

2012 AIR QUALITY CONFORMITY ANALYSIS



U.S. Department
of Transportation

**Federal Highway
Administration**

**Federal Highway Administration
California Division**

January 28, 2013

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In Reply Refer To:
HDA-CA

Ms. Joanne S. Marchetta
Executive Director
Tahoe Metropolitan Planning Organization
P.O. Box 5310
128 Market Street
Stateline, NV 89449

SUBJECT: Tahoe Metropolitan Planning Organization's (TMPO) 2012 RTP (Mobility 2035)
Conformity Determination

Dear Ms. Marchetta:

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have completed our review of the conformity determination for the Tahoe Metropolitan Planning Organization's (TMPO) 2012 RTP. A FHWA/FTA air quality conformity determination is required pursuant to the Environmental Protection Agency's (EPA) *Transportation Conformity Rule*, 40 CFR Parts 51 and 93, and the United States Department of Transportation's *Metropolitan Planning Rule*, 23 CFR Part 450.

On December 12, 2012, TMPO adopted the 2012 RTP and made the corresponding conformity determination. The conformity analysis submitted by TMPO indicates that all air quality conformity requirements have been met. Based on our review, we find that the 2012 RTP and conformity determination conform to the applicable state implementation plan in accordance with the provisions of 40 CFR Parts 51 and 93. In accordance with the July 15, 2004, *Memorandum of Understanding (MOU) between the Federal Highway Administration, California Division and the Federal Transit Administration, Region IX*, the FTA has concurred with this conformity determination. Additionally, this conformity determination was made after consultation with the EPA, Region 9 office.

If you have questions or need additional information concerning this approval, please contact Joseph Vaughn (Joseph.Vaughn@dot.gov) of the FHWA California Division office at (916) 498-5346.

Sincerely,

For: Vincent P. Mammano
Division Administrator

APPENDIX E

2012 Conformity

Purpose

The purpose of conformity is to ensure that regional transportation planning and programming remain consistent with state and local air quality planning efforts to achieve and/or maintain the National Ambient Air Quality Standards (NAAQS). As the Metropolitan Planning Organization (MPO) and the Regional Transportation Planning Agency (RTPA) for Tahoe Region, the Tahoe Metropolitan Planning Organization (TMPO) has prepared this analysis pursuant to the 1990 federal Clean Air Act Amendments (CAAA) and the State Implementation Plan (SIP) for California and Nevada.

The Transportation Conformity Rule requires all jurisdictions in non-attainment areas or who are under federally approved maintenance plans to submit a conformity analysis if the planning or programming documents identify projects that have been defined as non-exempt. The CAAA also directs MPOs to facilitate the expeditious implementation of the Transportation Control Measures (TCMs) that are included in the SIP. No TCMs are applicable to the Tahoe Region therefore no control measures are identified for implementation.

Emissions Tests

The TMPO is responsible for conducting conformity determinations for both the California and Nevada portions of the Basin where conformity requirements apply. EPA requires two 10 year CO maintenance plans. In California, EPA has approved the Lake Tahoe Air Basin (LTAB) second 10 year maintenance plan which ends in 2018. In Nevada, the first 10 year maintenance plan ends in 2014. Please refer to Table A for the current conformity designations by County.

Pursuant to the conformity regulation, a regional emission analysis which incorporates all conformity non-exempt projects must meet the established emission tests before *Mobility 2035* can be determined to conform with the State Implementation Plans (SIP). For California counties, the MPO must demonstrate that proposed transportation programs and plans are consistent with the SIP by showing that emissions associated with these plans and programs do not exceed applicable carrying capacities or “emission budgets” previously adopted by the California Air Resources Board (CARB). In Nevada, conformity is determined by applying a build/no build assessment for those areas that are either classified as non-attainment or are under a Maintenance Plan. Both Douglas and Washoe Counties have been designated as Limited Maintenance Areas, where the emissions test only applies for to non-attainment areas.

Table A Pollutant and Conformity Designation by Jurisdiction

Jurisdiction	Pollutant	Reason for Conformity Analysis
El Dorado County	CO	Current Maintenance Plan
Placer County	CO	Current Maintenance Plan
Douglas County	CO	Limited Maintenance Plan
Carson City County	CO	Limited Maintenance Plan

Modeling and Analytical Assumptions (California)

Pursuant to the conformity regulation, a regional emissions analysis which incorporates all conformity non-exempt projects must meet the emissions budget test before *Mobility 2035* can be determined to conform to the SIP. This analysis is holistic in scope, with final conformity being based on the program rather than on a project-by-project basis.

On November 30, 2005, the EPA took direct and final action to approve a State Implementation Plan revision that was submitted by the California Air Resources Board. The revision titled “*Approval and Promulgation of Implementation Plans and Designation of Areas for Air Quality Planning Purposes; Carbon Monoxide Maintenance Plan Update for Ten Planning Areas; Motor Vehicle Emissions Budgets: Technical Correction*” (Federal Register/Vol. 70, No 229/Wednesday, November 30, 2005/ Rules and Regulations) provides a 10-year update to the carbon monoxide maintenance plan, for 10 planning areas of which the LTAB was included. As part of this update the following Motor Vehicle Emission Budget (MVEB) was developed for the LTAB.

		Emission Budget	
CO Maintenance Area	Area Included	2010	2018
Lake Tahoe North Shore	Eastern Placer	11	11
Lake Tahoe South Shore	Eastern El Dorado	19	10

Note: Winter Seasonal emissions are in tons per day. Emissions budget represent CARB’s seasonal on-road motor vehicle emission inventory

The conformity regulations requires that a conformity analysis must include the attainment milestone year of the SIP, the forecast horizon year of the applicable RTP and have no analysis gaps greater than 10 years. Based on these requirements, the conformity analysis years selected for this analysis are: 2010, 2020, and 2035. A description of the conformity modeling planning assumptions is provided in Table B.

Table B

Modeling Assumptions	2012 RTP Conformity Assumptions
Socio-economic growth assumptions	TRPA Regional Plan Update Growth Forecasts
Vehicle Activity Levels (trips, VMT) (LDA, LDT, MDT, UB, MCY, SBUS, HHDT, HDGT,)	ARB Default Activity (2010, 2020, 2030) –TMPO Model (2010, 2020, 2035)
VMT by Speed Class Distributions (LDA, LDT, MDT, HDDT, HDGT, SBUS, MCY)	ARB Default Activity (2010, 2020, 2030)
Transportation Model Networks	TMPO Travel Model (2035 -Build-No Build)
Infrastructure Improvements & Schedules	Programmed Projects: 2012 FTIP: Planned Projects: 2012 RTP
Emission Model	EMFAC2007 v. 2.3 (ARB) and EMFAC2011 v. 1.0
Vehicle Type/Technology & Demographic Distributions	EMFAC2007 v. 2.3 (ARB) and EMFAC2011 v. 1.0
Vehicle Population	ARB Default Activity (2010, 2020, 2030)
Vehicle Starts	EMFAC2007v.2.3 and EMFAC2011 v. 1.0 ARB Default Activity (2010,2020, 2030)
Emission Budgets	2005 40 CFR (2010, 2018)

Mobility 2035 TransCAD Modeling and Network Analysis

The *Mobility 2035* impact on travel behavior is assessed at the regional scale using the TMPO TransCAD Tour-Based Travel Demand Model. The TransCAD model identifies the impact on region-wide circulation patterns and vehicle miles of travel (VMT). The socio-economic data inputs for the regional network travel demand model were derived from the most recent growth allocations (2020 and 2035) identified through the TRPA Regional Plan Growth Alternatives (Table C). Both Non-Exempt projects required modifications to the 2020 TransCAD street networks. New roads or road extensions were coded by creating new links; widening projects required re-coding the number of lanes on affected links; channelization improvements entailed increasing the coded lane capacities, and passing lanes and/or roadway improvements/upgrades were reflected by increasing the average free flow speeds on affected links.

Note: Additional Information concerning the TMPO TransCAD Model Development and Calibration can be found in *Lake Tahoe Resident and Visitor Model: Model Description and Final Results*: Parsons, Brickerhoff Quade & Douglas. August 2007. Additional information concerning the TRPA Growth Assumptions can be found in the *TRPA Regional Plan Update Draft Environmental Impact Statement*; TRPA, April 25, 2012.

Non-Exempt Projects - The Lake Tahoe Basin is subject to a transportation conformity analysis on specific types of projects (termed “non-exempt projects”) that are included within the planning and programming documents. Exempt projects generally include projects that will not increase roadway capacity or VMT, safety improvements, maintenance of existing transit systems, such as bus replacement and the addition of bus shelters to be implemented in the Lake Tahoe Region. The following non-exempt projects have been identified for the Tahoe Region.

US50 South Shore Community Revitalization Project - Scheduled for completion in 2017 this project will realign U.S. Highway 50 near the casino corridor to improve bicycle, pedestrian and transit opportunities. The project straddles the California/Nevada Stateline area in El Dorado County and Douglas County and is proposed to reduce the existing U.S. Highway 50 to two eastbound lanes with westbound traffic redirected on Lake Parkway.

State Route 89/Fanny Bridge Community Revitalization Project – Scheduled for completion in 2018 this project addresses seasonal traffic congestion at the Tahoe City Wye in Placer County and the structural and seismic deficiencies of Fanny Bridge on the Truckee River. Fanny Bridge will be upgraded to provide improved pedestrian and bicycle safety with a new SR 89 alignment through the 64-acre United States Forest Service parcel located west of the existing State Route 89.

Table C TRPA Regional Plan Alternative Growth Allocation and Development Rights Accounting

Allocations/ Development Rights	Additional Allocations Proposed In The Regional Plan				
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Residential Allocations	0	2600	2600	4000	5200
Residential Bonus Units	0	0	600	0	0
Tourist Bonus Units	0	0	0	200	400
Commercial Floor Area (Total)	0	200,000	200,000	400,000	600,000
<i>Placer County</i>					
<i>Washoe County</i>					
<i>Douglas County</i>					
<i>El Dorado County</i>					
<i>City of South Lake Tahoe</i>					
<i>TRPA Special Project and CEP Pool</i>					

On-Road Motor Vehicle Emissions Analysis

The on-road mobile source emissions estimates for *Mobility 2035* were produced with the EPA approved EMFAC2007 (v. 2.30 November 6, 2006) emission inventory model developed by the California Air Resources Board (ARB) for use in California. EMFAC calculates emission factors that are used as input to the activity module to produce an on-road mobile source emissions inventory. Additional analysis was completed with the updated EMFAC2011 which ARB has updated with the latest information on vehicle populations and miles traveled in California. Both models were used because EMFAC2007 is the current model accepted by EPA for purposes of conformity analysis, but it is anticipated that EPA will accept EMFAC2011 in the fall of 2012 and will use the model for conformity analysis thereafter. Both models use inputs on the types of vehicles in use, vehicle speeds, vehicle operating conditions (e.g., cold starts, hot starts, hot stabilized running etc.,) and temperature corrections (for diurnal and hot soak evaporative processes) to generate on-road vehicle emission factors. These emission factors are applied to the appropriate on-road activity data (e.g., VMT, VMT by speed class, and number of trip starts for each vehicle type and technology group) stratified by time of day (to account for diurnal ambient temperature variations) to produce a countywide on-road mobile source emissions estimate.

The emissions associated with VMT and vehicle starts are accounted for in the EMFAC models based on the distribution of these trips by vehicle classification, vehicle technology class, operating mode and activity by time of day. ARB default distributions were used for this purpose. The Emission Budget Results and On-Road Activity Data can also be found in Table D.

California Conformity Determination

As a result of the emission results identified in Table D, the TMPO finds the proposed new transportation programs discussed in this document do not affect CO attainment nor exceed the CO budget in either Placer or El Dorado Counties for the life of this plan. For this reason, the TMPO stipulates that this plan is consistent with the California's State Implementation Plan for air quality and is therefore in full compliance with the conformity requirements of the Clean Air Act.

Nevada Conformity

Nevada's conformity analysis differs slightly from California's in that there is no emissions budget to form a conformity determination. As mentioned previously, Carson City and Douglas Counties are working under a limited maintenance plan for CO (*NDEP's Carbon Monoxide Redesignation Request and Limited Maintenance Plan* which was adopted by the EPA February 2004). Areas with Limited Maintenance Plans do not need to conduct a regional emissions analysis, however the limited maintenance plans for these areas includes provisions for interagency consultation procedures should CO concentrations exceed a pre-determined "trigger." This trigger includes two verified 8-hour average concentrations in excess of 7.65 ppm (85% of the CO NAAQS) at any one monitoring site in any CO season (November through February) as the pre-violation action level. Since *Mobility 2035* is working under a Limited Maintenance Plan in Nevada, it is not required to satisfy the regional emissions analysis for a given pollutant.

In March 2012, NDEP drafted another revision to Nevada SIP for Carbon Monoxide titled *2012 Revision to the Nevada State Implementation Plan for Carbon Monoxide; Updated Maintenance Plan for the Nevada side of the Lake Tahoe Basin*, NDEP 2012. Under the transportation conformity rule, EPA guidance asserts that in limited maintenance plan areas, emissions budgets may be treated as not constraining because the area is unlikely to grow enough that a violation of the NAAQS would occur and that emissions need not be capped for the maintenance period.

Table D Mobile Source Emissions Modeling Results

Alternative 1		El Dorado County		Placer County	
Vehicle Activity Data	VMT	Daily Trips	VMT	Daily Trips	
2010	760,129	131,050	428,545	46,864	
2018 (interpolated)	804,354	132,617	452,395	49,038	
2020	815,410	133,009	458,357	49,582	
2026 (interpolated)	819,544	134,857	464,484	50,792	
2035	825,745	137,629	473,675	52,606	

EMFAC 2011	El Dorado County Total CO (TPD)	Emissions Budget	Placer County Total CO (TPD)	Emissions Budget
2010	7.95	19	4.35	11
2018	3.32	10	1.86	11
2026	1.76	-	1.05	-

EMFAC 2007	El Dorado County Total CO (TPD)	Emissions Budget	Placer County Total CO (TPD)	Emissions Budget
2010	6.84	19	3.25	11
2018	3.15	10	1.48	11
2026	1.62	-	0.82	-

Alternative 2		El Dorado County		Placer County	
Vehicle Activity Data	VMT	Daily Trips	VMT	Daily Trips	
2010	760,129	131,050	428,545	46,864	
2018 (interpolated)	784,549	134,868	443,752	50,638	
2020	790,654	135,823	447,554	51,581	
2026 (interpolated)	812,462	138,813	458,837	53,502	
2035	845,175	143,298	475,762	56,384	

EMFAC 2011	El Dorado County Total CO (TPD)	Emissions Budget	Placer County Total CO (TPD)	Emissions Budget
2010	7.95	19	4.35	11
2018	3.23	10	1.82	11
2026	1.75	-	1.04	-

EMFAC 2007	El Dorado County Total CO (TPD)	Emissions Budget	Placer County Total CO (TPD)	Emissions Budget
2010	6.84	19	3.25	11
2018	3.11	10	1.46	11
2026	1.62	-	0.82	-

Alternative 3	El Dorado County		Placer County		
	Vehicle Activity Data	VMT	Daily Trips	VMT	Daily Trips
2010		760,129	131,050	428,545	46,864
2018 (interpolated)		793,012	136,891	447,963	48,114
2020		801,233	138,351	452,818	48,427
2026 (interpolated)		818,631	141,077	464,386	52,473
2035		844,728	145,167	481,739	58,542

EMFAC 2011	El Dorado County Total CO (TPD)	Emissions Budget	Placer County Total CO (TPD)	Emissions Budget
2010	7.95	19	4.35	11
2018	3.27	10	1.84	11
2026	1.76	-	1.05	-

EMFAC 2007	El Dorado County Total CO (TPD)	Emissions Budget	Placer County Total CO (TPD)	Emissions Budget
2010	6.84	19	3.25	11
2018	3.15	10	1.46	11
2026	1.63	-	0.82	-

Alternative 4	El Dorado County		Placer County		
	Vehicle Activity Data	VMT	Daily Trips	VMT	Daily Trips
2010		760,129	131,050	428,545	46,864
2018 (interpolated)		804,354	136,939	452,395	49,707
2020		815,410	138,411	458,357	50,418
2026 (interpolated)		841,554	142,531	476,448	54,046
2035		880,770	148,710	503,585	59,487

EMFAC 2011	El Dorado County Total CO (TPD)	Emissions Budget	Placer County Total CO (TPD)	Emissions Budget
2010	7.95	19	4.35	11
2018	3.32	10	1.86	11
2026	1.81	-	1.08	-

EMFAC 2007	El Dorado County Total CO (TPD)	Emissions Budget	Placer County Total CO (TPD)	Emissions Budget
2010	6.84	19	3.25	11
2018	3.18	10	1.48	11
2026	1.67	-	0.84	-

Alternative 5 Vehicle Activity Data	El Dorado County		Placer County	
	VMT	Daily Trips	VMT	Daily Trips
2010	760,129	131,050	428,545	46,864
2018 (interpolated)	812,027	138,223	456,019	49,762
2020	825,001	140,016	462,887	50,487
2026 (interpolated)	853,383	143,469	482,494	54,499
2035	895,956	148,648	511,904	60,516

EMFAC 2011	El Dorado County Total CO (TPD)	Emissions Budget	Placer County Total CO (TPD)	Emissions Budget
2010	7.95	19	4.35	11
2018	3.35	10	1.87	11
2026	1.84	-	1.09	-

EMFAC 2007	El Dorado County Total CO (TPD)	Emissions Budget	Placer County Total CO (TPD)	Emissions Budget
2010	6.84	19	3.25	11
2018	3.21	10	1.49	11
2026	1.69	-	0.85	-