

Summary Information On Transportation Conformity Budget Documentation *

Draft Ventura County Ozone Nonattainment Area Motor Vehicle Emissions Budgets

(tons per day, summer planning inventory)

		2005
ROG	Baseline EMFAC2002*	14.44
	Local Rules	-0.00
	I/M Improvements	-0.15
	Adjusted Inventory	14.29
	New State Measures	-0.00
	New Local Measures	-0.00
	Draft ROG Budget**	14.3

* Baseline EMFAC2002 includes SCAG's "RTP Build" scenario.

** Rounded up to the nearest tenth.

		2005
NOx	Baseline EMFAC2002*	21.56
	Local Rules	-0.00
	I/M Improvements	-0.22
	Adjusted Inventory	21.34
	New State Measures	-0.00
	New Local Measures	-0.00
	Draft NOx Budget**	21.4

* Baseline EMFAC2002 includes SCAG's "RTP Build" scenario.

** Rounded up to the nearest tenth.

* Detailed documentation is available at ARB's website at:
<http://www.arb.ca.gov/planning/sip/vcsip04/vcactivity.htm>

Updated Motor Vehicle Emissions Inventory for the Ventura County 2003 Air Quality Management Plan and SIP Update

ARB staff (staff) calculated the draft motor vehicle emissions inventory for Ventura County on May 14, 2003. The summer season inventory is for the 2004 Air Quality Management Plan (AQMP) update for Ventura County for calendar years (CY) 1990, 1996, 1999, 2002, 2005, 2010, 2015, 2020 and 2025. The AQMP will be submitted as a State Implementation Plan revision, and the ROG and NOx inventories for 2005 will form the basis for motor vehicle emissions budgets used in the conformity process.

Methods

For the current update, staff used EMFAC2002 version 2.2 (Apr03), with new activity data supplied to ARB by the Southern California Association of Governments (SCAG) in November 2003. The new VMT and speed data are based on the 2004 Regional Transportation Plan (RTP, "build" scenario). The data does not reflect changes in regional truck activity forecasts from truck model revalidation, pending completion of a new statewide analysis of truck activity.

SCAG supplied EMFAC input files for calendar years 1990, 2000, 2005, 2010, 2020 and 2030, and VMT-by-speed group files for CY 2000, 2005, 2010, 2020 and 2030. Staff of the Analysis Section and Motor Vehicle Assessments Section reviewed these files. ARB staff had a conference call with SCAG staff November 25, 2003 to address follow-up questions, and SCAG provided written responses by e-mail December 1, 2003. ARB staff has concluded that the activity update proposed by SCAG staff is reasonable and appropriate.

Staff ran EMFAC2002 with the SCAG input files for CY 1990, 2005, 2010 and 2020. For CY 1996, 1999, 2002, 2015 and 2025, staff altered vehicle population by class to match figures interpolated from the SCAG input file data. Speeds were not altered from model defaults for these years.

The May 2003 draft inventory required a redistribution of vehicle population to match the June 2002 SCAG projection of light/medium and heavy-duty splits of vehicle miles traveled (VMT). Use of SCAG input files containing current VMT forecasts by vehicle class negated the need for that step this time. SCAG does not project VMT for buses or motor homes, but uses EMFAC2002 defaults for those classes.

Adjustments for Inspection and Maintenance (I/M) Programs

In the final planning inventory calculation on the spreadsheet summary page, staff has included emission reductions for two Smog Check II improvements that are not currently reflected in EMFAC results: (1) increasing the number of vehicles directed to test-only stations, and (2) adding areas to Enhanced I/M. The benefits of these improvements in Ventura County were previously estimated using EMFAC2002 version 2.2 (Apr03).

Directing more vehicles to test-only stations

The model assumes that 15% of vehicles are directed to test-only stations. The California Bureau of Automotive Repair (BAR) has committed to increase the number of vehicles directed to 36% by the end of 2002. We are using a conservative estimate that the actual number of vehicles being directed in summer 2002 was approximately 20%. (The additional benefits of ramping up from 20% to 36% directed are credited as part of SIP measure *LT/MED-Duty-2*.) Staff needs to adjust the emissions modeled by EMFAC to reflect the additional vehicles being directed. This adjustment is an additional benefit that should be subtracted from the emissions estimated by the model. The ROG and NOx benefits for increasing the vehicles directed to test-only are estimated by calculating the overall failure rates for 15% and 20% directed. Test-and-Repair stations have a 9.9% failure rate based on data from the BAR Executive Summary report for 3rd quarter 2002. The failure rate for vehicles randomly directed to Test-Only stations is 25.1% for fiscal year 2001/2002, based on data we have received from BAR. We are using the failure rate for the randomly directed vehicles to avoid over-estimation of benefits from use of the higher failure rate for the more-polluting "High Emitter Profile" vehicles. The emissions benefits are assumed to be proportional to the increase in the failure rate of going from 15% to 20% directed.

Adding areas to Enhanced I/M

Areas in Ventura County that are currently subject to Basic I/M are being added to Enhanced I/M beginning July 1, 2002. The current EMFAC model does not reflect these changes. Staff estimated the adjustment that needs to be made to the emissions modeled by EMFAC to reflect the addition of these areas to Enhanced I/M. This adjustment is a benefit that should be subtracted from the emissions estimated by the model.

Staff estimated the ROG and NOx benefits of these additional areas by first calculating a per-vehicle benefit for the Enhanced I/M program as modeled by EMFAC without the added areas. Total benefits for the added areas were calculated by multiplying the per-vehicle benefit by the number of vehicles being added to Enhanced I/M. BAR has provided the number of vehicles being added to Enhanced I/M based on May 2002 Department of Motor Vehicle (DMV) data obtained by BAR. All of the areas being added do not have test-only stations. The benefits for these areas have been reduced by 30% to reflect the lower failure rates when all vehicles go to test-and-repair stations.

Results

Staff compiled the model runs into an Excel spreadsheet notebook, *Ventura Summer 1990-2025.xls*, that contains a summary page (see following) showing model output emissions of ROG and NOx (summer) by calendar year, and model output VMT by calendar year. ARB has included detailed pages by calendar year showing complete

EMFAC2002 emissions and vehicle activity outputs at the vehicle class level.* Results are summarized below. Staff separately presented derivation of draft motor vehicle emissions budgets.

**Ventura County Planning Inventory
Summer On-road Emissions
(tons per day)**

		<u>1990</u>	<u>1996</u>	<u>1999</u>	<u>2002</u>	<u>2005</u>	<u>2010</u>	<u>2015</u>	<u>2020</u>	<u>2025</u>
ROG	EMFAC2002 results	46.3	28.9	23.2	17.8	14.4	10.9	8.1	6.3	5.1
	I/M Improvements	--	--	--	0.1	0.2	0.1	0.1	0.0	0.0
	Adjusted Inventory	46.3	28.9	23.2	17.7	14.3	10.8	8.0	6.3	5.1
NOx	EMFAC2002 results	51.4	35.1	30.5	26.4	21.6	15.4	10.0	7.0	5.2
	I/M Improvements	--	--	--	0.1	0.2	0.2	0.1	0.1	0.1
	Adjusted Inventory	51.4	35.1	30.5	26.4	21.3	15.2	9.8	6.9	5.2
VMT/1000		14,683	15,604	16,039	16,463	16,912	18,176	18,989	19,850	20,423

* Detailed documentation is available at ARB's website at:
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ROG	EMFAC2002 results	46.27	28.94	23.16	17.79	14.44	10.86	8.06	6.32	5.12
	I/M Improvements	--	--	--	0.05	0.15	0.11	0.06	0.04	0.02
	Adjusted Inventory	46.27	28.94	23.16	17.74	14.29	10.75	8.00	6.28	5.10
NOx	EMFAC2002 results	51.42	35.08	30.45	26.44	21.56	15.38	9.96	6.95	5.23
	I/M Improvements	--	--	--	0.07	0.22	0.18	0.13	0.08	0.05
	Adjusted Inventory	51.42	35.08	30.45	26.37	21.34	15.20	9.83	6.87	5.18
VMT/1000		14,683	15,604	16,039	16,463	16,912	18,176	18,989	19,850	20,423