

Emission Inventory Report**AIR QUALITY MODELING ANALYSIS FOR THE
DENVER EARLY ACTION OZONE COMPACT:
Development of the 2007 Base Case Modeling Inventory**

Prepared for

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1. INTRODUCTION

ENVIRON International Corporation and Alpine Geophysics, LLC are performing photochemical modeling for the Denver Regional Air Quality Council (RAQC) and Colorado Department of Public Health and Environment (CDPHE) to support the development of a 8-hour ozone attainment control plan for Denver, Colorado as part of an Early Action Compact (EAC) State Implementation Plan (SIP) due in 2004. The June 5, 2002 to July 23, 2002 modeling period was selected along with a 36/12/4/1.33 km nested-grid modeling domain that includes Mexico in the south to Wyoming in the north and California in the west to western Missouri to the east. A Modeling Protocol has been prepared that describes the rationale for the episode selection, model and domain selection and procedures for performing the photochemical modeling and 8-hour ozone attainment demonstration (Tesche et al., 2003a). The same ENVIRON/Alpine science team is also performing 8-hour ozone EAC modeling for the San Juan County, New Mexico area for the New Mexico Environmental Department (Tesche et al., 2003b).

The June 5 - July 23, 2002 episode is being modeled in CAMx using a Lambert Conformal Projection (LCP) nested grid configuration with grid resolutions of 36, 12, 4 and 1.33 km. In CAMx, emissions are separated between surface (surface and low level point) emissions and elevated point source emissions. For the surface emissions, a separate emission inventory is required for each grid nest, i.e., four inventories. For elevated point sources, a single emission inventory is prepared covering all grid nests. Figure 1-1 displays the modeling domain including the nested grid configuration. Emission inventories were prepared for the 2002 base year.

This report describes the 2007 base case emission inventory preparation for the June 5 - July 23, episode for the Denver Colorado EAC air quality modeling project. Emission inventories are processed using version 2x of the Emissions Processing System (EPS2x) for area, off-road, on-road mobile and point sources (ENVIRON, 2001). The purpose of the emissions processing is to format the emission inventory for CAMx photochemical modeling.

A discussion of the emission processing steps required to develop the model-ready emission inventory was presented in ENVIRON (2003). This report documents the data sources used in the development of the 2007 base case inventory. Section 2 presents the data sources and summarizes the processing steps used. Summaries of the inventory by major emission source category (area, on-road mobile, off-road mobile stationary point sources and biogenics) and by selected emission source subcategories are presented in Section 3.

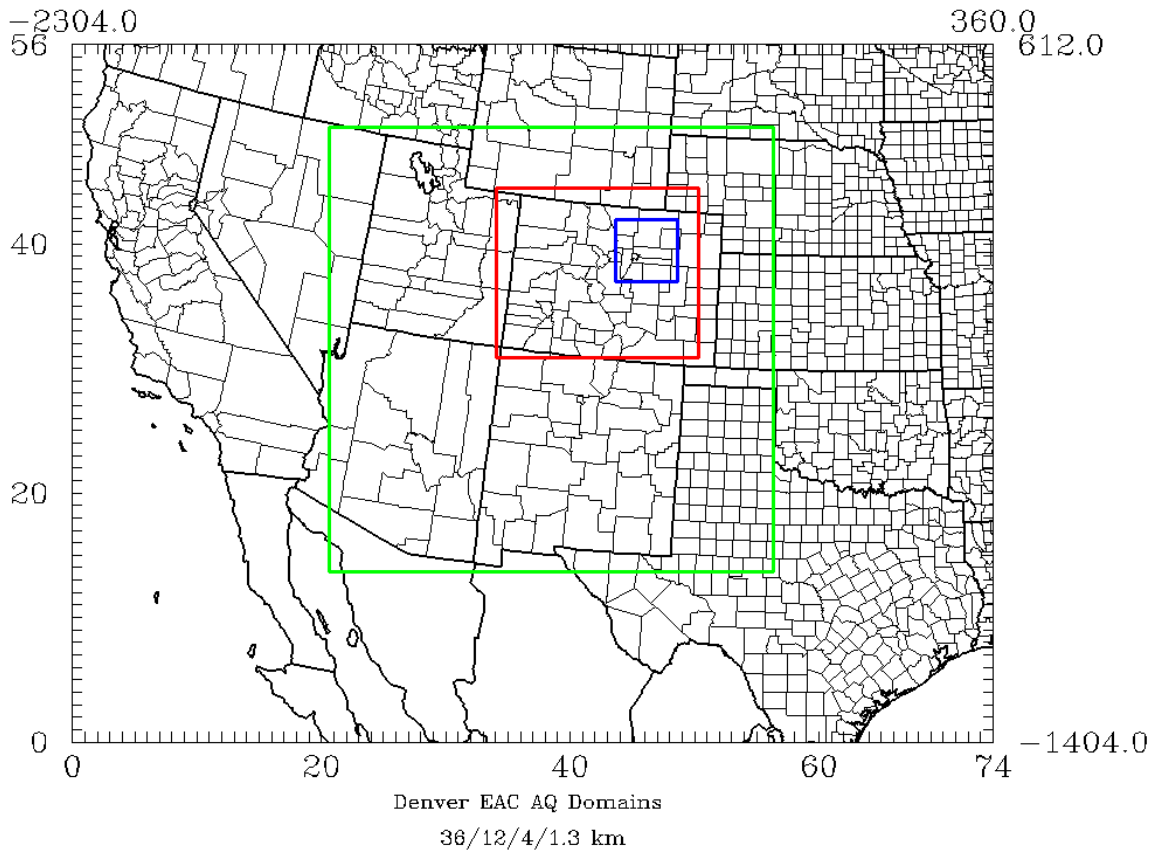


Figure 1-1. Denver EAC air quality modeling domains.

2. DATA SOURCES AND EMISSION INVENTORY PROCESSING

The emissions data and processing steps used in the development of the 2007 base case inventory for the Denver EAC air quality modeling project are described in the section.

Emissions Modeling

CAMx requires two types of emission input files:

1. Surface emissions from area, mobile, off-road, low-level point and biogenic sources are gridded to the CAMx nested grid system. This means that separate surface emissions files will be prepared for the 36 km, 12 km and 4 km grids. The surface emissions are injected into the lowest layer of the model.
2. Elevated emissions from major point sources are injected into CAMx at the coordinates of each source. The plume rise for each source is calculated by CAMx from stack parameters so that the emissions are injected into the appropriate vertical layer. Emissions from selected major NO_x emitters may be treated with the CAMx Plume-in-Grid (PiG) module.

Emissions for different major source groups (e.g., on-road mobile, off-road mobile, area, point and biogenic) were processed separately and merged together prior to CAMx modeling. This simplifies the processing and assists quality assurance (QA) and reporting tasks. The outputs from the emissions model are called the “model-ready” emissions, and are day-specific, gridded, speciated and temporally (hourly) allocated. The emission files were prepared using version 2x of the Emissions Processing System (EPS2x). EPS2x performs all of the processing steps for the anthropogenic emissions. The biogenic inventories were generated with GloBEIS version 3.1, which includes various enhancements to estimate the effects of drought conditions on biogenic emissions. The emissions model performs several tasks, briefly summarized below.

Temporal adjustments

Adjust emission rates for seasonal, day-of-week and hour-of-day effects. Default temporal profiles by SIC/SCC are used in EPS2x to adjust annual and peak ozone season emission estimates for the specific episode period.

Chemical Speciation

Emission estimates for total VOC were converted to the more detailed chemical speciation used by the Carbon Bond 4 (CB4) chemical mechanism in CAMx. Speciation profiles by SIC/SCC codes, based on EPA default data, as well as of various updates and improvements incorporated into the speciation database, were used in the EPS2x emissions modeling. The speciation of oil and gas sources in Northwest New Mexico was based on basin-specific data provided by NMOGA, as discussed in ENVIRON, 2003a. Total unspciated NO_x emissions are allocated to NO and NO₂ components.

Spatial Allocation

The spatial resolution of the emissions must be matched to the CAMx grid(s). Area and off-road mobile sources are estimated at the county level, and are allocated to the grid cells within each county based on spatial surrogates (e.g., population and economic activity). Link specific mobile source emissions (from transportation models) and are allocated to model grid cells using the LBASE module of EPS2x. Biogenic emissions are gridded for the modeling domain using the GloBEIS model. Data sources and surrogate assignments were detailed in ENVIRON, 2003a.

Growth and Control

Emissions estimated for one year may need to be adjusted for use in a different year. For the base case modeling, a large portion of the emission inventory data is based on EPA's NEI99 and so the growth, or projection, modules of EPS2x will be utilized. Emission estimates for 1999 for states other than Colorado are projected to 2007 using growths factors developed using EGAS.

Quality Assurance

The emissions model includes powerful QA and reporting features to keep track of the adjustments at each processing stage and ensure that data integrity is not compromised. Message files generated by the EPS2x processors were reviewed through out each stage of the emission processing. Summary tables were developed and reviewed for accuracy and completeness. The emission inventory is summarized in Section 3 of this report.

Data Sources and Emissions Processing

The CDPHE provided emission inventory data for 2007 for the entire State of Colorado. For the remaining states within the modeling domain, the EPA's 1999 National Emission Inventory (NEI99) was used. These 1999 emission estimates were projected to the 2007 base year using the EPS2x growth and projection modules with growth factors developed with the EGAS model. A draft emission inventory for Mexico based on data used in the BRAVO study was incorporated into the inventory, primarily as a placeholder, until such time as a more accurate inventory for Mexico becomes available (ENVION, 2003b). The version of the NEI database and the modifications and enhancements that were incorporated were discussed in ENVIRON, 2003a.

A summary of data sources for the development of the modeling emissions inventory is provided in Table 2-1.

Table 2-1. Summary of 2007 emissions data sources.

Category	Region	Data Source
Mobile	Denver Metro	CDPHE link-based, MOBILE6
	Other Colorado	CDPHE
	Outside Colorado	EPA NEI99, MOBILE6
Offroad	Colorado	CDPHE emissions data
	Outside Colorado	EPA NEI99
Area	Colorado	CDPHE emissions data
	Outside Colorado	EPA NEI99
Oil & Gas	Colorado	Included in Point Source inventory
	New Mexico	NMOGA Un-permitted data base
	Outside CO and NM	EPA NEI99
Point	Colorado	CDPHE emissions data
	Outside Colorado	EPA NEI99
Biogenic	Entire Domain	GloBEIS3 with BELD3 LULC data and drought adjustment

Point Sources

Point source data were obtained from different sources, processed separately and merged prior to modeling. The separate point source data includes: Colorado point sources; Other State point sources; and Mexico point sources. The point source data are processed for a typical peak ozone (PO) season weekday and weekend day. The 2007 Colorado point source data were provided EPS2x AFS input format.

For all states other than Colorado, data for criteria pollutants from the NEI99 is used. The EGAS model was used to develop growth factors for 2007. Point source emissions for Mexico were obtained in as ASCII IDA formatted files and re-formatted for processing with EPS2x.

The criteria for selecting NO_x point sources for plume in grid treatment within the 4 and 1.33-km modeling domains is 2 tons NO_x on any episode day. For the regional emissions grid, the NO_x criteria is 25 tons per day on any episode day.

On-Road Mobile Sources

On-road mobile emission sources were processed separately for the State of Colorado and all remaining states in the modeling domain and Mexico. For Colorado, link-based emissions data was provided for the Denver metropolitan area. HPMS-based VMT data provided by the CDPHE were used for the remaining counties in Colorado. All other on-road mobile emission estimates were based on the NEI99 database.

Colorado On-Road Mobile Source Emissions

A detailed discussion of the on-road mobile source emissions processing was presented in ENVIRON, 2003a. The development of the 2007 on-road mobile inventory used the same procedures as the 2002 inventory with data and assumptions representative of 2007. The following discussion summarizes the on-road mobile source emissions processing.

Emission factors in all cases were obtained from the US EPA's MOBILE6 model. Temperature and humidity inputs were taken from MM5 modeling performed by Alpine Geophysics for the air quality modeling portion of this work. In-use control inputs for the Denver, Fort Collins, and Colorado Springs areas were provided by the CDPHE. For counties not included in the group above, MOBILE6 modeling was done assuming the same RVP value (as the counties above) but no other controls.

Link-based activity (VMT) data for 2007 for the Denver, Fort Collins, and Colorado Springs areas were provided by the CDPHE. Corresponding MOBILE6 emission factors were prepared by running the model over a range of temperatures, speeds, and humidity conditions. M6LINC, an internal ENVIRON tool, was used to estimate link-specific hourly emissions by mode (start exhaust, running exhaust, running loss, resting loss, hotsoak, and crankcase). Diurnal emissions were estimated outside of M6LINC since MOBILE6 diurnal emission factors cannot be obtained at specific temperatures. These emission factors were estimated by running MOBILE6 with daily minimum and maximum temperatures (rather than for a range of specific temperatures). Table 2-2 summarizes the link-based NO_x, VOC and CO emissions for the Denver Metropolitan Area and the Front Range counties of the modeling domain. The counties for which on-road mobile source emissions are based on transportation networks include: Adams, Arapahoe, Boulder, Denver, Douglas, Elbert, El Paso, Gilpin, Jefferson, Larimer, Teller and Weld.

Table 2-2. Denver Metropolitan Area/Front Range 2007 link-based emission summary (tpd).

Date	NOx	VOC	CO
6/25/07	176.34	155.09	1284.33
6/26/07	173.82	150.55	1294.48
6/27/07	176.98	157.40	1308.60
6/28/07	191.71	168.36	1375.71
6/29/07	146.23	134.55	1119.09
6/30/07	107.25	98.90	871.94
7/01/07	165.37	156.83	1265.39
7/18/07	179.09	163.96	1329.99
7/19/07	187.35	171.64	1383.08
7/20/07	133.68	122.34	1081.31
7/21/07	100.36	89.14	851.20

The development of 2007 on-road emissions for photochemical modeling is very similar to the procedures used for 2002 (as described above). This discussion describes the major assumptions used to specifically reflect the status of fuels and controls in 2007. These assumptions follow from information provided by the APCD.

With regards to future fuel specifications, the RVP was set at 9.0 psi. In addition, ENVIRON was directed by the RAQC to assume a statewide 40% market share for an ethanol-based oxygenated fuel. In 2007, only the Denver metropolitan area was modeled with inspection and maintenance/anti-tampering programs. The test types include two-speed idle for heavy-duty gas vehicles and IM240 for light-duty gasoline cars and trucks. The final significant change in inputs was the VMT mix assumed for the Denver metropolitan area. The updated mix, provided by the APCD, put more significance on the activity of light-duty trucks and decreased activity from passenger cars.

HPMS-based VMT data were provided by the CDPHE. These data encompass all counties in the state except those with link-based data. CDPHE staff stated that VMT in counties with link-based data were greater than their HPMS counterpart estimates; therefore, the link-based estimates were used without further reconciliation. Likewise, HPMS data were used for those counties without link-based data. For these latter counties, the only MOBILE6-related differences among them are their temperatures and humidity. Thus, for each episode day, minimum and maximum daily temperatures and daily average humidity were obtained for each county. These counties were then grouped into bins such that within a bin, the variations in minimum and maximum temperatures were no more than five degrees Fahrenheit. The average daily minimum and maximum temperatures and humidity were derived for each group and used in the emission factor modeling. Each of the twelve HPMS facility classes was assigned one of four MOBILE6 road types (non-ramp freeway, arterial, local, and ramp) and a national average speed. These speeds are presented in Table 2-3. Emissions were estimated by county, episode day, pollutant/emission mode, facility type, and vehicle class.

The development of 2007 on-road emissions for photochemical modeling is similar to the procedures used for 2002 (as described above). This discussion describes the major assumptions used to specifically reflect the status of fuels and controls in 2007. These assumptions follow from information provided by the APCD.

With regards to future fuel specifications, the RVP was set at 9.0 psi. In addition, ENVIRON was directed by the RAQC to assume a statewide 40% market share for an ethanol-based oxygenated fuel. In 2007, only the Denver metropolitan area was modeled with inspection and maintenance/anti-tampering programs. The test types include two-speed idle for heavy-duty gas vehicles and IM240 for light-duty gasoline cars and trucks. The final significant change in inputs was the VMT mix assumed for the Denver metropolitan area. The updated mix, provided by the APCD, put more significance on the activity of light-duty trucks and decreased activity from passenger cars.

Table 2-3. Speeds used in emission factor modeling for counties with HPMS-based VMT.

Rural						Urban					
Interstate	Principal Arterial	Minor Arterial	Major Collector	Minor Collector	Local	Other Freeways & Express ways	Principal Arterial	Minor Arterial	Collector	Local	Interstate
56.23	44.32	39.32	34.32	29.66	29.66	44.35	44.35	19.67	19.67	19.67	19.67

Regional On-Road Mobile Source Emissions

The NEI99 is the basis for the on-road mobile source regional emissions inventory for those states outside Colorado. County-level mobile emissions data were first projected to the 2007 base year using EPS2x with growth factor calculated using the EGAS model. The resulting county-level 2007 emissions estimate were treated as area source and processed with EPS2x. A road type distribution (urban primary, rural primary, urban secondary, rural secondary) was used to spatially allocate the on-road sources grid cells in each of the modeling domains.

Mexico on-road mobile source emissions were obtained on a state/municipality level and processed as area sources. The Mexico emission inventory data is for 1999. Due to a lack of growth factor information, no attempt was made to project these data to the 2007 base year.

Area and Off-Road Sources

The CDPHE provided 2007 emission inventories for Colorado area and off-road sources. The data were provided as EPS2x AMS formatted files. These data were processed using EPS2x and spatially allocated to grid cells using gridding surrogates based on the EPA's gridding surrogate database.

For all areas outside Colorado, the NEI99 is the basis for the area and nonroad regional emissions inventory. The NEI 1999 area and off-road emission inventory is (1) processed to extract the typical peak ozone season day data, (2) reformatted to AMS input file format and (3) processed with EPS2x.

Oil and Gas Emissions

Emissions data from oil and gas production wells within the modeling domain were obtained from the CDPHE as well as the New Mexico Oil and Gas Association (NMOGA). The CDPHE provided oil and gas emissions within the statewide inventory data files used for the project. Emission for oil and gas production on New Mexico was provided separately by NMOGA for numerous small un-permitted operations in the northeast corner of New Mexico. In the San Juan Basin of New Mexico there are nearly 18,000 oil and gas wells in operation. Each of these emit only a relatively small amount of emission and thus are not subject to permitting based on EPA guidelines. However, in aggregate, the large number of wells contribute a substantial amount of NO_x and VOC to the overall inventory.

Bruce Gantner of NMOGA provided NO_x and VOC emissions estimates for 2002 for the three New Mexico counties within the San Juan Basin; San Juan, Sandoval, and Rio Arriba (Gantner, 2003). Flash, loading, working and standing, venting and fugitive VOC emission estimates were provided. NO_x emissions for various engine types were provided on a basin wide basis. These data were summarized in ENVIRON, 2003a. Speciation profiles were developed separately for each of the four formations based on the information provided by NMOGA. Because the emissions data was provided by county, and not separately for each formation, an average speciation profile was used for all formations.

Temporal allocation of the annual emissions for oil and gas operation was assumed constant for NO_x emissions and VOC emissions except for working and standing emissions. For working and standing VOC emissions a specific monthly temporal profile was provided by NMOGA. Spatial allocation of emissions was based on the location of wells within each county for VOC emissions and on the location of wells across the entire basin for NO_x emissions.

For 2007, the EGAS growth factors were used to project the 2002 estimates. EGAS estimates total growth from 2002 to 2007 of approximately 22%. Supplemental information concerning the estimated emission levels for oil and gas wells in the San Juan Basin was received from NMOGA, however, because these data were on Sept. 29, 2003, they were not incorporated into the current 2007 inventory. The data will be reviewed and if appropriate will be included in the inventory prior to any air quality simulations.

Biogenic Sources

Biogenic emissions were prepared using version 3.1 of the GloBEIS model (Yarwood et al., 1999 a,b). A discussion of the GloBEIS model, including options used in development of the inventory for the Denver EAC modeling effort, was presented in ENVIRON, 2003a. GloBEIS was used to calculate day specific, gridded, speciated, hourly emissions of biogenic VOCs and NO_x for each modeling grid (36 km, 12 km, 4 km, 1.33 km). Biogenic emissions for 2007 are unchanged from the 2002 base year biogenic emissions.

3. EMISSION SUMMARIES FOR 2007

Summary tables of emissions estimates for the 2007 base year are presented in this section. Table 3-1 summarizes the statewide and DMA/Front Range emission inventory by major source category. Tables 3-2 through 3-4 provide emissions estimates by county for various subcategories. The emission source category estimates are detailed within each source sector based on consideration of possible control strategies. Statewide totals are also presented. Note that, with the exception of Morgan County, the on-road mobile source emissions estimates for the DMA/Front Range were not available by individual county. These sources were processed using link-based data. Total on-road link-based mobile emissions are presented in Table 3-5 for each of the episode days. Also note that emissions from off-road mobile sources are not disaggregated by exhaust and evaporative emissions.

Tables 3-6 through 3-8 present the typical weekday, Saturday and Sunday 2007 major source category emission estimates by county for the State of Colorado.

Table 3-9 summarizes the gridded emissions by major source type for states other than Colorado.

Table 3-10 presents the gridded biogenic emissions for states other than Colorado. Note that the emission estimates in Tables 3-9 and 3-10 reflect gridded, model ready emissions. This means that for partial counties and/or states at the edge of a modeling domain, only the portion of emissions that is within the modeling domain is reported.

Table 3-1. 2007 emission inventory summary by major source category (tons/day).

Source Category	DMA/FR			State-wide		
	NOX	VOC	CO	NOX	VOC	CO
Stationary Points	170.47	217.33	50.06	346.86	270.30	103.92
Area	2.23	144.97	4.19	3.25	208.25	5.48
On-Road Mobile	178.33	156.80	1305.33	246.83	210.19	1993.25
Off-Road Mobile	137.54	89.88	1305.33	215.60	150.23	2023.77
Biogenics	56.12	1025.86	134.71	254.74	7688.51	932.96
Total	544.69	1634.84	2799.62	1067.29	8527.48	5059.38

Table 3-2. 2007 NOx emissions (tons/day).

NOx (tons/day)															
	Adams	Arapahoe	Boulder	Denver	Douglas	Elbert	EI Paso	Gilpin	Jefferson	Larimer	Morgan	Teller	Weld	Total DMA/FR	State Total
Source Category															
Flash (Condensate Tank SIC 1321)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	1.00
Gas Stations	0.08	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10
Mid-stream Oil & Gas Facilities SIC 1311	4.28	0.29	0.00	0.04	0.00	0.08	0.16	0.00	0.00	0.02	0.00	0.00	18.44	23.30	66.59
Other stationary point	36.73	2.14	14.11	11.44	0.19	0.12	25.18	0.00	8.42	14.59	23.02	0.18	10.93	147.06	279.17
Total Point	41.09	2.43	14.11	11.48	0.19	0.20	25.35	0.00	8.42	14.61	23.04	0.18	29.37	170.47	346.86
Automotive Aftermarket Products	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Architectural Coating	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Household & Personal Products	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Adhesives & Sealants	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Pesticide Application	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Other Area	0.41	0.16	0.18	0.41	0.07	0.01	0.41	0.00	0.32	0.05	0.01	0.01	0.21	2.23	3.25
Total Area	0.41	0.16	0.18	0.41	0.07	0.01	0.41	0.00	0.32	0.05	0.01	0.01	0.21	2.23	3.25
Lawn & Garden Equipment	0.60	2.40	1.06	1.56	1.42	0.07	1.43	0.00	1.93	1.02	0.02	0.01	0.28	11.79	13.13
Other Off-road	11.93	12.54	10.93	25.38	8.36	1.13	11.93	1.00	8.95	6.70	5.31	0.34	21.25	125.75	202.48
Total Off-road Mobile	12.53	14.94	11.99	26.94	9.78	1.20	13.35	1.00	10.88	7.71	5.32	0.35	21.53	137.54	215.60
On-road Exhaust*														178.33	246.83
On-road Evaporative*														0.00	0.00
Total On-road Mobile*														178.33	246.83
Biogenic	7.21	2.37	1.29	0.35	0.48	1.61	2.54	0.09	0.91	3.84	9.79	0.35	25.28	56.12	254.74
Total	61.24	19.90	27.58	39.18	10.52	3.02	41.65	1.10	20.54	26.21	40.16	0.88	76.39	544.69	1067.29

* On-road link-based mobile emissions estimates for the DMA counties are presented in Table 3-5.

Table 3-3. 2007 VOC emissions (tons/day).

VOC (tons/day)															
	Adams	Arapahoe	Boulder	Denver	Douglas	Elbert	EI Paso	Gilpin	Jefferson	Larimer	Morgan	Teller	Weld	Total DMA/FR	State Total
Source Category															
Flash (Condensate Tank SIC 1321)	3.50	0.19	1.44	0.12	0.00	0.10	0.00	0.00	0.00	0.06	0.97	0.00	141.35	147.73	162.37
Gas Stations	2.96	3.12	1.65	2.79	1.13	0.05	3.65	0.02	3.39	1.36	0.19	0.12	1.04	21.45	26.86
Mid-stream Oil & Gas Facilities SIC 1311	1.20	0.10	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	8.98	10.31	33.73
Other stationary point	9.01	2.37	2.66	5.73	0.25	0.02	3.54	0.00	4.62	2.84	1.15	0.01	5.64	37.83	47.34
Total Point	16.68	5.78	5.74	8.65	1.38	0.17	7.20	0.02	8.00	4.26	2.30	0.12	157.01	217.33	270.30
Automotive Aftermarket Products	4.42	5.54	3.13	7.02	0.75	0.16	5.59	0.03	5.90	2.55	0.33	0.18	2.25	37.86	47.95
Architectural Coating	3.15	3.97	2.25	5.03	0.54	0.11	4.01	0.03	4.23	1.84	0.24	0.13	1.61	27.14	34.42
Household & Personal Products	2.76	3.48	1.95	4.41	0.48	0.10	3.50	0.02	3.71	1.60	0.22	0.11	1.40	23.74	29.97
Adhesives & Sealants	2.39	3.01	1.69	3.80	0.41	0.08	3.04	0.02	3.20	1.40	0.18	0.10	1.21	20.53	25.95
Pesticide Application	2.77	0.41	0.51	0.00	0.17	0.65	0.07	0.00	0.10	0.79	1.65	0.00	6.04	13.16	36.47
Other Area	0.88	1.87	1.39	2.20	0.11	0.16	8.54	0.04	1.47	2.87	0.37	0.18	2.47	22.53	33.49
Total Area	16.37	18.28	10.91	22.45	2.46	1.26	24.74	0.15	18.61	11.05	2.98	0.70	14.98	144.97	208.25
Lawn & Garden Equipment	2.24	7.87	3.55	5.45	4.46	0.25	4.99	0.03	6.59	3.40	0.09	0.09	1.05	40.06	45.62
Other Off-road	7.99	7.08	3.74	5.29	1.63	0.52	6.48	0.61	4.58	4.18	1.22	1.04	5.48	49.82	104.61
Total Off-road Mobile	10.22	14.95	7.29	10.74	6.09	0.76	11.47	0.64	11.17	7.58	1.31	1.13	6.53	89.88	150.23
On-road Exhaust*												0.82		69.59	97.24
On-road Evaporative*												0.90		87.22	112.95
Total On-road Mobile*												1.71		156.80	210.19
Biogenic	9.39	15.34	84.48	12.04	137.37	45.12	103.71	26.99	130.80	268.01	18.23	95.76	78.63	1025.86	7688.51
Total	52.67	54.35	108.43	53.89	147.30	47.32	147.12	27.80	168.59	290.90	26.53	97.72	257.15	1634.84	8527.48

* On-road link-based mobile emissions estimates for the DMA counties are presented in Table 3-5.

Table 3-4. 2007 CO Emissions (tons/day).

CO (tons/day)															
	Adams	Arapahoe	Boulder	Denver	Douglas	Elbert	El Paso	Gilpin	Jefferson	Larimer	Morgan	Teller	Weld	Total DMA/FR	State Total
Source Category															
Flash (Condensate Tank SIC 1321)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.75
Gas Stations	0.22	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.32
Mid-stream Oil & Gas Facilities SIC 1311	1.19	0.20	0.00	0.00	0.00	0.01	0.26	0.00	0.00	0.00	0.00	0.00	12.40	14.06	40.57
Other stationary point	7.49	1.94	2.38	3.06	0.37	0.02	3.30	0.00	3.47	1.79	4.26	0.08	7.50	35.66	62.28
Total Point	8.90	2.15	2.38	3.06	0.37	0.03	3.66	0.00	3.47	1.79	4.28	0.08	19.90	50.06	103.92
Automotive Aftermarket Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Household & Personal Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Adhesives & Sealants	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pesticide Application	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Area	0.11	0.37	0.09	2.77	0.03	0.01	0.04	0.00	0.40	0.26	0.04	0.01	0.05	4.19	5.48
Total Area	0.11	0.37	0.09	2.77	0.03	0.01	0.04	0.00	0.40	0.26	0.04	0.01	0.05	4.19	5.48
Lawn & Garden Equipment	63.87	229.43	103.13	157.39	130.84	7.15	144.11	0.73	190.98	98.80	2.45	2.46	29.95	1161.30	1317.89
Other Off-road	49.78	72.23	48.79	102.61	22.03	2.98	48.31	0.83	50.78	35.47	9.38	4.00	30.43	477.61	705.88
Total Off-road Mobile	113.66	301.67	151.92	259.99	152.87	10.13	192.42	1.56	241.76	134.27	11.83	6.46	60.38	1638.92	2023.77
On-road Exhaust*												21.00		1305.33	1993.25
On-road Evaporative*												0.00		0.00	0.00
Total On-road Mobile*												21.00		1305.33	1993.25
Biogenic	1.12	1.67	11.83	1.13	11.59	5.61	11.36	3.63	17.41	42.69	3.14	11.27	12.24	134.71	932.96
Total	122.67	304.18	154.39	265.82	153.27	10.17	196.12	1.57	245.63	136.33	37.15	6.55	80.33	3133.21	5059.38

* On-road link-based mobile emissions estimates for the DMA counties are presented in Table 3-5.

Table 3-5. Denver Metropolitan Area/Front Range 2007 link-based emission summary (tpd).

Date	NOx	VOC	CO
6/25/07	176.34	155.09	1284.33
6/26/07	173.82	150.55	1294.48
6/27/07	176.98	157.40	1308.60
6/28/07	191.71	168.36	1375.71
6/29/07	146.23	134.55	1119.09
6/30/07	107.25	98.90	871.94
7/01/07	165.37	156.83	1265.39
7/18/07	179.09	163.96	1329.99
7/19/07	187.35	171.64	1383.08
7/20/07	133.68	122.34	1081.31
7/21/07	100.36	89.14	851.20

Table 3-6. 2002 NOx emissions by county for Colorado (tons/day).

County		Area			On-Road			Off-Road			Points			Anthropogenic			Biogenic			Total		
		Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
8001	Adams	0.39	0.38	0.41	*	*	*	12.54	12.54	12.54	37.20	36.89	37.32	50.13	49.81	50.28	6.86	6.76	7.21	56.99	56.57	57.49
8003	Alamosa	0.04	0.04	0.04	0.98	0.96	1.28	1.08	1.08	1.08	0.34	0.34	0.34	2.43	2.42	2.74	1.60	1.68	1.59	4.03	4.09	4.33
8005	Arapahoe	0.16	0.16	0.16	*	*	*	15.00	15.00	15.00	2.42	2.28	2.36	17.57	17.43	17.52	2.32	2.21	2.37	19.89	19.64	19.89
8007	Archuleta	0.01	0.01	0.01	0.71	0.68	0.91	0.36	0.36	0.36	0.04	0.04	0.04	1.12	1.09	1.32	0.48	0.51	0.53	1.60	1.61	1.85
8009	Baca	0.00	0.00	0.00	0.04	0.04	0.05	0.21	0.21	0.21	0.88	0.88	0.88	1.13	1.13	1.15	13.08	12.44	12.09	14.21	13.57	13.23
8011	Bent	0.00	0.00	0.00	0.33	0.34	0.45	1.54	1.54	1.54	0.28	0.28	0.68	2.16	2.17	2.67	5.83	5.62	5.52	7.99	7.79	8.19
8013	Boulder	0.18	0.17	0.18	*	*	*	12.00	12.00	12.00	13.98	13.98	14.01	26.15	26.15	26.19	1.24	1.23	1.29	27.39	27.38	27.48
8015	Chaffee	0.02	0.02	0.02	0.88	0.89	1.18	0.32	0.32	0.32	0.29	0.29	0.29	1.51	1.51	1.81	0.34	0.37	0.38	1.85	1.88	2.20
8017	Cheyenne	0.00	0.00	0.00	0.30	0.30	0.40	1.13	1.13	1.13	9.43	9.43	9.43	10.86	10.86	10.96	5.80	5.90	5.40	16.66	16.76	16.36
8019	Clear Creek	0.01	0.01	0.02	3.94	3.89	5.25	0.31	0.31	0.31	0.16	0.16	0.16	4.42	4.37	5.73	0.09	0.09	0.09	4.51	4.46	5.83
8021	Conejos	0.00	0.00	0.00	0.42	0.41	0.55	0.91	0.91	0.91	0.04	0.00	0.04	1.38	1.33	1.51	1.52	1.60	1.49	2.90	2.93	3.00
8023	Costilla	0.00	0.00	0.00	0.35	0.35	0.46	0.36	0.36	0.36	0.00	0.00	0.00	0.71	0.71	0.82	1.88	1.99	1.92	2.59	2.70	2.74
8025	Crowley	0.00	0.00	0.00	0.16	0.17	0.23	0.39	0.39	0.39	0.20	0.20	0.20	0.75	0.77	0.82	3.40	2.88	3.25	4.15	3.65	4.07
8027	Custer	0.00	0.00	0.00	0.20	0.20	0.27	0.17	0.17	0.17	0.00	0.00	0.00	0.37	0.37	0.44	0.34	0.36	0.36	0.71	0.73	0.80
8029	Delta	0.01	0.01	0.01	1.39	1.33	1.77	0.69	0.69	0.69	0.02	0.02	0.02	2.11	2.05	2.49	2.05	2.20	2.22	4.16	4.25	4.71
8031	Denver	0.39	0.38	0.42	*	*	*	37.15	37.15	37.15	11.20	10.97	11.24	48.74	48.50	48.81	0.36	0.33	0.35	49.10	48.83	49.16
8033	Dolores	0.00	0.00	0.00	0.19	0.19	0.25	0.46	0.46	0.46	0.99	0.99	0.99	1.65	1.65	1.71	0.90	0.99	1.01	2.55	2.64	2.71
8035	Douglas	0.07	0.07	0.07	*	*	*	9.79	9.79	9.79	0.18	0.17	0.19	10.03	10.03	10.05	0.47	0.45	0.48	10.50	10.48	10.53
8037	Eagle	0.03	0.03	0.03	4.81	4.78	6.44	2.21	2.21	2.21	0.51	0.51	0.52	7.56	7.53	9.20	0.67	0.72	0.72	8.24	8.25	9.92
8039	Elbert	0.01	0.01	0.01	*	*	*	1.20	1.20	1.20	0.19	0.19	0.20	1.39	1.39	1.41	1.61	1.56	1.61	3.00	2.95	3.02
8041	El Paso	0.34	0.33	0.35	*	*	*	14.59	14.59	14.59	27.87	27.84	28.09	42.80	42.76	43.02	2.82	2.70	2.54	45.62	45.46	45.56
8043	Fremont	0.03	0.03	0.03	2.33	2.22	2.96	0.73	0.73	0.73	6.62	6.61	6.68	9.71	9.59	10.40	1.70	1.73	1.77	11.40	11.32	12.18
8045	Garfield	0.04	0.04	0.04	4.16	3.99	5.36	5.19	5.19	5.19	6.33	6.33	6.37	15.72	15.55	16.96	1.33	1.43	1.43	17.04	16.98	18.39
8047	Gilpin	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.01	0.08	0.09	0.09	1.09	1.09	1.10
8049	Grand	0.06	0.06	0.07	1.21	1.21	1.61	0.89	0.89	0.89	0.14	0.14	0.14	2.30	2.30	2.71	0.48	0.52	0.51	2.78	2.81	3.22
8051	Gunnison	0.02	0.02	0.03	1.07	1.06	1.40	0.80	0.80	0.80	0.03	0.03	0.03	1.92	1.91	2.26	1.73	1.84	1.91	3.65	3.75	4.17
8053	Hinsdale	0.00	0.00	0.00	0.07	0.07	0.09	0.03	0.03	0.03	0.00	0.00	0.00	0.10	0.10	0.13	0.19	0.21	0.21	0.30	0.31	0.34
8055	Huerfano	0.01	0.01	0.01	1.19	1.14	1.54	0.63	0.63	0.63	0.01	0.01	0.01	1.84	1.80	2.19	2.32	2.25	2.06	4.16	4.05	4.26
8057	Jackson	0.01	0.01	0.01	0.21	0.21	0.28	0.84	0.84	0.84	0.00	0.00	0.00	1.06	1.06	1.13	0.83	0.88	0.89	1.89	1.93	2.02
8059	Jefferson	0.31	0.31	0.33	*	*	*	10.89	10.89	10.89	8.31	8.17	8.31	19.51	19.37	19.53	0.83	0.84	0.91	20.35	20.21	20.44
8061	Kiowa	0.00	0.00	0.00	0.28	0.29	0.38	1.95	1.95	1.95	0.39	0.39	0.39	2.62	2.62	2.72	9.82	9.92	9.70	12.44	12.54	12.42
8063	Kit Carson	0.01	0.01	0.01	2.32	2.32	3.12	4.29	4.29	4.29	1.19	1.19	0.04	7.82	7.81	7.46	13.83	14.98	12.44	21.64	22.79	19.90

County	Area			On-Road			Off-Road			Points			Anthropogenic			Biogenic			Total		
	NOx (tons/day)	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun
8065 Lake	0.00	0.00	0.00	0.56	0.56	0.75	0.14	0.14	0.14	0.04	0.04	0.04	0.75	0.75	0.93	0.09	0.09	0.09	0.83	0.84	1.03
8067 La Plata	0.02	0.02	0.02	3.19	3.12	4.14	2.37	2.37	2.37	10.15	10.13	10.16	15.73	15.63	16.69	1.52	1.64	1.68	17.24	17.27	18.36
8069 Larimer	0.05	0.04	0.05	*	*	*	8.32	8.32	8.32	14.36	14.32	14.44	22.72	22.68	22.80	3.71	3.62	3.84	26.43	26.30	26.65
8071 Las Animas	0.02	0.02	0.02	1.47	1.48	1.99	3.32	3.32	3.32	2.58	2.58	2.72	7.40	7.40	8.05	9.05	8.50	8.23	16.45	15.90	16.28
8073 Lincoln	0.01	0.01	0.01	0.97	0.95	1.28	2.72	2.72	2.72	0.09	0.09	0.09	3.79	3.77	4.11	6.96	6.85	6.94	10.75	10.62	11.05
8075 Logan	0.03	0.03	0.04	1.65	1.67	2.23	5.28	5.28	5.28	1.94	1.93	1.94	8.90	8.91	9.48	10.31	10.59	9.91	19.21	19.50	19.39
8077 Mesa	0.04	0.03	0.04	5.56	5.61	7.49	5.67	5.67	5.67	5.59	5.56	5.63	16.85	16.88	18.83	6.01	6.49	6.50	22.87	23.37	25.32
8079 Mineral	0.00	0.00	0.00	0.25	0.25	0.33	0.04	0.04	0.04	0.00	0.00	0.00	0.29	0.29	0.37	0.23	0.25	0.26	0.52	0.54	0.63
8081 Moffat	0.00	0.00	0.00	1.19	1.18	1.57	1.15	1.15	1.15	58.04	58.04	58.04	60.38	60.38	60.76	11.09	12.00	11.06	71.48	72.38	71.82
8083 Montezuma	0.04	0.04	0.04	2.19	2.09	2.78	1.13	1.13	1.13	1.02	1.02	1.02	4.38	4.28	4.97	3.29	3.57	3.60	7.67	7.85	8.58
8085 Montrose	0.02	0.02	0.02	2.18	2.16	2.87	1.09	1.09	1.09	3.58	3.58	3.60	6.87	6.84	7.57	3.38	3.66	3.68	10.25	10.49	11.25
8087 Morgan	0.01	0.01	0.01	2.02	2.04	2.73	5.33	5.33	5.33	21.46	21.32	22.44	28.83	28.70	30.52	9.91	9.98	9.79	38.74	38.68	40.31
8089 Otero	0.01	0.01	0.01	1.18	1.15	1.52	1.81	1.81	1.81	0.24	0.24	0.26	3.24	3.21	3.60	6.00	5.39	5.70	9.24	8.61	9.30
8091 Ouray	0.00	0.00	0.01	0.42	0.42	0.57	0.13	0.13	0.13	0.00	0.00	0.00	0.56	0.56	0.71	0.13	0.14	0.14	0.69	0.70	0.85
8093 Park	0.01	0.01	0.01	0.86	0.85	1.14	0.33	0.33	0.33	0.00	0.00	0.00	1.21	1.20	1.48	2.06	2.15	2.23	3.27	3.34	3.71
8095 Phillips	0.00	0.00	0.00	0.22	0.20	0.27	2.36	2.36	2.36	0.00	0.00	0.03	2.59	2.57	2.66	13.21	13.44	9.92	15.79	16.01	12.58
8097 Pitkin	0.22	0.21	0.24	1.26	1.24	1.66	2.05	2.05	2.05	0.00	0.00	0.00	3.54	3.51	3.96	0.22	0.24	0.25	3.76	3.76	4.21
8099 Prowers	0.01	0.01	0.01	0.87	0.87	1.16	2.52	2.52	2.52	2.82	2.70	2.83	6.22	6.10	6.52	7.93	7.94	8.05	14.15	14.04	14.56
8101 Pueblo	0.07	0.07	0.07	6.76	6.62	8.89	4.35	4.35	4.35	16.76	16.69	16.54	27.94	27.73	29.86	8.90	8.17	7.60	36.85	35.90	37.45
8103 Rio Blanco	0.01	0.01	0.01	0.38	0.36	0.49	0.86	0.86	0.86	10.76	10.76	10.76	12.00	11.98	12.11	4.69	5.06	4.69	16.69	17.04	16.80
8105 Rio Grande	0.02	0.02	0.02	0.63	0.62	0.83	1.18	1.18	1.18	0.05	0.05	0.07	1.88	1.87	2.09	1.54	1.67	1.72	3.42	3.54	3.81
8107 Routt	0.05	0.05	0.05	1.35	1.34	1.78	2.00	2.00	2.00	24.19	24.19	24.19	27.59	27.58	28.03	0.97	1.03	1.03	28.56	28.61	29.06
8109 Saguache	0.01	0.01	0.02	0.52	0.52	0.69	1.08	1.08	1.08	0.00	0.00	0.00	1.61	1.61	1.78	3.67	3.93	4.00	5.28	5.53	5.78
8111 San Juan	0.00	0.00	0.00	0.33	0.33	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.44	0.08	0.08	0.09	0.41	0.41	0.53
8113 San Miguel	0.00	0.00	0.01	0.53	0.50	0.66	0.31	0.31	0.31	0.59	0.59	0.59	1.43	1.40	1.57	1.61	1.75	1.77	3.04	3.15	3.34
8115 Sedgwick	0.01	0.01	0.01	0.24	0.25	0.34	1.21	1.21	1.21	0.00	0.00	0.00	1.46	1.47	1.56	4.86	4.78	3.67	6.32	6.25	5.23
8117 Summit	0.02	0.02	0.02	2.66	2.65	3.57	1.37	1.37	1.37	0.00	0.00	0.00	4.05	4.04	4.97	0.15	0.16	0.16	4.20	4.20	5.13
8119 Teller	0.01	0.01	0.01	*	*	*	0.34	0.34	0.34	0.18	0.18	0.18	0.53	0.53	0.53	0.33	0.33	0.35	0.86	0.86	0.88
8121 Washington	0.00	0.00	0.01	0.78	0.77	1.02	4.35	4.35	4.35	0.27	0.27	0.27	5.40	5.39	5.64	11.14	11.44	10.41	16.53	16.83	16.05
8123 Weld	0.20	0.19	0.21	*	*	*	21.54	21.54	21.54	27.83	27.75	29.57	49.57	49.48	51.31	25.30	24.63	25.28	74.88	74.11	76.59
8125 Yuma	0.02	0.02	0.02	0.49	0.45	0.60	4.64	4.64	4.64	3.04	3.04	3.04	8.20	8.15	8.31	21.35	23.74	17.79	29.55	31.89	26.09
Total	3.08	2.99	3.24	68.27	67.31	90.04	228.66	228.66	228.66	334.84	333.39	337.40	634.84	632.35	659.34	266.50	270.57	254.74	901.34	902.92	914.08

* On-road link-based mobile emissions estimates for the DMA counties are presented in Table 3-5.

Table 3-7. 2002 VOC emissions by county for Colorado (tons/day).

County	Area			On-Road			Off-Road			Points			Anthropogenic			Biogenic			Total		
	VOC (tons/day)	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun
8001 Adams	16.39	16.39	16.39	*	*	*	10.23	10.23	10.23	14.34	13.26	18.30	40.96	39.88	44.92	8.98	8.12	9.39	49.94	48.00	54.31
8003 Alamosa	1.20	1.20	1.20	0.82	0.82	1.08	0.66	0.66	0.66	0.14	0.11	0.14	2.82	2.79	3.08	36.71	39.48	37.80	39.52	42.26	40.87
8005 Arapahoe	18.25	18.21	18.33	*	*	*	17.43	17.43	17.43	4.66	4.34	6.34	40.34	39.98	42.10	15.12	13.36	15.34	55.46	53.34	57.44
8007 Archuleta	0.36	0.36	0.36	0.55	0.55	0.74	0.48	0.48	0.48	0.03	0.03	0.03	1.42	1.42	1.61	221.02	244.40	260.69	222.44	245.82	262.29
8009 Baca	1.58	1.58	1.58	0.04	0.04	0.05	0.67	0.67	0.67	1.41	1.41	1.41	3.70	3.70	3.71	19.80	18.35	17.96	23.50	22.05	21.68
8011 Bent	0.58	0.58	0.58	0.31	0.32	0.41	1.12	1.12	1.12	0.05	0.05	0.06	2.06	2.06	2.17	17.47	16.88	16.68	19.53	18.94	18.85
8013 Boulder	10.90	10.89	10.94	*	*	*	7.30	7.30	7.30	4.84	4.80	6.23	23.04	22.99	24.46	76.19	75.38	84.48	99.23	98.37	108.94
8015 Chaffee	0.77	0.77	0.77	0.62	0.62	0.85	1.33	1.33	1.33	0.17	0.17	0.19	2.90	2.90	3.15	89.34	98.72	106.93	92.23	101.62	110.07
8017 Cheyenne	0.52	0.52	0.52	0.26	0.24	0.32	2.47	2.47	2.47	7.50	7.50	7.50	10.76	10.73	10.81	10.67	10.82	9.97	21.42	21.55	20.78
8019 Clear Creek	0.41	0.41	0.41	2.52	2.57	3.45	0.10	0.10	0.10	0.12	0.12	0.12	3.16	3.20	4.08	32.33	34.22	36.22	35.49	37.42	40.30
8021 Conejos	0.64	0.64	0.64	0.30	0.30	0.41	0.15	0.15	0.15	0.00	0.00	0.00	1.10	1.09	1.20	96.95	108.63	107.56	98.04	109.72	108.76
8023 Costilla	0.40	0.40	0.40	0.25	0.25	0.34	0.16	0.16	0.16	0.02	0.02	0.18	0.83	0.83	1.08	94.07	103.32	98.21	94.90	104.15	99.29
8025 Crowley	0.30	0.30	0.30	0.14	0.16	0.22	0.44	0.44	0.44	0.00	0.00	0.00	0.88	0.90	0.96	12.07	8.54	11.73	12.95	9.45	12.69
8027 Custer	0.14	0.14	0.14	0.15	0.15	0.20	0.26	0.26	0.26	0.00	0.00	0.00	0.55	0.55	0.61	110.34	119.64	119.86	110.89	120.19	120.46
8029 Delta	1.64	1.64	1.64	1.11	1.11	1.46	0.47	0.47	0.47	0.16	0.15	0.16	3.39	3.37	3.73	142.34	153.99	158.47	145.73	157.36	162.21
8031 Denver	22.45	22.42	22.49	*	*	*	11.71	11.71	11.71	5.37	4.48	10.43	39.53	38.62	44.64	12.03	10.22	12.04	51.55	48.84	56.68
8033 Dolores	0.25	0.25	0.25	0.13	0.13	0.18	0.12	0.12	0.12	0.58	0.58	0.58	1.08	1.08	1.13	108.74	121.47	129.15	109.83	122.55	130.28
8035 Douglas	2.46	2.46	2.46	*	*	*	6.09	6.09	6.09	1.27	1.24	1.44	9.83	9.79	9.99	122.37	116.60	137.37	132.20	126.40	147.36
8037 Eagle	1.16	1.16	1.17	3.17	3.20	4.27	2.52	2.52	2.52	0.39	0.38	0.39	7.24	7.26	8.35	200.03	219.08	225.26	207.27	226.34	233.61
8039 Elbert	1.26	1.26	1.26	*	*	*	0.76	0.76	0.76	0.16	0.16	0.18	2.18	2.18	2.20	43.02	40.48	45.12	45.19	42.66	47.32
8041 El Paso	22.82	22.80	22.87	*	*	*	12.12	12.12	12.12	6.28	5.73	7.73	41.22	40.65	42.72	95.51	95.79	103.71	136.74	136.44	146.43
8043 Fremont	1.86	1.86	1.86	1.96	2.02	2.66	0.68	0.68	0.68	0.75	0.75	0.87	5.26	5.32	6.07	146.47	155.38	172.68	151.73	160.70	178.75
8045 Garfield	1.84	1.84	1.84	3.10	3.08	4.09	3.84	3.84	3.84	12.26	12.19	12.34	21.03	20.95	22.11	373.98	408.24	423.66	395.02	429.19	445.77
8047 Gilpin	0.15	0.15	0.15	*	*	*	0.63	0.63	0.63	0.02	0.02	0.02	0.80	0.80	0.80	23.51	23.66	26.99	24.30	24.46	27.79
8049 Grand	0.59	0.59	0.59	0.86	0.87	1.17	4.00	4.00	4.00	0.14	0.14	0.14	5.58	5.58	5.88	206.67	225.73	230.94	212.25	231.31	236.83
8051 Gunnison	0.57	0.57	0.57	0.78	0.79	1.06	1.75	1.75	1.75	0.12	0.12	0.29	3.22	3.23	3.67	371.87	416.05	443.04	375.09	419.28	446.71
8053 Hinsdale	0.03	0.03	0.03	0.05	0.05	0.07	0.23	0.23	0.23	0.00	0.00	0.00	0.31	0.30	0.33	110.52	121.04	130.74	110.83	121.34	131.06
8055 Huerfano	0.40	0.40	0.40	0.83	0.82	1.08	1.99	1.99	1.99	0.06	0.06	0.06	3.28	3.27	3.54	118.93	124.07	119.94	122.22	127.34	123.47
8057 Jackson	0.13	0.13	0.13	0.15	0.15	0.21	0.50	0.50	0.50	0.13	0.13	0.19	0.92	0.92	1.03	175.56	187.31	195.58	176.48	188.22	196.61
8059 Jefferson	18.63	18.63	18.63	*	*	*	11.18	11.18	11.18	7.43	7.16	8.42	37.24	36.97	38.23	114.90	112.25	130.80	152.14	149.22	169.03
8061 Kiowa	0.71	0.71	0.71	0.25	0.24	0.32	0.77	0.77	0.77	0.05	0.05	0.05	1.78	1.77	1.85	10.49	10.63	10.34	12.27	12.41	12.19
8063 Kit Carson	2.61	2.61	2.61	1.88	1.79	2.37	0.72	0.72	0.72	0.21	0.13	0.19	5.42	5.24	5.89	11.43	12.61	9.74	16.85	17.85	15.63

County	Area			On-Road			Off-Road			Points			Anthropogenic			Biogenic			Total			
	VOC (tons/day)	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
8065	Lake	0.37	0.37	0.37	0.41	0.41	0.56	0.76	0.76	0.76	0.06	0.06	0.08	1.60	1.60	1.77	33.55	37.47	39.13	35.15	39.06	40.90
8067	La Plata	2.16	2.16	2.16	2.61	2.69	3.55	3.61	3.61	3.61	2.17	2.17	2.20	10.55	10.63	11.53	165.24	183.83	195.42	175.79	194.46	206.95
8069	Larimer	11.06	11.06	11.06	*	*	*	7.59	7.59	7.59	3.91	3.85	4.45	22.55	22.49	23.10	252.45	246.15	268.01	275.00	268.64	291.11
8071	Las Animas	0.99	0.99	0.99	1.17	1.11	1.46	0.52	0.52	0.52	0.77	0.77	0.80	3.46	3.40	3.78	202.27	201.02	173.77	205.73	204.41	177.55
8073	Lincoln	1.71	1.71	1.71	0.66	0.70	0.93	0.50	0.50	0.50	0.21	0.21	0.25	3.08	3.12	3.39	20.18	19.45	20.45	23.26	22.57	23.85
8075	Logan	2.99	2.99	2.99	1.49	1.52	1.97	0.97	0.97	0.97	0.75	0.75	0.77	6.20	6.22	6.70	21.81	22.00	20.63	28.01	28.22	27.34
8077	Mesa	5.79	5.79	5.80	5.36	5.48	7.10	3.78	3.78	3.78	2.71	2.65	3.26	17.65	17.71	19.94	341.44	367.72	382.89	359.08	385.43	402.83
8079	Mineral	0.03	0.03	0.03	0.18	0.17	0.24	0.53	0.53	0.53	0.00	0.00	0.00	0.74	0.74	0.80	98.52	109.37	117.43	99.27	110.11	118.23
8081	Moffat	0.85	0.85	0.85	1.12	1.11	1.47	0.31	0.31	0.31	3.93	3.93	3.96	6.21	6.20	6.59	159.80	168.11	165.47	166.01	174.31	172.06
8083	Montezuma	1.38	1.38	1.38	1.86	1.93	2.53	1.29	1.29	1.29	0.83	0.82	0.85	5.35	5.42	6.05	134.21	147.71	157.85	139.57	153.13	163.89
8085	Montrose	2.03	2.03	2.03	1.93	1.93	2.54	0.70	0.70	0.70	0.31	0.30	0.39	4.98	4.96	5.66	289.23	311.35	323.21	294.20	316.31	328.87
8087	Morgan	2.99	2.99	2.99	1.81	1.85	2.41	1.31	1.31	1.31	2.21	2.13	2.32	8.32	8.27	9.03	18.97	19.10	18.23	27.29	27.37	27.26
8089	Otero	1.54	1.54	1.54	1.08	1.22	1.56	0.59	0.59	0.59	0.46	0.45	0.50	3.67	3.80	4.19	18.25	14.90	17.66	21.93	18.70	21.85
8091	Ourray	0.14	0.14	0.14	0.31	0.31	0.41	0.34	0.34	0.34	0.00	0.00	0.00	0.79	0.79	0.89	69.38	76.38	80.61	70.17	77.17	81.51
8093	Park	0.57	0.57	0.57	0.62	0.62	0.84	1.21	1.21	1.21	0.06	0.06	0.06	2.46	2.46	2.67	166.03	175.84	194.07	168.49	178.30	196.74
8095	Phillips	1.27	1.27	1.27	0.21	0.18	0.23	0.36	0.36	0.36	0.07	0.06	0.07	1.90	1.87	1.93	14.22	12.41	7.96	16.13	14.28	9.88
8097	Pitkin	0.61	0.61	0.62	0.96	0.98	1.30	1.24	1.24	1.24	0.10	0.10	0.10	2.90	2.93	3.25	114.49	127.10	132.52	117.40	130.03	135.77
8099	Prowers	2.06	2.06	2.06	0.83	0.85	1.10	0.53	0.53	0.53	0.68	0.29	0.91	4.10	3.73	4.60	11.63	11.71	11.99	15.73	15.44	16.59
8101	Pueblo	7.60	7.60	7.61	5.87	6.19	8.03	4.21	4.21	4.21	2.01	1.99	2.66	19.70	19.99	22.52	48.83	45.53	43.71	68.53	65.51	66.23
8103	Rio Blanco	0.40	0.40	0.40	0.31	0.33	0.42	4.67	4.67	4.67	8.11	8.11	8.12	13.50	13.51	13.62	307.61	322.54	328.76	321.11	336.05	342.38
8105	Rio Grande	1.51	1.51	1.51	0.45	0.46	0.62	0.64	0.64	0.64	0.12	0.05	0.13	2.73	2.66	2.90	71.49	79.27	85.68	74.22	81.93	88.58
8107	Routt	0.99	0.99	0.99	1.10	1.09	1.46	0.95	0.95	0.95	0.23	0.22	0.23	3.27	3.25	3.63	395.68	405.24	421.33	398.95	408.49	424.95
8109	Saguache	0.94	0.94	0.94	0.39	0.39	0.52	0.16	0.16	0.16	0.01	0.01	0.01	1.50	1.50	1.64	244.19	275.92	295.42	245.69	277.42	297.06
8111	San Juan	0.05	0.05	0.05	0.23	0.23	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.29	0.37	51.58	57.52	62.62	51.86	57.81	63.00
8113	San Miguel	0.22	0.22	0.22	0.43	0.42	0.56	0.36	0.36	0.36	0.86	0.86	0.86	1.86	1.86	2.00	119.00	130.06	135.86	120.86	131.91	137.86
8115	Sedgwick	0.79	0.79	0.79	0.19	0.17	0.23	0.24	0.24	0.24	0.02	0.02	0.02	1.25	1.23	1.29	10.73	8.66	7.20	11.98	9.89	8.49
8117	Summit	0.85	0.84	0.86	1.67	1.65	2.26	0.84	0.84	0.84	0.28	0.28	0.29	3.64	3.61	4.26	100.42	113.50	115.02	104.05	117.11	119.27
8119	Teller	0.70	0.70	0.70	*	*	*	1.08	1.08	1.08	0.13	0.13	0.13	1.91	1.91	1.91	83.01	86.41	95.76	84.92	88.32	97.67
8121	Washington	2.73	2.73	2.73	0.65	0.68	0.90	0.79	0.79	0.79	0.96	0.93	0.99	5.13	5.13	5.40	15.07	15.40	13.60	20.20	20.53	19.00
8123	Weld	15.00	15.00	15.00	*	*	*	6.53	6.53	6.53	156.33	155.89	157.33	177.86	177.41	178.86	78.62	74.59	78.63	256.48	252.01	257.49
8125	Yuma	4.07	4.07	4.07	0.45	0.39	0.51	1.82	1.82	1.82	1.86	1.79	1.86	8.20	8.06	8.26	63.19	61.46	39.25	71.39	69.52	47.51
Total		206.38	206.25	206.63	54.59	55.32	73.03	151.37	151.37	151.37	258.82	254.14	277.61	671.15	667.08	708.63	6950.54	7382.19	7688.51	7621.69	8049.26	8397.14

* On-road link-based mobile emissions estimates for the DMA counties are presented in Table 3-5.

Table 3-8. 2002 CO emissions by county for Colorado (tons/day).

County	Area			On-Road			Off-Road			Points			Anthropogenic			Biogenic			Total		
	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
8001 Adams	0.11	0.10	0.11	*	*	*	113.74	113.74	113.74	8.90	8.60	9.01	122.75	122.44	122.87	1.07	1.03	1.12	123.82	123.48	123.99
8003 Alamosa	0.03	0.02	0.03	9.62	9.60	12.13	5.34	5.34	5.34	0.10	0.10	0.10	15.08	15.05	17.59	6.63	7.06	6.70	21.71	22.11	24.29
8005 Arapahoe	0.36	0.35	0.37	*	*	*	303.26	303.26	303.26	2.13	1.67	2.10	305.76	305.28	305.74	1.68	1.51	1.67	307.43	306.80	307.41
8007 Archuleta	0.00	0.00	0.00	7.12	7.00	8.93	3.43	3.43	3.43	0.00	0.00	0.00	10.56	10.44	12.37	26.54	29.17	30.53	37.11	39.61	42.90
8009 Baca	0.00	0.00	0.00	0.38	0.38	0.48	2.30	2.30	2.30	0.91	0.91	0.91	3.58	3.59	3.68	2.66	2.51	2.43	6.24	6.09	6.11
8011 Bent	0.00	0.00	0.00	3.57	3.60	4.66	4.91	4.91	4.91	0.26	0.26	0.49	8.75	8.77	10.06	2.90	2.79	2.75	11.65	11.56	12.81
8013 Boulder	0.09	0.09	0.09	*	*	*	152.04	152.04	152.04	2.73	2.73	2.87	154.86	154.86	155.00	10.70	10.91	11.83	165.57	165.78	166.84
8015 Chaffee	0.01	0.01	0.01	8.93	9.16	11.67	7.31	7.31	7.31	0.33	0.33	0.33	16.58	16.81	19.32	12.74	14.18	15.01	29.32	30.99	34.33
8017 Cheyenne	0.00	0.00	0.00	3.21	3.12	3.97	2.81	2.81	2.81	6.82	6.82	6.82	12.84	12.75	13.60	1.77	1.82	1.69	14.61	14.56	15.29
8019 Clear Creek	0.01	0.01	0.01	37.11	36.90	46.79	2.24	2.24	2.24	0.21	0.21	0.21	39.56	39.36	49.25	4.65	4.96	5.17	44.21	44.32	54.42
8021 Conejos	0.01	0.01	0.01	4.19	4.09	5.21	2.22	2.22	2.22	0.03	0.00	0.03	6.44	6.32	7.46	11.66	12.92	12.62	18.11	19.24	20.09
8023 Costilla	0.00	0.00	0.00	3.40	3.41	4.32	1.24	1.24	1.24	0.00	0.00	0.00	4.65	4.66	5.56	12.91	13.85	13.34	17.56	18.51	18.90
8025 Crowley	0.00	0.00	0.00	1.73	1.87	2.42	1.86	1.86	1.86	0.26	0.26	0.26	3.85	3.99	4.54	1.93	1.46	1.82	5.78	5.45	6.36
8027 Custer	0.00	0.00	0.00	1.94	1.95	2.47	2.25	2.25	2.25	0.00	0.00	0.00	4.19	4.20	4.72	14.75	15.96	15.58	18.94	20.15	20.30
8029 Delta	0.03	0.03	0.03	13.60	13.62	17.37	5.86	5.86	5.86	0.00	0.00	0.00	19.50	19.52	23.27	16.35	18.00	18.12	35.85	37.51	41.39
8031 Denver	2.63	2.52	2.84	*	*	*	267.51	267.51	267.51	3.15	2.71	3.33	273.29	272.74	273.67	1.13	1.00	1.13	274.41	273.75	274.80
8033 Dolores	0.00	0.00	0.00	1.81	1.82	2.30	1.31	1.31	1.31	0.55	0.55	0.55	3.67	3.68	4.16	14.04	15.93	16.40	17.71	19.60	20.56
8035 Douglas	0.03	0.03	0.04	*	*	*	152.98	152.98	152.98	0.32	0.31	0.39	153.34	153.32	153.40	11.34	10.65	11.59	164.68	163.97	164.99
8037 Eagle	0.30	0.28	0.32	46.39	45.49	57.69	23.54	23.54	23.54	0.26	0.26	0.26	70.48	69.57	81.81	23.66	26.28	26.33	94.15	95.85	108.14
8039 Elbert	0.01	0.01	0.01	*	*	*	10.14	10.14	10.14	0.03	0.03	0.03	10.18	10.18	10.18	5.66	5.36	5.61	15.84	15.54	15.79
8041 El Paso	0.04	0.04	0.04	*	*	*	193.48	193.48	193.48	4.25	4.23	4.40	197.76	197.75	197.92	10.93	10.81	11.36	208.69	208.56	209.28
8043 Fremont	0.01	0.01	0.01	22.38	22.83	29.09	7.15	7.15	7.15	4.51	4.51	4.52	34.05	34.50	40.77	19.64	20.84	22.38	53.69	55.34	63.15
8045 Garfield	0.02	0.02	0.02	39.84	39.91	50.82	23.77	23.77	23.77	5.24	5.24	5.64	68.87	68.94	80.25	43.33	48.07	47.95	112.20	117.01	128.21
8047 Gilpin	0.00	0.00	0.00	*	*	*	1.53	1.53	1.53	0.00	0.00	0.00	1.53	1.53	1.53	3.20	3.31	3.63	4.74	4.84	5.17
8049 Grand	0.02	0.02	0.02	12.05	12.13	15.44	7.93	7.93	7.93	0.08	0.08	0.08	20.07	20.15	23.47	24.78	27.32	27.41	44.85	47.47	50.88
8051 Gunnison	0.06	0.06	0.07	10.54	10.34	13.11	7.68	7.68	7.68	0.01	0.01	0.01	18.29	18.09	20.87	43.06	47.92	49.91	61.35	66.01	70.78
8053 Hinsdale	0.00	0.00	0.00	0.75	0.72	0.92	1.11	1.11	1.11	0.00	0.00	0.00	1.86	1.83	2.02	13.13	14.23	14.98	14.99	16.06	17.00
8055 Huerfano	0.00	0.00	0.00	11.47	11.23	14.37	4.26	4.26	4.26	0.02	0.02	0.02	15.75	15.51	18.65	14.96	15.50	14.99	30.71	31.01	33.64
8057 Jackson	0.00	0.00	0.00	2.10	2.12	2.69	2.41	2.41	2.41	0.00	0.00	0.00	4.51	4.53	5.10	19.04	20.71	21.05	23.56	25.24	26.16
8059 Jefferson	0.38	0.36	0.41	*	*	*	241.97	241.97	241.97	3.71	3.23	3.72	246.07	245.57	246.11	15.40	15.47	17.41	261.47	261.04	263.52
8061 Kiowa	0.00	0.00	0.00	3.06	3.03	3.88	4.30	4.30	4.30	0.06	0.06	0.06	7.42	7.39	8.24	1.75	1.79	1.76	9.17	9.19	10.00
8063 Kit Carson	0.01	0.01	0.01	23.49	23.09	29.49	8.89	8.89	8.89	0.09	0.09	0.12	32.48	32.08	38.51	1.90	2.13	1.68	34.38	34.22	40.18
8065 Lake	0.01	0.01	0.01	5.98	5.98	7.65	3.36	3.36	3.36	0.01	0.01	0.01	9.36	9.37	11.04	4.09	4.52	4.66	13.45	13.89	15.69

County		Area			On-Road			Off-Road			Points			Anthropogenic			Biogenic			Total		
CO (tons/day)		Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
8067	La Plata	0.08	0.08	0.09	30.85	31.02	39.24	20.74	20.74	20.74	4.34	4.34	4.41	56.01	56.18	64.48	24.13	26.84	27.95	80.14	83.02	92.43
8069	Larimer	0.25	0.25	0.27*	*	*	*	134.55	134.55	134.55	2.04	1.50	2.05	136.84	136.30	136.86	40.34	40.14	42.69	177.18	176.44	179.56
8071	Las Animas	0.01	0.01	0.01	15.00	14.40	18.38	3.53	3.53	3.53	2.21	2.21	2.32	20.74	20.14	24.23	28.14	27.85	25.30	48.88	47.99	49.52
8073	Lincoln	0.00	0.00	0.00	9.40	9.81	12.60	4.24	4.24	4.24	0.06	0.06	0.14	13.70	14.11	16.99	3.36	3.30	3.42	17.06	17.42	20.41
8075	Logan	0.02	0.02	0.02	17.26	17.38	22.44	10.28	10.28	10.28	0.73	0.69	0.73	28.28	28.36	33.46	3.51	3.64	3.33	31.79	32.01	36.79
8077	Mesa	0.05	0.05	0.05	57.57	57.97	74.34	43.30	43.30	43.30	1.62	1.56	1.63	102.54	102.89	119.33	37.35	41.59	42.09	139.89	144.49	161.42
8079	Mineral	0.00	0.00	0.00	2.62	2.59	3.30	1.93	1.93	1.93	0.00	0.00	0.00	4.55	4.52	5.23	12.81	14.07	14.79	17.36	18.59	20.02
8081	Moffat	0.03	0.03	0.03	11.96	11.99	15.21	5.32	5.32	5.32	4.75	4.75	4.75	22.06	22.09	25.31	24.90	27.01	25.18	46.96	49.10	50.50
8083	Montezuma	0.01	0.01	0.01	21.09	21.51	27.37	8.86	8.86	8.86	0.64	0.64	0.64	30.60	31.03	36.88	20.60	23.03	23.91	51.20	54.06	60.79
8085	Montrose	0.04	0.04	0.04	20.93	20.90	26.43	7.10	7.10	7.10	0.62	0.62	0.82	28.68	28.66	34.39	29.20	32.40	32.78	57.88	61.06	67.17
8087	Morgan	0.04	0.04	0.04	21.17	21.32	27.54	11.84	11.84	11.84	3.53	3.34	4.22	36.58	36.54	43.64	3.28	3.32	3.14	39.86	39.86	46.77
8089	Otero	0.02	0.01	0.02	12.06	12.54	16.23	6.79	6.79	6.79	0.31	0.31	0.32	19.17	19.66	23.36	2.90	2.45	2.73	22.07	22.11	26.09
8091	Ouray	0.00	0.00	0.00	4.18	4.19	5.30	1.63	1.63	1.63	0.00	0.00	0.00	5.81	5.82	6.93	5.76	6.53	6.72	11.56	12.35	13.66
8093	Park	0.02	0.02	0.02	8.75	8.60	10.94	6.84	6.84	6.84	0.00	0.00	0.00	15.62	15.46	17.80	18.25	19.47	20.66	33.87	34.93	38.46
8095	Phillips	0.00	0.00	0.00	2.37	2.21	2.84	4.07	4.07	4.07	0.00	0.00	0.00	6.44	6.28	6.92	0.64	0.66	0.44	7.08	6.94	7.36
8097	Pitkin	0.07	0.07	0.08	12.68	12.08	15.24	23.00	23.00	23.00	0.00	0.00	0.00	35.75	35.14	38.32	12.38	13.86	14.17	48.13	49.01	52.48
8099	Prowers	0.01	0.01	0.01	9.15	9.21	11.87	6.58	6.58	6.58	1.63	1.60	1.63	17.37	17.40	20.09	2.23	2.26	2.32	19.60	19.66	22.41
8101	Pueblo	0.06	0.05	0.06	68.24	70.33	90.49	38.17	38.17	38.17	6.31	6.29	6.36	112.78	114.84	135.08	7.89	7.41	6.94	120.67	122.25	142.02
8103	Rio Blanco	0.01	0.01	0.01	3.75	3.82	4.90	1.68	1.68	1.68	6.77	6.77	6.77	12.22	12.29	13.37	40.40	43.81	42.40	52.61	56.10	55.77
8105	Rio Grande	0.01	0.01	0.01	6.25	6.14	7.78	5.83	5.83	5.83	0.01	0.01	0.08	12.10	11.99	13.69	10.70	11.85	12.55	22.80	23.83	26.24
8107	Routt	0.23	0.22	0.25	13.02	12.90	16.26	7.08	7.08	7.08	1.33	1.33	1.33	21.66	21.53	24.92	30.24	32.36	32.59	51.90	53.89	57.50
8109	Saguache	0.00	0.00	0.00	5.10	5.05	6.40	2.32	2.32	2.32	0.00	0.00	0.00	7.42	7.37	8.72	34.34	38.29	40.07	41.76	45.66	48.80
8111	San Juan	0.00	0.00	0.00	3.47	3.34	4.25	0.09	0.09	0.09	0.00	0.00	0.00	3.57	3.43	4.35	6.28	6.97	7.39	9.85	10.40	11.73
8113	San Miguel	0.00	0.00	0.01	5.09	5.10	6.50	1.82	1.82	1.82	0.22	0.22	0.28	7.13	7.14	8.60	13.76	15.50	15.86	20.90	22.65	24.46
8115	Sedgwick	0.00	0.00	0.00	2.58	2.44	3.12	2.75	2.75	2.75	0.00	0.00	0.00	5.34	5.20	5.88	0.59	0.58	0.42	5.92	5.77	6.30
8117	Summit	0.03	0.03	0.03	26.83	26.56	33.90	9.26	9.26	9.26	0.01	0.01	0.01	36.13	35.85	43.20	12.46	14.04	13.97	48.59	49.89	57.17
8119	Teller	0.01	0.01	0.01*	*	*	*	6.32	6.32	6.32	0.08	0.08	0.08	6.41	6.41	6.41	10.30	10.46	11.27	16.71	16.87	17.68
8121	Washington	0.00	0.00	0.00	7.93	8.10	10.51	7.77	7.77	7.77	0.27	0.27	0.27	15.97	16.14	18.55	2.56	2.64	2.30	18.53	18.78	20.84
8123	Weld	0.05	0.05	0.05*	*	*	*	60.41	60.41	60.41	19.00	18.64	19.56	79.46	79.10	80.03	12.32	12.03	12.24	91.77	91.13	92.27
8125	Yuma	0.00	0.00	0.00	5.31	4.96	6.37	10.00	10.00	10.00	1.68	1.68	1.68	16.99	16.64	18.05	3.49	4.03	2.73	20.48	20.67	20.78
Total		5.23	5.04	5.61	679.24	679.83	867.64	2028.20	2028.20	2028.20	103.16	100.18	106.37	2815.83	2813.26	3007.82	855.11	918.40	932.96	3670.94	3731.66	3940.78

* On-road link-based mobile emissions estimates for the DMA counties are presented in Table 3-5.

Table 3-9. Summary of 2007 gridded emissions by major source category for states other than Colorado.

State	Area			On-Road			Off-Road			Points			Anthropogenic		
	NOx	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun
Arizona	199.73	191.31	216.57	340.07	340.07	453.42	184.24	152.62	215.18	539.07	539.07	539.07	1263.12	1223.07	1424.25
Arkansas	34.22	32.79	37.07	72.44	72.44	96.58	50.22	44.34	52.96	78.54	78.54	78.54	235.41	228.11	265.14
California	352.32	343.95	369.04	1749.72	1749.72	2332.96	1016.43	892.78	1104.93	269.51	269.51	269.51	3387.98	3255.97	4076.44
Idaho	33.48	32.07	36.29	79.80	79.80	106.40	112.48	106.51	116.89	13.17	13.17	13.17	238.93	231.55	272.75
Iowa	42.19	40.53	45.51	112.55	112.55	150.06	433.62	419.17	445.93	170.84	170.84	170.84	759.20	743.09	812.34
Kansas	34.98	33.68	37.58	175.29	175.29	233.71	484.16	462.14	504.88	591.89	591.89	591.89	1286.32	1263.00	1368.06
Louisiana	74.99	71.71	81.56	42.07	42.07	56.09	24.35	20.82	26.59	162.88	162.88	162.88	304.28	297.47	327.11
Minnesota	30.98	29.84	33.26	229.58	229.58	306.11	369.84	340.75	398.24	309.43	309.43	309.43	939.84	909.61	1047.05
Missouri	33.56	32.35	35.97	182.76	182.76	243.69	249.70	234.08	256.25	208.83	208.83	208.83	674.85	658.03	744.73
Montana	0.08	0.08	0.09	0.24	0.24	0.32	1.37	1.31	1.39	0.00	0.00	0.00	1.69	1.63	1.80
Nebraska	37.86	36.28	41.02	111.62	111.62	148.82	449.84	438.15	460.54	210.49	210.49	210.49	809.81	796.54	860.87
Nevada	18.64	17.97	19.97	126.84	126.84	169.12	104.22	77.82	130.64	155.86	155.86	155.86	405.55	378.48	475.59
New Mexico	82.15	78.69	89.06	163.50	163.50	217.99	110.74	100.74	119.64	448.80	448.80	448.80	805.19	791.73	875.50
Oklahoma	91.87	88.02	99.58	288.17	288.17	384.23	246.86	230.57	255.37	555.59	555.59	555.59	1182.49	1162.34	1294.76
Oregon	2.66	2.57	2.83	27.98	27.98	37.30	23.72	20.16	24.66	4.03	4.03	4.03	58.39	54.74	68.82
South Dakota	15.68	15.05	16.93	51.41	51.41	68.54	283.10	277.36	286.96	83.28	83.28	83.28	433.46	427.09	455.71
Texas	74.73	72.88	78.44	1348.36	1348.36	1797.81	882.05	786.39	972.57	2607.14	2607.14	2607.14	4912.28	4814.76	5455.96
Utah	55.54	53.31	60.00	142.17	142.17	189.55	168.64	123.30	210.93	278.85	278.85	278.85	645.19	597.63	739.33
Wisconsin	1.83	1.76	1.98	9.02	9.02	12.03	6.76	6.18	7.27	1.43	1.43	1.43	19.05	18.40	22.71
Wyoming	235.41	225.03	256.16	57.20	57.20	76.27	105.84	99.18	110.65	327.14	327.14	327.14	725.59	708.55	770.21
Grand Total	1452.89	1399.90	1558.87	7288.44	7287.15	7291.02	5308.17	4834.37	5702.44	7016.77	7016.77	7016.77	19088.61	18561.81	21359.11
VOC	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
Arizona	498.55	498.45	498.75	269.20	269.20	358.94	304.50	298.89	203.05	56.31	56.31	56.31	1128.57	1122.86	1117.05
Arkansas	147.95	147.93	147.98	47.16	47.16	62.88	83.74	82.80	34.64	34.12	34.12	34.12	312.97	312.00	279.62
California	1804.69	1804.18	1805.72	1411.19	1411.19	1881.58	1479.22	1456.80	983.45	72.06	72.06	72.06	4767.15	4744.22	4742.80
Idaho	130.77	130.75	130.80	56.86	56.86	75.82	92.01	91.05	54.47	0.54	0.54	0.54	280.18	279.21	261.64
Iowa	293.71	293.68	293.77	63.53	63.53	84.70	167.64	165.37	122.12	33.25	33.25	33.25	558.12	555.82	533.83
Kansas	378.22	378.07	378.52	111.49	111.49	148.66	164.74	161.16	133.33	71.62	71.62	71.62	726.07	722.34	732.13
Louisiana	65.11	65.07	65.20	28.53	28.53	38.05	45.79	45.24	20.48	46.88	46.88	46.88	186.32	185.72	170.61
Minnesota	514.49	514.47	514.53	173.57	173.57	231.42	175.12	170.05	145.53	58.23	58.23	58.23	921.41	916.32	949.71
Missouri	280.50	280.47	280.55	126.45	126.45	168.59	274.38	271.80	124.45	20.77	20.77	20.77	702.09	699.49	594.36
Montana	0.41	0.41	0.41	0.12	0.12	0.16	0.89	0.88	0.42	0.00	0.00	0.00	1.42	1.41	0.99

State	Area			On-Road			Off-Road			Points			Anthropogenic		
Nebraska	290.82	290.79	290.90	65.81	65.81	87.75	128.16	126.31	101.00	15.12	15.12	15.12	499.92	498.03	494.77
Nevada	168.64	168.62	168.67	120.72	120.72	160.96	128.89	124.27	88.67	1.28	1.28	1.28	419.53	414.89	419.58
New Mexico	206.12	206.07	206.21	117.66	117.66	156.88	78.57	76.95	49.40	15.10	15.10	15.10	417.45	415.78	427.60
Oklahoma	378.64	378.59	378.74	211.45	211.45	281.94	259.07	256.43	126.13	53.28	53.28	53.28	902.44	899.75	840.10
Oregon	34.04	34.03	34.05	17.09	17.09	22.79	73.79	73.30	26.28	11.61	11.61	11.61	136.53	136.03	94.73
South Dakota	123.15	123.15	123.16	28.21	28.21	37.61	105.15	104.29	69.91	6.07	6.07	6.07	262.57	261.71	236.74
Texas	1621.59	1621.53	1621.69	924.21	924.21	1232.29	906.31	890.13	602.89	299.66	299.66	299.66	3751.76	3735.52	3756.53
Utah	268.17	268.15	268.23	115.30	115.30	153.74	181.54	173.62	106.96	12.01	12.01	12.01	577.02	569.08	540.93
Wisconsin	20.76	20.75	20.76	5.22	5.22	6.95	4.97	4.89	3.52	0.14	0.14	0.14	31.08	30.99	31.38
Wyoming	62.11	61.98	62.38	34.86	34.86	46.48	66.07	65.03	33.81	36.23	36.23	36.23	199.27	198.11	178.90
Grand Total	7288.44	7287.15	7291.02	2350.66	2340.00	2371.99	4720.54	4639.25	3030.52	844.26	844.26	844.26	16781.86	16699.28	16403.97
CO	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
Arizona	298.24	297.02	300.66	2804.89	2804.89	3739.85	2213.21	2164.21	2512.80	80.99	80.99	80.99	5397.33	5347.11	6634.30
Arkansas	43.97	43.76	44.38	507.20	507.20	676.26	378.94	368.76	284.33	27.82	27.82	27.82	957.92	947.54	1032.79
California	770.01	768.08	773.86	14180.84	14180.84	18907.80	11125.45	10923.35	12106.45	234.53	234.53	234.53	26310.82	26106.79	32022.63
Idaho	39.55	39.33	39.98	605.32	605.32	807.10	628.92	619.46	593.74	0.89	0.89	0.89	1274.69	1265.01	1441.72
Iowa	42.21	41.95	42.74	658.16	658.16	877.56	1383.73	1361.23	1339.73	10.79	10.79	10.79	2094.90	2072.13	2270.82
Kansas	95.42	93.87	98.50	1159.77	1159.77	1546.35	1435.06	1401.04	1534.55	276.48	276.48	276.48	2966.72	2931.16	3455.89
Louisiana	34.20	33.69	35.21	300.28	300.28	400.38	210.54	205.31	176.01	58.11	58.11	58.11	603.14	597.41	669.72
Minnesota	85.02	84.81	85.45	1801.33	1801.33	2401.79	1988.03	1939.52	2010.59	47.77	47.77	47.77	3922.14	3873.42	4545.59
Missouri	100.45	100.17	101.01	1283.93	1283.93	1711.89	1405.53	1380.27	1165.99	21.63	21.63	21.63	2811.54	2786.00	3000.52
Montana	0.30	0.30	0.30	1.27	1.27	1.69	4.07	4.00	2.99	0.00	0.00	0.00	5.64	5.57	4.98
Nebraska	24.77	24.50	25.30	656.69	656.69	875.59	1065.49	1047.47	1071.90	26.42	26.42	26.42	1773.37	1755.08	1999.20
Nevada	90.45	90.32	90.72	1261.00	1261.00	1681.35	860.81	822.81	1002.19	53.54	53.54	53.54	2265.81	2227.67	2827.81
New Mexico	73.57	73.08	74.55	1323.42	1323.42	1764.57	522.38	507.82	541.69	65.86	65.86	65.86	1985.23	1970.19	2446.67
Oklahoma	87.54	86.98	88.67	2088.55	2088.55	2784.72	1486.67	1461.03	1327.88	123.27	123.27	123.27	3786.03	3759.83	4324.55
Oregon	17.01	17.00	17.03	202.14	202.14	269.51	278.16	273.73	184.66	12.96	12.96	12.96	510.27	505.84	484.16
South Dakota	16.31	16.22	16.50	299.76	299.76	399.69	677.91	669.12	613.23	2.39	2.39	2.39	996.37	987.49	1031.81
Texas	326.93	326.05	328.69	9413.45	9413.45	12551.33	6969.66	6832.61	7703.63	1115.25	1115.25	1115.25	17825.29	17687.36	21698.90
Utah	148.03	147.67	148.76	1216.28	1216.28	1621.70	1042.55	977.54	998.64	119.46	119.46	119.46	2526.32	2460.95	2888.55
Wisconsin	4.03	4.00	4.09	62.73	62.73	83.63	51.86	50.90	45.57	0.00	0.00	0.00	118.62	117.63	133.30
Wyoming	52.66	51.20	55.57	394.51	394.51	526.01	364.41	355.58	302.97	143.89	143.89	143.89	955.47	945.18	1028.44
Grand Total	2350.66	2340.00	2371.99	40221.52	40221.52	53628.76	34093.39	33365.77	35519.53	2422.06	2422.06	2422.06	79087.64	78349.35	93942.35

* On-road link-based mobile emissions estimates for the DMA counties are presented in Table 3-5.

Table 3-10. Gridded biogenic emissions for states other than Colorado.

	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	1-Jul	18-Jul	19-Jul	20-Jul	21-Jul
CO (tpd)											
AR	274.7	282.4	308.0	337.0	287.8	338.0	332.8	329.5	409.2	432.3	442.2
AZ	908.9	930.8	858.2	845.1	847.1	904.2	931.0	641.2	716.7	739.8	786.3
CA	1755.9	1623.0	1452.6	1405.4	1509.5	1723.4	1915.0	1538.1	1635.7	1942.7	1745.3
CO	816.3	798.4	756.9	768.1	870.0	917.4	921.6	838.9	788.6	680.5	689.8
IA	116.3	102.4	98.5	107.4	125.1	133.6	122.7	124.4	115.7	138.6	144.5
ID	549.1	565.8	567.1	507.8	473.0	445.6	388.3	508.6	464.7	457.0	532.7
KS	207.2	202.1	204.0	218.9	232.7	212.7	159.6	222.5	265.0	282.2	276.1
LA	130.2	132.4	127.4	140.4	151.6	179.8	165.5	202.9	211.3	213.8	206.7
MN	137.1	122.2	128.7	141.2	175.8	193.3	175.8	133.1	134.7	158.6	137.1
MO	269.4	265.1	269.9	288.0	305.0	283.2	270.4	265.5	290.4	367.5	370.6
MT	7.8	8.7	9.3	8.7	10.8	8.3	6.3	7.8	8.0	7.8	6.2
NE	239.4	235.0	232.7	279.2	313.9	290.7	266.0	318.9	326.5	331.3	229.2
NM	699.5	648.8	597.5	570.8	625.1	665.3	682.3	503.4	500.5	486.7	513.3
NV	506.6	532.5	508.1	507.2	538.7	591.6	593.4	410.0	420.4	519.2	572.8
SD	218.5	219.9	242.3	304.5	349.4	264.8	274.1	277.7	291.5	298.0	174.4
OK	385.2	393.6	432.2	469.2	384.0	374.3	319.2	446.0	518.2	542.4	564.6
OR	399.9	349.1	300.3	282.0	257.6	261.2	278.1	336.7	300.2	387.6	434.7
TX	1104.8	1110.9	1063.7	1107.5	1078.2	1124.8	1098.6	1312.9	1408.4	1438.4	1466.9
UT	639.7	625.1	586.3	584.3	610.2	661.9	666.6	511.0	519.3	519.9	573.1
WY	531.4	577.4	603.3	620.1	615.2	581.2	524.5	558.2	531.5	468.3	425.6
daily total	791.1	768.0	741.5	740.1	839.3	902.3	918.0	820.9	775.2	673.0	666.7
	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	1-Jul	18-Jul	19-Jul	20-Jul	21-Jul
NOX (tpd)											
AR	10.3	10.5	11.0	11.7	10.8	12.1	11.8	11.7	13.7	14.0	14.2
AZ	467.6	476.8	445.4	432.3	431.3	453.3	466.1	357.3	385.5	398.8	415.2
CA	422.2	406.8	374.8	373.3	402.7	433.9	460.0	367.0	396.2	422.5	395.5
CO	236.8	229.4	243.0	254.0	267.0	265.6	255.6	271.4	280.0	249.2	218.4
IA	764.9	700.1	668.8	712.1	797.1	836.9	780.8	774.3	717.0	835.3	820.6
ID	122.6	123.9	127.1	119.2	120.6	114.7	102.9	117.7	112.9	112.2	128.9
KS	688.4	643.7	675.0	729.1	756.0	709.8	591.1	751.1	837.0	833.4	780.8
LA	6.6	6.7	6.5	6.9	7.2	8.3	7.7	8.8	9.1	9.2	8.9
MN	407.2	370.4	380.5	408.8	474.5	500.3	468.7	393.0	385.8	443.5	386.9

	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	1-Jul	18-Jul	19-Jul	20-Jul	21-Jul
MO	152.8	144.7	147.7	151.2	164.7	156.3	149.6	154.8	158.8	186.2	189.2
MT	4.2	4.4	4.7	4.4	5.2	4.3	3.7	3.9	4.2	4.2	3.6
NE	814.5	821.0	803.4	884.3	978.3	943.3	832.3	982.2	992.0	1030.7	823.5
NM	340.6	320.0	295.2	281.2	305.9	323.1	323.6	263.6	260.3	254.4	264.7
NV	360.5	367.7	358.6	361.3	376.1	398.9	400.8	311.4	314.2	371.9	396.2
OK	209.3	211.3	225.6	237.1	220.5	196.9	174.5	236.3	245.8	247.2	262.1
OR	77.0	69.1	66.2	66.2	64.5	60.8	58.4	72.1	61.4	73.6	83.9
SD	386.5	364.1	370.4	438.0	508.9	459.6	460.0	439.7	434.8	491.9	337.1
TX	789.6	798.8	785.8	807.8	782.8	752.7	746.2	819.0	817.9	851.2	848.7
UT	260.4	249.0	237.4	237.9	252.8	271.6	268.3	215.7	223.2	220.0	243.0
WY	203.4	208.5	216.4	226.2	247.7	238.1	225.3	212.5	210.6	199.4	177.6
daily total	192.9	189.5	198.4	207.9	219.8	222.2	211.7	223.9	228.4	207.4	183.9
	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	1-Jul	18-Jul	19-Jul	20-Jul	21-Jul
VOC (tpd)											
AR	2744.2	2957.2	3346.3	3787.2	2932.2	3470.4	3178.4	3254.3	4560.3	4955.4	5120.9
AZ	6248.6	6269.5	5840.9	5823.6	5785.2	6081.5	6401.5	4059.5	4608.9	4829.2	5134.7
CA	15571.4	13950.5	12547.8	11956.6	13504.0	14721.7	17422.6	13249.4	14343.4	16935.4	14479.2
CO	6773.1	6596.1	6208.9	6223.7	7124.6	7478.2	7731.7	6827.1	6353.3	5263.9	5291.8
IA	1362.5	1071.3	1080.0	1229.2	1482.9	1559.5	1453.7	1389.5	1163.3	1613.5	1736.3
ID	3710.2	3847.0	3855.7	3378.7	3101.8	2868.5	2506.4	3365.9	3045.0	2915.4	3458.5
KS	1680.6	1629.3	1649.6	1765.1	1918.4	1713.3	1134.3	1753.2	2178.3	2399.6	2311.6
LA	1204.2	1166.3	1172.0	1282.4	1372.6	1776.3	1558.2	2064.8	2162.5	2186.7	2095.4
MN	1310.2	1111.0	1166.1	1345.4	1713.8	1886.8	1755.6	1196.8	1216.0	1373.2	1257.8
MO	3104.1	3198.1	3268.0	3548.2	3869.8	3457.5	3293.1	2968.8	3340.9	4786.4	4815.5
MT	49.1	55.4	60.6	55.9	72.0	50.9	37.9	48.8	51.1	49.2	38.2
NE	2472.6	2281.4	2282.7	2872.5	3305.7	2869.1	2690.5	3250.1	3392.5	3519.6	2298.4
NM	4530.6	4123.5	3801.0	3557.0	3933.4	4252.9	4340.9	3042.5	2993.5	2928.7	3073.8
NV	2455.6	2572.5	2454.6	2444.2	2595.3	2834.2	2879.3	1956.4	2013.3	2507.5	2769.7
OK	4215.3	4321.6	4796.4	5435.2	4114.5	3844.9	2482.5	4874.2	6158.1	6509.2	6720.8
OR	2363.4	2044.1	1722.4	1597.3	1444.4	1468.4	1616.0	1946.8	1733.5	2284.9	2556.3
SD	1933.0	1898.0	2126.8	2857.8	3261.0	2204.0	2562.3	2396.4	2567.5	2742.4	1220.6
TX	10301.4	10001.2	9605.5	9915.4	8662.9	9712.1	9635.6	12943.6	14150.1	14434.1	14870.8
UT	4368.0	4330.5	4024.4	3988.3	4119.0	4333.7	4513.9	3359.9	3399.5	3359.7	3734.5
WY	3905.9	4314.4	4465.6	4521.7	4314.9	3976.0	3647.3	3982.4	3654.1	3244.5	2913.4

	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	1-Jul	18-Jul	19-Jul	20-Jul	21-Jul
daily total	6455.0	6241.1	5940.3	5895.8	6793.7	7230.7	7557.0	6561.6	6106.2	5141.1	5029.6
	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	1-Jul	18-Jul	19-Jul	20-Jul	21-Jul
ISOP (tpd)											
AR	1606.1	1789.0	2072.3	2399.9	1744.5	2062.6	1793.3	1875.3	2848.9	3153.5	3275.9
AZ	2324.8	2258.6	2139.5	2175.9	2126.3	2178.2	2379.4	1292.0	1514.1	1631.5	1733.5
CA	7043.5	6046.5	5484.0	5121.4	6199.2	6387.9	8167.6	5788.0	6423.4	7496.2	5944.0
CO	3034.9	2938.7	2727.1	2693.7	3132.1	3274.5	3507.9	2954.5	2713.4	2129.1	2135.5
IA	998.9	751.0	771.8	893.3	1091.7	1142.2	1070.5	1000.1	801.0	1179.9	1283.4
ID	1227.0	1290.8	1296.2	1089.1	979.3	872.3	759.7	1067.4	948.7	853.0	1065.0
KS	922.7	894.4	903.3	959.8	1066.1	933.5	549.0	935.7	1206.0	1372.5	1312.4
LA	572.9	524.4	555.2	601.8	636.8	904.9	755.6	1081.0	1138.5	1151.0	1093.3
MN	883.3	730.7	765.6	906.2	1167.4	1284.8	1208.5	783.0	797.1	880.7	830.9
MO	2217.0	2326.0	2379.2	2600.6	2866.0	2525.6	2403.8	2094.0	2384.1	3576.8	3595.5
MT	7.9	9.5	11.2	10.2	15.0	7.1	4.9	7.5	8.9	7.8	5.4
NE	1588.3	1407.6	1407.7	1813.4	2130.4	1791.5	1680.1	2042.2	2160.1	2300.3	1473.1
NM	1232.9	1064.0	982.2	863.5	981.6	1111.2	1127.6	656.0	623.0	625.9	646.9
NV	166.3	176.3	163.3	154.6	166.2	161.2	191.3	113.5	119.5	164.0	196.4
OK	2748.6	2826.9	3151.3	3650.7	2651.9	2417.7	1265.4	3169.4	4181.0	4448.9	4574.4
OR	321.3	265.3	185.4	158.3	132.8	141.5	200.9	220.5	200.4	310.6	337.3
SD	1014.3	951.9	1068.7	1543.5	1770.9	1098.9	1422.2	1209.3	1315.7	1504.8	491.7
TX	5340.1	5003.1	4843.1	4944.1	3799.9	4634.9	4685.4	7082.9	7854.8	7997.5	8310.0
UT	1460.9	1494.0	1362.8	1332.2	1345.5	1324.2	1481.4	1037.7	1038.1	994.2	1130.0
WY	1291.7	1476.6	1497.6	1469.9	1277.9	1112.4	1062.4	1233.1	1034.9	937.9	822.4
daily total	2853.1	2744.6	2554.7	2515.7	2967.6	3120.0	3373.2	2802.6	2557.5	2062.4	1992.2

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