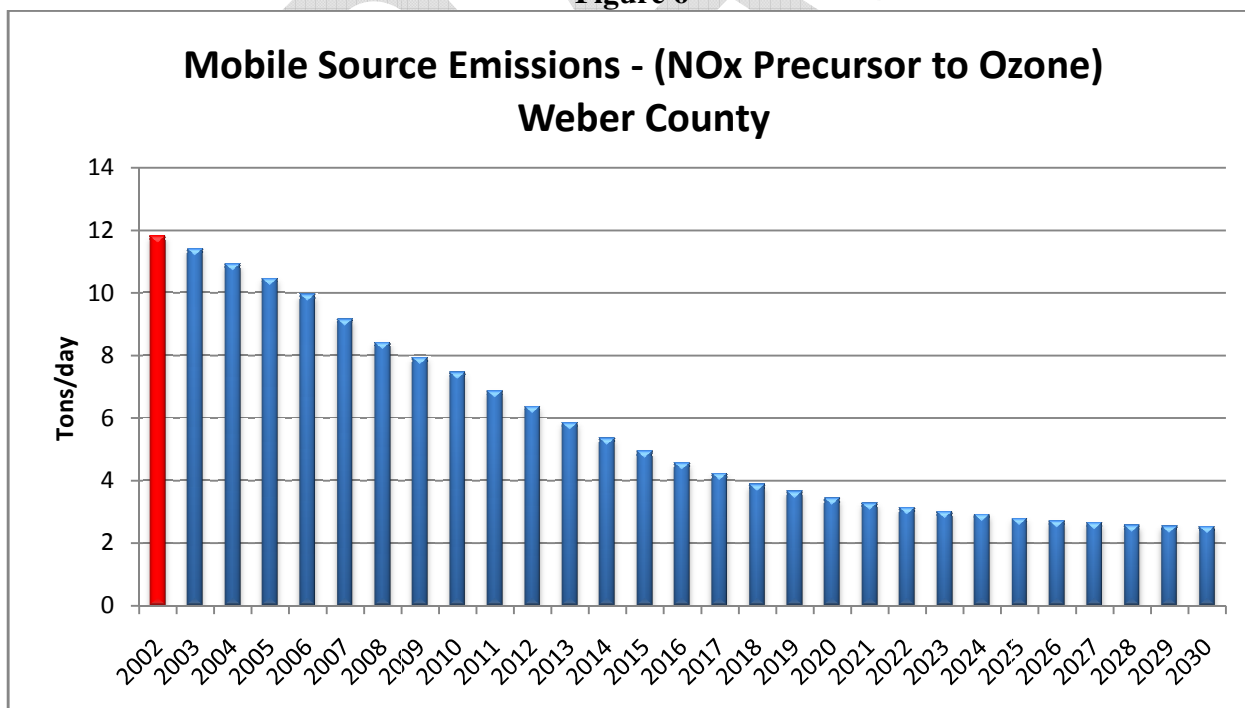


Figure 6



\*Source: Mobile6.2 vehicle emission rates and projected vehicle miles of travel based on the Wasatch Front 2030 RTP.



**Particulate Matter (PM<sub>2.5</sub>)**

It is anticipated that portions of Weber, Davis, Salt Lake, and Tooele Counties will be designated as non-attainment areas under the new PM<sub>2.5</sub> standard (35 µg/m<sup>3</sup>) that was established in 2006. The previous PM<sub>2.5</sub> standard was 65 µg/m<sup>3</sup> and the Wasatch Front Region was in attainment of the former standard. Official EPA non-attainment designations under the new stricter standard will be made in 2009 and conformity to the new standard will be required beginning in 2010.

By 2012 the State of Utah will be required to submit a new section of the State Implementation Plan (SIP) documenting how the state will meet the new PM<sub>2.5</sub> standard. Once the PM<sub>2.5</sub> SIP is approved by EPA, WFRC will be required to make a conformity determination verifying that transportation related emissions are within the limits established in the SIP. During the interim period from 2010 when PM<sub>2.5</sub> conformity is required and 2012 when emission limits are established in the SIP, WFRC will be required to establish conformity by demonstrating that future PM<sub>2.5</sub> emissions are lower than 2002 levels.

A conformity determination for PM<sub>2.5</sub> is not required for this RTP. However, for discussion purposes a projection of PM<sub>2.5</sub> precursor emissions (NO<sub>x</sub>) is presented in the charts below to illustrate that PM<sub>2.5</sub> related emissions from on-road mobile sources are expected to continue their declining trend of the last several years thus making PM<sub>2.5</sub> conformity a reasonable expectation for transportation plans developed after 2010.

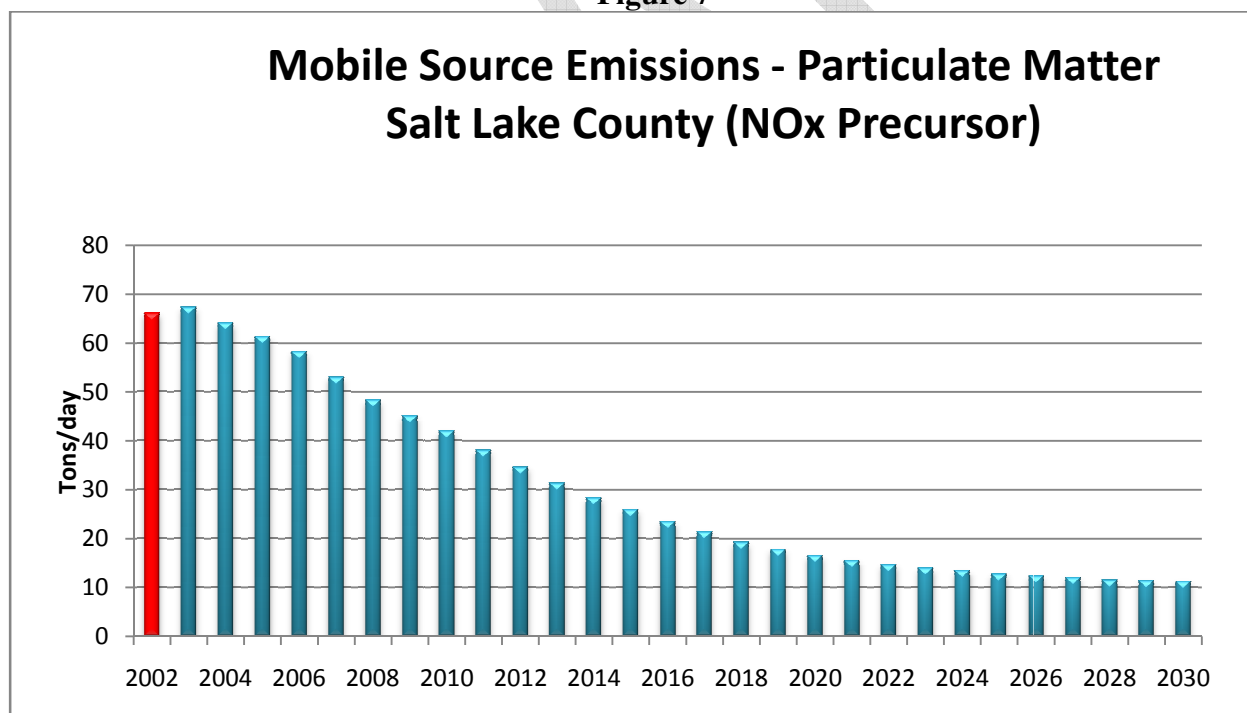
**Figure 7**



Figure 8

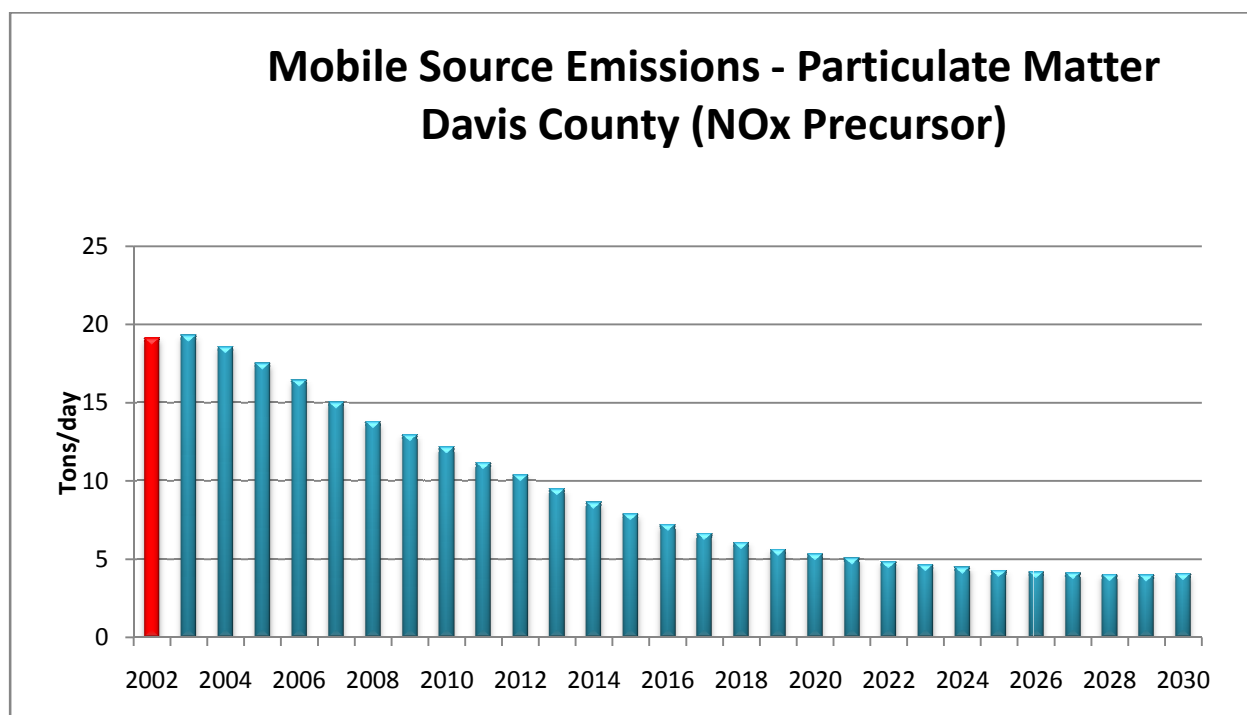
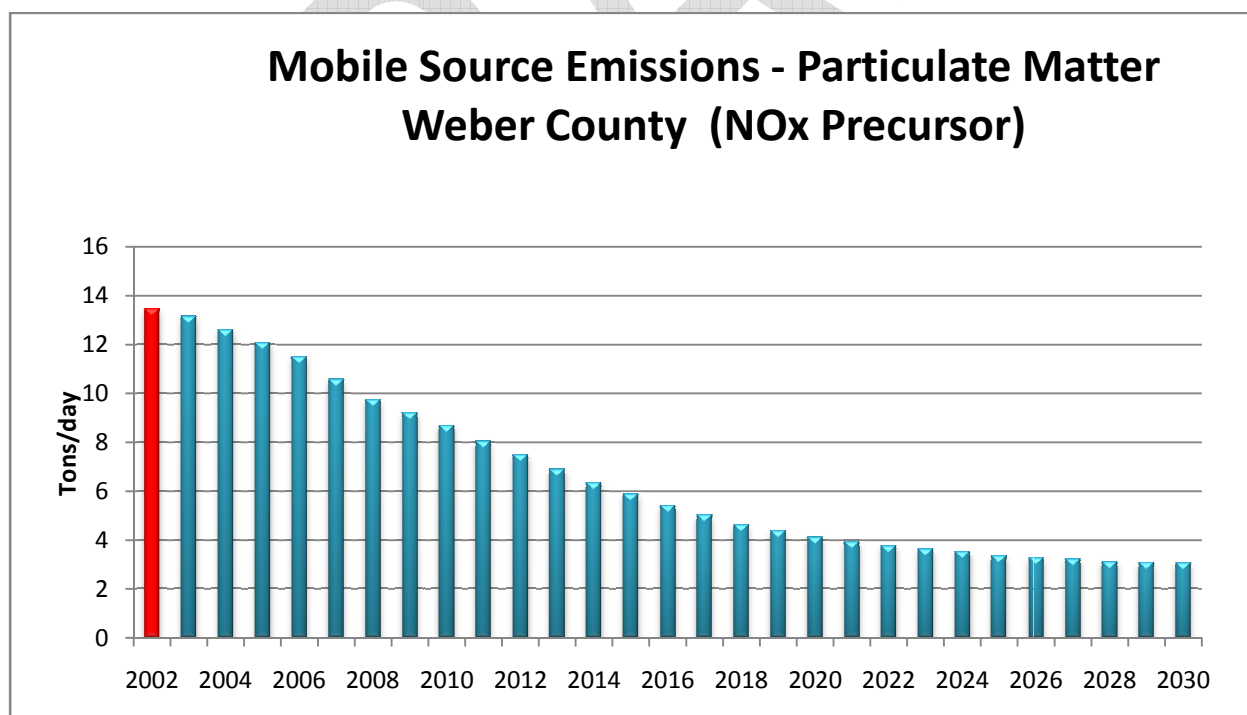


Figure 9







## **Appendix – 1**

### **Definition of Regionally Significant Projects**



**Process for Determining Regionally Significant Facilities  
for Purposes of Regional Emissions Analysis (see CFR 93.105.2.c.1.ii)**

Background: 40 FR 93.101 defines “regionally significant project” and associated facilities for the purpose of transportation conformity. The federal definition does not specifically include minor arterials. The following definitions and processes will be used by the Wasatch Front Regional Council (WFRC) and Mountainlands Association of Governments (MAG) in consultation with DAQ, UDOT, UTA, FHWA, FTA, and EPA to determine which facilities shall be considered regionally significant for purposes of regional emissions analysis. It is the practice of the MPO to include minor arterials and collectors in the travel model for the purpose of accurately modeling regional VMT and associated vehicle emissions. The inclusion of minor arterials and collectors in the travel model, however, does not identify these facilities as regionally significant.

1. Any new or existing facility with a functional classification of principal arterial or higher on the latest UDOT Functional Classification Map (currently found at <http://www.dot.utah.gov/index.php/m=c/tid=1228>) shall be considered regionally significant.
2. Any fixed guideway transit service including light rail, commuter rail, or portions of bus rapid transit that involve exclusive right-of-way shall be considered regionally significant.
3. As traffic conditions change in the future, the MPO's - in consultation with DAQ, UDOT, FHWA, and EPA (and UTA and FTA in cases involving transit facilities) - will consider 1) the relative importance of minor arterials serving major activity centers, and 2) the absence of principal arterials in the vicinity to determine if any minor arterials in addition to those listed in Exhibit A should be considered as regionally significant for purposes of regional emissions analysis.



**Exhibit A**  
**Minor Arterials Determined to be Regionally Significant**  
**for Purposes of Regional Emissions Analysis**

In consultation with DAQ, UDOT, FHWA, and EPA; and based on inspection and engineering judgment of current traffic conditions; and based on application of the “Process for Determining Regionally Significant Facilities for Purposes of Regional Emissions Analysis” agreed upon by the aforementioned agencies; the WFRC and MAG designate the following minor arterials as regionally significant.

**Salt Lake County**

300 West/Beck Street: 600 South north to I-15  
Redwood Road: 14400 South to Utah County line  
U-111: SR-201 to New Bingham Highway  
New Bingham Highway: U-111 to 9000 South

**Davis County**

Syracuse Road: I-15 west to Antelope Island  
SR-108 (2000 West): Syracuse Road to Weber County line

**Weber County**

SR-108 (3500 West): Davis County line to Midland Drive  
SR-108 (Midland Drive): 3500 West to Hinckley Drive  
SR-79 (Hinckley Drive): SR-108 to I-15

**Utah County**

Redwood Road: Salt Lake County line to Highway-73



**Process for Determining Significant Change in Design Concept and Scope  
for Purposes of Regional Emissions Analysis (see CFR 93.105.2.c.1.ii)**

Changes to regionally significant projects may or may not necessitate a new regional emissions analysis. The following definitions and processes will be used to determine what changes to project concept and scope are to be considered significant or not for purposes of regional emissions analysis.

1. Adding or extending freeway auxiliary lanes or weaving lanes between interchanges is not considered a significant change in concept and scope since these lanes are not normally included in the travel model.
2. Adding or extending freeway auxiliary/weaving lanes from one interchange to a point beyond the next interchange is considered a significant change in concept and scope.
3. A change to a regionally significant project defined in the Regional Transportation Plan that does not change how the project is defined in the travel model is not considered a significant change in concept and scope. These changes include but are not limited to lane or shoulder widening, cross section (other than the number of through lanes), alignment, interchange configuration, intersection traffic control, turn lanes, continuous or center turn lanes, and storage lanes.
4. A change to a regionally significant project defined in the Regional Transportation Plan that does alter the number of through lanes, lane capacity, or speed classification as defined in the travel model is considered a significant change in concept and scope.
5. Advancing or delaying the planned implementation of a regionally significant project that does not result in a change in the transportation network described in the travel model for any horizon year (as defined in CFR 93.101) is not considered a significant change in concept and scope.
6. Advancing or delaying the planned implementation of a regionally significant project that does result in a change in the transportation network described in the travel model for any horizon year (as defined in CFR 93.101) is considered a significant change in concept and scope.
7. Project changes not addressed in the above statements will be decided on a case by case basis through consultation by representatives from DAQ, WFRC, MAG, UDOT, UTA, FHWA, FTA, and EPA.