

Incorporating recommended adjustments

Grid structure

The grid structure suggested by TNRCC extends far beyond the boundaries of the urbanized areas of both Juarez and El Paso, so a subset of these cells, enough to cover the Juarez urban area was used to aggregate the emissions from its roadway network. Figure 1 shows this smaller grid, identifying each cell by their X,Y sequential numbering position within the base oversized grid. The domain size for this rectangle is of 15 (E-W) x 14 (N-S) grid cells, with SW origin located at 348Km easting, 3,490Km northing, UTM zone 13.

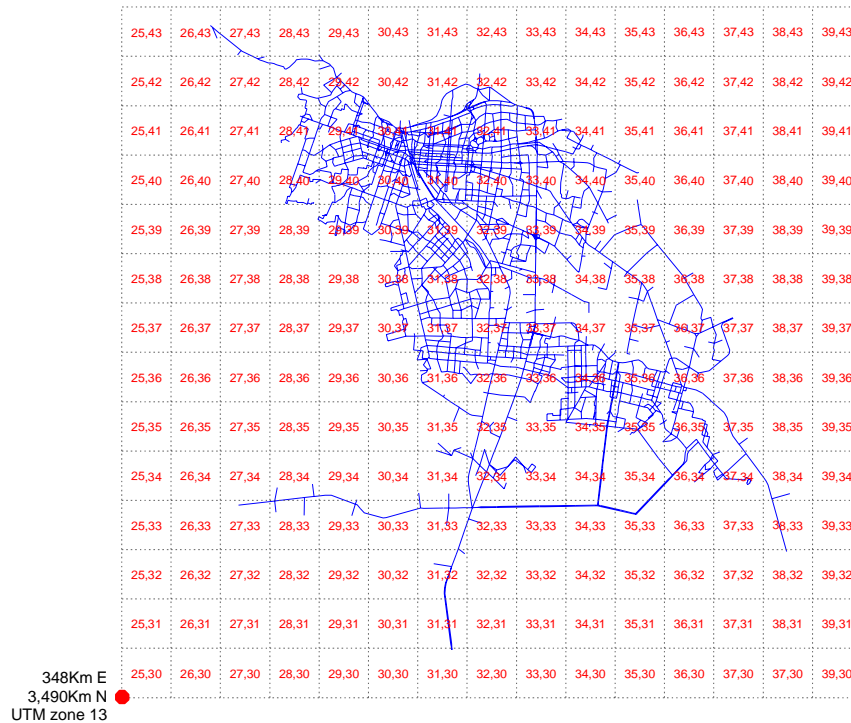


Figure 1. Revised grid structure for Juarez (2x2-km cells).

At this time the cells will only aggregate emissions from traffic flows in Juarez. In a later exercise the roadway systems on both sides of the border will be activated to establish a region wide emissions inventory and thus the larger cell coverage will be used as well.

Time-of-day periods

Based on the traffic patterns typical of Juarez, IMIP established the following four time-of-day periods for emissions modeling:

period 1	7am to 9am
period 2	9am to 4pm
period 3	4pm to 8pm
period 4	8pm to 7am

With this layout the 24 hours of the day are now being covered. Yet, since these do not coincide exactly with the time-of-day periods used for El Paso, any comparison needs to be done only through an entire day. Further disaggregation to hourly time periods could be eventually done on both models for more detailed comparisons.

Basis for seasonal emissions models

The main factors required to establish seasonal emissions models are seasonal adjustments to daily traffic and temperature. Regarding traffic, it was assumed that traffic flows remain approximately the same on

both summer and winter seasons. For temperature though, the following sample of values on Table 1 were provided by TNRCC to establish preliminary seasonal averages.

Table 1. Sample of temperatures used to establish seasonal averages.

period	hour of day	Summer							Winter						
		ambient temperature						hour average °C	period average °C	ambient temperature				hour average °C	period average °C
		8/11/96		8/12/96		8/13/96				12/18/97		12/19/97			
°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C				
1	7:00 a 8:00	76	24.4	77.0	25.0	77	25.0	24.80	25.47	33	0.6	39	3.9	2.25	
	8:00 a 9:00	78	25.6	80.0	26.7	79	26.1	26.13		35	1.7	42	5.6	3.65	
2	9:00 a 10:00	81	27.2	83.0	28.3	83	28.3	27.93	31.64	40	4.4	46	7.8	6.10	
	10:00 a 11:00	83	28.3	86.0	30.0	87	30.6	29.63		46	7.8	51	10.6	9.20	
	11:00 a 12:00	85	29.4	89.0	31.7	89	31.7	30.93		51	10.6	55	12.8	11.70	
	12:00 a 13:00	87	30.6	91.0	32.8	91	32.8	32.07		54	12.2	59	15.0	13.60	
	13:00 a 14:00	89	31.7	93.0	33.9	92	33.3	32.97		58	14.4	62	16.7	15.55	
	14:00 a 15:00	91	32.8	94.0	34.4	93	33.9	33.70		60	15.6	64	17.8	16.70	
	15:00 a 16:00	93	33.9	94.0	34.4	94	34.4	34.23		61	16.1	65	18.3	17.20	
3	16:00 a 17:00	94	34.4	94.0	34.4	95	35.0	34.60	33.13	61	16.1	64	17.8	16.95	
	17:00 a 18:00	93	33.9	94.0	34.4	94	34.4	34.23		59	15.0	62	16.7	15.85	
	18:00 a 19:00	92	33.3	91.0	32.8	91	32.8	32.97		56	13.3	60	15.6	14.45	
4	19:00 a 20:00	89	31.7	85.0	29.4	88	31.1	30.73	24.71	52	11.1	57	13.9	12.50	
	20:00 a 21:00	85	29.4	83.0	28.3	86	30.0	29.23		47	8.3	53	11.7	10.00	
	21:00 a 22:00	82	27.8	81.0	27.2	83	28.3	27.77		47	8.3	53	11.7	10.00	
	22:00 a 23:00	80	26.7	78.0	25.6	81	27.2	26.50		45	7.2	53	11.7	9.45	
	23:00 a 0:00	78	25.6	77.0	25.0	79	26.1	25.57		42	5.6	53	11.7	8.65	
	0:00 a 1:00	77	25.0	75.0	23.9	77	25.0	24.63		37	2.8	41	5.0	3.90	
	1:00 a 2:00	75	23.9	74.0	23.3	76	24.4	23.87		36	2.2	40	4.4	3.30	
	2:00 a 3:00	74	23.3	74.0	23.3	73	22.8	23.13		35	1.7	38	3.3	2.50	
	3:00 a 4:00	74	23.3	73.0	22.8	73	22.8	22.97		33	0.6	38	3.3	1.95	
	4:00 a 5:00	74	23.3	73.0	22.8	72	22.2	22.77		33	0.6	38	3.3	1.95	
5:00 a 6:00	74	23.3	72.0	22.2	70	21.1	22.20	33	0.6	38	3.3	1.95			
6:00 a 7:00	75	23.9	73.0	22.8	73	22.8	23.17	32	0.0	38	3.3	1.65			

Developing emission concentrations by-link

To develop emission rates IMIP again used Mobile5Juarez, which is the software developed by EPA specifically for the Juarez urban area. The development of emission concentrations by-link though requires a couple of modifications to the approach originally used.

Establishing link congestion by time-of-day

The daily non-directional traffic and 24-hour average speeds assigned to each link need to be converted to time-of-day directional traffic and time-of-day directional speeds. To do this IMIP followed the criteria suggested by TTI and used in their specialized computer program PREPIN. IMIP developed its own computer program to accomplish this task (as well as other tasks to be explained further ahead); the actual VB code labeled PinPlus is presented in appendix A. The following sequence summarizes the process, which needs to be done for each time-of-day period:

- a) The 24-hour non-directional traffic assigned to each network link is distributed over the four time-of-day periods, based on information from ground counts. For Juarez the daily traffic volumes have been distributed as follows:

period 1	9.8% over a 2-hour period
period 2	39.8% over a 7-hour period
period 3	26.0% over a 4-hour period
period 4	24.4% over an 11-hour period
	100.0%

- b) To establish the directional split, the period non-directional traffic volume on each link is then applied a factor, which depends on the specific time-of-day period being analyzed. These factors vary also depending on the area type and functional classification of the roadway. Table 2 shows the directional factors used for the AB link direction; the complement to 1 is applied to the BA direction of each link. At this point then every link in the network has directional traffic volumes for the time-of-day period being evaluated.

Table 2. Directional split factors used for Juarez.

period 1

		Functional classification												
		0	1	2	3	4	5	6	7	8	9	10	11	12
Area Type	1	0.540	0.650	0.500	0.650	0.650	0.650	0.580	0.580	0.645	0.645	0.500	0.500	0.500
	2	0.540	0.650	0.500	0.650	0.650	0.650	0.580	0.580	0.645	0.645	0.500	0.500	0.500
	3	0.870	0.600	0.500	0.600	0.600	0.600	0.590	0.590	0.630	0.630	0.500	0.500	0.500
	4	0.760	0.620	0.630	0.665	0.665	0.665	0.650	0.650	0.738	0.738	0.630	0.630	0.630

periods 2 and 4

		Functional classification												
		0	1	2	3	4	5	6	7	8	9	10	11	12
Area Type	1	0.540	0.550	0.510	0.550	0.550	0.550	0.550	0.550	0.545	0.545	0.510	0.510	0.510
	2	0.540	0.550	0.510	0.550	0.550	0.550	0.550	0.550	0.545	0.545	0.510	0.510	0.510
	3	0.540	0.540	0.510	0.540	0.540	0.540	0.550	0.550	0.530	0.530	0.510	0.510	0.510
	4	0.540	0.565	0.510	0.565	0.565	0.565	0.565	0.565	0.555	0.555	0.510	0.510	0.510

period 3

		Functional classification												
		0	1	2	3	4	5	6	7	8	9	10	11	12
Area Type	1	0.550	0.620	0.540	0.620	0.620	0.620	0.520	0.520	0.575	0.575	0.540	0.540	0.540
	2	0.550	0.620	0.540	0.620	0.620	0.620	0.520	0.520	0.575	0.575	0.540	0.540	0.540
	3	0.720	0.590	0.540	0.590	0.590	0.590	0.530	0.530	0.645	0.645	0.540	0.540	0.540
	4	0.715	0.615	0.665	0.615	0.615	0.615	0.645	0.645	0.648	0.648	0.665	0.665	0.665

- c) Next, the average directional 24-hour link capacities provided as attributes of the roadway network are converted into directional hourly capacities. This is done through another set of conversion factors that also depend on the area type and functional classification of the link. Table 3 shows the factors used for Juarez; these remain constant during the day.

Table 3. Conversion factors for 24-hour to hourly capacities.

		Functional classification												
		0	1	2	3	4	5	6	7	8	9	10	11	12
Area Type	1	N/A	0.063	0.104	0.063	0.066	0.066	0.076	0.076	0.073	0.070	0.070	0.066	0.061
	2	N/A	0.063	0.104	0.063	0.066	0.066	0.076	0.076	0.073	0.070	0.070	0.066	0.061
	3	N/A	0.077	0.081	0.077	0.080	0.081	0.092	0.092	0.086	0.083	0.083	0.080	0.067
	4	N/A	0.106	0.166	0.106	0.116	0.121	0.173	0.167	0.164	0.159	0.159	0.112	0.078

By multiplying the directional hourly capacities by the hours in each period, these are then turned into directional link capacities for the entire time-of-day period. Having established both directional traffic volume and capacity for each link, for a specific time-of-day period, the link's v/c ratio on each direction can be computed.

- d) To establish the directional time-of-day speed, IMIP used the Dallas-Fort Worth algorithm. For this algorithm the free-flow speed for each link needs to be established, and for that purpose Table 4 provide average values depending on the link's specific area type and functional classification. For each link, this free-flow speed goes into the DFW algorithm together with the average 24-hour speed, and the directional v/c ratio, thus yielding the directional congested speed.

Table 4. Free-flow speeds in mph.

		Functional classification												
		0	1	2	3	4	5	6	7	8	9	10	11	12
Area Type	1	15.00	50.00	55.00	50.00	11.90	11.90	11.90	11.90	11.90	11.90	11.90	11.90	16.90
	2	15.00	50.00	55.00	50.00	11.90	11.90	11.90	11.90	11.90	11.90	11.90	11.90	16.90
	3	25.00	50.00	55.00	50.00	25.40	25.40	20.00	20.00	19.40	19.40	25.40	25.40	30.40
	4	35.00	51.00	57.00	51.00	36.40	36.40	31.30	31.30	30.00	30.00	30.00	36.40	41.40

Converting link congestion into emissions by-link

The directional speed on each link (established for specific time-of-day periods) is then used to establish the link's emissions rate for VOC, CO and NOx. To accomplish this IMIP developed emission rates using Mobile5Juarez for an array of speeds going from 4kph to 100kph in increments of 2kph; these rates were developed for each of the time-of-day period temperatures, for both summer and winter seasons. The rates are provided as a lookup table on the VB code and used to assign the resulting rates to each link. Appendix B shows the emission rates developed for Juarez. Appendix C shows an example Mobile5Juarez input file used to develop these rates, as well as the resulting output file.

Having established the emission rates for each link, these are then multiplied by the link's length and traffic volume in the period to obtain the link's emissions concentration.

Traffic from intrazonal travel is not assigned to the network as part of the traffic assignment modeling process, thus to account for their emissions an additional procedure is needed. This simply consists of using the average 24-hour speed from centroid connectors in a zone to establish the appropriate emission rates (the speed on a centroid connector is considered to remain constant throughout the day); then these emission rates are multiplied by the intrazonal vehicle trips (OD diagonal) on each time-of-day period, and by the average length of the zone's centroid connectors. The resulting concentration is then distributed onto each of the centroid connectors of a zone and added to the concentrations from interzonal travel.

All of these steps have been incorporated as well into the PinPlus computer program developed by the IMIP staff.

The result of this whole process is organized in the network link table, which shows VOC, CO, and NOx concentrations (in grams) by-link, for each of the time-of-day periods, as depicted in Table 5 and Table 6.

Table 5. Example of link table: grams of emissions by-link and for each time-of-day period (winter season).

LINK_ID	VOCw1	COw1	NOXw1	VOCw2	COw2	NOXw2	VOCw3	COw3	NOXw3	VOCw4	COw4	NOXw4
5259	1111.2	10933.5	1022.4	4151.3	35449.7	3876.9	2698.1	22958.2	2525.7	2943.9	25927.9	2506.9
5261	263.4	2586.5	248.8	985.5	8394.0	945.3	640.5	5436.4	615.9	698.1	6134.9	610.2
5263	80.8	792.6	77.6	302.7	2573.7	295.1	196.7	1666.9	192.3	214.2	1880.1	190.3
5265	233.7	2293.4	223.7	875.4	7446.2	851.2	569.0	4822.7	554.6	619.8	5440.1	549.0
5267	204.4	2005.0	196.1	765.5	6510.4	746.0	497.6	4216.6	486.0	541.9	4756.1	481.1
5269	400.5	3930.0	382.0	1499.4	12758.5	1452.6	974.6	8263.2	946.4	1061.7	9322.1	937.1
629	1530.9	15161.8	2082.2	5968.5	49323.9	7922.8	3875.7	31945.9	5163.8	4180.9	35993.6	5340.4
5273	156.5	1537.8	146.7	585.3	4989.2	557.2	380.4	3231.2	363.0	414.8	3647.2	359.8
5271	91.3	913.7	55.9	326.8	2954.1	210.6	211.8	1913.2	137.1	234.3	2165.4	137.1
6059	1348.1	13379.0	938.1	4860.4	43426.4	3574.3	3151.0	28129.5	2328.9	3467.2	31731.8	2306.5
5276	17.0	169.4	11.5	61.3	549.3	43.8	39.7	355.8	28.5	43.8	401.7	28.3
6062	3.2	31.9	2.2	11.6	103.6	8.5	7.5	67.1	5.5	8.3	75.7	5.5
6063	157.3	1561.1	109.5	567.1	5067.3	417.2	367.7	3282.4	271.9	404.6	3702.6	269.2
6065	6.1	59.9	5.9	22.9	194.6	22.3	14.9	126.0	14.5	16.2	142.2	14.4
5278	191.5	1878.0	183.9	717.2	6098.2	699.9	466.2	3949.7	456.0	507.7	4454.8	451.3
5281	242.4	2411.3	163.5	872.5	7818.9	621.5	565.6	5064.5	404.9	623.2	5718.0	401.9
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Table 6. Example of link table: grams of emissions by-link and for each time-of-day period (summer season).

LINK_ID	VOCs1	COs1	NOXs1	VOCs2	COs2	NOXs2	VOCs3	COs3	NOXs3	VOCs4	COs4	NOXs4
5259	1078.9	7111.8	869.0	5013.2	33613.5	3294.4	3410.2	23012.9	2117.3	2639.0	17444.3	2189.6
5261	256.2	1686.0	212.6	1190.2	7968.2	807.9	809.5	5454.9	519.6	626.7	4135.5	535.4
5263	78.7	517.3	66.5	365.5	2444.8	253.1	248.6	1673.6	162.8	192.5	1269.0	167.4
5265	227.6	1496.6	191.7	1057.2	7072.6	729.6	719.1	4841.6	469.3	556.8	3670.9	482.8
5267	199.1	1308.6	168.1	924.5	6184.3	639.7	628.8	4233.5	411.5	486.9	3209.9	423.2
5269	389.9	2563.9	327.1	1810.8	12116.4	1244.1	1231.6	8294.5	800.2	953.6	6288.7	823.6
629	1624.5	9928.9	1793.0	7574.7	46750.4	6800.8	5160.1	31968.0	4381.4	3959.3	24373.7	4700.7
5273	152.2	1001.8	125.2	706.9	4734.6	475.4	480.8	3241.3	305.7	372.2	2457.2	315.3
5271	80.6	592.3	46.9	372.0	2821.2	176.0	253.0	1935.9	113.2	197.1	1451.5	117.9
6059	1202.0	8753.1	808.5	5536.6	41665.8	3074.9	3763.5	28580.7	1983.7	2939.3	21449.0	2030.4
5276	15.2	110.6	9.9	69.8	526.4	37.5	47.5	361.1	24.2	37.1	271.0	24.8
6062	2.9	20.9	1.9	13.2	99.4	7.3	9.0	68.2	4.7	7.0	51.2	4.8
6063	140.3	1021.4	94.4	646.1	4861.9	358.9	439.2	3335.0	231.6	343.0	2502.9	237.0
6065	6.0	39.1	5.0	27.7	184.9	19.1	18.8	126.6	12.3	14.6	95.9	12.7
5278	186.5	1225.9	157.7	866.1	5793.2	600.3	589.1	3965.7	386.2	456.2	3006.9	397.1
5281	215.7	1573.9	140.1	993.7	7493.1	531.1	675.5	5140.3	342.4	527.3	3856.8	351.9
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Before aggregating the emissions by-cell, the emissions by-link for each of the time-of-day periods are added; this last step yields daily concentrations by-link as shown in Table 7.

Table 7. Example of link table: daily grams of emissions by-link and for each season.

LINK_ID	VOCw	COw	NOXw	VOCs	COs	NOXs
5259	10904.4	95269.3	9931.9	12141.3	81182.5	8470.2
5261	2587.5	22551.8	2420.2	2882.6	19244.6	2075.5
5263	794.4	6913.3	755.2	885.3	5904.8	649.8
5265	2297.9	20002.3	2178.5	2560.7	17081.6	1873.4
5267	2009.5	17488.1	1909.2	2239.4	14936.3	1642.5
5269	3936.1	34273.9	3718.1	4385.9	29263.5	3195.0
629	15556.1	132425.3	20509.1	18318.7	113021.1	17675.8
5273	1537.0	13405.4	1426.8	1712.0	11434.8	1221.6
5271	864.2	7946.4	540.7	902.8	6801.0	454.0
6059	12826.7	116666.7	9147.9	13441.5	100448.6	7897.4
5276	161.9	1476.1	112.2	169.5	1269.1	96.3
6062	30.7	278.4	21.7	32.1	239.6	18.7
6063	1496.7	13613.4	1067.8	1568.5	11721.1	921.9
6065	60.2	522.7	57.1	67.0	446.5	49.1
5278	1882.5	16380.7	1791.1	2097.9	13991.6	1541.4
5281	2303.6	21012.7	1591.8	2412.2	18064.1	1365.5
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Aggregating emission concentration by cells

To aggregate the by-link emission concentrations into the grid cells, the link table is imported to TransCAD and joined to the roadway network coverage. Under this environment TransCAD provides tools that allow the aggregation of different coverages into area coverages, thus the data of those links within a cell can be added. As a result the thematic maps shown in Figures 2 to 7 were created, showing the daily area concentrations of VOC, CO, and NOx, for winter and summer seasons.

The daily mobile source emissions are summarized in Table 8 for the entire Juarez urban area. These daily emissions are for base year 1996.

Table 8. Summary of daily mobile source emissions in Juarez.

	daily VMT	Tons/day		
		VOC	CO	NOx
Summer 1996	3.6 million	31.1	242.8	18.2
Winter 1996	3.6 million	30.0	280.5	21.0

Preliminary regional model

The El Paso MPO has developed similar models for the El Paso urban area, although for base year 1994. Appendix D shows thematic maps of both models joined (El Paso 1994 and Juarez 1996); in this regard it is necessary to point out that border links are accurate in the traffic volumes, but no idling speeds were used to obtain emissions at these points. Future improvements to these models should include this idling speed consideration at the international crossings. In addition it is necessary to underline that the El Paso model is based on 1994 traffic, while the Juarez model is based on 1996 traffic, so any comparison between VMT and emissions should consider this time lag.

The current effort shows that a region-wide mobile-source emissions inventory is now almost a reality; the only remaining step would be to establish traffic scenarios on both sides of the border, under the same target year.

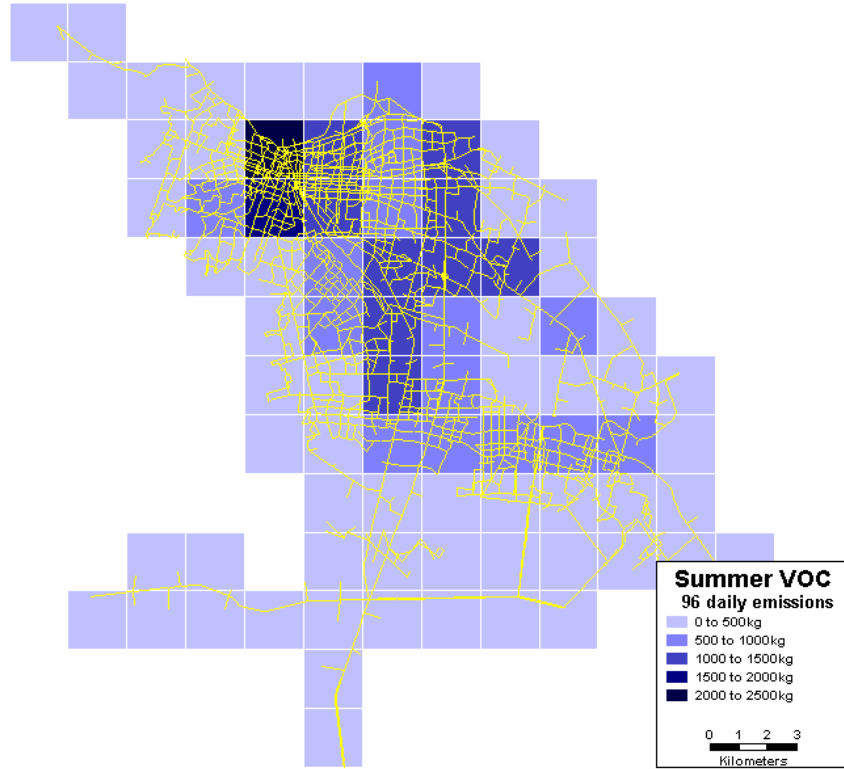


Figure 2. Daily emissions of VOC from mobile sources in Juarez during the summer.

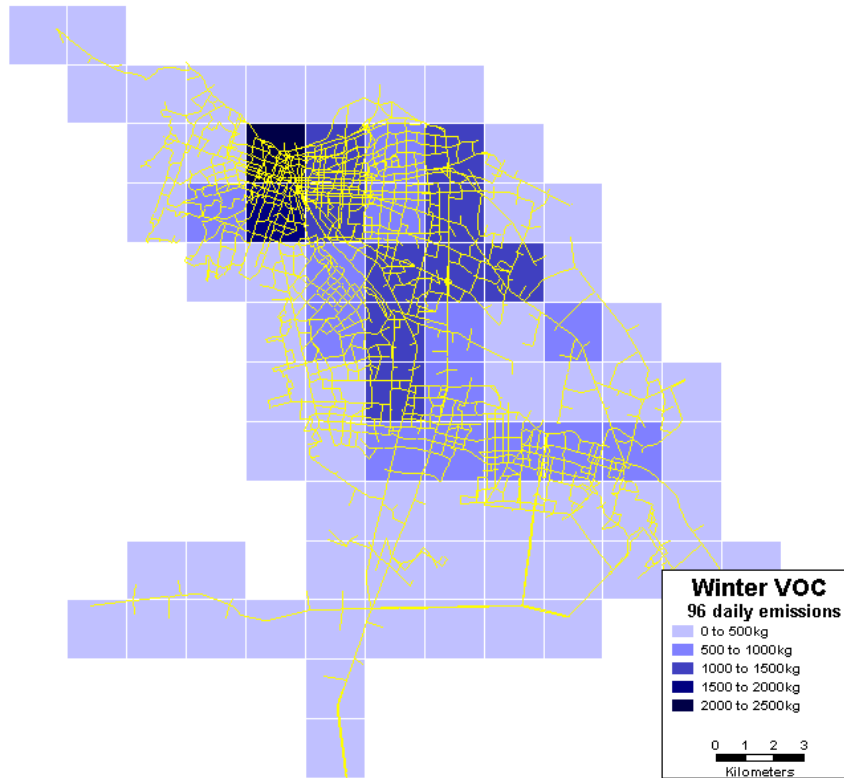


Figure 3. Daily emissions of VOC from mobile sources in Juarez during the winter.

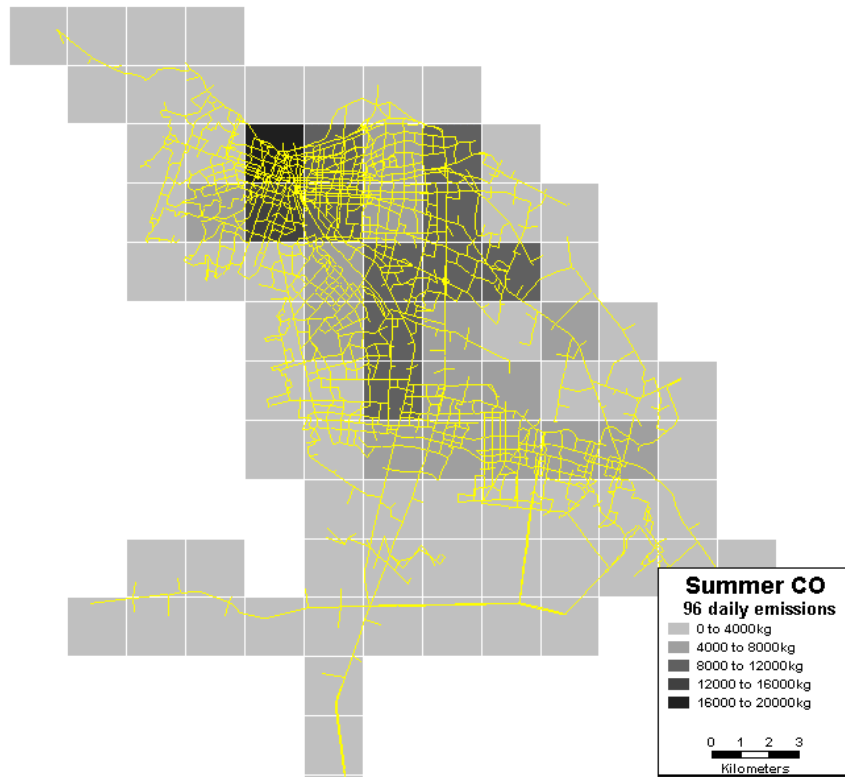


Figure 4. Daily emissions of CO from mobile sources in Juarez during the summer.

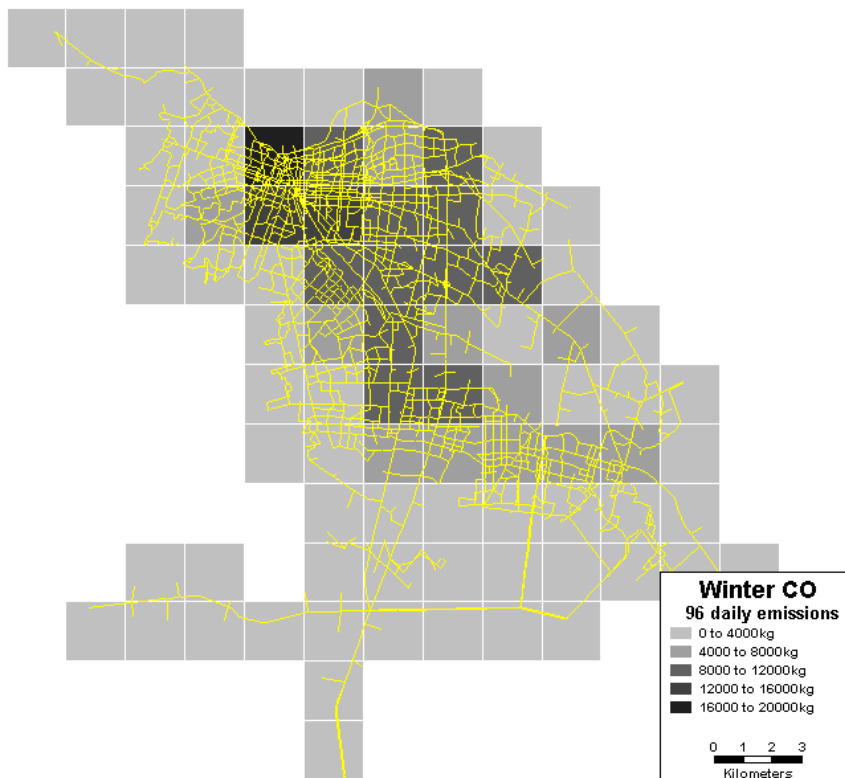


Figure 5. Daily emissions of CO from mobile sources in Juarez during the winter.

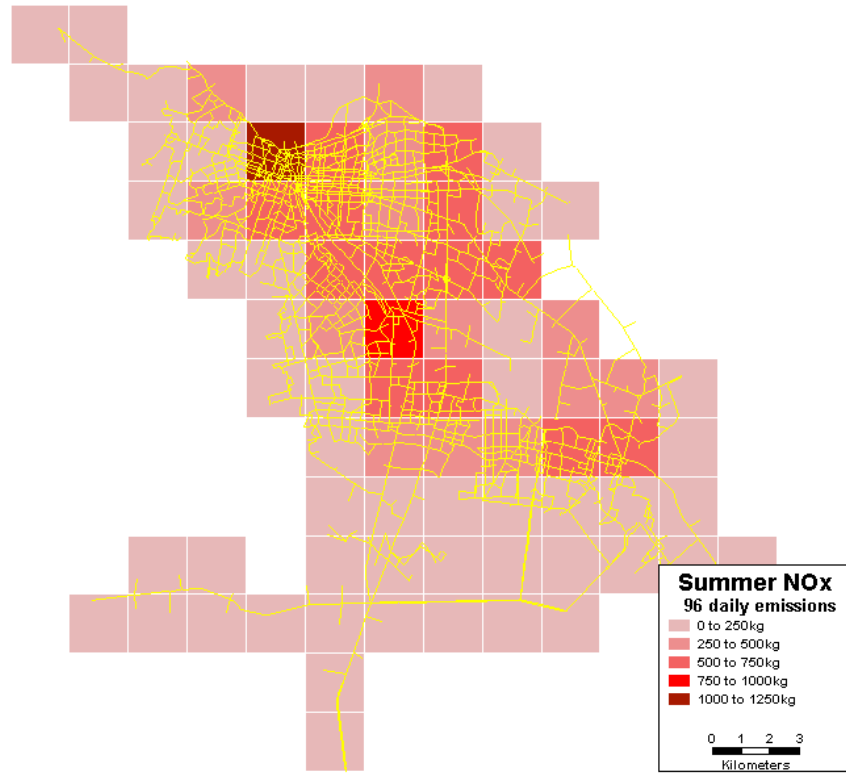


Figure 6. Daily emissions of NOx from mobile sources in Juarez during the summer.

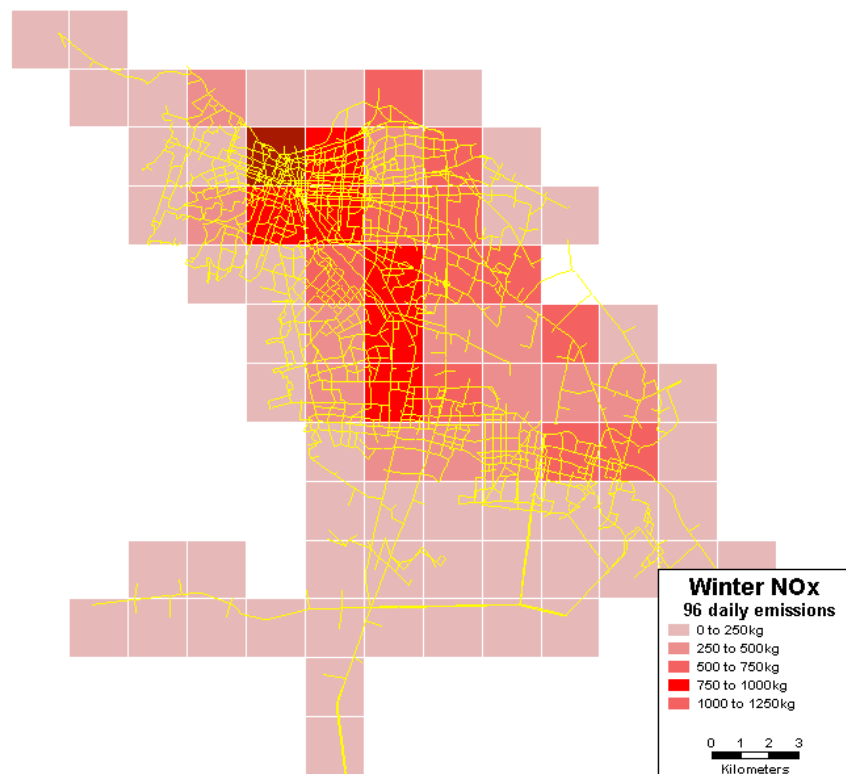


Figure 7. Daily emissions of NOx from mobile sources in Juarez during the winter.

Appendix A

VisualBasic code PinPlus for estimation of emissions concentrations by link.

Option Explicit

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Dim TAZ, ATYP, FUNC, k1, k2, WAY As Integer
Dim i, j, N, INTspdA, INTspdB As Integer
Dim LINK As Long
Dim SPD24, Kspd, spd0, spdCONGA, spdCONGB As Double
Dim spdkmA, spdkmB As Double
Dim DelayA, DelayB, Delay1A, Delay1B, Delay2 As Double
Dim SplA, SplB, VolA, VolB, VOL24, Kcap As Double
Dim vocA, vocB, CAP24A, CAP24B As Double
Dim Kvol, VMT As Double
Dim LENGTH, PERIOD, a, b, m As Double
Dim VOCrA, VOCrB, COrA, COrB, NOXrA, NOXrB, pct(8) As Double
Dim VOC, CO, NOX As Double
```

Sub PinPlus()

```
Kvol = 0.098
PERIOD = 2
' Kvol = 0.3980
' PERIOD = 7
' Kvol = 0.2600
' PERIOD = 4
' Kvol = 0.2440
' PERIOD = 11

ThisWorkbook.Worksheets("rates").Activate
Range("z5").Select
For i = 1 To 8
    pct(i) = ActiveCell.Offset(0, i).Value
Next i
ThisWorkbook.Worksheets("Kspd").Activate
Range("b2").Select
ThisWorkbook.Worksheets("Kcap").Activate
Range("b2").Select
ThisWorkbook.Worksheets("DIR").Activate
Range("b2").Select
ThisWorkbook.Worksheets("MAIN").Activate
Range("b2").Select
Do While ActiveCell <> ""
    LENGTH = ActiveCell.Value
    WAY = ActiveCell.Offset(0, 1).Value
    SPD24 = ActiveCell.Offset(0, 2).Value
    FUNC = ActiveCell.Offset(0, 3).Value
    ATYP = ActiveCell.Offset(0, 4).Value
    VOL24 = ActiveCell.Offset(0, 7).Value
    CAP24A = ActiveCell.Offset(0, 5).Value
    CAP24B = ActiveCell.Offset(0, 6).Value
    ThisWorkbook.Worksheets("DIR").Activate
    SplA = ActiveCell.Offset(ATYP, FUNC).Value
    VolA = VOL24 * SplA * Kvol
    SplB = 1 - SplA
    VolB = VOL24 * SplB * Kvol
    If WAY <> 0 Then
        VolA = VolA + VolB
        VolB = 0
    End If
    ThisWorkbook.Worksheets("Kcap").Activate
    If FUNC <> 0 Then
        k1 = ActiveCell.Offset(ATYP, FUNC).Value
        k2 = ActiveCell.Offset(ATYP + 15, FUNC).Value
        Kcap = k2 * PERIOD / k1
    Else
        Kcap = 0.15 * PERIOD
    End If
    vocA = VolA / (CAP24A * Kcap)
    If CAP24B <> 0 Then
        vocB = VolB / (CAP24B * Kcap)
    Else
        vocB = 0
    End If
    ThisWorkbook.Worksheets("Kspd").Activate
    Kspd = ActiveCell.Offset(ATYP + 32, FUNC).Value
```

```

spd0 = SPD24 * Kspd
If FUNC = 1 Or FUNC = 2 Or FUNC = 3 Then
    a = 0.015
    b = 3.5
    m = 5
Else
    a = 0.05
    b = 3
    m = 10
End If
Delay1A = a * Exp(b * vocA)
Delay1B = a * Exp(b * vocB)
Delay2 = m
If Delay1A <= m Then
    DelayA = Delay1A
Else
    DelayA = m
End If
If Delay1B <= m Then
    DelayB = Delay1B
Else
    DelayB = m
End If
spdCONGA = 60 / ((60 / spd0) + DelayA)
spdCONGB = 60 / ((60 / spd0) + DelayB)
If FUNC = 0 Then
    spdCONGA = spd0
    spdCONGB = spd0
End If
If WAY = 1 Then
    spdCONGB = 0
End If
ThisWorkbook.Worksheets("rates").Activate
Range("a3:a51").Select
VOCrA = 0
COrA = 0
NOXrA = 0
VOCrB = 0
COrB = 0
NOXrB = 0
INTspdA = 2 * (Application.WorksheetFunction.Round(spdCONGA * 1.609 / 2, 0))
INTspdB = 2 * (Application.WorksheetFunction.Round(spdCONGB * 1.609 / 2, 0))
If INTspdA < 4 Then INTspdA = 4
If INTspdB < 4 Then INTspdB = 4
If INTspdA > 100 Then INTspdA = 100
If INTspdB > 100 Then INTspdB = 100
Selection.Find(what:=INTspdA, Lookat:=xlWhole).Activate
For i = 1 To 8
    VOCrA = VOCrA + ActiveCell.Offset(0, i).Value * pct(i)
    COrA = COrA + ActiveCell.Offset(0, 8 + i).Value * pct(i)
    NOXrA = NOXrA + ActiveCell.Offset(0, 16 + i).Value * pct(i)
Next i
Selection.Find(what:=INTspdB, Lookat:=xlWhole).Activate
For i = 1 To 8
    VOCrB = VOCrB + ActiveCell.Offset(0, i).Value * pct(i)
    COrB = COrB + ActiveCell.Offset(0, 8 + i).Value * pct(i)
    NOXrB = NOXrB + ActiveCell.Offset(0, 16 + i).Value * pct(i)
Next i
VOC = VOCrA * VolA * LENGTH + VOCrB * VolB * LENGTH
CO = COrA * VolA * LENGTH + COrB * VolB * LENGTH
NOX = NOXrA * VolA * LENGTH + NOXrB * VolB * LENGTH

ThisWorkbook.Worksheets("MAIN").Activate
ActiveCell.Offset(0, 8).Value = VolA
ActiveCell.Offset(0, 9).Value = VolB
ActiveCell.Offset(0, 10).Value = vocA
ActiveCell.Offset(0, 11).Value = vocB
ActiveCell.Offset(0, 12).Value = spdCONGA
ActiveCell.Offset(0, 13).Value = spdCONGB
ActiveCell.Offset(0, 15).Value = VOCrA
ActiveCell.Offset(0, 16).Value = VOCrB
ActiveCell.Offset(0, 17).Value = COrA

```

```

ActiveCell.Offset(0, 18).Value = COrB
ActiveCell.Offset(0, 19).Value = NOXrA
ActiveCell.Offset(0, 20).Value = NOXrB
ActiveCell.Offset(0, 22).Value = VOC
ActiveCell.Offset(0, 23).Value = CO
ActiveCell.Offset(0, 24).Value = NOX

```

```
ActiveCell.Offset(1, 0).Select
```

```

Loop
zonal
End Sub

```

```

Sub zonal ()
ThisWorkbook.Worksheets("intra1").Activate
Range("a2").Select
ThisWorkbook.Worksheets("intra2").Activate
Range("a2").Select
Do While ActiveCell <> ""
    TAZ = ActiveCell.Value
    VOL24 = ActiveCell.Offset(0, 4).Value
    LENGTH = ActiveCell.Offset(0, 2).Value
    N = ActiveCell.Offset(0, 1).Value
    VolA = VOL24 * Kvol
    VMT = VolA * LENGTH / N
    For i = 1 To N
        ThisWorkbook.Worksheets("intra1").Activate
        LINK = ActiveCell.Offset(0, 1).Value
        ActiveCell.Offset(1, 0).Select
        ThisWorkbook.Worksheets("MAIN").Activate
        Columns("A:A").Select
        Selection.Find(what:=LINK, Lookat:=xlWhole).Select
        SPD24 = ActiveCell.Offset(0, 3).Value
        INTspdA = 2 * (Application.WorksheetFunction.Round(SPD24 * 1.609 / 2, 0))
        ThisWorkbook.Worksheets("rates").Activate
        Range("a3:a65").Select
        VOCrA = 0
        COrA = 0
        NOXrA = 0
        If INTspdA < 4 Then INTspdA = 4
        If INTspdA > 100 Then INTspdA = 100
        Selection.Find(what:=INTspdA, Lookat:=xlWhole).Activate
        For j = 1 To 8
            VOCrA = VOCrA + ActiveCell.Offset(0, i).Value * pct(i)
            COrA = COrA + ActiveCell.Offset(0, 8 + i).Value * pct(i)
            NOXrA = NOXrA + ActiveCell.Offset(0, 16 + i).Value * pct(i)
        Next j
        VOC = VOCrA * VMT
        CO = COrA * VMT
        NOX = NOXrA * VMT
        ThisWorkbook.Worksheets("MAIN").Activate
        ActiveCell.Offset(0, 27).Value = VMT
        ActiveCell.Offset(0, 28).Value = VOC
        ActiveCell.Offset(0, 29).Value = CO
        ActiveCell.Offset(0, 30).Value = NOX
    Next i
    ThisWorkbook.Worksheets("intra2").Activate
    ActiveCell.Offset(1, 0).Select
Loop
End Sub

```

Appendix B

Emission rates for Juarez 1996

(obtained from Mobile5Juarez as grams/kilometer and converted to grams/mile for use with PinPlus)

Table B1. VOC emission rates for time period 1, summer 1996.

sum 1 km/hr	VOC (gr/mile)							
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
4	48.51135	46.17830	59.05030	42.22016	1.57682	1.93080	8.62424	29.95958
6	33.66028	32.63052	40.78815	32.38917	1.48028	1.80208	8.09327	24.40853
8	26.00144	25.42220	31.37550	27.49781	1.38374	1.68945	7.59448	20.61129
10	21.33534	20.94918	25.63137	24.23154	1.30329	1.59291	7.12787	17.92426
12	18.24606	17.97253	21.85022	21.83413	1.22284	1.49637	6.70953	15.99346
14	16.12218	15.92910	19.24364	19.99987	1.15848	1.41592	6.32337	14.56145
16	14.52927	14.38446	17.29675	18.40696	1.09412	1.33547	5.96939	13.48342
18	13.30643	13.19380	15.80038	17.02322	1.02976	1.25502	5.63150	12.64674
20	12.32494	12.24449	14.60972	15.81647	0.96540	1.19066	5.32579	11.98705
22	11.52044	11.47217	13.64432	14.73844	0.91713	1.12630	5.05226	11.47217
24	10.86075	10.82857	12.85591	13.78913	0.86886	1.06194	4.79482	11.03774
26	10.31369	10.29760	12.18013	12.95245	0.83668	1.01367	4.55347	10.68376
28	9.83099	9.83099	11.61698	12.21231	0.78841	0.96540	4.32821	10.39414
30	9.41265	9.41265	11.11819	11.55262	0.75623	0.91713	4.11904	10.13670
32	9.02649	9.07476	10.73203	10.95729	0.72405	0.86886	3.92596	9.91144
34	8.68860	8.75296	10.34587	10.44241	0.69187	0.83668	3.74897	9.71836
36	8.38289	8.46334	10.00798	9.97580	0.65969	0.80450	3.58807	9.54137
38	8.10936	8.18981	9.70227	9.55746	0.62751	0.77232	3.44326	9.38047
40	7.85192	7.93237	9.42874	9.17130	0.59533	0.74014	3.29845	9.21957
42	7.61057	7.70711	9.17130	8.83341	0.57924	0.70796	3.16973	9.09085
44	7.38531	7.48185	8.92995	8.52770	0.56315	0.67578	3.04101	8.94604
46	7.19223	7.28877	8.70469	8.25417	0.53097	0.65969	2.92838	8.81732
48	6.99915	7.09569	8.51161	7.99673	0.51488	0.62751	2.83184	8.70469
50	6.82216	6.91870	8.31853	7.77147	0.49879	0.61142	2.73530	8.59206
52	6.66126	6.75780	8.14154	7.57839	0.48270	0.59533	2.63876	8.49552
54	6.51645	6.61299	7.96455	7.38531	0.46661	0.56315	2.55831	8.39898
56	6.37164	6.46818	7.81974	7.22441	0.45052	0.54706	2.47786	8.30244
58	6.24292	6.33946	7.67493	7.06351	0.43443	0.53097	2.41350	8.22199
60	6.13029	6.22683	7.54621	6.93479	0.43443	0.51488	2.33305	8.14154
62	6.01766	6.13029	7.43358	6.80607	0.41834	0.51488	2.28478	8.07718
64	5.92112	6.03375	7.32095	6.69344	0.40225	0.49879	2.22042	8.01282
66	5.84067	5.95330	7.22441	6.59690	0.40225	0.48270	2.17215	7.96455
68	5.74413	5.87285	7.12787	6.50036	0.38616	0.46661	2.12388	7.91628
70	5.67977	5.80849	7.04742	6.41991	0.37007	0.46661	2.07561	7.88410
72	5.61541	5.74413	6.96697	6.33946	0.37007	0.45052	2.02734	7.85192
74	5.55105	5.69586	6.90261	6.27510	0.37007	0.45052	1.99516	7.81974
76	5.48669	5.64759	6.83825	6.21074	0.35398	0.43443	1.96298	7.80365
78	5.45451	5.61541	6.80607	6.16247	0.35398	0.43443	1.93080	7.78756
80	5.45451	5.61541	6.78998	6.11420	0.35398	0.41834	1.89862	7.78756
82	5.43842	5.61541	6.78998	6.06593	0.33789	0.41834	1.88253	7.78756
84	5.43842	5.59932	6.77389	6.03375	0.33789	0.41834	1.85035	7.78756
86	5.43842	5.59932	6.77389	6.00157	0.33789	0.40225	1.83426	7.78756
88	5.43842	5.59932	6.77389	5.96939	0.33789	0.40225	1.81817	7.78756
90	5.63150	5.80849	7.03133	5.95330	0.32180	0.40225	1.80208	7.98064
92	5.88894	6.09811	7.38531	5.93721	0.32180	0.40225	1.78599	8.22199
94	6.16247	6.38773	7.73929	5.92112	0.32180	0.40225	1.78599	8.44725
96	6.41991	6.67735	8.10936	5.92112	0.32180	0.40225	1.76990	8.68860
98	6.69344	6.95088	8.46334	5.92112	0.32180	0.40225	1.76990	8.92995
100	6.82216	7.09569	8.64033	5.92112	0.32180	0.40225	1.76990	9.05867

Table B2. CO emission rates for time period 1, summer 1996.

sum 1 km/hr	CO (gr/mile)							
	LDGV	LDGT1	LDGT2	HDTV	LDDV	LDDT	HDDV	MC
4	497.58325	454.39769	587.01147	427.67220	5.35797	5.95330	50.13644	190.82740
6	349.31390	322.04135	412.03272	381.86397	4.82700	5.37406	45.26117	142.25169
8	266.22514	245.93565	312.45171	342.10558	4.37648	4.87527	40.98123	110.13605
10	213.78783	197.48866	248.99275	307.54426	3.97423	4.42475	37.20008	88.14102
12	178.18066	164.55243	205.59802	277.40769	3.62025	4.02250	33.86945	72.61417
14	152.72628	141.10930	174.46387	251.08445	3.29845	3.66852	30.90889	61.35117
16	133.82053	123.81255	151.29427	228.02748	3.02492	3.36281	28.30231	52.95219
18	119.33953	110.65093	133.51482	207.78626	2.76748	3.08928	25.98535	46.54837
20	107.93172	100.36942	119.53261	189.99072	2.55831	2.84793	23.92583	41.56047
22	98.74433	92.13134	108.28570	174.31906	2.36523	2.62267	22.09157	37.60233
24	91.18203	85.37354	99.05004	160.48166	2.18824	2.42959	20.45039	34.38433
26	84.84257	79.70986	91.35902	148.23717	2.02734	2.25260	18.98620	31.71339
28	79.43633	74.85068	84.82648	137.40860	1.88253	2.10779	17.68291	29.46079
30	74.73805	70.60292	79.19498	127.78678	1.76990	1.96298	16.50834	27.52999
32	70.65119	67.22402	75.04376	119.25908	1.65727	1.83426	15.44640	25.82445
34	67.04703	64.08647	71.56832	111.66460	1.54464	1.72163	14.51318	24.32808
36	63.79685	61.20636	68.46295	104.92289	1.46419	1.62509	13.66041	22.97652
38	60.82020	58.51933	65.64720	98.92132	1.38374	1.52855	12.90418	21.73759
40	58.10099	56.02538	63.08889	93.57944	1.30329	1.44810	12.21231	20.61129
42	55.57486	53.67624	60.73975	88.81680	1.23893	1.38374	11.60089	19.54935
44	53.24181	51.45582	58.56760	84.60122	1.17457	1.31938	11.05383	18.58395
46	51.06966	49.39630	56.57244	80.85225	1.12630	1.25502	10.55504	17.66682
48	49.07450	47.46550	54.72209	77.52162	1.07803	1.20675	10.10452	16.83014
50	47.20806	45.66342	53.00046	74.59324	1.02976	1.15848	9.70227	16.04173
52	45.48643	44.00615	51.40755	72.01884	0.99758	1.11021	9.34829	15.31768
54	43.90961	42.49369	49.94336	69.76624	0.96540	1.07803	9.02649	14.64190
56	42.46151	41.10995	48.59180	67.81935	0.93322	1.04585	8.73687	14.01439
58	41.14213	39.87102	47.35287	66.14599	0.90104	1.01367	8.47943	13.45124
60	39.93538	38.76081	46.21048	64.74616	0.88495	0.98149	8.27026	12.93636
62	38.84126	37.76323	45.16463	63.57159	0.86886	0.96540	8.07718	12.46975
64	37.84368	36.91046	44.21532	62.63837	0.83668	0.93322	7.90019	12.05141
66	36.97482	36.17032	43.36255	61.94650	0.83668	0.91713	7.77147	11.68134
68	36.18641	35.54281	42.59023	61.44771	0.82059	0.90104	7.64275	11.35954
70	35.47845	35.01184	41.88227	61.17418	0.80450	0.90104	7.54621	11.06992
72	34.85094	34.57741	41.25476	61.09373	0.80450	0.88495	7.48185	10.81248
74	34.28779	34.19125	40.69161	61.23854	0.78841	0.88495	7.43358	10.58722
76	33.77291	33.86945	40.17673	61.59252	0.78841	0.88495	7.40140	10.37805
78	33.48329	33.69246	39.88711	62.13958	0.78841	0.88495	7.38531	10.26542
80	33.48329	33.69246	39.88711	62.92799	0.78841	0.88495	7.40140	10.26542
82	33.48329	33.69246	39.88711	63.92557	0.78841	0.88495	7.43358	10.26542
84	33.48329	33.69246	39.88711	65.16450	0.80450	0.88495	7.49794	10.26542
86	33.48329	33.69246	39.88711	66.66087	0.80450	0.90104	7.56230	10.26542
88	33.48329	33.69246	39.88711	68.43077	0.82059	0.91713	7.67493	10.26542
90	40.16064	40.77206	48.35045	70.47420	0.83668	0.93322	7.78756	12.56629
92	49.02623	50.20080	59.58127	72.82334	0.85277	0.94931	7.93237	15.63948
94	57.90791	59.62954	70.82818	75.51037	0.86886	0.96540	8.10936	18.71267
96	66.77350	69.04219	82.07509	78.56747	0.88495	0.98149	8.30244	21.76977
98	75.65518	78.47093	93.32200	82.02682	0.91713	1.01367	8.52770	24.84296
100	80.09602	83.18530	98.93741	83.90935	0.91713	1.02976	8.65642	26.37151

Table B3. NOx emission rates for time period 1, summer 1996.

sum 1 km/hr	Nox (gr/mile)							
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
4	4.68219	4.26385	5.10053	5.35797	2.34914	2.73530	41.20649	0.93322
6	4.34430	3.92596	4.69828	5.43842	2.22042	2.59049	39.03434	0.88495
8	4.16731	3.73288	4.48911	5.50278	2.10779	2.46177	37.05527	0.83668
10	4.03859	3.63634	4.37648	5.56714	2.01125	2.34914	35.25319	0.80450
12	3.95814	3.55589	4.29603	5.64759	1.91471	2.23651	33.61201	0.78841
14	3.90987	3.50762	4.23167	5.71195	1.81817	2.13997	32.13173	0.77232
16	3.86160	3.49153	4.19949	5.77631	1.75381	2.04343	30.76408	0.75623
18	3.82942	3.47544	4.16731	5.84067	1.67336	1.96298	29.52515	0.75623
20	3.81333	3.47544	4.16731	5.92112	1.60900	1.88253	28.39885	0.75623
22	3.79724	3.47544	4.15122	5.98548	1.56073	1.81817	27.38518	0.75623
24	3.79724	3.49153	4.15122	6.04984	1.49637	1.75381	26.45196	0.77232
26	3.79724	3.52371	4.15122	6.13029	1.46419	1.70554	25.61528	0.78841
28	3.79724	3.53980	4.15122	6.19465	1.41592	1.65727	24.85905	0.80450
30	3.81333	3.57198	4.16731	6.25901	1.36765	1.60900	24.18327	0.82059
32	3.82942	3.60416	4.18340	6.33946	1.33547	1.56073	23.57185	0.83668
34	3.84551	3.65243	4.24776	6.40382	1.30329	1.52855	23.02479	0.86886
36	3.87769	3.71679	4.29603	6.46818	1.28720	1.49637	22.54209	0.88495
38	3.90987	3.76506	4.34430	6.54863	1.25502	1.46419	22.10766	0.90104
40	3.94205	3.81333	4.37648	6.61299	1.23893	1.44810	21.73759	0.93322
42	3.95814	3.86160	4.42475	6.67735	1.22284	1.41592	21.41579	0.94931
44	3.99032	3.90987	4.47302	6.75780	1.20675	1.39983	21.15835	0.96540
46	4.02250	3.95814	4.50520	6.82216	1.19066	1.38374	20.93309	0.99758
48	4.03859	3.99032	4.53738	6.88652	1.17457	1.38374	20.77219	1.01367
50	4.07077	4.02250	4.56956	6.95088	1.17457	1.36765	20.64347	1.02976
52	4.10295	4.07077	4.60174	7.03133	1.17457	1.36765	20.56302	1.04585
54	4.11904	4.10295	4.63392	7.09569	1.17457	1.36765	20.54693	1.06194
56	4.13513	4.11904	4.65001	7.16005	1.17457	1.36765	20.54693	1.07803
58	4.16731	4.15122	4.68219	7.24050	1.17457	1.36765	20.61129	1.07803
60	4.18340	4.18340	4.71437	7.30486	1.17457	1.38374	20.72392	1.09412
62	4.21558	4.19949	4.73046	7.36922	1.19066	1.38374	20.86873	1.11021
64	4.23167	4.23167	4.76264	7.44967	1.19066	1.39983	21.06181	1.11021
66	4.26385	4.24776	4.77873	7.51403	1.20675	1.41592	21.31925	1.12630
68	4.27994	4.27994	4.81091	7.57839	1.22284	1.43201	21.60887	1.12630
70	4.31212	4.29603	4.82700	7.65884	1.25502	1.46419	21.96285	1.14239
72	4.34430	4.32821	4.85918	7.72320	1.27111	1.48028	22.36510	1.14239
74	4.37648	4.34430	4.89136	7.78756	1.30329	1.51246	22.81562	1.15848
76	4.40866	4.37648	4.92354	7.85192	1.31938	1.54464	23.34659	1.15848
78	4.52129	4.47302	5.05226	7.93237	1.36765	1.59291	23.92583	1.19066
80	4.76264	4.69828	5.32579	7.99673	1.39983	1.64118	24.58552	1.23893
82	4.98790	4.92354	5.59932	8.06109	1.43201	1.68945	25.30957	1.28720
84	5.22925	5.14880	5.87285	8.14154	1.48028	1.73772	26.11407	1.33547
86	5.47060	5.35797	6.14638	8.20590	1.52855	1.80208	27.01511	1.38374
88	5.71195	5.58323	6.41991	8.27026	1.59291	1.86644	27.99660	1.43201
90	5.93721	5.80849	6.70953	8.35071	1.65727	1.93080	29.07463	1.48028
92	6.17856	6.03375	6.98306	8.41507	1.72163	2.01125	30.26529	1.52855
94	6.41991	6.25901	7.25659	8.47943	1.80208	2.09170	31.58467	1.57682
96	6.66126	6.46818	7.53012	8.55988	1.88253	2.18824	33.01668	1.62509
98	6.90261	6.69344	7.80365	8.62424	1.96298	2.30087	34.60959	1.67336
100	7.01524	6.80607	7.94846	8.65642	2.01125	2.34914	35.44627	1.68945

Table B4. VOC emission rates for time period 2, summer 1996.

sum 2 km/hr	VOC (gr/mile)							
	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC
4	56.49199	53.24181	66.78959	55.04389	1.57682	1.93080	8.62424	31.19851
6	38.34247	36.83001	44.73020	39.85493	1.48028	1.80208	8.09327	25.66355
8	29.33207	28.43103	33.91772	32.96841	1.38374	1.68945	7.59448	21.88240
10	23.95801	23.33050	27.51390	28.68847	1.30329	1.59291	7.12787	19.21146
12	20.48257	19.99987	23.37877	25.72791	1.22284	1.49637	6.70953	17.29675
14	18.13343	17.73118	20.61129	23.60403	1.15848	1.41592	6.32337	15.86474
16	16.36353	16.02564	18.55177	21.78586	1.09412	1.33547	5.96939	14.78671
18	14.99588	14.72235	16.95886	20.20904	1.02976	1.25502	5.63150	13.95003
20	13.91785	13.67650	15.70384	18.82530	0.96540	1.19066	5.32579	13.30643
22	13.03290	12.83982	14.67408	17.61855	0.91713	1.12630	5.05226	12.77546
24	12.29276	12.13186	13.82131	16.55661	0.86886	1.06194	4.79482	12.35712
26	11.66525	11.53653	13.11335	15.60730	0.83668	1.01367	4.55347	12.00314
28	11.13428	11.02165	12.50193	14.77062	0.78841	0.96540	4.32821	11.71352
30	10.65158	10.57113	11.98705	14.03048	0.75623	0.91713	4.11904	11.45608
32	10.23324	10.20106	11.56871	13.37079	0.72405	0.86886	3.92596	11.23082
34	9.86317	9.84708	11.16646	12.77546	0.69187	0.83668	3.74897	11.03774
36	9.52528	9.52528	10.81248	12.24449	0.65969	0.80450	3.58807	10.86075
38	9.21957	9.21957	10.47459	11.77788	0.62751	0.77232	3.44326	10.69985
40	8.92995	8.94604	10.18497	11.35954	0.59533	0.74014	3.29845	10.55504
42	8.67251	8.68860	9.91144	10.97338	0.57924	0.70796	3.16973	10.41023
44	8.43116	8.44725	9.65400	10.61940	0.56315	0.67578	3.04101	10.28151
46	8.20590	8.22199	9.41265	10.31369	0.53097	0.65969	2.92838	10.15279
48	7.99673	8.01282	9.20348	10.04016	0.51488	0.62751	2.83184	10.04016
50	7.80365	7.81974	8.99431	9.78272	0.49879	0.61142	2.73530	9.92753
52	7.62666	7.64275	8.81732	9.55746	0.48270	0.59533	2.63876	9.81490
54	7.46576	7.46576	8.64033	9.34829	0.46661	0.56315	2.55831	9.71836
56	7.30486	7.32095	8.47943	9.15521	0.45052	0.54706	2.47786	9.63791
58	7.16005	7.17614	8.31853	8.97822	0.43443	0.53097	2.41350	9.55746
60	7.03133	7.04742	8.18981	8.83341	0.43443	0.51488	2.33305	9.47701
62	6.91870	6.93479	8.06109	8.68860	0.41834	0.51488	2.28478	9.41265
64	6.80607	6.83825	7.94846	8.55988	0.40225	0.49879	2.22042	9.34829
66	6.70953	6.74171	7.83583	8.44725	0.40225	0.48270	2.17215	9.30002
68	6.61299	6.66126	7.73929	8.33462	0.38616	0.46661	2.12388	9.25175
70	6.53254	6.58081	7.64275	8.23808	0.37007	0.46661	2.07561	9.21957
72	6.45209	6.51645	7.57839	8.15763	0.37007	0.45052	2.02734	9.18739
74	6.38773	6.45209	7.49794	8.07718	0.37007	0.45052	1.99516	9.15521
76	6.32337	6.40382	7.43358	8.01282	0.35398	0.43443	1.96298	9.13912
78	6.27510	6.37164	7.38531	7.94846	0.35398	0.43443	1.93080	9.12303
80	6.27510	6.35555	7.36922	7.88410	0.35398	0.41834	1.89862	9.12303
82	6.25901	6.35555	7.35313	7.83583	0.33789	0.41834	1.88253	9.12303
84	6.25901	6.35555	7.35313	7.78756	0.33789	0.41834	1.85035	9.12303
86	6.24292	6.33946	7.33704	7.73929	0.33789	0.40225	1.83426	9.12303
88	6.24292	6.33946	7.32095	7.70711	0.33789	0.40225	1.81817	9.12303
90	6.45209	6.56472	7.59448	7.69102	0.32180	0.40225	1.80208	9.30002
92	6.72562	6.87043	7.96455	7.65884	0.32180	0.40225	1.78599	9.54137
94	7.01524	7.17614	8.31853	7.64275	0.32180	0.40225	1.78599	9.78272
96	7.28877	7.48185	8.67251	7.64275	0.32180	0.40225	1.76990	10.02407
98	7.57839	7.78756	9.04258	7.64275	0.32180	0.40225	1.76990	10.26542
100	7.72320	7.94846	9.21957	7.64275	0.32180	0.40225	1.76990	10.37805

Table B5. CO emission rates for time period 2, summer 1996.

sum 2 km/hr	CO (gr/mile)							
	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC
4	590.56736	534.57416	642.21626	532.80426	5.35797	5.95330	50.13644	227.01381
6	414.47840	379.64355	450.84180	475.73303	4.82700	5.37406	45.26117	169.21853
8	315.62144	290.00616	341.75160	426.20801	4.37648	4.87527	40.98123	131.02087
10	253.22442	232.80621	272.21062	383.15117	3.97423	4.42475	37.20008	104.85853
12	210.84336	193.93277	224.66467	345.59711	3.62025	4.02250	33.86945	86.38721
14	180.57807	166.27406	190.56996	312.80569	3.29845	3.66852	30.90889	72.98424
16	158.10034	145.90412	165.19603	284.08504	3.02492	3.36281	28.30231	62.99235
18	140.90013	130.42554	145.74322	258.87201	2.76748	3.08928	25.98535	55.38178
20	127.36844	118.35804	130.45772	236.69999	2.55831	2.84793	23.92583	49.44457
22	116.47551	108.70404	118.14887	217.16673	2.36523	2.62267	22.09157	44.73020
24	107.51338	100.78776	108.07653	199.93434	2.18824	2.42959	20.45039	40.90078
26	99.99935	94.15868	99.66146	184.68102	2.02734	2.25260	18.98620	37.73105
28	93.56335	88.46282	92.51750	171.18151	1.88253	2.10779	17.68291	35.04402
30	87.98012	83.47492	86.37112	159.21055	1.76990	1.96298	16.50834	32.74315
32	83.12094	79.45242	81.80156	148.57506	1.65727	1.83426	15.44640	30.73190
34	78.84100	75.73563	77.95605	139.11414	1.54464	1.72163	14.51318	28.94591
36	74.97940	72.30846	74.51279	130.71516	1.46419	1.62509	13.66041	27.33691
38	71.43960	69.10655	71.40742	123.23331	1.38374	1.52855	12.90418	25.85663
40	68.17333	66.09772	68.57558	116.57205	1.30329	1.44810	12.21231	24.52116
42	65.16450	63.28197	65.96900	110.65093	1.23893	1.38374	11.60089	23.26614
44	62.36484	60.61103	63.57159	105.38950	1.17457	1.31938	11.05383	22.10766
46	59.77435	58.11708	61.35117	100.72340	1.12630	1.25502	10.55504	21.02963
48	57.37694	55.78403	59.30774	96.58827	1.07803	1.20675	10.10452	20.01596
50	55.14043	53.61188	57.39303	92.93584	1.02976	1.15848	9.70227	19.08274
52	53.08091	51.61672	55.63922	89.71784	0.99758	1.11021	9.34829	18.21388
54	51.18229	49.78246	54.01413	86.91818	0.96540	1.07803	9.02649	17.40938
56	49.44457	48.10910	52.51776	84.48859	0.93322	1.04585	8.73687	16.68533
58	47.86775	46.61273	51.13402	82.41298	0.90104	1.01367	8.47943	16.00955
60	46.41965	45.27726	49.87900	80.65917	0.88495	0.98149	8.27026	15.39813
62	45.11636	44.10269	48.72052	79.21107	0.86886	0.96540	8.07718	14.83498
64	43.95788	43.08902	47.67467	78.05259	0.83668	0.93322	7.90019	14.35228
66	42.91203	42.22016	46.74145	77.16764	0.83668	0.91713	7.77147	13.90176
68	41.97881	41.48002	45.88868	76.55622	0.82059	0.90104	7.64275	13.51560
70	41.15822	40.86860	45.11636	76.20224	0.80450	0.90104	7.54621	13.16162
72	40.41808	40.36981	44.44058	76.12179	0.80450	0.88495	7.48185	12.87200
74	39.75839	39.95147	43.81307	76.29878	0.78841	0.88495	7.43358	12.59847
76	39.17915	39.59749	43.24992	76.71712	0.78841	0.88495	7.40140	12.35712
78	38.82517	39.40441	42.92812	77.42508	0.78841	0.88495	7.38531	12.21231
80	38.82517	39.40441	42.92812	78.39048	0.78841	0.88495	7.40140	12.21231
82	38.82517	39.40441	42.92812	79.64550	0.78841	0.88495	7.43358	12.21231
84	38.82517	39.40441	42.92812	81.19014	0.80450	0.88495	7.49794	12.21231
86	38.82517	39.40441	42.92812	83.05658	0.80450	0.90104	7.56230	12.21231
88	38.82517	39.40441	42.92812	85.24482	0.82059	0.91713	7.67493	12.21231
90	46.69318	47.81948	52.09942	87.78704	0.83668	0.93322	7.78756	14.96370
92	57.13559	59.00203	64.27955	90.73151	0.85277	0.94931	7.93237	18.60004
94	67.59409	70.18458	76.45968	94.07823	0.86886	0.96540	8.10936	22.25247
96	78.05259	81.38322	88.65590	97.87547	0.88495	0.98149	8.30244	25.90490
98	88.49500	92.56577	100.83603	102.18759	0.91713	1.01367	8.52770	29.55733
100	93.72425	98.14900	106.93414	104.53673	0.91713	1.02976	8.65642	31.37550

Table B6. NOx emission rates for time period 2, summer 1996.

sum 2 km/hr	Nox (gr/mile)							
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
4	4.29603	4.03859	4.79482	5.02008	2.34914	2.73530	41.20649	0.85277
6	3.99032	3.70070	4.40866	5.08444	2.22042	2.59049	39.03434	0.80450
8	3.81333	3.50762	4.19949	5.14880	2.10779	2.46177	37.05527	0.77232
10	3.68461	3.41108	4.08686	5.21316	2.01125	2.34914	35.25319	0.74014
12	3.62025	3.33063	4.00641	5.27752	1.91471	2.23651	33.61201	0.72405
14	3.55589	3.29845	3.94205	5.34188	1.81817	2.13997	32.13173	0.70796
16	3.52371	3.26627	3.90987	5.40624	1.75381	2.04343	30.76408	0.69187
18	3.49153	3.25018	3.89378	5.47060	1.67336	1.96298	29.52515	0.69187
20	3.47544	3.25018	3.87769	5.53496	1.60900	1.88253	28.39885	0.69187
22	3.45935	3.25018	3.86160	5.59932	1.56073	1.81817	27.38518	0.70796
24	3.45935	3.26627	3.86160	5.66368	1.49637	1.75381	26.45196	0.70796
26	3.45935	3.28236	3.86160	5.72804	1.46419	1.70554	25.61528	0.72405
28	3.45935	3.31454	3.86160	5.79240	1.41592	1.65727	24.85905	0.74014
30	3.47544	3.33063	3.86160	5.85676	1.36765	1.60900	24.18327	0.75623
32	3.49153	3.36281	3.89378	5.92112	1.33547	1.56073	23.57185	0.77232
34	3.50762	3.41108	3.94205	5.98548	1.30329	1.52855	23.02479	0.78841
36	3.53980	3.45935	3.99032	6.04984	1.28720	1.49637	22.54209	0.82059
38	3.57198	3.50762	4.02250	6.11420	1.25502	1.46419	22.10766	0.83668
40	3.58807	3.55589	4.07077	6.17856	1.23893	1.44810	21.73759	0.85277
42	3.62025	3.60416	4.10295	6.24292	1.22284	1.41592	21.41579	0.86886
44	3.65243	3.65243	4.15122	6.30728	1.20675	1.39983	21.15835	0.88495
46	3.66852	3.68461	4.18340	6.37164	1.19066	1.38374	20.93309	0.91713
48	3.70070	3.71679	4.21558	6.43600	1.17457	1.38374	20.77219	0.93322
50	3.71679	3.76506	4.24776	6.50036	1.17457	1.36765	20.64347	0.94931
52	3.73288	3.79724	4.27994	6.56472	1.17457	1.36765	20.56302	0.96540
54	3.76506	3.81333	4.29603	6.62908	1.17457	1.36765	20.54693	0.96540
56	3.78115	3.84551	4.32821	6.69344	1.17457	1.36765	20.54693	0.98149
58	3.79724	3.87769	4.34430	6.75780	1.17457	1.36765	20.61129	0.99758
60	3.82942	3.89378	4.37648	6.82216	1.17457	1.38374	20.72392	1.01367
62	3.84551	3.92596	4.39257	6.88652	1.19066	1.38374	20.86873	1.01367
64	3.86160	3.94205	4.42475	6.95088	1.19066	1.39983	21.06181	1.02976
66	3.87769	3.95814	4.44084	7.01524	1.20675	1.41592	21.31925	1.02976
68	3.90987	3.99032	4.45693	7.07960	1.22284	1.43201	21.60887	1.02976
70	3.92596	4.00641	4.48911	7.16005	1.25502	1.46419	21.96285	1.04585
72	3.95814	4.02250	4.50520	7.22441	1.27111	1.48028	22.36510	1.04585
74	3.97423	4.05468	4.53738	7.28877	1.30329	1.51246	22.81562	1.06194
76	4.00641	4.07077	4.55347	7.35313	1.31938	1.54464	23.34659	1.06194
78	4.10295	4.16731	4.68219	7.41749	1.36765	1.59291	23.92583	1.09412
80	4.32821	4.37648	4.93963	7.48185	1.39983	1.64118	24.58552	1.14239
82	4.53738	4.58565	5.18098	7.54621	1.43201	1.68945	25.30957	1.17457
84	4.76264	4.79482	5.43842	7.61057	1.48028	1.73772	26.11407	1.22284
86	4.97181	4.98790	5.69586	7.67493	1.52855	1.80208	27.01511	1.27111
88	5.18098	5.19707	5.95330	7.73929	1.59291	1.86644	27.99660	1.30329
90	5.40624	5.40624	6.21074	7.80365	1.65727	1.93080	29.07463	1.35156
92	5.61541	5.61541	6.46818	7.86801	1.72163	2.01125	30.26529	1.39983
94	5.84067	5.80849	6.72562	7.93237	1.80208	2.09170	31.58467	1.44810
96	6.04984	6.01766	6.98306	7.99673	1.88253	2.18824	33.01668	1.48028
98	6.25901	6.22683	7.22441	8.06109	1.96298	2.30087	34.60959	1.52855
100	6.37164	6.32337	7.35313	8.09327	2.01125	2.34914	35.44627	1.54464

Table B7. VOC emission rates for time period 3, summer 1996.

sum 3 km/hr	VOC (gr/mile)							
	LDGV	LDGT1	LDGT2	HDTV	LDDV	LDDT	HDDV	MC
4	60.19269	56.45981	70.94081	61.52816	1.57682	1.93080	8.62424	31.55249
6	40.33763	38.58382	46.72536	43.24992	1.48028	1.80208	8.09327	26.01753
8	30.68363	29.62169	35.15665	35.23710	1.38374	1.68945	7.59448	22.23638
10	24.97168	24.21545	28.38276	30.42619	1.30329	1.59291	7.12787	19.56544
12	21.31925	20.72392	24.07064	27.19210	1.22284	1.49637	6.70953	17.65073
14	18.87357	18.37478	21.22271	24.93950	1.15848	1.41592	6.32337	16.21872
16	17.03931	16.62097	19.09883	23.02479	1.09412	1.33547	5.96939	15.14069
18	15.62339	15.25332	17.45765	21.35143	1.02976	1.25502	5.63150	14.32010
20	14.48100	14.17529	16.17045	19.90333	0.96540	1.19066	5.32579	13.66041
22	13.56387	13.30643	15.10851	18.64831	0.91713	1.12630	5.05226	13.14553
24	12.79155	12.58238	14.23965	17.52201	0.86886	1.06194	4.79482	12.71110
26	12.14795	11.97096	13.51560	16.54052	0.83668	1.01367	4.55347	12.37321
28	11.58480	11.43999	12.88809	15.67166	0.78841	0.96540	4.32821	12.06750
30	11.08601	10.97338	12.34103	14.88325	0.75623	0.91713	4.11904	11.81006
32	10.65158	10.57113	11.92269	14.19138	0.72405	0.86886	3.92596	11.60089
34	10.24933	10.21715	11.50435	13.57996	0.69187	0.83668	3.74897	11.40781
36	9.91144	9.87926	11.13428	13.03290	0.65969	0.80450	3.58807	11.21473
38	9.58964	9.55746	10.79639	12.55020	0.62751	0.77232	3.44326	11.05383
40	9.30002	9.28393	10.49068	12.09968	0.59533	0.74014	3.29845	10.90902
42	9.02649	9.01040	10.20106	11.69743	0.57924	0.70796	3.16973	10.76421
44	8.76905	8.76905	9.94362	11.34345	0.56315	0.67578	3.04101	10.63549
46	8.54379	8.52770	9.70227	11.02165	0.53097	0.65969	2.92838	10.50677
48	8.33462	8.31853	9.47701	10.73203	0.51488	0.62751	2.83184	10.39414
50	8.12545	8.10936	9.26784	10.45850	0.49879	0.61142	2.73530	10.28151
52	7.94846	7.91628	9.07476	10.21715	0.48270	0.59533	2.63876	10.18497
54	7.77147	7.75538	8.89777	10.00798	0.46661	0.56315	2.55831	10.08843
56	7.61057	7.59448	8.72078	9.81490	0.45052	0.54706	2.47786	9.99189
58	7.46576	7.44967	8.57597	9.62182	0.43443	0.53097	2.41350	9.91144
60	7.32095	7.30486	8.43116	9.46092	0.43443	0.51488	2.33305	9.83099
62	7.20832	7.19223	8.30244	9.31611	0.41834	0.51488	2.28478	9.76663
64	7.09569	7.07960	8.17372	9.18739	0.40225	0.49879	2.22042	9.70227
66	6.98306	6.98306	8.07718	9.05867	0.40225	0.48270	2.17215	9.65400
68	6.88652	6.90261	7.96455	8.94604	0.38616	0.46661	2.12388	9.60573
70	6.80607	6.82216	7.88410	8.84950	0.37007	0.46661	2.07561	9.57355
72	6.72562	6.75780	7.80365	8.76905	0.37007	0.45052	2.02734	9.54137
74	6.66126	6.69344	7.72320	8.68860	0.37007	0.45052	1.99516	9.52528
76	6.58081	6.64517	7.64275	8.60815	0.35398	0.43443	1.96298	9.49310
78	6.54863	6.59690	7.59448	8.54379	0.35398	0.43443	1.93080	9.49310
80	6.53254	6.59690	7.57839	8.46334	0.35398	0.41834	1.89862	9.49310
82	6.51645	6.58081	7.57839	8.41507	0.33789	0.41834	1.88253	9.49310
84	6.51645	6.58081	7.56230	8.36680	0.33789	0.41834	1.85035	9.49310
86	6.50036	6.56472	7.54621	8.31853	0.33789	0.40225	1.83426	9.49310
88	6.50036	6.56472	7.53012	8.28635	0.33789	0.40225	1.81817	9.49310
90	6.70953	6.78998	7.80365	8.25417	0.32180	0.40225	1.80208	9.67009
92	6.99915	7.09569	8.15763	8.22199	0.32180	0.40225	1.78599	9.91144
94	7.27268	7.41749	8.52770	8.20590	0.32180	0.40225	1.78599	10.13670
96	7.56230	7.72320	8.88168	8.18981	0.32180	0.40225	1.76990	10.37805
98	7.85192	8.04500	9.25175	8.18981	0.32180	0.40225	1.76990	10.61940
100	7.99673	8.18981	9.42874	8.18981	0.32180	0.40225	1.76990	10.74812

Table B8. CO emission rates for time period 3, summer 1996.

sum 3 km/hr	CO (gr/mile)							
	LDGV	LDGT1	LDGT2	HDBGV	LDDV	LDDT	HDDV	MC
4	622.29684	562.28114	661.54035	562.84429	5.35797	5.95330	50.13644	238.32508
6	436.68260	399.51470	464.40567	502.55506	4.82700	5.37406	45.26117	177.64969
8	332.45158	305.21121	352.00093	450.23038	4.37648	4.87527	40.98123	137.53732
10	266.65957	245.00243	280.31998	404.74395	3.97423	4.42475	37.20008	110.08778
12	221.97764	204.06947	231.32593	365.08210	3.62025	4.02250	33.86945	90.69933
14	190.07117	174.97875	196.20146	330.44033	3.29845	3.66852	30.90889	76.62058
16	166.38669	153.54687	170.05521	300.09459	3.02492	3.36281	28.30231	66.12990
18	148.26935	137.27988	150.02316	273.46564	2.76748	3.08928	25.98535	58.13317
20	134.01361	124.58487	134.27105	250.05469	2.55831	2.84793	23.92583	51.90634
22	122.52535	114.43208	121.60822	229.41122	2.36523	2.62267	22.09157	46.95062
24	113.08052	106.12964	111.23017	211.19734	2.18824	2.42959	20.45039	42.92812
26	105.16424	99.16267	102.55766	195.09125	2.02734	2.25260	18.98620	39.59749
28	98.40644	93.19328	95.20453	180.83551	1.88253	2.10779	17.68291	36.79783
30	92.51750	87.94794	88.86507	168.17268	1.76990	1.96298	16.50834	34.36824
32	87.38479	83.70018	84.15070	156.94186	1.65727	1.83426	15.44640	32.26045
34	82.87959	79.79031	80.19256	146.96606	1.54464	1.72163	14.51318	30.37792
36	78.79273	76.17006	76.63667	138.08438	1.46419	1.62509	13.66041	28.68847
38	75.05985	72.79116	73.41867	130.18419	1.38374	1.52855	12.90418	27.15992
40	71.63268	69.60534	70.49029	123.15286	1.30329	1.44810	12.21231	25.72791
42	68.44686	66.61260	67.80326	116.89385	1.23893	1.38374	11.60089	24.42462
44	65.50239	63.79685	65.32540	111.32671	1.17457	1.31938	11.05383	23.20178
46	62.75100	61.15809	63.02453	106.40317	1.12630	1.25502	10.55504	22.07548
48	60.20878	58.68023	60.90065	102.02669	1.07803	1.20675	10.10452	21.01354
50	57.85964	56.37936	58.93767	98.16509	1.02976	1.15848	9.70227	20.03205
52	55.68749	54.25548	57.11950	94.78619	0.99758	1.11021	9.34829	19.13101
54	53.67624	52.30859	55.43005	91.82563	0.96540	1.07803	9.02649	18.27824
56	51.84198	50.55478	53.88541	89.25123	0.93322	1.04585	8.73687	17.50592
58	50.16862	48.96187	52.46949	87.06299	0.90104	1.01367	8.47943	16.79796
60	48.65616	47.56204	51.16620	85.19655	0.88495	0.98149	8.27026	16.15436
62	47.28851	46.32311	49.97554	83.66800	0.86886	0.96540	8.07718	15.57512
64	46.04958	45.24508	48.89751	82.44516	0.83668	0.93322	7.90019	15.06024
66	44.95546	44.32795	47.91602	81.51194	0.83668	0.91713	7.77147	14.59363
68	43.97397	43.55563	47.04716	80.86834	0.82059	0.90104	7.64275	14.19138
70	43.10511	42.92812	46.25875	80.49827	0.80450	0.90104	7.54621	13.82131
72	42.33279	42.39715	45.55079	80.41782	0.80450	0.88495	7.48185	13.49951
74	41.64092	41.96272	44.90719	80.59481	0.78841	0.88495	7.43358	13.22598
76	41.02950	41.60874	44.32795	81.04533	0.78841	0.88495	7.40140	12.96854
78	40.65943	41.39957	43.99006	81.78547	0.78841	0.88495	7.38531	12.82373
80	40.65943	41.39957	43.99006	82.81523	0.78841	0.88495	7.40140	12.82373
82	40.65943	41.39957	43.99006	84.13461	0.78841	0.88495	7.43358	12.82373
84	40.65943	41.39957	43.99006	85.77579	0.80450	0.88495	7.49794	12.82373
86	40.65943	41.39957	43.99006	87.73877	0.80450	0.90104	7.56230	12.82373
88	40.65943	41.39957	43.99006	90.05573	0.82059	0.91713	7.67493	12.82373
90	48.92969	50.28125	53.41880	92.74276	0.83668	0.93322	7.78756	15.70384
92	59.91916	62.07522	65.92073	95.83204	0.85277	0.94931	7.93237	19.53326
94	70.92472	73.88528	78.43875	99.37184	0.86886	0.96540	8.10936	23.36268
96	81.91419	85.67925	90.95677	103.39434	0.88495	0.98149	8.30244	27.19210
98	92.90366	97.48931	103.47479	107.94781	0.91713	1.01367	8.52770	31.02152
100	98.39035	103.37825	109.71771	110.42567	0.91713	1.02976	8.65642	32.95232

Table B9. NOx emission rates for time period 3, summer 1996.

sum 3 km/hr	Nox (gr/mile)							
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
4	4.21558	3.97423	4.73046	4.93963	2.34914	2.73530	41.20649	0.83668
6	3.90987	3.63634	4.34430	5.00399	2.22042	2.59049	39.03434	0.78841
8	3.73288	3.45935	4.13513	5.06835	2.10779	2.46177	37.05527	0.75623
10	3.62025	3.36281	4.02250	5.13271	2.01125	2.34914	35.25319	0.72405
12	3.53980	3.28236	3.94205	5.19707	1.91471	2.23651	33.61201	0.70796
14	3.47544	3.25018	3.89378	5.26143	1.81817	2.13997	32.13173	0.69187
16	3.44326	3.21800	3.84551	5.32579	1.75381	2.04343	30.76408	0.67578
18	3.41108	3.20191	3.82942	5.37406	1.67336	1.96298	29.52515	0.67578
20	3.39499	3.20191	3.81333	5.43842	1.60900	1.88253	28.39885	0.67578
22	3.39499	3.20191	3.79724	5.50278	1.56073	1.81817	27.38518	0.69187
24	3.37890	3.21800	3.79724	5.56714	1.49637	1.75381	26.45196	0.69187
26	3.37890	3.23409	3.79724	5.63150	1.46419	1.70554	25.61528	0.70796
28	3.39499	3.25018	3.79724	5.69586	1.41592	1.65727	24.85905	0.72405
30	3.39499	3.28236	3.79724	5.76022	1.36765	1.60900	24.18327	0.74014
32	3.41108	3.31454	3.81333	5.82458	1.33547	1.56073	23.57185	0.75623
34	3.44326	3.36281	3.87769	5.88894	1.30329	1.52855	23.02479	0.77232
36	3.45935	3.41108	3.90987	5.95330	1.28720	1.49637	22.54209	0.80450
38	3.49153	3.45935	3.95814	6.01766	1.25502	1.46419	22.10766	0.82059
40	3.52371	3.50762	4.00641	6.08202	1.23893	1.44810	21.73759	0.83668
42	3.53980	3.55589	4.03859	6.14638	1.22284	1.41592	21.41579	0.85277
44	3.57198	3.58807	4.07077	6.21074	1.20675	1.39983	21.15835	0.86886
46	3.58807	3.62025	4.10295	6.27510	1.19066	1.38374	20.93309	0.88495
48	3.62025	3.66852	4.13513	6.33946	1.17457	1.38374	20.77219	0.90104
50	3.63634	3.70070	4.16731	6.40382	1.17457	1.36765	20.64347	0.91713
52	3.66852	3.73288	4.19949	6.46818	1.17457	1.36765	20.56302	0.93322
54	3.68461	3.76506	4.23167	6.53254	1.17457	1.36765	20.54693	0.94931
56	3.70070	3.78115	4.24776	6.59690	1.17457	1.36765	20.54693	0.96540
58	3.71679	3.81333	4.27994	6.66126	1.17457	1.36765	20.61129	0.98149
60	3.74897	3.82942	4.29603	6.72562	1.17457	1.38374	20.72392	0.98149
62	3.76506	3.86160	4.32821	6.78998	1.19066	1.38374	20.86873	0.99758
64	3.78115	3.87769	4.34430	6.85434	1.19066	1.39983	21.06181	0.99758
66	3.79724	3.89378	4.36039	6.91870	1.20675	1.41592	21.31925	1.01367
68	3.82942	3.90987	4.39257	6.98306	1.22284	1.43201	21.60887	1.01367
70	3.84551	3.94205	4.40866	7.04742	1.25502	1.46419	21.96285	1.02976
72	3.86160	3.95814	4.44084	7.11178	1.27111	1.48028	22.36510	1.02976
74	3.89378	3.97423	4.45693	7.17614	1.30329	1.51246	22.81562	1.04585
76	3.92596	4.00641	4.48911	7.22441	1.31938	1.54464	23.34659	1.04585
78	4.02250	4.10295	4.60174	7.28877	1.36765	1.59291	23.92583	1.06194
80	4.23167	4.29603	4.84309	7.35313	1.39983	1.64118	24.58552	1.11021
82	4.44084	4.50520	5.10053	7.41749	1.43201	1.68945	25.30957	1.15848
84	4.65001	4.71437	5.34188	7.48185	1.48028	1.73772	26.11407	1.19066
86	4.85918	4.90745	5.59932	7.54621	1.52855	1.80208	27.01511	1.23893
88	5.06835	5.11662	5.85676	7.61057	1.59291	1.86644	27.99660	1.28720
90	5.27752	5.30970	6.09811	7.67493	1.65727	1.93080	29.07463	1.31938
92	5.50278	5.51887	6.35555	7.73929	1.72163	2.01125	30.26529	1.36765
94	5.71195	5.71195	6.59690	7.80365	1.80208	2.09170	31.58467	1.41592
96	5.92112	5.92112	6.85434	7.86801	1.88253	2.18824	33.01668	1.44810
98	6.13029	6.13029	7.11178	7.93237	1.96298	2.30087	34.60959	1.49637
100	6.22683	6.22683	7.22441	7.96455	2.01125	2.34914	35.44627	1.51246

Table B10. VOC emission rates for time period 4, summer 1996.

sum 4 km/hr	VOC (gr/mile)							
	LDGV	LDGT1	LDGT2	HDTV	LDDV	LDDT	HDDV	MC
4	47.88384	45.59906	58.53542	41.27085	1.57682	1.93080	8.62424	29.78259
6	33.24194	32.24436	40.48244	31.72948	1.48028	1.80208	8.09327	24.21545
8	25.67964	25.11649	31.16633	26.95075	1.38374	1.68945	7.59448	20.40212
10	21.07790	20.70783	25.45438	23.74884	1.30329	1.59291	7.12787	17.73118
12	18.02080	17.76336	21.70541	21.38361	1.22284	1.49637	6.70953	15.78429
14	15.91301	15.71993	19.11492	19.56544	1.15848	1.41592	6.32337	14.35228
16	14.33619	14.19138	17.16803	18.00471	1.09412	1.33547	5.96939	13.27425
18	13.11335	13.01681	15.68775	16.63706	1.02976	1.25502	5.63150	12.43757
20	12.14795	12.06750	14.49709	15.43031	0.96540	1.19066	5.32579	11.77788
22	11.35954	11.31127	13.53169	14.38446	0.91713	1.12630	5.05226	11.26300
24	10.69985	10.68376	12.74328	13.45124	0.86886	1.06194	4.79482	10.82857
26	10.15279	10.13670	12.08359	12.61456	0.83668	1.01367	4.55347	10.47459
28	9.67009	9.68618	11.52044	11.89051	0.78841	0.96540	4.32821	10.18497
30	9.25175	9.26784	11.02165	11.23082	0.75623	0.91713	4.11904	9.92753
32	8.88168	8.92995	10.63549	10.65158	0.72405	0.86886	3.92596	9.70227
34	8.54379	8.62424	10.24933	10.13670	0.69187	0.83668	3.74897	9.50919
36	8.23808	8.33462	9.92753	9.67009	0.65969	0.80450	3.58807	9.33220
38	7.96455	8.06109	9.62182	9.25175	0.62751	0.77232	3.44326	9.17130
40	7.70711	7.81974	9.33220	8.88168	0.59533	0.74014	3.29845	9.01040
42	7.48185	7.57839	9.07476	8.54379	0.57924	0.70796	3.16973	8.88168
44	7.25659	7.36922	8.84950	8.23808	0.56315	0.67578	3.04101	8.73687
46	7.06351	7.17614	8.62424	7.96455	0.53097	0.65969	2.92838	8.60815
48	6.87043	6.98306	8.41507	7.72320	0.51488	0.62751	2.83184	8.49552
50	6.70953	6.80607	8.22199	7.49794	0.49879	0.61142	2.73530	8.38289
52	6.54863	6.64517	8.04500	7.28877	0.48270	0.59533	2.63876	8.28635
54	6.38773	6.50036	7.88410	7.11178	0.46661	0.56315	2.55831	8.18981
56	6.25901	6.35555	7.73929	6.95088	0.45052	0.54706	2.47786	8.09327
58	6.13029	6.24292	7.59448	6.78998	0.43443	0.53097	2.41350	8.01282
60	6.01766	6.11420	7.46576	6.66126	0.43443	0.51488	2.33305	7.93237
62	5.90503	6.01766	7.33704	6.53254	0.41834	0.51488	2.28478	7.86801
64	5.80849	5.92112	7.24050	6.41991	0.40225	0.49879	2.22042	7.80365
66	5.71195	5.84067	7.14396	6.32337	0.40225	0.48270	2.17215	7.75538
68	5.63150	5.77631	7.04742	6.22683	0.38616	0.46661	2.12388	7.70711
70	5.56714	5.69586	6.96697	6.14638	0.37007	0.46661	2.07561	7.67493
72	5.50278	5.64759	6.88652	6.08202	0.37007	0.45052	2.02734	7.64275
74	5.43842	5.59932	6.82216	6.01766	0.37007	0.45052	1.99516	7.61057
76	5.37406	5.55105	6.75780	5.95330	0.35398	0.43443	1.96298	7.59448
78	5.34188	5.51887	6.72562	5.90503	0.35398	0.43443	1.93080	7.57839
80	5.34188	5.51887	6.70953	5.85676	0.35398	0.41834	1.89862	7.57839
82	5.32579	5.50278	6.70953	5.80849	0.33789	0.41834	1.88253	7.57839
84	5.32579	5.50278	6.70953	5.77631	0.33789	0.41834	1.85035	7.57839
86	5.32579	5.50278	6.69344	5.74413	0.33789	0.40225	1.83426	7.57839
88	5.32579	5.50278	6.69344	5.71195	0.33789	0.40225	1.81817	7.57839
90	5.51887	5.71195	6.95088	5.69586	0.32180	0.40225	1.80208	7.77147
92	5.77631	5.98548	7.30486	5.67977	0.32180	0.40225	1.78599	7.99673
94	6.04984	6.27510	7.65884	5.66368	0.32180	0.40225	1.78599	8.23808
96	6.30728	6.56472	8.02891	5.66368	0.32180	0.40225	1.76990	8.47943
98	6.56472	6.85434	8.38289	5.66368	0.32180	0.40225	1.76990	8.72078
100	6.69344	6.98306	8.55988	5.67977	0.32180	0.40225	1.76990	8.84950

Table B11. CO emission rates for time period 4, summer 1996.

sum 4 km/hr	CO (gr/mile)							
	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC
4	489.21645	447.33418	582.40973	416.07131	5.35797	5.95330	50.13644	187.25542
6	343.44105	316.94082	408.79863	371.50201	4.82700	5.37406	45.26117	139.59684
8	261.76821	242.04187	310.00603	332.82165	4.37648	4.87527	40.98123	108.07653
10	210.24803	194.36720	247.06195	299.19355	3.97423	4.42475	37.20008	86.49984
12	175.23619	161.96194	204.02120	269.87757	3.62025	4.02250	33.86945	71.26261
14	150.21624	138.88888	173.12840	244.26229	3.29845	3.66852	30.90889	60.19269
16	131.63229	121.86566	150.13579	221.83283	3.02492	3.36281	28.30231	51.95461
18	117.39264	108.91321	132.50115	202.15476	2.76748	3.08928	25.98535	45.67951
20	106.19400	98.79260	118.61548	184.84192	2.55831	2.84793	23.92583	40.78815
22	97.15142	90.66715	107.44902	169.58860	2.36523	2.62267	22.09157	36.89437
24	89.71784	84.02198	98.30990	156.12127	2.18824	2.42959	20.45039	33.74073
26	83.49101	78.43875	90.66715	144.21467	2.02734	2.25260	18.98620	31.11806
28	78.16522	73.66002	84.18288	133.67572	1.88253	2.10779	17.68291	28.91373
30	73.54739	69.47662	78.58356	124.32743	1.76990	1.96298	16.50834	27.01511
32	69.52489	66.14599	74.48061	116.02499	1.65727	1.83426	15.44640	25.34175
34	65.98509	63.07280	71.03735	108.63968	1.54464	1.72163	14.51318	23.87756
36	62.78318	60.22487	67.94807	102.07496	1.46419	1.62509	13.66041	22.54209
38	59.87089	57.60220	65.16450	96.23429	1.38374	1.52855	12.90418	21.33534
40	57.18386	55.14043	62.62228	91.03722	1.30329	1.44810	12.21231	20.22513
42	54.72209	52.82347	60.28923	86.40330	1.23893	1.38374	11.60089	19.19537
44	52.42122	50.66741	58.14926	82.30035	1.17457	1.31938	11.05383	18.22997
46	50.29734	48.64007	56.17019	78.64792	1.12630	1.25502	10.55504	17.34502
48	48.31827	46.74145	54.33593	75.41383	1.07803	1.20675	10.10452	16.50834
50	46.50010	44.97155	52.63039	72.56590	1.02976	1.15848	9.70227	15.73602
52	44.81065	43.34646	51.05357	70.07195	0.99758	1.11021	9.34829	15.02806
54	43.26601	41.85009	49.60547	67.86762	0.96540	1.07803	9.02649	14.36837
56	41.83400	40.49853	48.27000	65.98509	0.93322	1.04585	8.73687	13.75695
58	40.53071	39.27569	47.03107	64.36000	0.90104	1.01367	8.47943	13.20989
60	39.34005	38.18157	45.90477	62.97626	0.88495	0.98149	8.27026	12.69501
62	38.27811	37.21617	44.87501	61.84996	0.86886	0.96540	8.07718	12.24449
64	37.31271	36.37949	43.92570	60.94892	0.83668	0.93322	7.90019	11.82615
66	36.44385	35.65544	43.07293	60.25705	0.83668	0.91713	7.77147	11.47217
68	35.65544	35.02793	42.31670	59.77435	0.82059	0.90104	7.64275	11.15037
70	34.96357	34.49696	41.62483	59.51691	0.80450	0.90104	7.54621	10.86075
72	34.35215	34.06253	40.99732	59.43646	0.80450	0.88495	7.48185	10.61940
74	33.80509	33.69246	40.43417	59.58127	0.78841	0.88495	7.43358	10.39414
76	33.29021	33.37066	39.91929	59.91916	0.78841	0.88495	7.40140	10.18497
78	33.00059	33.19367	39.62967	60.46622	0.78841	0.88495	7.38531	10.07234
80	33.00059	33.19367	39.62967	61.22245	0.78841	0.88495	7.40140	10.07234
82	33.00059	33.19367	39.62967	62.18785	0.78841	0.88495	7.43358	10.07234
84	33.00059	33.19367	39.62967	63.41069	0.80450	0.88495	7.49794	10.07234
86	33.00059	33.19367	39.62967	64.85879	0.80450	0.90104	7.56230	10.07234
88	33.00059	33.19367	39.62967	66.56433	0.82059	0.91713	7.67493	10.07234
90	39.56531	40.16064	48.02865	68.55949	0.83668	0.93322	7.78756	12.34103
92	48.30218	49.44457	59.19511	70.84427	0.85277	0.94931	7.93237	15.34986
94	57.03905	58.71241	70.36157	73.46694	0.86886	0.96540	8.10936	18.35869
96	65.77592	67.98025	81.52803	76.42750	0.88495	0.98149	8.30244	21.36752
98	74.51279	77.24809	92.69449	79.79031	0.91713	1.01367	8.52770	24.37635
100	78.87318	81.88201	98.27772	81.64066	0.91713	1.02976	8.65642	25.88881

Table B12. NOx emission rates for time period 4, summer 1996.

sum 4 km/hr	Nox (gr/mile)							
	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC
4	4.73046	4.29603	5.13271	5.42233	2.34914	2.73530	41.20649	0.94931
6	4.40866	3.95814	4.74655	5.48669	2.22042	2.59049	39.03434	0.88495
8	4.21558	3.76506	4.53738	5.55105	2.10779	2.46177	37.05527	0.85277
10	4.10295	3.65243	4.40866	5.63150	2.01125	2.34914	35.25319	0.82059
12	4.00641	3.58807	4.32821	5.69586	1.91471	2.23651	33.61201	0.78841
14	3.95814	3.53980	4.27994	5.76022	1.81817	2.13997	32.13173	0.77232
16	3.90987	3.52371	4.23167	5.84067	1.75381	2.04343	30.76408	0.77232
18	3.87769	3.50762	4.21558	5.90503	1.67336	1.96298	29.52515	0.75623
20	3.86160	3.50762	4.19949	5.96939	1.60900	1.88253	28.39885	0.75623
22	3.84551	3.50762	4.19949	6.04984	1.56073	1.81817	27.38518	0.77232
24	3.84551	3.52371	4.19949	6.11420	1.49637	1.75381	26.45196	0.78841
26	3.84551	3.55589	4.19949	6.17856	1.46419	1.70554	25.61528	0.78841
28	3.84551	3.57198	4.19949	6.25901	1.41592	1.65727	24.85905	0.80450
30	3.86160	3.60416	4.21558	6.32337	1.36765	1.60900	24.18327	0.83668
32	3.87769	3.63634	4.23167	6.38773	1.33547	1.56073	23.57185	0.85277
34	3.89378	3.70070	4.27994	6.46818	1.30329	1.52855	23.02479	0.86886
36	3.92596	3.74897	4.34430	6.53254	1.28720	1.49637	22.54209	0.90104
38	3.95814	3.79724	4.37648	6.61299	1.25502	1.46419	22.10766	0.91713
40	3.99032	3.84551	4.42475	6.67735	1.23893	1.44810	21.73759	0.93322
42	4.02250	3.89378	4.47302	6.74171	1.22284	1.41592	21.41579	0.96540
44	4.03859	3.94205	4.50520	6.82216	1.20675	1.39983	21.15835	0.98149
46	4.07077	3.99032	4.55347	6.88652	1.19066	1.38374	20.93309	0.99758
48	4.10295	4.02250	4.58565	6.95088	1.17457	1.38374	20.77219	1.01367
50	4.11904	4.07077	4.61783	7.03133	1.17457	1.36765	20.64347	1.04585
52	4.15122	4.10295	4.65001	7.09569	1.17457	1.36765	20.56302	1.06194
54	4.16731	4.13513	4.68219	7.16005	1.17457	1.36765	20.54693	1.06194
56	4.19949	4.16731	4.69828	7.24050	1.17457	1.36765	20.54693	1.07803
58	4.21558	4.19949	4.73046	7.30486	1.17457	1.36765	20.61129	1.09412
60	4.24776	4.21558	4.76264	7.36922	1.17457	1.38374	20.72392	1.11021
62	4.26385	4.24776	4.77873	7.44967	1.19066	1.38374	20.86873	1.11021
64	4.27994	4.26385	4.81091	7.51403	1.19066	1.39983	21.06181	1.12630
66	4.31212	4.29603	4.82700	7.57839	1.20675	1.41592	21.31925	1.12630
68	4.34430	4.31212	4.85918	7.65884	1.22284	1.43201	21.60887	1.14239
70	4.36039	4.34430	4.89136	7.72320	1.25502	1.46419	21.96285	1.14239
72	4.39257	4.36039	4.90745	7.80365	1.27111	1.48028	22.36510	1.15848
74	4.42475	4.39257	4.93963	7.86801	1.30329	1.51246	22.81562	1.15848
76	4.45693	4.42475	4.97181	7.93237	1.31938	1.54464	23.34659	1.17457
78	4.56956	4.52129	5.10053	8.01282	1.36765	1.59291	23.92583	1.20675
80	4.81091	4.74655	5.37406	8.07718	1.39983	1.64118	24.58552	1.25502
82	5.05226	4.97181	5.66368	8.14154	1.43201	1.68945	25.30957	1.30329
84	5.29361	5.19707	5.93721	8.22199	1.48028	1.73772	26.11407	1.35156
86	5.53496	5.42233	6.21074	8.28635	1.52855	1.80208	27.01511	1.39983
88	5.77631	5.64759	6.50036	8.35071	1.59291	1.86644	27.99660	1.44810
90	6.01766	5.87285	6.77389	8.43116	1.65727	1.93080	29.07463	1.49637
92	6.25901	6.08202	7.04742	8.49552	1.72163	2.01125	30.26529	1.54464
94	6.50036	6.30728	7.33704	8.55988	1.80208	2.09170	31.58467	1.59291
96	6.74171	6.53254	7.61057	8.64033	1.88253	2.18824	33.01668	1.64118
98	6.98306	6.75780	7.88410	8.70469	1.96298	2.30087	34.60959	1.68945
100	7.11178	6.87043	8.02891	8.73687	2.01125	2.34914	35.44627	1.70554

Table B13. VOC emission rates for time period 1, winter 1996.

win 1 km/hr	VOC (gr/mile)							
	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC
4	67.09530	61.99477	76.36314	31.93865	1.57682	1.93080	8.62424	32.63052
6	47.49768	44.76238	54.44856	28.54366	1.48028	1.80208	8.09327	25.34175
8	36.66911	34.88312	42.13971	25.59919	1.38374	1.68945	7.59448	20.36994
10	29.87913	28.52757	34.30388	23.00870	1.30329	1.59291	7.12787	16.86232
12	25.24521	24.16718	28.94591	20.74001	1.22284	1.49637	6.70953	14.32010
14	21.89849	21.02963	25.08431	18.76094	1.15848	1.41592	6.32337	12.43757
16	19.40454	18.68049	22.20420	17.00713	1.09412	1.33547	5.96939	11.02165
18	17.47374	16.87841	19.98378	15.46249	1.02976	1.25502	5.63150	9.92753
20	15.94519	15.46249	18.22997	14.09484	0.96540	1.19066	5.32579	9.07476
22	14.70626	14.30401	16.81405	12.88809	0.91713	1.12630	5.05226	8.38289
24	13.67650	13.35470	15.63948	11.81006	0.86886	1.06194	4.79482	7.83583
26	12.82373	12.55020	14.65799	10.86075	0.83668	1.01367	4.55347	7.36922
28	12.08359	11.85833	13.82131	10.00798	0.78841	0.96540	4.32821	6.98306
30	11.43999	11.26300	13.09726	9.25175	0.75623	0.91713	4.11904	6.64517
32	10.84466	10.76421	12.55020	8.57597	0.72405	0.86886	3.92596	6.35555
34	10.29760	10.26542	11.98705	7.98064	0.69187	0.83668	3.74897	6.09811
36	9.81490	9.81490	11.47217	7.43358	0.65969	0.80450	3.58807	5.85676
38	9.36438	9.39656	11.02165	6.95088	0.62751	0.77232	3.44326	5.64759
40	8.96213	8.99431	10.60331	6.51645	0.59533	0.74014	3.29845	5.45451
42	8.59206	8.64033	10.21715	6.13029	0.57924	0.70796	3.16973	5.26143
44	8.23808	8.30244	9.86317	5.77631	0.56315	0.67578	3.04101	5.08444
46	7.91628	7.99673	9.52528	5.45451	0.53097	0.65969	2.92838	4.92354
48	7.62666	7.69102	9.23566	5.18098	0.51488	0.62751	2.83184	4.76264
50	7.35313	7.43358	8.94604	4.92354	0.49879	0.61142	2.73530	4.61783
52	7.09569	7.17614	8.68860	4.68219	0.48270	0.59533	2.63876	4.48911
54	6.87043	6.95088	8.43116	4.47302	0.46661	0.56315	2.55831	4.36039
56	6.64517	6.72562	8.20590	4.27994	0.45052	0.54706	2.47786	4.24776
58	6.45209	6.53254	7.99673	4.10295	0.43443	0.53097	2.41350	4.13513
60	6.25901	6.35555	7.80365	3.95814	0.43443	0.51488	2.33305	4.03859
62	6.09811	6.19465	7.62666	3.81333	0.41834	0.51488	2.28478	3.94205
64	5.93721	6.04984	7.46576	3.68461	0.40225	0.49879	2.22042	3.86160
66	5.80849	5.92112	7.32095	3.57198	0.40225	0.48270	2.17215	3.79724
68	5.67977	5.80849	7.19223	3.47544	0.38616	0.46661	2.12388	3.73288
70	5.55105	5.71195	7.06351	3.37890	0.37007	0.46661	2.07561	3.68461
72	5.45451	5.61541	6.95088	3.29845	0.37007	0.45052	2.02734	3.65243
74	5.35797	5.53496	6.85434	3.21800	0.37007	0.45052	1.99516	3.62025
76	5.26143	5.47060	6.75780	3.16973	0.35398	0.43443	1.96298	3.58807
78	5.21316	5.42233	6.70953	3.10537	0.35398	0.43443	1.93080	3.57198
80	5.21316	5.42233	6.70953	3.05710	0.35398	0.41834	1.89862	3.57198
82	5.21316	5.42233	6.70953	3.00883	0.33789	0.41834	1.88253	3.57198
84	5.21316	5.42233	6.70953	2.97665	0.33789	0.41834	1.85035	3.57198
86	5.21316	5.42233	6.70953	2.96056	0.33789	0.40225	1.83426	3.57198
88	5.21316	5.42233	6.70953	2.92838	0.33789	0.40225	1.81817	3.57198
90	5.55105	5.77631	7.14396	2.91229	0.32180	0.40225	1.80208	3.81333
92	6.00157	6.25901	7.72320	2.91229	0.32180	0.40225	1.78599	4.11904
94	6.45209	6.72562	8.30244	2.91229	0.32180	0.40225	1.78599	4.44084
96	6.90261	7.19223	8.88168	2.91229	0.32180	0.40225	1.76990	4.76264
98	7.35313	7.65884	9.46092	2.91229	0.32180	0.40225	1.76990	5.06835
100	7.57839	7.90019	9.76663	2.92838	0.32180	0.40225	1.76990	5.22925

Table B14. CO emission rates for time period 1, winter 1996.

win 1 km/hr	CO (gr/mile)							
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
4	765.30476	698.77261	851.59543	462.08871	5.35797	5.95330	50.13644	264.02081
6	535.44302	494.83186	596.27931	412.57978	4.82700	5.37406	45.26117	196.79679
8	408.04240	378.32417	452.00028	369.63557	4.37648	4.87527	40.98123	152.37230
10	328.09119	304.39062	360.38382	332.29068	3.97423	4.42475	37.20008	121.94611
12	273.91616	254.23809	297.82590	299.72452	3.62025	4.02250	33.86945	100.46596
14	235.20362	218.56656	252.96698	271.27740	3.29845	3.66852	30.90889	84.87475
16	206.43470	192.25941	219.56414	246.37008	3.02492	3.36281	28.30231	73.25777
18	184.34313	172.22736	193.93277	224.50377	2.76748	3.08928	25.98535	64.40827
20	166.94984	156.57179	173.73982	205.27622	2.55831	2.84793	23.92583	57.50566
22	152.90327	144.03768	157.48892	188.34954	2.36523	2.62267	22.09157	52.01897
24	141.33456	133.74008	144.15031	173.38584	2.18824	2.42959	20.45039	47.56204
26	131.61620	125.09975	132.99994	160.15986	2.02734	2.25260	18.98620	43.87743
28	123.31376	117.68226	123.53902	148.46243	1.88253	2.10779	17.68291	40.75597
30	116.08935	111.18190	115.38139	138.06829	1.76990	1.96298	16.50834	38.08503
32	109.79816	105.92047	109.33155	128.84872	1.65727	1.83426	15.44640	35.73589
34	104.21493	100.94866	104.21493	120.65891	1.54464	1.72163	14.51318	33.66028
36	99.16267	96.37910	99.64537	113.35405	1.46419	1.62509	13.66041	31.77775
38	94.56093	92.11525	95.51024	106.86978	1.38374	1.52855	12.90418	30.07221
40	90.32926	88.14102	91.74518	101.09347	1.30329	1.44810	12.21231	28.51148
42	86.41939	84.39205	88.30192	95.96076	1.23893	1.38374	11.60089	27.06338
44	82.81523	80.88443	85.13219	91.40729	1.17457	1.31938	11.05383	25.71182
46	79.46851	77.58598	82.20381	87.35261	1.12630	1.25502	10.55504	24.45680
48	76.36314	74.51279	79.48460	83.76454	1.07803	1.20675	10.10452	23.28223
50	73.49912	71.66486	76.97456	80.59481	1.02976	1.15848	9.70227	22.18811
52	70.84427	69.02610	74.65760	77.81124	0.99758	1.11021	9.34829	21.19053
54	68.39859	66.61260	72.51763	75.38165	0.96540	1.07803	9.02649	20.25731
56	66.16208	64.40827	70.52247	73.27386	0.93322	1.04585	8.73687	19.40454
58	64.10256	62.42920	68.70430	71.47178	0.90104	1.01367	8.47943	18.61613
60	62.23612	60.65930	67.03094	69.94323	0.88495	0.98149	8.27026	17.90817
62	60.54667	59.09857	65.50239	68.68821	0.86886	0.96540	8.07718	17.26457
64	59.01812	57.73092	64.11865	67.69063	0.83668	0.93322	7.90019	16.68533
66	57.63438	56.55635	62.84754	66.91831	0.83668	0.91713	7.77147	16.17045
68	56.41154	55.55877	61.70515	66.38734	0.82059	0.90104	7.64275	15.71993
70	55.30133	54.72209	60.65930	66.09772	0.80450	0.90104	7.54621	15.31768
72	54.31984	54.01413	59.72608	66.01727	0.80450	0.88495	7.48185	14.96370
74	53.41880	53.41880	58.87331	66.16208	0.78841	0.88495	7.43358	14.64190
76	52.61430	52.90392	58.10099	66.53215	0.78841	0.88495	7.40140	14.36837
78	52.13160	52.61430	57.65047	67.14357	0.78841	0.88495	7.38531	14.20747
80	52.13160	52.61430	57.65047	67.98025	0.78841	0.88495	7.40140	14.20747
82	52.13160	52.61430	57.65047	69.07437	0.78841	0.88495	7.43358	14.20747
84	52.13160	52.61430	57.65047	70.40984	0.80450	0.88495	7.49794	14.20747
86	52.13160	52.61430	57.65047	72.03493	0.80450	0.90104	7.56230	14.20747
88	52.13160	52.61430	57.65047	73.93355	0.82059	0.91713	7.67493	14.20747
90	62.39702	63.52332	69.75015	76.13788	0.83668	0.93322	7.78756	17.39329
92	76.02525	78.03650	85.82406	78.68010	0.85277	0.94931	7.93237	21.64105
94	89.65348	92.53359	101.89797	81.59239	0.86886	0.96540	8.10936	25.88881
96	103.29780	107.04677	117.97188	84.89084	0.88495	0.98149	8.30244	30.13657
98	116.92603	121.54386	134.06188	88.62372	0.91713	1.01367	8.52770	34.36824
100	123.74819	128.80045	142.09079	90.66715	0.91713	1.02976	8.65642	36.49212

Table B15. NOx emission rates for time period 1, winter 1996.

win 1 km/hr	Nox (gr/mile)							
	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC
4	5.87285	5.18098	6.25901	5.79240	2.34914	2.73530	41.20649	1.14239
6	5.45451	4.76264	5.77631	5.85676	2.22042	2.59049	39.03434	1.07803
8	5.21316	4.52129	5.51887	5.93721	2.10779	2.46177	37.05527	1.02976
10	5.06835	4.39257	5.35797	6.01766	2.01125	2.34914	35.25319	0.99758
12	4.95572	4.29603	5.24534	6.08202	1.91471	2.23651	33.61201	0.96540
14	4.87527	4.23167	5.18098	6.16247	1.81817	2.13997	32.13173	0.94931
16	4.81091	4.19949	5.13271	6.24292	1.75381	2.04343	30.76408	0.93322
18	4.77873	4.18340	5.10053	6.30728	1.67336	1.96298	29.52515	0.93322
20	4.74655	4.16731	5.06835	6.38773	1.60900	1.88253	28.39885	0.93322
22	4.71437	4.18340	5.05226	6.45209	1.56073	1.81817	27.38518	0.93322
24	4.71437	4.18340	5.05226	6.53254	1.49637	1.75381	26.45196	0.94931
26	4.69828	4.19949	5.05226	6.61299	1.46419	1.70554	25.61528	0.96540
28	4.69828	4.23167	5.05226	6.67735	1.41592	1.65727	24.85905	0.99758
30	4.71437	4.24776	5.06835	6.75780	1.36765	1.60900	24.18327	1.01367
32	4.71437	4.29603	5.08444	6.83825	1.33547	1.56073	23.57185	1.04585
34	4.74655	4.36039	5.14880	6.90261	1.30329	1.52855	23.02479	1.06194
36	4.77873	4.40866	5.21316	6.98306	1.28720	1.49637	22.54209	1.09412
38	4.81091	4.47302	5.26143	7.06351	1.25502	1.46419	22.10766	1.12630
40	4.84309	4.53738	5.32579	7.12787	1.23893	1.44810	21.73759	1.14239
42	4.87527	4.58565	5.37406	7.20832	1.22284	1.41592	21.41579	1.17457
44	4.90745	4.63392	5.40624	7.28877	1.20675	1.39983	21.15835	1.19066
46	4.93963	4.68219	5.45451	7.35313	1.19066	1.38374	20.93309	1.22284
48	4.97181	4.73046	5.50278	7.43358	1.17457	1.38374	20.77219	1.23893
50	5.00399	4.76264	5.53496	7.51403	1.17457	1.36765	20.64347	1.27111
52	5.02008	4.81091	5.56714	7.57839	1.17457	1.36765	20.56302	1.28720
54	5.05226	4.84309	5.61541	7.65884	1.17457	1.36765	20.54693	1.30329
56	5.08444	4.87527	5.64759	7.73929	1.17457	1.36765	20.54693	1.31938
58	5.11662	4.90745	5.67977	7.80365	1.17457	1.36765	20.61129	1.33547
60	5.13271	4.93963	5.71195	7.88410	1.17457	1.38374	20.72392	1.35156
62	5.16489	4.97181	5.72804	7.96455	1.19066	1.38374	20.86873	1.36765
64	5.19707	4.98790	5.76022	8.02891	1.19066	1.39983	21.06181	1.36765
66	5.22925	5.02008	5.79240	8.10936	1.20675	1.41592	21.31925	1.38374
68	5.24534	5.05226	5.82458	8.17372	1.22284	1.43201	21.60887	1.39983
70	5.29361	5.06835	5.85676	8.25417	1.25502	1.46419	21.96285	1.39983
72	5.32579	5.10053	5.88894	8.33462	1.27111	1.48028	22.36510	1.41592
74	5.35797	5.13271	5.92112	8.39898	1.30329	1.51246	22.81562	1.41592
76	5.40624	5.16489	5.95330	8.47943	1.31938	1.54464	23.34659	1.43201
78	5.55105	5.29361	6.11420	8.55988	1.36765	1.59291	23.92583	1.46419
80	5.84067	5.55105	6.45209	8.62424	1.39983	1.64118	24.58552	1.52855
82	6.13029	5.80849	6.77389	8.70469	1.43201	1.68945	25.30957	1.57682
84	6.43600	6.08202	7.11178	8.78514	1.48028	1.73772	26.11407	1.64118
86	6.72562	6.33946	7.44967	8.84950	1.52855	1.80208	27.01511	1.70554
88	7.01524	6.61299	7.78756	8.92995	1.59291	1.86644	27.99660	1.75381
90	7.30486	6.87043	8.12545	9.01040	1.65727	1.93080	29.07463	1.81817
92	7.61057	7.12787	8.44725	9.07476	1.72163	2.01125	30.26529	1.88253
94	7.90019	7.40140	8.78514	9.15521	1.80208	2.09170	31.58467	1.93080
96	8.18981	7.65884	9.12303	9.23566	1.88253	2.18824	33.01668	1.99516
98	8.49552	7.91628	9.46092	9.30002	1.96298	2.30087	34.60959	2.05952
100	8.64033	8.06109	9.62182	9.34829	2.01125	2.34914	35.44627	2.09170

Table B16. VOC emission rates for time period 2, winter 1996.

win 2 km/hr	VOC (gr/mile)							
	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC
4	54.31984	51.35928	64.85879	35.38191	1.57682	1.93080	8.62424	28.88155
6	38.22984	36.91046	45.98522	29.49297	1.48028	1.80208	8.09327	22.59036
8	29.54124	28.83328	35.70371	25.84054	1.38374	1.68945	7.59448	18.27824
10	24.13500	23.70057	29.25162	23.05697	1.30329	1.59291	7.12787	15.25332
12	20.48257	20.22513	24.87514	20.80437	1.22284	1.49637	6.70953	13.04899
14	17.89208	17.74727	21.78586	18.93793	1.15848	1.41592	6.32337	11.42390
16	15.96128	15.89692	19.48499	17.29675	1.09412	1.33547	5.96939	10.20106
18	14.46491	14.46491	17.69900	15.86474	1.02976	1.25502	5.63150	9.25175
20	13.27425	13.33861	16.28308	14.59363	0.96540	1.19066	5.32579	8.51161
22	12.30885	12.42148	15.14069	13.46733	0.91713	1.12630	5.05226	7.91628
24	11.50435	11.66525	14.20747	12.48584	0.86886	1.06194	4.79482	7.44967
26	10.82857	11.02165	13.41906	11.60089	0.83668	1.01367	4.55347	7.04742
28	10.24933	10.47459	12.74328	10.82857	0.78841	0.96540	4.32821	6.70953
30	9.75054	9.99189	12.16404	10.12061	0.75623	0.91713	4.11904	6.41991
32	9.30002	9.58964	11.71352	9.50919	0.72405	0.86886	3.92596	6.16247
34	8.88168	9.20348	11.26300	8.94604	0.69187	0.83668	3.74897	5.93721
36	8.49552	8.84950	10.86075	8.44725	0.65969	0.80450	3.58807	5.74413
38	8.15763	8.52770	10.50677	8.01282	0.62751	0.77232	3.44326	5.55105
40	7.85192	8.22199	10.16888	7.61057	0.59533	0.74014	3.29845	5.39015
42	7.56230	7.93237	9.86317	7.25659	0.57924	0.70796	3.16973	5.22925
44	7.28877	7.67493	9.57355	6.91870	0.56315	0.67578	3.04101	5.06835
46	7.04742	7.43358	9.31611	6.62908	0.53097	0.65969	2.92838	4.93963
48	6.80607	7.19223	9.05867	6.37164	0.51488	0.62751	2.83184	4.79482
50	6.59690	6.98306	8.83341	6.13029	0.49879	0.61142	2.73530	4.66610
52	6.40382	6.78998	8.62424	5.92112	0.48270	0.59533	2.63876	4.55347
54	6.22683	6.59690	8.43116	5.72804	0.46661	0.56315	2.55831	4.44084
56	6.04984	6.43600	8.25417	5.55105	0.45052	0.54706	2.47786	4.34430
58	5.88894	6.29119	8.07718	5.39015	0.43443	0.53097	2.41350	4.24776
60	5.76022	6.14638	7.93237	5.24534	0.43443	0.51488	2.33305	4.16731
62	5.61541	6.01766	7.78756	5.11662	0.41834	0.51488	2.28478	4.08686
64	5.50278	5.90503	7.65884	5.00399	0.40225	0.49879	2.22042	4.02250
66	5.39015	5.80849	7.53012	4.89136	0.40225	0.48270	2.17215	3.95814
68	5.29361	5.71195	7.43358	4.79482	0.38616	0.46661	2.12388	3.90987
70	5.19707	5.63150	7.33704	4.71437	0.37007	0.46661	2.07561	3.86160
72	5.11662	5.56714	7.24050	4.63392	0.37007	0.45052	2.02734	3.82942
74	5.05226	5.50278	7.16005	4.56956	0.37007	0.45052	1.99516	3.79724
76	4.97181	5.43842	7.09569	4.50520	0.35398	0.43443	1.96298	3.78115
78	4.93963	5.40624	7.04742	4.45693	0.35398	0.43443	1.93080	3.76506
80	4.93963	5.40624	7.04742	4.40866	0.35398	0.41834	1.89862	3.76506
82	4.93963	5.40624	7.03133	4.36039	0.33789	0.41834	1.88253	3.76506
84	4.92354	5.40624	7.03133	4.32821	0.33789	0.41834	1.85035	3.76506
86	4.92354	5.40624	7.03133	4.29603	0.33789	0.40225	1.83426	3.76506
88	4.92354	5.40624	7.03133	4.27994	0.33789	0.40225	1.81817	3.76506
90	5.18098	5.67977	7.36922	4.26385	0.32180	0.40225	1.80208	3.97423
92	5.51887	6.03375	7.81974	4.24776	0.32180	0.40225	1.78599	4.24776
94	5.85676	6.40382	8.27026	4.24776	0.32180	0.40225	1.78599	4.50520
96	6.21074	6.75780	8.72078	4.24776	0.32180	0.40225	1.76990	4.77873
98	6.54863	7.12787	9.17130	4.24776	0.32180	0.40225	1.76990	5.05226
100	6.70953	7.30486	9.39656	4.24776	0.32180	0.40225	1.76990	5.19707

Table B17. CO emission rates for time period 2, winter 1996.

win 2 km/hr	CO (gr/mile)							
	LDGV	LDGT1	LDGT2	HDTV	LDDV	LDDT	HDDV	MC
4	608.44335	554.52576	700.86431	433.17498	5.35797	5.95330	50.13644	219.24234
6	426.28846	392.69254	491.24379	386.77142	4.82700	5.37406	45.26117	163.42613
8	324.92146	300.09459	372.46741	346.51424	4.37648	4.87527	40.98123	126.53176
10	261.17288	241.28564	296.94095	311.50240	3.97423	4.42475	37.20008	101.27046
12	217.93905	201.35026	245.34032	280.97967	3.62025	4.02250	33.86945	83.42665
14	187.04625	172.95141	208.33332	254.31854	3.29845	3.66852	30.90889	70.47420
16	164.06973	151.98614	180.77115	230.95586	3.02492	3.36281	28.30231	60.83629
18	146.46727	136.02486	159.62889	210.47329	2.76748	3.08928	25.98535	53.48316
20	132.58160	123.53902	142.97574	192.43640	2.55831	2.84793	23.92583	47.75512
22	121.39905	113.54713	129.57277	176.55557	2.36523	2.62267	22.09157	43.20165
24	112.17948	105.34123	118.58330	162.54118	2.18824	2.42959	20.45039	39.50095
26	104.44019	98.45471	109.41200	150.15188	2.02734	2.25260	18.98620	36.42776
28	97.84329	92.54968	101.60835	139.17850	1.88253	2.10779	17.68291	33.85336
30	92.09916	87.38479	94.89882	129.42796	1.76990	1.96298	16.50834	31.61685
32	87.09517	83.21748	89.92701	120.78763	1.65727	1.83426	15.44640	29.68605
34	82.67042	79.32370	85.75970	113.11270	1.54464	1.72163	14.51318	27.94833
36	78.66401	75.75172	82.01073	106.27445	1.46419	1.62509	13.66041	26.38760
38	75.01158	72.42109	78.63183	100.19243	1.38374	1.52855	12.90418	24.97168
40	71.66486	69.31572	75.55864	94.77010	1.30329	1.44810	12.21231	23.66839
42	68.57558	66.38734	72.74289	89.95919	1.23893	1.38374	11.60089	22.46164
44	65.71156	63.65204	70.15240	85.67925	1.17457	1.31938	11.05383	21.35143
46	63.05671	61.07764	67.75499	81.88201	1.12630	1.25502	10.55504	20.30558
48	60.61103	58.69632	65.53457	78.51920	1.07803	1.20675	10.10452	19.34018
50	58.32625	56.45981	63.47505	75.55864	1.02976	1.15848	9.70227	18.42305
52	56.23455	54.40029	61.57643	72.95206	0.99758	1.11021	9.34829	17.58637
54	54.28766	52.51776	59.82262	70.66728	0.96540	1.07803	9.02649	16.81405
56	52.51776	50.81222	58.19753	68.68821	0.93322	1.04585	8.73687	16.10609
58	50.89267	49.26758	56.70116	66.99876	0.90104	1.01367	8.47943	15.46249
60	49.41239	47.88384	55.33351	65.56675	0.88495	0.98149	8.27026	14.86716
62	48.06083	46.66100	54.09458	64.39218	0.86886	0.96540	8.07718	14.33619
64	46.85408	45.59906	52.95219	63.45896	0.83668	0.93322	7.90019	13.85349
66	45.75996	44.66584	51.92243	62.73491	0.83668	0.91713	7.77147	13.43515
68	44.77847	43.87743	50.98921	62.23612	0.82059	0.90104	7.64275	13.04899
70	43.90961	43.21774	50.13644	61.96259	0.80450	0.90104	7.54621	12.71110
72	43.13729	42.67068	49.38021	61.88214	0.80450	0.88495	7.48185	12.42148
74	42.42933	42.18798	48.68834	62.02695	0.78841	0.88495	7.43358	12.16404
76	41.78573	41.78573	48.06083	62.38093	0.78841	0.88495	7.40140	11.92269
78	41.41566	41.54438	47.70685	62.94408	0.78841	0.88495	7.38531	11.79397
80	41.41566	41.54438	47.70685	63.73249	0.78841	0.88495	7.40140	11.79397
82	41.41566	41.54438	47.70685	64.74616	0.78841	0.88495	7.43358	11.79397
84	41.41566	41.54438	47.70685	66.01727	0.80450	0.88495	7.49794	11.79397
86	41.41566	41.54438	47.70685	67.52973	0.80450	0.90104	7.56230	11.79397
88	41.41566	41.54438	47.70685	69.29963	0.82059	0.91713	7.67493	11.79397
90	49.57329	50.18471	57.73092	71.37524	0.83668	0.93322	7.78756	14.44882
92	60.43404	61.67297	71.06953	73.75656	0.85277	0.94931	7.93237	17.97253
94	71.29479	73.14514	84.40814	76.47577	0.86886	0.96540	8.10936	21.49624
96	82.13945	84.61731	97.74675	79.58114	0.88495	0.98149	8.30244	25.01995
98	93.00020	96.10557	111.08536	83.07267	0.91713	1.01367	8.52770	28.54366
100	98.42253	101.84970	117.74662	84.98738	0.91713	1.02976	8.65642	30.31356

Table B18. NOx emission rates for time period 2, winter 1996.

win 2 km/hr	Nox (gr/mile)							
	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC
4	5.32579	4.76264	5.71195	5.56714	2.34914	2.73530	41.20649	1.04585
6	4.95572	4.37648	5.26143	5.64759	2.22042	2.59049	39.03434	0.99758
8	4.74655	4.16731	5.03617	5.71195	2.10779	2.46177	37.05527	0.94931
10	4.60174	4.03859	4.89136	5.79240	2.01125	2.34914	35.25319	0.90104
12	4.50520	3.95814	4.79482	5.85676	1.91471	2.23651	33.61201	0.88495
14	4.44084	3.90987	4.73046	5.93721	1.81817	2.13997	32.13173	0.86886
16	4.37648	3.87769	4.69828	6.00157	1.75381	2.04343	30.76408	0.85277
18	4.34430	3.86160	4.66610	6.08202	1.67336	1.96298	29.52515	0.85277
20	4.32821	3.86160	4.65001	6.14638	1.60900	1.88253	28.39885	0.85277
22	4.31212	3.86160	4.63392	6.22683	1.56073	1.81817	27.38518	0.85277
24	4.29603	3.87769	4.63392	6.29119	1.49637	1.75381	26.45196	0.86886
26	4.29603	3.89378	4.63392	6.37164	1.46419	1.70554	25.61528	0.88495
28	4.29603	3.92596	4.63392	6.43600	1.41592	1.65727	24.85905	0.90104
30	4.31212	3.94205	4.65001	6.51645	1.36765	1.60900	24.18327	0.93322
32	4.31212	3.97423	4.66610	6.58081	1.33547	1.56073	23.57185	0.94931
34	4.34430	4.03859	4.73046	6.66126	1.30329	1.52855	23.02479	0.96540
36	4.37648	4.10295	4.77873	6.72562	1.28720	1.49637	22.54209	0.99758
38	4.40866	4.15122	4.84309	6.80607	1.25502	1.46419	22.10766	1.02976
40	4.44084	4.21558	4.89136	6.87043	1.23893	1.44810	21.73759	1.04585
42	4.47302	4.26385	4.92354	6.95088	1.22284	1.41592	21.41579	1.07803
44	4.50520	4.31212	4.97181	7.01524	1.20675	1.39983	21.15835	1.09412
46	4.52129	4.36039	5.02008	7.09569	1.19066	1.38374	20.93309	1.11021
48	4.55347	4.39257	5.05226	7.16005	1.17457	1.38374	20.77219	1.14239
50	4.58565	4.44084	5.08444	7.24050	1.17457	1.36765	20.64347	1.15848
52	4.60174	4.47302	5.11662	7.30486	1.17457	1.36765	20.56302	1.17457
54	4.63392	4.50520	5.14880	7.38531	1.17457	1.36765	20.54693	1.19066
56	4.66610	4.53738	5.18098	7.44967	1.17457	1.36765	20.54693	1.20675
58	4.68219	4.56956	5.21316	7.51403	1.17457	1.36765	20.61129	1.22284
60	4.71437	4.60174	5.24534	7.59448	1.17457	1.38374	20.72392	1.23893
62	4.73046	4.63392	5.27752	7.65884	1.19066	1.38374	20.86873	1.23893
64	4.76264	4.65001	5.29361	7.73929	1.19066	1.39983	21.06181	1.25502
66	4.79482	4.68219	5.32579	7.80365	1.20675	1.41592	21.31925	1.27111
68	4.81091	4.69828	5.35797	7.88410	1.22284	1.43201	21.60887	1.27111
70	4.84309	4.73046	5.39015	7.94846	1.25502	1.46419	21.96285	1.28720
72	4.87527	4.74655	5.40624	8.02891	1.27111	1.48028	22.36510	1.28720
74	4.92354	4.77873	5.43842	8.09327	1.30329	1.51246	22.81562	1.30329
76	4.95572	4.81091	5.47060	8.17372	1.31938	1.54464	23.34659	1.30329
78	5.08444	4.92354	5.61541	8.23808	1.36765	1.59291	23.92583	1.33547
80	5.35797	5.18098	5.92112	8.31853	1.39983	1.64118	24.58552	1.39983
82	5.63150	5.42233	6.22683	8.38289	1.43201	1.68945	25.30957	1.44810
84	5.88894	5.66368	6.53254	8.46334	1.48028	1.73772	26.11407	1.49637
86	6.16247	5.90503	6.85434	8.52770	1.52855	1.80208	27.01511	1.56073
88	6.43600	6.14638	7.16005	8.60815	1.59291	1.86644	27.99660	1.60900
90	6.69344	6.40382	7.46576	8.67251	1.65727	1.93080	29.07463	1.65727
92	6.96697	6.64517	7.77147	8.75296	1.72163	2.01125	30.26529	1.72163
94	7.24050	6.88652	8.07718	8.81732	1.80208	2.09170	31.58467	1.76990
96	7.51403	7.12787	8.38289	8.89777	1.88253	2.18824	33.01668	1.81817
98	7.77147	7.36922	8.68860	8.96213	1.96298	2.30087	34.60959	1.88253
100	7.91628	7.49794	8.84950	8.99431	2.01125	2.34914	35.44627	1.89862

Table B19. VOC emission rates for time period 3, winter 1996.

win 3 km/hr	VOC (gr/mile)							
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
4	53.93368	51.02139	64.50481	35.51063	1.57682	1.93080	8.62424	28.75283
6	37.94022	36.65302	45.71169	29.50906	1.48028	1.80208	8.09327	22.49382
8	29.31598	28.62411	35.46236	25.82445	1.38374	1.68945	7.59448	18.21388
10	23.94192	23.52358	29.04245	23.04088	1.30329	1.59291	7.12787	15.18896
12	20.32167	20.06423	24.71424	20.77219	1.22284	1.49637	6.70953	13.00072
14	17.76336	17.61855	21.64105	18.90575	1.15848	1.41592	6.32337	11.39172
16	15.83256	15.78429	19.35627	17.28066	1.09412	1.33547	5.96939	10.16888
18	14.35228	14.36837	17.58637	15.83256	1.02976	1.25502	5.63150	9.23566
20	13.17771	13.24207	16.18654	14.57754	0.96540	1.19066	5.32579	8.49552
22	12.21231	12.34103	15.06024	13.46733	0.91713	1.12630	5.05226	7.90019
24	11.42390	11.58480	14.12702	12.46975	0.86886	1.06194	4.79482	7.41749
26	10.74812	10.95729	13.33861	11.60089	0.83668	1.01367	4.55347	7.03133
28	10.18497	10.41023	12.67892	10.81248	0.78841	0.96540	4.32821	6.69344
30	9.68618	9.92753	12.09968	10.12061	0.75623	0.91713	4.11904	6.40382
32	9.23566	9.52528	11.64916	9.50919	0.72405	0.86886	3.92596	6.16247
34	8.81732	9.13912	11.19864	8.94604	0.69187	0.83668	3.74897	5.93721
36	8.44725	8.78514	10.79639	8.44725	0.65969	0.80450	3.58807	5.72804
38	8.10936	8.46334	10.44241	8.01282	0.62751	0.77232	3.44326	5.55105
40	7.78756	8.17372	10.10452	7.61057	0.59533	0.74014	3.29845	5.37406
42	7.49794	7.88410	9.79881	7.25659	0.57924	0.70796	3.16973	5.21316
44	7.24050	7.62666	9.52528	6.93479	0.56315	0.67578	3.04101	5.06835
46	6.99915	7.38531	9.25175	6.64517	0.53097	0.65969	2.92838	4.92354
48	6.77389	7.16005	9.01040	6.37164	0.51488	0.62751	2.83184	4.79482
50	6.56472	6.93479	8.78514	6.14638	0.49879	0.61142	2.73530	4.66610
52	6.35555	6.74171	8.57597	5.92112	0.48270	0.59533	2.63876	4.55347
54	6.17856	6.56472	8.38289	5.72804	0.46661	0.56315	2.55831	4.44084
56	6.01766	6.40382	8.20590	5.55105	0.45052	0.54706	2.47786	4.34430
58	5.85676	6.24292	8.04500	5.39015	0.43443	0.53097	2.41350	4.24776
60	5.71195	6.11420	7.88410	5.26143	0.43443	0.51488	2.33305	4.16731
62	5.58323	5.98548	7.73929	5.11662	0.41834	0.51488	2.28478	4.08686
64	5.47060	5.87285	7.61057	5.00399	0.40225	0.49879	2.22042	4.02250
66	5.35797	5.77631	7.49794	4.90745	0.40225	0.48270	2.17215	3.95814
68	5.26143	5.67977	7.38531	4.81091	0.38616	0.46661	2.12388	3.90987
70	5.18098	5.59932	7.28877	4.71437	0.37007	0.46661	2.07561	3.86160
72	5.10053	5.53496	7.20832	4.65001	0.37007	0.45052	2.02734	3.82942
74	5.02008	5.47060	7.12787	4.56956	0.37007	0.45052	1.99516	3.79724
76	4.95572	5.42233	7.04742	4.52129	0.35398	0.43443	1.96298	3.78115
78	4.90745	5.39015	7.01524	4.45693	0.35398	0.43443	1.93080	3.76506
80	4.90745	5.37406	6.99915	4.40866	0.35398	0.41834	1.89862	3.76506
82	4.90745	5.37406	6.99915	4.37648	0.33789	0.41834	1.88253	3.76506
84	4.90745	5.37406	6.99915	4.34430	0.33789	0.41834	1.85035	3.76506
86	4.90745	5.37406	6.99915	4.31212	0.33789	0.40225	1.83426	3.76506
88	4.90745	5.37406	6.99915	4.29603	0.33789	0.40225	1.81817	3.76506
90	5.14880	5.64759	7.33704	4.26385	0.32180	0.40225	1.80208	3.97423
92	5.48669	6.00157	7.77147	4.26385	0.32180	0.40225	1.78599	4.24776
94	5.82458	6.35555	8.22199	4.24776	0.32180	0.40225	1.78599	4.50520
96	6.16247	6.72562	8.67251	4.24776	0.32180	0.40225	1.76990	4.77873
98	6.50036	7.07960	9.10694	4.26385	0.32180	0.40225	1.76990	5.05226
100	6.66126	7.25659	9.33220	4.26385	0.32180	0.40225	1.76990	5.18098

Table B20. CO emission rates for time period 3, winter 1996.

win 3 km/hr	CO (gr/mile)							
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
4	603.23019	549.79530	695.84423	432.11304	5.35797	5.95330	50.13644	217.76206
6	422.65212	389.34582	487.75226	385.82211	4.82700	5.37406	45.26117	162.33201
8	322.15398	297.53628	369.82865	345.66147	4.37648	4.87527	40.98123	125.67899
10	258.95246	239.21003	294.83316	310.73008	3.97423	4.42475	37.20008	100.59468
12	216.07261	199.62863	243.60260	280.28780	3.62025	4.02250	33.86945	82.86350
14	185.43725	171.45504	206.85304	253.67494	3.29845	3.66852	30.90889	70.00759
16	162.66990	150.65067	179.48395	230.39271	3.02492	3.36281	28.30231	60.43404
18	145.19616	134.83420	158.47041	209.94232	2.76748	3.08928	25.98535	53.12918
20	131.43921	122.46099	141.94598	191.96979	2.55831	2.84793	23.92583	47.43332
22	120.35320	112.53346	128.65564	176.12114	2.36523	2.62267	22.09157	42.91203
24	111.21408	104.40801	117.73053	162.13893	2.18824	2.42959	20.45039	39.22742
26	103.53915	97.56976	108.62359	149.78181	2.02734	2.25260	18.98620	36.18641
28	96.99052	91.71300	100.88430	138.82452	1.88253	2.10779	17.68291	33.61201
30	91.29466	86.59638	94.20695	129.10616	1.76990	1.96298	16.50834	31.40768
32	86.33894	82.47734	89.28341	120.48192	1.65727	1.83426	15.44640	29.47688
34	81.94637	78.61574	85.13219	112.82308	1.54464	1.72163	14.51318	27.75525
36	77.97214	75.07594	81.43149	106.00092	1.46419	1.62509	13.66041	26.21061
38	74.36798	71.77749	78.06868	99.93499	1.38374	1.52855	12.90418	24.81078
40	71.03735	68.68821	75.02767	94.54484	1.30329	1.44810	12.21231	23.50749
42	67.98025	65.79201	72.22801	89.73393	1.23893	1.38374	11.60089	22.31683
44	65.14841	63.08889	69.65361	85.47008	1.17457	1.31938	11.05383	21.20662
46	62.50965	60.54667	67.27229	81.68893	1.12630	1.25502	10.55504	20.17686
48	60.08006	58.16535	65.06796	78.32612	1.07803	1.20675	10.10452	19.21146
50	57.82746	55.96102	63.02453	75.36556	1.02976	1.15848	9.70227	18.31042
52	55.73576	53.93368	61.14200	72.75898	0.99758	1.11021	9.34829	17.47374
54	53.82105	52.05115	59.38819	70.49029	0.96540	1.07803	9.02649	16.70142
56	52.05115	50.36170	57.77919	68.52731	0.93322	1.04585	8.73687	15.99346
58	50.44215	48.83315	56.29891	66.83786	0.90104	1.01367	8.47943	15.34986
60	48.97796	47.46550	54.94735	65.40585	0.88495	0.98149	8.27026	14.77062
62	47.64249	46.25875	53.70842	64.23128	0.86886	0.96540	8.07718	14.23965
64	46.45183	45.19681	52.58212	63.29806	0.83668	0.93322	7.90019	13.75695
66	45.35771	44.27968	51.55236	62.57401	0.83668	0.91713	7.77147	13.33861
68	44.39231	43.50736	50.61914	62.09131	0.82059	0.90104	7.64275	12.96854
70	43.52345	42.84767	49.78246	61.80169	0.80450	0.90104	7.54621	12.63065
72	42.75113	42.28452	49.02623	61.73733	0.80450	0.88495	7.48185	12.34103
74	42.05926	41.81791	48.35045	61.86605	0.78841	0.88495	7.43358	12.08359
76	41.43175	41.41566	47.72294	62.22003	0.78841	0.88495	7.40140	11.84224
78	41.04559	41.19040	47.36896	62.78318	0.78841	0.88495	7.38531	11.71352
80	41.04559	41.19040	47.36896	63.57159	0.78841	0.88495	7.40140	11.71352
82	41.04559	41.19040	47.36896	64.58526	0.78841	0.88495	7.43358	11.71352
84	41.04559	41.19040	47.36896	65.84028	0.80450	0.88495	7.49794	11.71352
86	41.04559	41.19040	47.36896	67.35274	0.80450	0.90104	7.56230	11.71352
88	41.04559	41.19040	47.36896	69.13873	0.82059	0.91713	7.67493	11.71352
90	49.15495	49.75028	57.32867	71.19825	0.83668	0.93322	7.78756	14.35228
92	59.91916	61.12591	70.57074	73.57957	0.85277	0.94931	7.93237	17.84381
94	70.66728	72.51763	83.81281	76.29878	0.86886	0.96540	8.10936	21.35143
96	81.43149	83.89326	97.07097	79.37197	0.88495	0.98149	8.30244	24.85905
98	92.19570	95.26889	110.31304	82.86350	0.91713	1.01367	8.52770	28.35058
100	97.58585	100.96475	116.92603	84.77821	0.91713	1.02976	8.65642	30.10439

Table B21. NOx emission rates for time period 3, winter 1996.

win 3 km/hr	Nox (gr/mile)							
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
4	5.29361	4.74655	5.69586	5.56714	2.34914	2.73530	41.20649	1.04585
6	4.93963	4.36039	5.24534	5.63150	2.22042	2.59049	39.03434	0.98149
8	4.71437	4.15122	5.02008	5.71195	2.10779	2.46177	37.05527	0.93322
10	4.58565	4.02250	4.87527	5.77631	2.01125	2.34914	35.25319	0.90104
12	4.48911	3.94205	4.77873	5.85676	1.91471	2.23651	33.61201	0.88495
14	4.42475	3.89378	4.71437	5.92112	1.81817	2.13997	32.13173	0.85277
16	4.36039	3.86160	4.68219	6.00157	1.75381	2.04343	30.76408	0.85277
18	4.32821	3.84551	4.65001	6.06593	1.67336	1.96298	29.52515	0.85277
20	4.31212	3.84551	4.63392	6.14638	1.60900	1.88253	28.39885	0.85277
22	4.29603	3.84551	4.61783	6.21074	1.56073	1.81817	27.38518	0.85277
24	4.27994	3.86160	4.61783	6.29119	1.49637	1.75381	26.45196	0.86886
26	4.27994	3.87769	4.61783	6.35555	1.46419	1.70554	25.61528	0.88495
28	4.27994	3.90987	4.61783	6.43600	1.41592	1.65727	24.85905	0.90104
30	4.29603	3.94205	4.63392	6.50036	1.36765	1.60900	24.18327	0.91713
32	4.29603	3.97423	4.65001	6.58081	1.33547	1.56073	23.57185	0.94931
34	4.32821	4.03859	4.71437	6.64517	1.30329	1.52855	23.02479	0.96540
36	4.36039	4.08686	4.76264	6.72562	1.28720	1.49637	22.54209	0.99758
38	4.39257	4.15122	4.82700	6.78998	1.25502	1.46419	22.10766	1.01367
40	4.42475	4.19949	4.87527	6.87043	1.23893	1.44810	21.73759	1.04585
42	4.45693	4.24776	4.90745	6.93479	1.22284	1.41592	21.41579	1.06194
44	4.48911	4.29603	4.95572	6.99915	1.20675	1.39983	21.15835	1.09412
46	4.50520	4.34430	5.00399	7.07960	1.19066	1.38374	20.93309	1.11021
48	4.53738	4.39257	5.03617	7.14396	1.17457	1.38374	20.77219	1.12630
50	4.56956	4.42475	5.06835	7.22441	1.17457	1.36765	20.64347	1.15848
52	4.58565	4.45693	5.10053	7.28877	1.17457	1.36765	20.56302	1.17457
54	4.61783	4.48911	5.13271	7.36922	1.17457	1.36765	20.54693	1.19066
56	4.65001	4.52129	5.16489	7.43358	1.17457	1.36765	20.54693	1.20675
58	4.66610	4.55347	5.19707	7.51403	1.17457	1.36765	20.61129	1.22284
60	4.69828	4.58565	5.22925	7.57839	1.17457	1.38374	20.72392	1.22284
62	4.71437	4.61783	5.26143	7.65884	1.19066	1.38374	20.86873	1.23893
64	4.74655	4.63392	5.27752	7.72320	1.19066	1.39983	21.06181	1.25502
66	4.77873	4.66610	5.30970	7.80365	1.20675	1.41592	21.31925	1.25502
68	4.81091	4.68219	5.34188	7.86801	1.22284	1.43201	21.60887	1.27111
70	4.82700	4.71437	5.35797	7.94846	1.25502	1.46419	21.96285	1.27111
72	4.85918	4.74655	5.39015	8.01282	1.27111	1.48028	22.36510	1.28720
74	4.90745	4.76264	5.42233	8.09327	1.30329	1.51246	22.81562	1.30329
76	4.93963	4.79482	5.45451	8.15763	1.31938	1.54464	23.34659	1.30329
78	5.06835	4.90745	5.59932	8.23808	1.36765	1.59291	23.92583	1.33547
80	5.34188	5.16489	5.90503	8.30244	1.39983	1.64118	24.58552	1.38374
82	5.59932	5.40624	6.21074	8.36680	1.43201	1.68945	25.30957	1.44810
84	5.87285	5.64759	6.51645	8.44725	1.48028	1.73772	26.11407	1.49637
86	6.14638	5.88894	6.82216	8.51161	1.52855	1.80208	27.01511	1.54464
88	6.40382	6.13029	7.12787	8.59206	1.59291	1.86644	27.99660	1.60900
90	6.67735	6.37164	7.43358	8.65642	1.65727	1.93080	29.07463	1.65727
92	6.95088	6.62908	7.73929	8.73687	1.72163	2.01125	30.26529	1.70554
94	7.20832	6.87043	8.04500	8.80123	1.80208	2.09170	31.58467	1.76990
96	7.48185	7.11178	8.36680	8.88168	1.88253	2.18824	33.01668	1.81817
98	7.75538	7.35313	8.67251	8.94604	1.96298	2.30087	34.60959	1.86644
100	7.88410	7.48185	8.81732	8.99431	2.01125	2.34914	35.44627	1.89862

Table B22. VOC emission rates for time period 4, winter 1996.

win 4 km/hr	VOC (gr/mile)							
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
4	64.00602	59.69390	74.06227	32.79142	1.57682	1.93080	8.62424	31.90647
6	45.51861	43.39473	53.27399	29.29989	1.48028	1.80208	8.09327	24.85905
8	35.33364	34.03035	41.57656	26.33933	1.38374	1.68945	7.59448	20.04814
10	28.91373	28.02878	34.15907	23.78102	1.30329	1.59291	7.12787	16.65315
12	24.55334	23.89365	29.07463	21.56060	1.22284	1.49637	6.70953	14.20747
14	21.39970	20.93309	25.40611	19.59762	1.15848	1.41592	6.32337	12.38930
16	19.05056	18.71267	22.67081	17.89208	1.09412	1.33547	5.96939	11.02165
18	17.23239	17.00713	20.56302	16.37962	1.02976	1.25502	5.63150	9.95971
20	15.80038	15.65557	18.90575	15.04415	0.96540	1.19066	5.32579	9.12303
22	14.62581	14.56145	17.55419	13.85349	0.91713	1.12630	5.05226	8.46334
24	13.66041	13.66041	16.46007	12.80764	0.86886	1.06194	4.79482	7.93237
26	12.83982	12.90418	15.52685	11.87442	0.83668	1.01367	4.55347	7.48185
28	12.14795	12.26058	14.73844	11.03774	0.78841	0.96540	4.32821	7.11178
30	11.53653	11.68134	14.04657	10.31369	0.75623	0.91713	4.11904	6.78998
32	10.98947	11.21473	13.53169	9.65400	0.72405	0.86886	3.92596	6.50036
34	10.47459	10.74812	12.98463	9.05867	0.69187	0.83668	3.74897	6.24292
36	10.02407	10.31369	12.51802	8.52770	0.65969	0.80450	3.58807	6.01766
38	9.60573	9.92753	12.08359	8.06109	0.62751	0.77232	3.44326	5.82458
40	9.21957	9.55746	11.68134	7.62666	0.59533	0.74014	3.29845	5.63150
42	8.86559	9.21957	11.31127	7.24050	0.57924	0.70796	3.16973	5.43842
44	8.54379	8.89777	10.98947	6.90261	0.56315	0.67578	3.04101	5.27752
46	8.23808	8.59206	10.66767	6.59690	0.53097	0.65969	2.92838	5.11662
48	7.96455	8.31853	10.37805	6.30728	0.51488	0.62751	2.83184	4.97181
50	7.70711	8.06109	10.10452	6.04984	0.49879	0.61142	2.73530	4.82700
52	7.46576	7.83583	9.86317	5.82458	0.48270	0.59533	2.63876	4.69828
54	7.24050	7.61057	9.63791	5.61541	0.46661	0.56315	2.55831	4.56956
56	7.04742	7.40140	9.41265	5.43842	0.45052	0.54706	2.47786	4.45693
58	6.85434	7.22441	9.21957	5.26143	0.43443	0.53097	2.41350	4.36039
60	6.67735	7.06351	9.04258	5.11662	0.43443	0.51488	2.33305	4.26385
62	6.51645	6.90261	8.86559	4.97181	0.41834	0.51488	2.28478	4.16731
64	6.37164	6.77389	8.72078	4.85918	0.40225	0.49879	2.22042	4.10295
66	6.24292	6.64517	8.57597	4.74655	0.40225	0.48270	2.17215	4.03859
68	6.13029	6.54863	8.44725	4.65001	0.38616	0.46661	2.12388	3.97423
70	6.01766	6.45209	8.33462	4.55347	0.37007	0.46661	2.07561	3.92596
72	5.92112	6.35555	8.22199	4.47302	0.37007	0.45052	2.02734	3.89378
74	5.82458	6.29119	8.12545	4.40866	0.37007	0.45052	1.99516	3.86160
76	5.74413	6.21074	8.04500	4.34430	0.35398	0.43443	1.96298	3.82942
78	5.69586	6.17856	7.99673	4.27994	0.35398	0.43443	1.93080	3.81333
80	5.69586	6.17856	7.99673	4.23167	0.35398	0.41834	1.89862	3.81333
82	5.69586	6.17856	7.99673	4.19949	0.33789	0.41834	1.88253	3.81333
84	5.69586	6.17856	7.99673	4.16731	0.33789	0.41834	1.85035	3.81333
86	5.69586	6.17856	7.99673	4.13513	0.33789	0.40225	1.83426	3.81333
88	5.69586	6.17856	7.99673	4.11904	0.33789	0.40225	1.81817	3.81333
90	6.00157	6.51645	8.39898	4.10295	0.32180	0.40225	1.80208	4.03859
92	6.43600	6.95088	8.94604	4.08686	0.32180	0.40225	1.78599	4.34430
94	6.85434	7.40140	9.50919	4.08686	0.32180	0.40225	1.78599	4.65001
96	7.27268	7.85192	10.05625	4.08686	0.32180	0.40225	1.76990	4.95572
98	7.70711	8.28635	10.60331	4.10295	0.32180	0.40225	1.76990	5.26143
100	7.91628	8.51161	10.87684	4.10295	0.32180	0.40225	1.76990	5.40624

Table B23. CO emission rates for time period 4, winter 1996.

win 4 km/hr	CO (gr/mile)							
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
4	728.12077	664.27565	815.92390	455.78143	5.35797	5.95330	50.13644	253.33705
6	509.55421	470.39115	571.40417	406.94828	4.82700	5.37406	45.26117	188.84833
8	388.33215	359.61150	433.17498	364.59940	4.37648	4.87527	40.98123	146.20983
10	312.24254	289.29820	345.37185	327.75330	3.97423	4.42475	37.20008	117.02257
12	260.65800	241.59135	285.42051	295.63766	3.62025	4.02250	33.86945	96.41128
14	223.79581	207.67363	242.41194	267.57670	3.29845	3.66852	30.90889	81.44758
16	196.41063	182.63759	210.39284	243.00727	3.02492	3.36281	28.30231	70.29721
18	175.38100	163.58703	185.82341	221.44667	2.76748	3.08928	25.98535	61.80169
20	158.82439	148.68769	166.46714	202.47656	2.55831	2.84793	23.92583	55.18870
22	145.45360	136.74891	150.89202	185.77514	2.36523	2.62267	22.09157	49.91118
24	134.44804	126.95010	138.11656	171.02061	2.18824	2.42959	20.45039	45.63124
26	125.19629	118.72811	127.43280	157.98771	2.02734	2.25260	18.98620	42.09144
28	117.29610	111.68069	118.35804	146.43509	1.88253	2.10779	17.68291	39.11479
30	110.42567	105.50213	110.55439	136.18576	1.76990	1.96298	16.50834	36.54039
32	104.44019	100.49814	104.76199	127.09491	1.65727	1.83426	15.44640	34.28779
34	99.13049	95.79986	99.87063	119.00164	1.54464	1.72163	14.51318	32.29263
36	94.31958	91.45556	95.49415	111.80941	1.46419	1.62509	13.66041	30.50664
38	89.94310	87.41697	91.53601	105.42168	1.38374	1.52855	12.90418	28.86546
40	85.92060	83.65191	87.93185	99.72582	1.30329	1.44810	12.21231	27.35300
42	82.21990	80.09602	84.63340	94.65747	1.23893	1.38374	11.60089	25.96926
44	78.77664	76.78148	81.60848	90.15227	1.17457	1.31938	11.05383	24.66597
46	75.60691	73.66002	78.79273	86.16195	1.12630	1.25502	10.55504	23.45922
48	72.64635	70.74773	76.20224	82.62215	1.07803	1.20675	10.10452	22.34901
50	69.92714	68.04461	73.80483	79.50069	1.02976	1.15848	9.70227	21.30316
52	67.40101	65.53457	71.58441	76.74930	0.99758	1.11021	9.34829	20.33776
54	65.08405	63.24979	69.52489	74.35189	0.96540	1.07803	9.02649	19.43672
56	62.94408	61.17418	67.62627	72.27628	0.93322	1.04585	8.73687	18.61613
58	60.99719	59.29165	65.88855	70.49029	0.90104	1.01367	8.47943	17.85990
60	59.21120	57.61829	64.27955	68.99392	0.88495	0.98149	8.27026	17.18412
62	57.60220	56.13801	62.83145	67.75499	0.86886	0.96540	8.07718	16.55661
64	56.15410	54.85081	61.49598	66.75741	0.83668	0.93322	7.90019	16.00955
66	54.83472	53.72451	60.28923	66.01727	0.83668	0.91713	7.77147	15.51076
68	53.67624	52.77520	59.17902	65.48630	0.82059	0.90104	7.64275	15.07633
70	52.61430	51.98679	58.19753	65.19668	0.80450	0.90104	7.54621	14.69017
72	51.68108	51.31101	57.29649	65.11623	0.80450	0.88495	7.48185	14.35228
74	50.82831	50.74786	56.49199	65.26104	0.78841	0.88495	7.43358	14.06266
76	50.05599	50.24907	55.75185	65.63111	0.78841	0.88495	7.40140	13.78913
78	49.60547	49.97554	55.31742	66.22644	0.78841	0.88495	7.38531	13.62823
80	49.60547	49.97554	55.31742	67.06312	0.78841	0.88495	7.40140	13.62823
82	49.60547	49.97554	55.31742	68.12506	0.78841	0.88495	7.43358	13.62823
84	49.60547	49.97554	55.31742	69.46053	0.80450	0.88495	7.49794	13.62823
86	49.60547	49.97554	55.31742	71.05344	0.80450	0.90104	7.56230	13.62823
88	49.60547	49.97554	55.31742	72.91988	0.82059	0.91713	7.67493	13.62823
90	59.37210	60.33750	66.93440	75.09203	0.83668	0.93322	7.78756	16.68533
92	72.34064	74.12663	82.36471	77.60207	0.85277	0.94931	7.93237	20.77219
94	85.32527	87.89967	97.77893	80.46609	0.86886	0.96540	8.10936	24.84296
96	98.29381	101.67271	113.20924	83.73236	0.88495	0.98149	8.30244	28.91373
98	111.27844	115.44575	128.63955	87.41697	0.91713	1.01367	8.52770	32.98450
100	117.76271	122.33227	136.36275	89.42822	0.91713	1.02976	8.65642	35.02793

Table B24. NOx emission rates for time period 4, winter 1996.

win 4 km/hr	Nox (gr/mile)							
	LDGV	LDGT1	LDGT2	HDBGV	LDDV	LDDT	HDDV	MC
4	5.74413	5.10053	6.14638	5.74413	2.34914	2.73530	41.20649	1.12630
6	5.34188	4.66610	5.66368	5.80849	2.22042	2.59049	39.03434	1.06194
8	5.11662	4.44084	5.40624	5.88894	2.10779	2.46177	37.05527	1.01367
10	4.95572	4.31212	5.24534	5.96939	2.01125	2.34914	35.25319	0.98149
12	4.85918	4.21558	5.14880	6.03375	1.91471	2.23651	33.61201	0.94931
14	4.77873	4.16731	5.08444	6.11420	1.81817	2.13997	32.13173	0.93322
16	4.71437	4.11904	5.03617	6.17856	1.75381	2.04343	30.76408	0.91713
18	4.68219	4.10295	5.00399	6.25901	1.67336	1.96298	29.52515	0.91713
20	4.65001	4.10295	4.97181	6.33946	1.60900	1.88253	28.39885	0.91713
22	4.63392	4.10295	4.97181	6.40382	1.56073	1.81817	27.38518	0.91713
24	4.61783	4.11904	4.95572	6.48427	1.49637	1.75381	26.45196	0.93322
26	4.61783	4.13513	4.95572	6.56472	1.46419	1.70554	25.61528	0.94931
28	4.61783	4.16731	4.97181	6.62908	1.41592	1.65727	24.85905	0.96540
30	4.61783	4.18340	4.97181	6.70953	1.36765	1.60900	24.18327	0.99758
32	4.63392	4.21558	4.98790	6.77389	1.33547	1.56073	23.57185	1.01367
34	4.66610	4.27994	5.05226	6.85434	1.30329	1.52855	23.02479	1.04585
36	4.69828	4.34430	5.11662	6.93479	1.28720	1.49637	22.54209	1.07803
38	4.73046	4.40866	5.16489	6.99915	1.25502	1.46419	22.10766	1.09412
40	4.76264	4.45693	5.22925	7.07960	1.23893	1.44810	21.73759	1.12630
42	4.79482	4.50520	5.27752	7.14396	1.22284	1.41592	21.41579	1.14239
44	4.81091	4.56956	5.30970	7.22441	1.20675	1.39983	21.15835	1.17457
46	4.84309	4.61783	5.35797	7.30486	1.19066	1.38374	20.93309	1.20675
48	4.87527	4.65001	5.40624	7.36922	1.17457	1.38374	20.77219	1.22284
50	4.90745	4.69828	5.43842	7.44967	1.17457	1.36765	20.64347	1.23893
52	4.93963	4.73046	5.47060	7.53012	1.17457	1.36765	20.56302	1.25502
54	4.95572	4.76264	5.50278	7.59448	1.17457	1.36765	20.54693	1.28720
56	4.98790	4.81091	5.53496	7.67493	1.17457	1.36765	20.54693	1.30329
58	5.02008	4.84309	5.56714	7.73929	1.17457	1.36765	20.61129	1.31938
60	5.03617	4.85918	5.59932	7.81974	1.17457	1.38374	20.72392	1.31938
62	5.06835	4.89136	5.63150	7.90019	1.19066	1.38374	20.86873	1.33547
64	5.10053	4.92354	5.66368	7.96455	1.19066	1.39983	21.06181	1.35156
66	5.13271	4.93963	5.69586	8.04500	1.20675	1.41592	21.31925	1.35156
68	5.14880	4.97181	5.72804	8.10936	1.22284	1.43201	21.60887	1.36765
70	5.19707	5.00399	5.74413	8.18981	1.25502	1.46419	21.96285	1.38374
72	5.22925	5.02008	5.77631	8.27026	1.27111	1.48028	22.36510	1.38374
74	5.26143	5.05226	5.80849	8.33462	1.30329	1.51246	22.81562	1.39983
76	5.30970	5.08444	5.85676	8.41507	1.31938	1.54464	23.34659	1.39983
78	5.43842	5.21316	6.00157	8.49552	1.36765	1.59291	23.92583	1.43201
80	5.72804	5.47060	6.32337	8.55988	1.39983	1.64118	24.58552	1.49637
82	6.01766	5.72804	6.66126	8.64033	1.43201	1.68945	25.30957	1.56073
84	6.30728	5.98548	6.98306	8.70469	1.48028	1.73772	26.11407	1.60900
86	6.59690	6.24292	7.32095	8.78514	1.52855	1.80208	27.01511	1.67336
88	6.88652	6.50036	7.64275	8.86559	1.59291	1.86644	27.99660	1.72163
90	7.17614	6.75780	7.98064	8.92995	1.65727	1.93080	29.07463	1.78599
92	7.46576	7.03133	8.30244	9.01040	1.72163	2.01125	30.26529	1.85035
94	7.75538	7.28877	8.62424	9.07476	1.80208	2.09170	31.58467	1.89862
96	8.04500	7.54621	8.96213	9.15521	1.88253	2.18824	33.01668	1.96298
98	8.33462	7.80365	9.28393	9.23566	1.96298	2.30087	34.60959	2.01125
100	8.47943	7.93237	9.44483	9.26784	2.01125	2.34914	35.44627	2.04343

Appendix C

Sample Mobile5Juarez input and output files
(example for period 1 summer).

INPUT FILE (summer period 1)

```
1          PROMPT -
MOBILE5a - Cd. Juarez Mexico, JULIO AM. PEEK (07:00 A 09:00)
1          TAMFLG -
1          SPDFLG -
3          VMFLAG - EIT mix
5          MYMRFG -
5          NEWFLG - sin CAAA
1          IMFLAG -
1          ALHFLG -
1          ATPFLG -
1          RLFLAG -
1          LOCFLG - enter LAP record once
2          TEMFLG -
4          OUTFMT - imprimir en formato de 80 columnas
4          PRTFLG - print exhaust HC, CO and NOx results
1          IDLFLG - print idle exhaust
3          NMHFLG - print VOC
2          HCFLAG - print HC components
.822.036.015.020.002.039.060.006
1 96 04.0 25.5 19.6 19.7 30.0 1
VEL=4      A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 06.0 25.5 19.6 19.7 30.0 1
VEL=06     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 08.0 25.5 19.6 19.7 30.0 1
VEL=08     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 10.0 25.5 19.6 19.7 30.0 1
VEL=10     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 12.0 25.5 19.6 19.7 30.0 1
VEL=12     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 14.0 25.5 19.6 19.7 30.0 1
VEL=14     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 16.0 25.5 19.6 19.7 30.0 1
VEL=16     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 18.0 25.5 19.6 19.7 30.0 1
VEL=18     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 20.0 25.5 19.6 19.7 30.0 1
VEL=20     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 22.0 25.5 19.6 19.7 30.0 1
VEL=22     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 24.0 25.5 19.6 19.7 30.0 1
VEL=24     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 26.0 25.5 19.6 19.7 30.0 1
VEL=26     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 28.0 25.5 19.6 19.7 30.0 1
VEL=28     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 30.0 25.5 19.6 19.7 30.0 1
VEL=30     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 32.0 25.5 19.6 19.7 30.0 1
VEL=32     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 34.0 25.5 19.6 19.7 30.0 1
VEL=34     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 36.0 25.5 19.6 19.7 30.0 1
VEL=36     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 38.0 25.5 19.6 19.7 30.0 1
VEL=38     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 40.0 25.5 19.6 19.7 30.0 1
VEL=40     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 42.0 25.5 19.6 19.7 30.0 1
VEL=42     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 44.0 25.5 19.6 19.7 30.0 1
VEL=44     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 46.0 25.5 19.6 19.7 30.0 1
VEL=46     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 48.0 25.5 19.6 19.7 30.0 1
VEL=48     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 50.0 25.5 19.6 19.7 30.0 1
VEL=50     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 52.0 25.5 19.6 19.7 30.0 1
VEL=52     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 54.0 25.5 19.6 19.7 30.0 1
VEL=54     A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 56.0 25.5 19.6 19.7 30.0 1
VEL=56     A 20.0 35.6 07.5 07.5 93 1 1 1
```

1 96 58.0 25.5 19.6 19.7 30.0 1
VEL=58 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 60.0 25.5 19.6 19.7 30.0 1
VEL=60 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 62.0 25.5 19.6 19.7 30.0 1
VEL=62 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 64.0 25.5 19.6 19.7 30.0 1
VEL=64 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 66.0 25.5 19.6 19.7 30.0 1
VEL=66 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 68.0 25.5 19.6 19.7 30.0 1
VEL=68 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 70.0 25.5 19.6 19.7 30.0 1
VEL=70 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 72.0 25.5 19.6 19.7 30.0 1
VEL=72 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 74.0 25.5 19.6 19.7 30.0 1
VEL=74 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 76.0 25.5 19.6 19.7 30.0 1
VEL=76 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 78.0 25.5 19.6 19.7 30.0 1
VEL=78 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 80.0 25.5 19.6 19.7 30.0 1
VEL=80 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 82.0 25.5 19.6 19.7 30.0 1
VEL=82 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 84.0 25.5 19.6 19.7 30.0 1
VEL=84 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 86.0 25.5 19.6 19.7 30.0 1
VEL=86 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 88.0 25.5 19.6 19.7 30.0 1
VEL=88 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 90.0 25.5 19.6 19.7 30.0 1
VEL=90 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 92.0 25.5 19.6 19.7 30.0 1
VEL=92 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 94.0 25.5 19.6 19.7 30.0 1
VEL=94 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 96.0 25.5 19.6 19.7 30.0 1
VEL=96 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 98.0 25.5 19.6 19.7 30.0 1
VEL=98 A 20.0 35.6 07.5 07.5 93 1 1 1
1 96 99.0 25.5 19.6 19.7 30.0 1
VEL=99 A 20.0 35.6 07.5 07.5 93 1 1 1

OUTPUT FILE (summer period 1)

1

MOBILE5-Juarez version 5a.1

Input Speed should be in km/hr
Input Temperatures should be in Celsius

August 30, 1996
Radian International, LLC

1MOBILE5a - Cd. Juarez Mexico, JULIO AM. PEEK (07:00 A 09:00)
Based on EPA-MOBILE5a (26-Mar-93)

0

-M135 Warning:

+ All effects of the 1990 Clean Air Act Ammendments have been disabled.
OVOC HC emission factors include evaporative HC emission factors.

0

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
Reformulated Gas: No

0VEL=4

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993

0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	30.15	28.70	36.70	31.06	26.24	0.98	1.20	5.36	18.62	27.37
Exhst HC:	24.63	23.45	29.34	25.18	15.85	0.98	1.20	5.36	15.47	22.31
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	4.01	3.76	5.61	4.30	7.98					3.67
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	309.25	282.41	364.83	306.65	265.80	3.33	3.70	31.16	118.60	277.89
Exhst NOX:	2.91	2.65	3.17	2.80	3.33	1.46	1.70	25.61	0.58	4.21

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
Reformulated Gas: No

0VEL=06

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993

0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	20.92	20.28	25.35	21.77	20.13	0.92	1.12	5.03	15.17	19.14
Exhst HC:	17.53	16.98	21.01	18.17	14.14	0.92	1.12	5.03	12.02	16.04
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	1.88	1.79	2.58	2.02	3.58					1.72
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	217.10	200.15	256.08	216.60	237.33	3.00	3.34	28.13	88.41	196.61
Exhst NOX:	2.70	2.44	2.92	2.58	3.38	1.38	1.61	24.26	0.55	3.95

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
Reformulated Gas: No

0VEL=08

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993

0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	

VMT Mix: 0.822 0.036 0.015 0.020 0.002 0.039 0.060 0.006

0Composite Emission Factors (grams/kilometer)

VOC	HC:	16.16	15.80	19.50	16.89	17.09	0.86	1.05	4.72	12.81	14.89
Exhst	HC:	13.54	13.22	16.25	14.11	12.65	0.86	1.05	4.72	9.65	12.48
Evap.	HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel	HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing	HC:	1.11	1.08	1.50	1.20	2.03					1.02
Rsting	HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst	CO:	165.46	152.85	194.19	165.01	212.62	2.72	3.03	25.47	68.45	150.74
Exhst	NOX:	2.59	2.32	2.79	2.46	3.42	1.31	1.53	23.03	0.52	3.77

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=10

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993

0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDTV	LDDV	LDDT	HDDV	MC	All Veh	
+											
Spd Km/hr:	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		
VMT Mix:	0.822	0.036	0.015	0.020	0.002	0.039	0.060	0.006			
0Composite Emission Factors (grams/kilometer)											
VOC	HC:	13.26	13.02	15.93	13.88	15.06	0.81	0.99	4.43	11.14	12.28
Exhst	HC:	11.00	10.79	13.19	11.49	11.34	0.81	0.99	4.43	7.99	10.21
Evap.	HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel	HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing	HC:	0.75	0.73	0.99	0.81	1.31					0.68
Rsting	HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst	CO:	132.87	122.74	154.75	132.15	191.14	2.47	2.75	23.12	54.78	121.61
Exhst	NOX:	2.51	2.26	2.72	2.39	3.46	1.25	1.46	21.91	0.50	3.64

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=12

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993

0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDTV	LDDV	LDDT	HDDV	MC	All Veh	
+											
Spd Km/hr:	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0		
VMT Mix:	0.822	0.036	0.015	0.020	0.002	0.039	0.060	0.006			
0Composite Emission Factors (grams/kilometer)											
VOC	HC:	11.34	11.17	13.58	11.88	13.57	0.76	0.93	4.17	9.94	10.55
Exhst	HC:	9.27	9.11	11.08	9.69	10.20	0.76	0.93	4.17	6.79	8.65
Evap.	HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel	HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing	HC:	0.57	0.56	0.74	0.62	0.97					0.52
Rsting	HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst	CO:	110.74	102.27	127.78	109.77	172.41	2.25	2.50	21.05	45.13	101.71
Exhst	NOX:	2.46	2.21	2.67	2.34	3.51	1.19	1.39	20.89	0.49	3.53

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=14

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993

0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDTV	LDDV	LDDT	HDDV	MC	All Veh	
+											
Spd Km/hr:	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0		
VMT Mix:	0.822	0.036	0.015	0.020	0.002	0.039	0.060	0.006			
0Composite Emission Factors (grams/kilometer)											
VOC	HC:	10.02	9.90	11.96	10.50	12.43	0.72	0.88	3.93	9.05	9.35
Exhst	HC:	8.02	7.90	9.57	8.39	9.19	0.72	0.88	3.93	5.90	7.51
Evap.	HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel	HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing	HC:	0.50	0.49	0.64	0.54	0.83					0.45
Rsting	HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst	CO:	94.92	87.70	108.43	93.80	156.05	2.05	2.28	19.21	38.13	87.40
Exhst	NOX:	2.43	2.18	2.63	2.32	3.55	1.13	1.33	19.97	0.48	3.44

0Emission factors are as of Jan. 1st of the indicated calendar year.
 0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=16

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993
 0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh
 +
 Spd Km/hr: 16.0 16.0 16.0 16.0 16.0 16.0 16.0 16.0 16.0
 VMT Mix: 0.822 0.036 0.015 0.020 0.002 0.039 0.060 0.006
 0Composite Emission Factors (grams/kilometer)
 VOC HC: 9.03 8.94 10.75 9.47 11.44 0.68 0.83 3.71 8.38 8.44
 Exhst HC: 7.08 7.00 8.43 7.42 8.31 0.68 0.83 3.71 5.23 6.65
 Evap. HC: 1.25 1.24 1.53 1.32 2.08 2.73 1.15
 Refuel HC: 0.12 0.15 0.15 0.15 0.22 0.11
 Runing HC: 0.44 0.44 0.57 0.48 0.73 0.40
 Rsting HC: 0.14 0.11 0.08 0.10 0.10 0.43 0.12
 Exhst CO: 83.17 76.95 94.03 81.97 141.72 1.88 2.09 17.59 32.91 76.72
 Exhst NOX: 2.40 2.17 2.61 2.30 3.59 1.09 1.27 19.12 0.47 3.36

0Emission factors are as of Jan. 1st of the indicated calendar year.
 0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=18

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993
 0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh
 +
 Spd Km/hr: 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18.0
 VMT Mix: 0.822 0.036 0.015 0.020 0.002 0.039 0.060 0.006
 0Composite Emission Factors (grams/kilometer)
 VOC HC: 8.27 8.20 9.82 8.67 10.58 0.64 0.78 3.50 7.86 7.74
 Exhst HC: 6.36 6.30 7.56 6.67 7.52 0.64 0.78 3.50 4.71 5.99
 Evap. HC: 1.25 1.24 1.53 1.32 2.08 2.73 1.15
 Refuel HC: 0.12 0.15 0.15 0.15 0.22 0.11
 Runing HC: 0.40 0.39 0.51 0.43 0.65 0.36
 Rsting HC: 0.14 0.11 0.08 0.10 0.10 0.43 0.12
 Exhst CO: 74.17 68.77 82.98 72.95 129.14 1.72 1.92 16.15 28.93 68.49
 Exhst NOX: 2.38 2.16 2.59 2.29 3.63 1.04 1.22 18.35 0.47 3.30

0Emission factors are as of Jan. 1st of the indicated calendar year.
 0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=20

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993
 0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh
 +
 Spd Km/hr: 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0
 VMT Mix: 0.822 0.036 0.015 0.020 0.002 0.039 0.060 0.006
 0Composite Emission Factors (grams/kilometer)
 VOC HC: 7.66 7.61 9.08 8.04 9.83 0.60 0.74 3.31 7.45 7.18
 Exhst HC: 5.79 5.76 6.88 6.09 6.83 0.60 0.74 3.31 4.30 5.46
 Evap. HC: 1.25 1.24 1.53 1.32 2.08 2.73 1.15
 Refuel HC: 0.12 0.15 0.15 0.15 0.22 0.11
 Runing HC: 0.36 0.35 0.45 0.38 0.59 0.33
 Rsting HC: 0.14 0.11 0.08 0.10 0.10 0.43 0.12
 Exhst CO: 67.08 62.38 74.29 65.88 118.08 1.59 1.77 14.87 25.83 61.98
 Exhst NOX: 2.37 2.16 2.59 2.28 3.68 1.00 1.17 17.65 0.47 3.25

0Emission factors are as of Jan. 1st of the indicated calendar year.
 0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=22

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993
 0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh

Exhst CO: 49.37 46.52 52.72 48.34 85.40 1.17 1.31 10.99 18.31 45.58
 Exhst NOX: 2.36 2.20 2.58 2.31 3.85 0.88 1.03 15.45 0.50 3.11

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=30

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993

0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	30.0	30.0	30.0		30.0	30.0	30.0	30.0	30.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	5.85	5.85	6.91	6.16	7.18	0.47	0.57	2.56	6.30	5.48
Exhst HC:	4.11	4.15	4.88	4.37	4.39	0.47	0.57	2.56	3.15	3.89
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.23	0.20	0.28	0.22	0.39					0.21
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	46.45	43.88	49.22	45.45	79.42	1.10	1.22	10.26	17.11	42.85
Exhst NOX:	2.37	2.22	2.59	2.33	3.89	0.85	1.00	15.03	0.51	3.09

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=32

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993

0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	32.0	32.0	32.0		32.0	32.0	32.0	32.0	32.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	5.61	5.64	6.67	5.94	6.81	0.45	0.54	2.44	6.16	5.26
Exhst HC:	3.89	3.96	4.66	4.17	4.05	0.45	0.54	2.44	3.01	3.68
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.21	0.18	0.25	0.20	0.36					0.19
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	43.91	41.78	46.64	43.21	74.12	1.03	1.14	9.60	16.05	40.50
Exhst NOX:	2.38	2.24	2.60	2.35	3.94	0.83	0.97	14.65	0.52	3.07

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=34

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993

0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	34.0	34.0	34.0		34.0	34.0	34.0	34.0	34.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	5.40	5.44	6.43	5.73	6.49	0.43	0.52	2.33	6.04	5.06
Exhst HC:	3.69	3.77	4.44	3.97	3.74	0.43	0.52	2.33	2.89	3.49
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.20	0.17	0.24	0.19	0.34					0.18
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	41.67	39.83	44.48	41.20	69.40	0.96	1.07	9.02	15.12	38.42
Exhst NOX:	2.39	2.27	2.64	2.38	3.98	0.81	0.95	14.31	0.54	3.07

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=36

Minimum Temp: 20. (C) Maximum Temp: 36. (C)

		Period 1 RVP: 7.5			Period 2 RVP: 7.5			Period 2 Yr: 1993		
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HdGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	36.0	36.0	36.0		36.0	36.0	36.0	36.0	36.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	5.21	5.26	6.22	5.54	6.20	0.41	0.50	2.23	5.93	4.88
Exhst HC:	3.51	3.60	4.25	3.79	3.47	0.41	0.50	2.23	2.78	3.32
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.19	0.16	0.23	0.18	0.32					0.17
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	39.65	38.04	42.55	39.36	65.21	0.91	1.01	8.49	14.28	36.54
Exhst NOX:	2.41	2.31	2.67	2.41	4.02	0.80	0.93	14.01	0.55	3.07

0Emission factors are as of Jan. 1st of the indicated calendar year.
0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
Reformulated Gas: No

0VEL=38

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)			Period 1 RVP: 7.5		Period 2 RVP: 7.5		Period 2 Yr: 1993	
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HdGV	LDDV	LDDT	HDDV	MC	All Veh			
+													
Spd Km/hr:	38.0	38.0	38.0		38.0	38.0	38.0	38.0	38.0				
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006				
0Composite Emission Factors (grams/kilometer)													
VOC HC:	5.04	5.09	6.03	5.37	5.94	0.39	0.48	2.14	5.83	4.71			
Exhst HC:	3.35	3.44	4.07	3.62	3.23	0.39	0.48	2.14	2.68	3.17			
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15			
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11			
Runing HC:	0.18	0.15	0.22	0.17	0.30					0.16			
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12			
Exhst CO:	37.80	36.37	40.80	37.68	61.48	0.86	0.95	8.02	13.51	34.82			
Exhst NOX:	2.43	2.34	2.70	2.45	4.07	0.78	0.91	13.74	0.56	3.07			

0Emission factors are as of Jan. 1st of the indicated calendar year.
0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
Reformulated Gas: No

0VEL=40

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)			Period 1 RVP: 7.5		Period 2 RVP: 7.5		Period 2 Yr: 1993	
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HdGV	LDDV	LDDT	HDDV	MC	All Veh			
+													
Spd Km/hr:	40.0	40.0	40.0		40.0	40.0	40.0	40.0	40.0				
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006				
0Composite Emission Factors (grams/kilometer)													
VOC HC:	4.88	4.93	5.86	5.21	5.70	0.37	0.46	2.05	5.73	4.56			
Exhst HC:	3.20	3.29	3.90	3.47	3.01	0.37	0.46	2.05	2.58	3.02			
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15			
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11			
Runing HC:	0.17	0.14	0.20	0.16	0.29					0.15			
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12			
Exhst CO:	36.11	34.82	39.21	36.11	58.16	0.81	0.90	7.59	12.81	33.25			
Exhst NOX:	2.45	2.37	2.72	2.48	4.11	0.77	0.90	13.51	0.58	3.07			

0Emission factors are as of Jan. 1st of the indicated calendar year.
0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
Reformulated Gas: No

0VEL=42

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)			Period 1 RVP: 7.5		Period 2 RVP: 7.5		Period 2 Yr: 1993	
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HdGV	LDDV	LDDT	HDDV	MC	All Veh			
+													
Spd Km/hr:	42.0	42.0	42.0		42.0	42.0	42.0	42.0	42.0				
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006				
0Composite Emission Factors (grams/kilometer)													
VOC HC:	4.73	4.79	5.70	5.06	5.49	0.36	0.44	1.97	5.65	4.43			
Exhst HC:	3.06	3.15	3.75	3.33	2.81	0.36	0.44	1.97	2.49	2.89			
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15			
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11			

Runing HC:	0.16	0.14	0.20	0.15	0.28						0.15
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12	
Exhst CO:	34.54	33.36	37.75	34.65	55.20	0.77	0.86	7.21	12.15	31.80	
Exhst NOX:	2.46	2.40	2.75	2.50	4.15	0.76	0.88	13.31	0.59	3.08	

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=44

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)						
		Period 1 RVP: 7.5			Period 2 RVP: 7.5			Period 2 Yr: 1993			
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HGV	LDDV	LDDT	HDDV	MC	All Veh	
+											
Spd Km/hr:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0		
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006		
0Composite Emission Factors (grams/kilometer)											
VOC HC:	4.59	4.65	5.55	4.92	5.30	0.35	0.42	1.89	5.56	4.30	
Exhst HC:	2.93	3.02	3.61	3.20	2.63	0.35	0.42	1.89	2.41	2.77	
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15	
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11	
Runing HC:	0.15	0.13	0.19	0.15	0.26					0.14	
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12	
Exhst CO:	33.09	31.98	36.40	33.28	52.58	0.73	0.82	6.87	11.55	30.46	
Exhst NOX:	2.48	2.43	2.78	2.53	4.20	0.75	0.87	13.15	0.60	3.08	

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=46

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)						
		Period 1 RVP: 7.5			Period 2 RVP: 7.5			Period 2 Yr: 1993			
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HGV	LDDV	LDDT	HDDV	MC	All Veh	
+											
Spd Km/hr:	46.0	46.0	46.0		46.0	46.0	46.0	46.0	46.0		
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006		
0Composite Emission Factors (grams/kilometer)											
VOC HC:	4.47	4.53	5.41	4.79	5.13	0.33	0.41	1.82	5.48	4.18	
Exhst HC:	2.81	2.90	3.48	3.07	2.47	0.33	0.41	1.82	2.33	2.66	
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15	
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11	
Runing HC:	0.15	0.13	0.18	0.14	0.25					0.13	
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12	
Exhst CO:	31.74	30.70	35.16	32.01	50.25	0.70	0.78	6.56	10.98	29.22	
Exhst NOX:	2.50	2.46	2.80	2.56	4.24	0.74	0.86	13.01	0.62	3.09	

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=48

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)						
		Period 1 RVP: 7.5			Period 2 RVP: 7.5			Period 2 Yr: 1993			
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HGV	LDDV	LDDT	HDDV	MC	All Veh	
+											
Spd Km/hr:	48.0	48.0	48.0		48.0	48.0	48.0	48.0	48.0		
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006		
0Composite Emission Factors (grams/kilometer)											
VOC HC:	4.35	4.41	5.29	4.67	4.97	0.32	0.39	1.76	5.41	4.07	
Exhst HC:	2.70	2.79	3.36	2.96	2.33	0.32	0.39	1.76	2.26	2.55	
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15	
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11	
Runing HC:	0.14	0.12	0.17	0.13	0.24					0.13	
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12	
Exhst CO:	30.50	29.50	34.01	30.82	48.18	0.67	0.75	6.28	10.46	28.07	
Exhst NOX:	2.51	2.48	2.82	2.58	4.28	0.73	0.86	12.91	0.63	3.10	

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=50

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)					
		Period 1 RVP: 7.5			Period 2 RVP: 7.5			Period 2 Yr: 1993		
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	50.0	50.0	50.0		50.0	50.0	50.0	50.0	50.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	4.24	4.30	5.17	4.56	4.83	0.31	0.38	1.70	5.34	3.97
Exhst HC:	2.60	2.69	3.25	2.85	2.20	0.31	0.38	1.70	2.19	2.46
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.13	0.11	0.16	0.13	0.23					0.12
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	29.34	28.38	32.94	29.72	46.36	0.64	0.72	6.03	9.97	27.01
Exhst NOX:	2.53	2.50	2.84	2.60	4.32	0.73	0.85	12.83	0.64	3.11

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
Reformulated Gas: No

0VEL=52

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)					
		Period 1 RVP: 7.5			Period 2 RVP: 7.5			Period 2 Yr: 1993		
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	52.0	52.0	52.0		52.0	52.0	52.0	52.0	52.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	4.14	4.20	5.06	4.45	4.71	0.30	0.37	1.64	5.28	3.87
Exhst HC:	2.51	2.59	3.15	2.75	2.08	0.30	0.37	1.64	2.13	2.37
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.13	0.11	0.16	0.12	0.22					0.12
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	28.27	27.35	31.95	28.71	44.76	0.62	0.69	5.81	9.52	26.03
Exhst NOX:	2.55	2.53	2.86	2.62	4.37	0.73	0.85	12.78	0.65	3.12

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
Reformulated Gas: No

0VEL=54

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)					
		Period 1 RVP: 7.5			Period 2 RVP: 7.5			Period 2 Yr: 1993		
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	54.0	54.0	54.0		54.0	54.0	54.0	54.0	54.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	4.05	4.11	4.95	4.36	4.59	0.29	0.35	1.59	5.22	3.78
Exhst HC:	2.42	2.50	3.05	2.66	1.97	0.29	0.35	1.59	2.07	2.29
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.12	0.11	0.15	0.12	0.21					0.11
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	27.29	26.41	31.04	27.77	43.36	0.60	0.67	5.61	9.10	25.14
Exhst NOX:	2.56	2.55	2.88	2.64	4.41	0.73	0.85	12.77	0.66	3.13

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
Reformulated Gas: No

0VEL=56

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)					
		Period 1 RVP: 7.5			Period 2 RVP: 7.5			Period 2 Yr: 1993		
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	56.0	56.0	56.0		56.0	56.0	56.0	56.0	56.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	3.96	4.02	4.86	4.27	4.49	0.28	0.34	1.54	5.16	3.70
Exhst HC:	2.34	2.42	2.96	2.58	1.88	0.28	0.34	1.54	2.01	2.21

Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.12	0.10	0.15	0.11	0.21					0.11
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	26.39	25.55	30.20	26.92	42.15	0.58	0.65	5.43	8.71	24.31
Exhst NOX:	2.57	2.56	2.89	2.66	4.45	0.73	0.85	12.77	0.67	3.15

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=58

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)					
		Period 1 RVP: 7.5			Period 2 RVP: 7.5			Period 2 Yr: 1993		
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDTV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	58.0	58.0	58.0		58.0	58.0	58.0	58.0	58.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	3.88	3.94	4.77	4.19	4.39	0.27	0.33	1.50	5.11	3.63
Exhst HC:	2.26	2.35	2.88	2.50	1.79	0.27	0.33	1.50	1.96	2.14
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.11	0.10	0.14	0.11	0.20					0.10
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	25.57	24.78	29.43	26.14	41.11	0.56	0.63	5.27	8.36	23.56
Exhst NOX:	2.59	2.58	2.91	2.68	4.50	0.73	0.85	12.81	0.67	3.16

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=60

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)					
		Period 1 RVP: 7.5			Period 2 RVP: 7.5			Period 2 Yr: 1993		
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDTV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	60.0	60.0	60.0		60.0	60.0	60.0	60.0	60.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	3.81	3.87	4.69	4.11	4.31	0.27	0.32	1.45	5.06	3.56
Exhst HC:	2.19	2.28	2.80	2.43	1.71	0.27	0.32	1.45	1.91	2.07
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.11	0.09	0.14	0.11	0.19					0.10
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	24.82	24.09	28.72	25.45	40.24	0.55	0.61	5.14	8.04	22.88
Exhst NOX:	2.60	2.60	2.93	2.69	4.54	0.73	0.86	12.88	0.68	3.18

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=62

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)					
		Period 1 RVP: 7.5			Period 2 RVP: 7.5			Period 2 Yr: 1993		
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDTV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	62.0	62.0	62.0		62.0	62.0	62.0	62.0	62.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	3.74	3.81	4.62	4.05	4.23	0.26	0.32	1.42	5.02	3.50
Exhst HC:	2.13	2.22	2.73	2.37	1.64	0.26	0.32	1.42	1.87	2.02
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.10	0.09	0.13	0.10	0.18					0.09
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	24.14	23.47	28.07	24.83	39.51	0.54	0.60	5.02	7.75	22.27
Exhst NOX:	2.62	2.61	2.94	2.71	4.58	0.74	0.86	12.97	0.69	3.20

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C

Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

OVEL=64

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993

O Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDTV	LDDV	LDDT	HDDV	MC	All Veh
Spd Km/hr:	64.0	64.0	64.0		64.0	64.0	64.0	64.0	64.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	3.68	3.75	4.55	3.98	4.16	0.25	0.31	1.38	4.98	3.44
Exhst HC:	2.08	2.16	2.67	2.31	1.58	0.25	0.31	1.38	1.83	1.96
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.10	0.09	0.13	0.10	0.18					0.09
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	23.52	22.94	27.48	24.28	38.93	0.52	0.58	4.91	7.49	21.72
Exhst NOX:	2.63	2.63	2.96	2.73	4.63	0.74	0.87	13.09	0.69	3.22

0Emission factors are as of Jan. 1st of the indicated calendar year.
 0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

OVEL=66

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993

O Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDTV	LDDV	LDDT	HDDV	MC	All Veh
Spd Km/hr:	66.0	66.0	66.0		66.0	66.0	66.0	66.0	66.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	3.63	3.70	4.49	3.93	4.10	0.25	0.30	1.35	4.95	3.39
Exhst HC:	2.02	2.11	2.61	2.26	1.52	0.25	0.30	1.35	1.80	1.91
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.09	0.08	0.12	0.09	0.17					0.09
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	22.98	22.48	26.95	23.80	38.50	0.52	0.57	4.83	7.26	21.23
Exhst NOX:	2.65	2.64	2.97	2.74	4.67	0.75	0.88	13.25	0.70	3.24

0Emission factors are as of Jan. 1st of the indicated calendar year.
 0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

OVEL=68

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993

O Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDTV	LDDV	LDDT	HDDV	MC	All Veh
Spd Km/hr:	68.0	68.0	68.0		68.0	68.0	68.0	68.0	68.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	3.57	3.65	4.43	3.88	4.04	0.24	0.29	1.32	4.92	3.34
Exhst HC:	1.98	2.07	2.56	2.22	1.47	0.24	0.29	1.32	1.77	1.87
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.09	0.08	0.12	0.09	0.17					0.08
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	22.49	22.09	26.47	23.38	38.19	0.51	0.56	4.75	7.06	20.79
Exhst NOX:	2.66	2.66	2.99	2.75	4.71	0.76	0.89	13.43	0.70	3.27

0Emission factors are as of Jan. 1st of the indicated calendar year.
 0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

OVEL=70

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993

O Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDTV	LDDV	LDDT	HDDV	MC	All Veh
Spd Km/hr:	70.0	70.0	70.0		70.0	70.0	70.0	70.0	70.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										

VOC	HC:	3.53	3.61	4.38	3.84	3.99	0.23	0.29	1.29	4.90	3.29
Exhst	HC:	1.94	2.03	2.51	2.17	1.42	0.23	0.29	1.29	1.75	1.83
Evap.	HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel	HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing	HC:	0.09	0.08	0.11	0.09	0.16					0.08
Rsting	HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst	CO:	22.05	21.76	26.03	23.02	38.02	0.50	0.56	4.69	6.88	20.40
Exhst	NOX:	2.68	2.67	3.00	2.77	4.76	0.78	0.91	13.65	0.71	3.30

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=72

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993
 0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh

Spd Km/hr:	72.0	72.0	72.0		72.0	72.0	72.0	72.0	72.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	

0Composite Emission Factors (grams/kilometer)

VOC	HC:	3.49	3.57	4.33	3.80	3.94	0.23	0.28	1.26	4.88	3.25
Exhst	HC:	1.90	2.00	2.47	2.14	1.38	0.23	0.28	1.26	1.73	1.79
Evap.	HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel	HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing	HC:	0.08	0.07	0.11	0.08	0.16					0.07
Rsting	HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst	CO:	21.66	21.49	25.64	22.71	37.97	0.50	0.55	4.65	6.72	20.06
Exhst	NOX:	2.70	2.69	3.02	2.78	4.80	0.79	0.92	13.90	0.71	3.33

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=74

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993
 0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh

Spd Km/hr:	74.0	74.0	74.0		74.0	74.0	74.0	74.0	74.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	

0Composite Emission Factors (grams/kilometer)

VOC	HC:	3.45	3.54	4.29	3.76	3.90	0.23	0.28	1.24	4.86	3.22
Exhst	HC:	1.86	1.97	2.43	2.11	1.34	0.23	0.28	1.24	1.71	1.76
Evap.	HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel	HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing	HC:	0.08	0.07	0.11	0.08	0.15					0.07
Rsting	HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst	CO:	21.31	21.25	25.29	22.44	38.06	0.49	0.55	4.62	6.58	19.76
Exhst	NOX:	2.72	2.70	3.04	2.80	4.84	0.81	0.94	14.18	0.72	3.37

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=76

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993
 0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh

Spd Km/hr:	76.0	76.0	76.0		76.0	76.0	76.0	76.0	76.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	

0Composite Emission Factors (grams/kilometer)

VOC	HC:	3.41	3.51	4.25	3.73	3.86	0.22	0.27	1.22	4.85	3.19
Exhst	HC:	1.83	1.94	2.40	2.08	1.31	0.22	0.27	1.22	1.70	1.73
Evap.	HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel	HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing	HC:	0.07	0.07	0.10	0.08	0.15					0.07
Rsting	HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst	CO:	20.99	21.05	24.97	22.21	38.28	0.49	0.55	4.60	6.45	19.49
Exhst	NOX:	2.74	2.72	3.06	2.82	4.88	0.82	0.96	14.51	0.72	3.41

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

OVEL=78

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)					
		Period 1 RVP: 7.5			Period 2 RVP: 7.5			Period 2 Yr: 1993		
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HdGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	78.0	78.0	78.0		78.0	78.0	78.0	78.0	78.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	3.39	3.49	4.23	3.71	3.83	0.22	0.27	1.20	4.84	3.16
Exhst HC:	1.81	1.93	2.38	2.06	1.28	0.22	0.27	1.20	1.69	1.71
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.07	0.06	0.10	0.07	0.14					0.06
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	20.81	20.94	24.79	22.07	38.62	0.49	0.55	4.59	6.38	19.34
Exhst NOX:	2.81	2.78	3.14	2.89	4.93	0.85	0.99	14.87	0.74	3.49

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

OVEL=80

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)					
		Period 1 RVP: 7.5			Period 2 RVP: 7.5			Period 2 Yr: 1993		
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HdGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	80.0	80.0	80.0		80.0	80.0	80.0	80.0	80.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	3.39	3.49	4.22	3.70	3.80	0.22	0.26	1.18	4.84	3.16
Exhst HC:	1.81	1.93	2.38	2.06	1.26	0.22	0.26	1.18	1.69	1.71
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.07	0.06	0.09	0.07	0.13					0.06
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	20.81	20.94	24.79	22.07	39.11	0.49	0.55	4.60	6.38	19.35
Exhst NOX:	2.96	2.92	3.31	3.04	4.97	0.87	1.02	15.28	0.77	3.65

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

OVEL=82

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)					
		Period 1 RVP: 7.5			Period 2 RVP: 7.5			Period 2 Yr: 1993		
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HdGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	82.0	82.0	82.0		82.0	82.0	82.0	82.0	82.0	
VMT Mix:	0.822	0.036	0.015		0.020	0.002	0.039	0.060	0.006	
0Composite Emission Factors (grams/kilometer)										
VOC HC:	3.38	3.49	4.22	3.70	3.77	0.21	0.26	1.17	4.84	3.15
Exhst HC:	1.81	1.93	2.38	2.06	1.24	0.21	0.26	1.17	1.69	1.71
Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
Runing HC:	0.06	0.06	0.09	0.07	0.13					0.06
Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
Exhst CO:	20.81	20.94	24.79	22.07	39.73	0.49	0.55	4.62	6.38	19.36
Exhst NOX:	3.10	3.06	3.48	3.18	5.01	0.89	1.05	15.73	0.80	3.81

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

OVEL=84

		Minimum Temp: 20. (C)			Maximum Temp: 36. (C)					
		Period 1 RVP: 7.5			Period 2 RVP: 7.5			Period 2 Yr: 1993		
0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HdGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Spd Km/hr:	84.0	84.0	84.0		84.0	84.0	84.0	84.0	84.0	

VMT Mix: 0.822 0.036 0.015 0.020 0.002 0.039 0.060 0.006
 0Composite Emission Factors (grams/kilometer)
 VOC HC: 3.38 3.48 4.21 3.70 3.75 0.21 0.26 1.15 4.84 3.15
 Exhst HC: 1.81 1.93 2.38 2.06 1.22 0.21 0.26 1.15 1.69 1.71
 Evap. HC: 1.25 1.24 1.53 1.32 2.08 2.73 1.15
 Refuel HC: 0.12 0.15 0.15 0.15 0.22 0.11
 Runing HC: 0.06 0.06 0.09 0.06 0.12 0.06
 Rsting HC: 0.14 0.11 0.08 0.10 0.10 0.43 0.12
 Exhst CO: 20.81 20.94 24.79 22.07 40.50 0.50 0.55 4.66 6.38 19.38
 Exhst NOX: 3.25 3.20 3.65 3.33 5.06 0.92 1.08 16.23 0.83 3.97

0Emission factors are as of Jan. 1st of the indicated calendar year.
 0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=86

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993
 0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh
 +
 Spd Km/hr: 86.0 86.0 86.0 86.0 86.0 86.0 86.0 86.0 86.0
 VMT Mix: 0.822 0.036 0.015 0.020 0.002 0.039 0.060 0.006
 0Composite Emission Factors (grams/kilometer)
 VOC HC: 3.38 3.48 4.21 3.70 3.73 0.21 0.25 1.14 4.84 3.15
 Exhst HC: 1.81 1.93 2.38 2.06 1.20 0.21 0.25 1.14 1.69 1.71
 Evap. HC: 1.25 1.24 1.53 1.32 2.08 2.73 1.15
 Refuel HC: 0.12 0.15 0.15 0.15 0.22 0.11
 Runing HC: 0.06 0.05 0.08 0.06 0.12 0.05
 Rsting HC: 0.14 0.11 0.08 0.10 0.10 0.43 0.12
 Exhst CO: 20.81 20.94 24.79 22.07 41.43 0.50 0.56 4.70 6.38 19.40
 Exhst NOX: 3.40 3.33 3.82 3.48 5.10 0.95 1.12 16.79 0.86 4.13

0Emission factors are as of Jan. 1st of the indicated calendar year.
 0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=88

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993
 0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh
 +
 Spd Km/hr: 88.0 88.0 88.0 88.0 88.0 88.0 88.0 88.0 88.0
 VMT Mix: 0.822 0.036 0.015 0.020 0.002 0.039 0.060 0.006
 0Composite Emission Factors (grams/kilometer)
 VOC HC: 3.38 3.48 4.21 3.69 3.71 0.21 0.25 1.13 4.84 3.14
 Exhst HC: 1.81 1.93 2.38 2.06 1.19 0.21 0.25 1.13 1.69 1.71
 Evap. HC: 1.25 1.24 1.53 1.32 2.08 2.73 1.15
 Refuel HC: 0.12 0.15 0.15 0.15 0.22 0.11
 Runing HC: 0.06 0.05 0.08 0.06 0.11 0.05
 Rsting HC: 0.14 0.11 0.08 0.10 0.10 0.43 0.12
 Exhst CO: 20.81 20.94 24.79 22.07 42.53 0.51 0.57 4.77 6.38 19.43
 Exhst NOX: 3.55 3.47 3.99 3.63 5.14 0.99 1.16 17.40 0.89 4.30

0Emission factors are as of Jan. 1st of the indicated calendar year.
 0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=90

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993
 0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh
 +
 Spd Km/hr: 90.0 90.0 90.0 90.0 90.0 90.0 90.0 90.0 90.0
 VMT Mix: 0.822 0.036 0.015 0.020 0.002 0.039 0.060 0.006
 0Composite Emission Factors (grams/kilometer)
 VOC HC: 3.50 3.61 4.37 3.84 3.70 0.20 0.25 1.12 4.96 3.25
 Exhst HC: 1.94 2.06 2.55 2.20 1.19 0.20 0.25 1.12 1.80 1.82
 Evap. HC: 1.25 1.24 1.53 1.32 2.08 2.73 1.15
 Refuel HC: 0.12 0.15 0.15 0.15 0.22 0.11
 Runing HC: 0.05 0.05 0.07 0.06 0.11 0.05
 Rsting HC: 0.14 0.11 0.08 0.10 0.10 0.43 0.12
 Exhst CO: 24.96 25.34 30.05 26.73 43.80 0.52 0.58 4.84 7.81 23.11
 Exhst NOX: 3.69 3.61 4.17 3.77 5.19 1.03 1.20 18.07 0.92 4.47

0Emission factors are as of Jan. 1st of the indicated calendar year.
 0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=92

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993
 0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh
 +
 Spd Km/hr: 92.0 92.0 92.0 92.0 92.0 92.0 92.0 92.0 92.0
 VMT Mix: 0.822 0.036 0.015 0.020 0.002 0.039 0.060 0.006
 0Composite Emission Factors (grams/kilometer)
 VOC HC: 3.66 3.79 4.59 4.03 3.69 0.20 0.25 1.11 5.11 3.40
 Exhst HC: 2.10 2.24 2.77 2.40 1.18 0.20 0.25 1.11 1.95 1.96
 Evap. HC: 1.25 1.24 1.53 1.32 2.08 2.73 1.15
 Refuel HC: 0.12 0.15 0.15 0.15 0.22 0.11
 Runing HC: 0.05 0.05 0.07 0.05 0.10 0.05
 Rsting HC: 0.14 0.11 0.08 0.10 0.10 0.43 0.12
 Exhst CO: 30.47 31.20 37.03 32.92 45.26 0.53 0.59 4.93 9.72 28.01
 Exhst NOX: 3.84 3.75 4.34 3.92 5.23 1.07 1.25 18.81 0.95 4.65

0Emission factors are as of Jan. 1st of the indicated calendar year.
 0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=94

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993
 0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh
 +
 Spd Km/hr: 94.0 94.0 94.0 94.0 94.0 94.0 94.0 94.0 94.0
 VMT Mix: 0.822 0.036 0.015 0.020 0.002 0.039 0.060 0.006
 0Composite Emission Factors (grams/kilometer)
 VOC HC: 3.83 3.97 4.81 4.22 3.68 0.20 0.25 1.11 5.25 3.54
 Exhst HC: 2.27 2.42 2.99 2.59 1.18 0.20 0.25 1.11 2.10 2.11
 Evap. HC: 1.25 1.24 1.53 1.32 2.08 2.73 1.15
 Refuel HC: 0.12 0.15 0.15 0.15 0.22 0.11
 Runing HC: 0.05 0.05 0.07 0.05 0.10 0.05
 Rsting HC: 0.14 0.11 0.08 0.10 0.10 0.43 0.12
 Exhst CO: 35.99 37.06 44.02 39.11 46.93 0.54 0.60 5.04 11.63 32.91
 Exhst NOX: 3.99 3.89 4.51 4.07 5.27 1.12 1.30 19.63 0.98 4.83

0Emission factors are as of Jan. 1st of the indicated calendar year.
 0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=96

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993
 0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh
 +
 Spd Km/hr: 96.0 96.0 96.0 96.0 96.0 96.0 96.0 96.0 96.0
 VMT Mix: 0.822 0.036 0.015 0.020 0.002 0.039 0.060 0.006
 0Composite Emission Factors (grams/kilometer)
 VOC HC: 3.99 4.15 5.04 4.41 3.68 0.20 0.25 1.10 5.40 3.69
 Exhst HC: 2.44 2.60 3.22 2.78 1.18 0.20 0.25 1.10 2.25 2.26
 Evap. HC: 1.25 1.24 1.53 1.32 2.08 2.73 1.15
 Refuel HC: 0.12 0.15 0.15 0.15 0.22 0.11
 Runing HC: 0.05 0.04 0.07 0.05 0.09 0.04
 Rsting HC: 0.14 0.11 0.08 0.10 0.10 0.43 0.12
 Exhst CO: 41.50 42.91 51.01 45.29 48.83 0.55 0.61 5.16 13.53 37.82
 Exhst NOX: 4.14 4.02 4.68 4.22 5.32 1.17 1.36 20.52 1.01 5.02

0Emission factors are as of Jan. 1st of the indicated calendar year.
 0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
 Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
 Reformulated Gas: No

0VEL=98

Minimum Temp: 20. (C) Maximum Temp: 36. (C)
 Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993
 0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh

+	Spd Km/hr:	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	
	VMT Mix:	0.822	0.036	0.015	0.020	0.002	0.039	0.060	0.006		
0	Composite Emission Factors (grams/kilometer)										
	VOC HC:	4.16	4.32	5.26	4.60	3.68	0.20	0.25	1.10	5.55	3.83
	Exhst HC:	2.60	2.78	3.44	2.98	1.19	0.20	0.25	1.10	2.40	2.41
	Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
	Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
	Runing HC:	0.05	0.04	0.06	0.05	0.09					0.04
	Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
	Exhst CO:	47.02	48.77	58.00	51.48	50.98	0.57	0.63	5.30	15.44	42.73
	Exhst NOX:	4.29	4.16	4.85	4.36	5.36	1.22	1.43	21.51	1.04	5.21

0Emission factors are as of Jan. 1st of the indicated calendar year.
0Cal. Year: 1996 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 25.5 / 25.5 / 25.5 C
Anti-tam. Program: No Operating Mode: 19.6 / 19.7 / 30.0
Reformulated Gas: No

0VEL=99 Minimum Temp: 20. (C) Maximum Temp: 36. (C)
Period 1 RVP: 7.5 Period 2 RVP: 7.5 Period 2 Yr: 1993
0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh

+	Spd Km/hr:	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	
	VMT Mix:	0.822	0.036	0.015	0.020	0.002	0.039	0.060	0.006		
0	Composite Emission Factors (grams/kilometer)										
	VOC HC:	4.24	4.41	5.37	4.69	3.68	0.20	0.25	1.10	5.63	3.91
	Exhst HC:	2.69	2.87	3.55	3.07	1.19	0.20	0.25	1.10	2.48	2.48
	Evap. HC:	1.25	1.24	1.53	1.32	2.08				2.73	1.15
	Refuel HC:	0.12	0.15	0.15	0.15	0.22					0.11
	Runing HC:	0.05	0.04	0.06	0.05	0.09					0.04
	Rsting HC:	0.14	0.11	0.08	0.10	0.10				0.43	0.12
	Exhst CO:	49.78	51.70	61.49	54.58	52.15	0.57	0.64	5.38	16.39	45.19
	Exhst NOX:	4.36	4.23	4.94	4.44	5.38	1.25	1.46	22.03	1.05	5.31

Appendix D

Thematic maps of regional mobile-source emissions
(based on Juarez 1996 model and El Paso 1994 model).

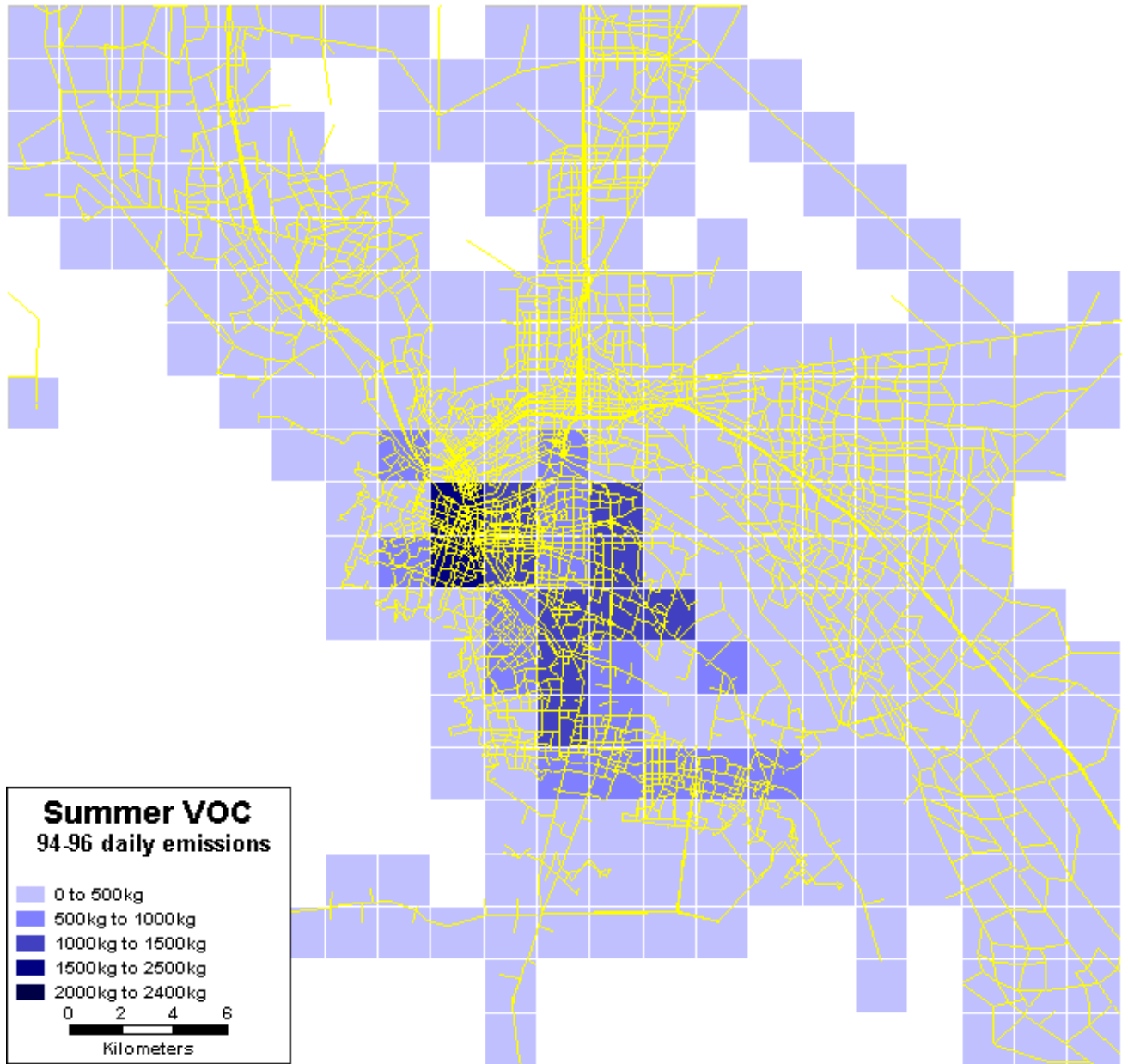
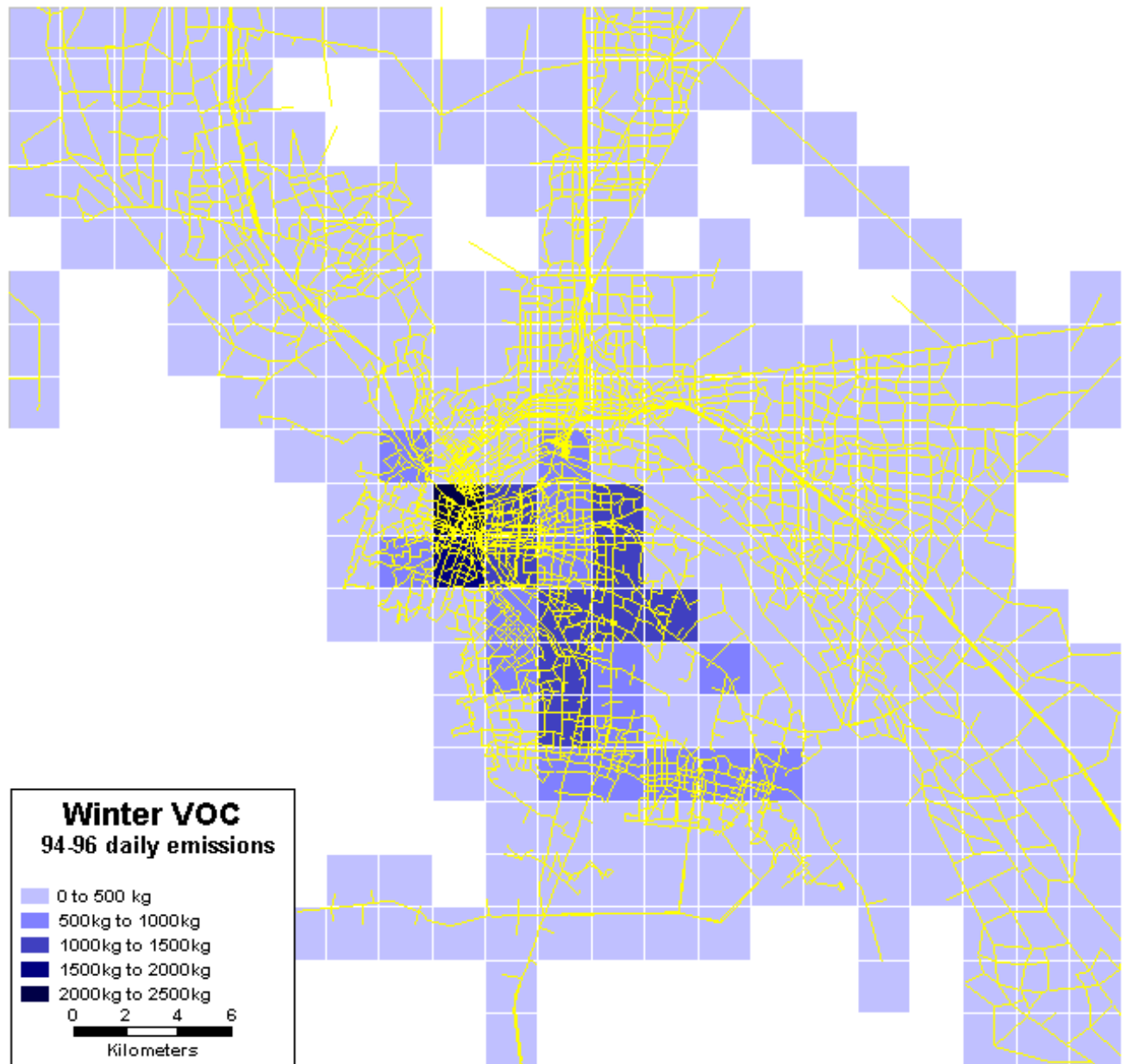
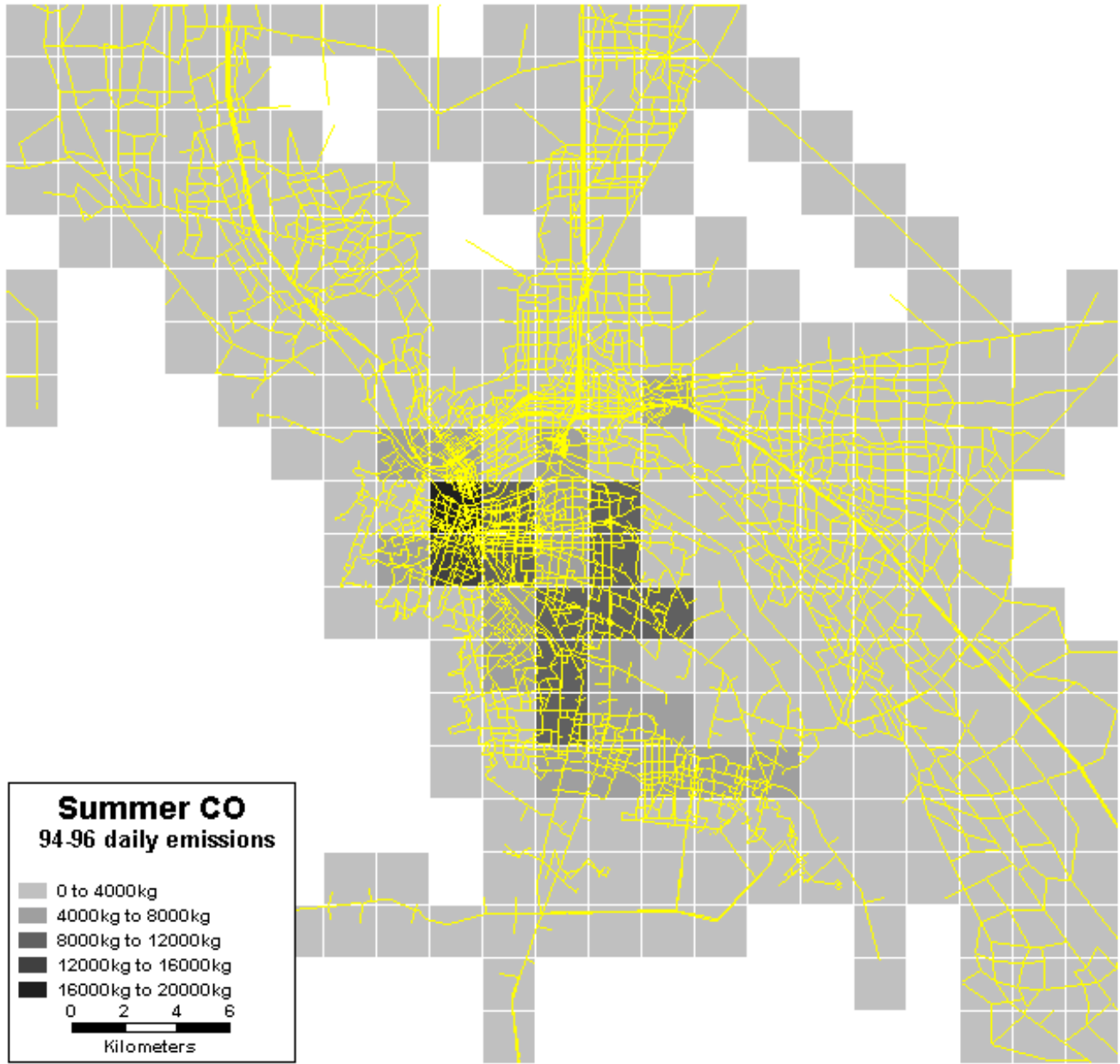


Figure D1. Daily emissions of VOC from mobile sources in the Paso del Norte region, during the summer.



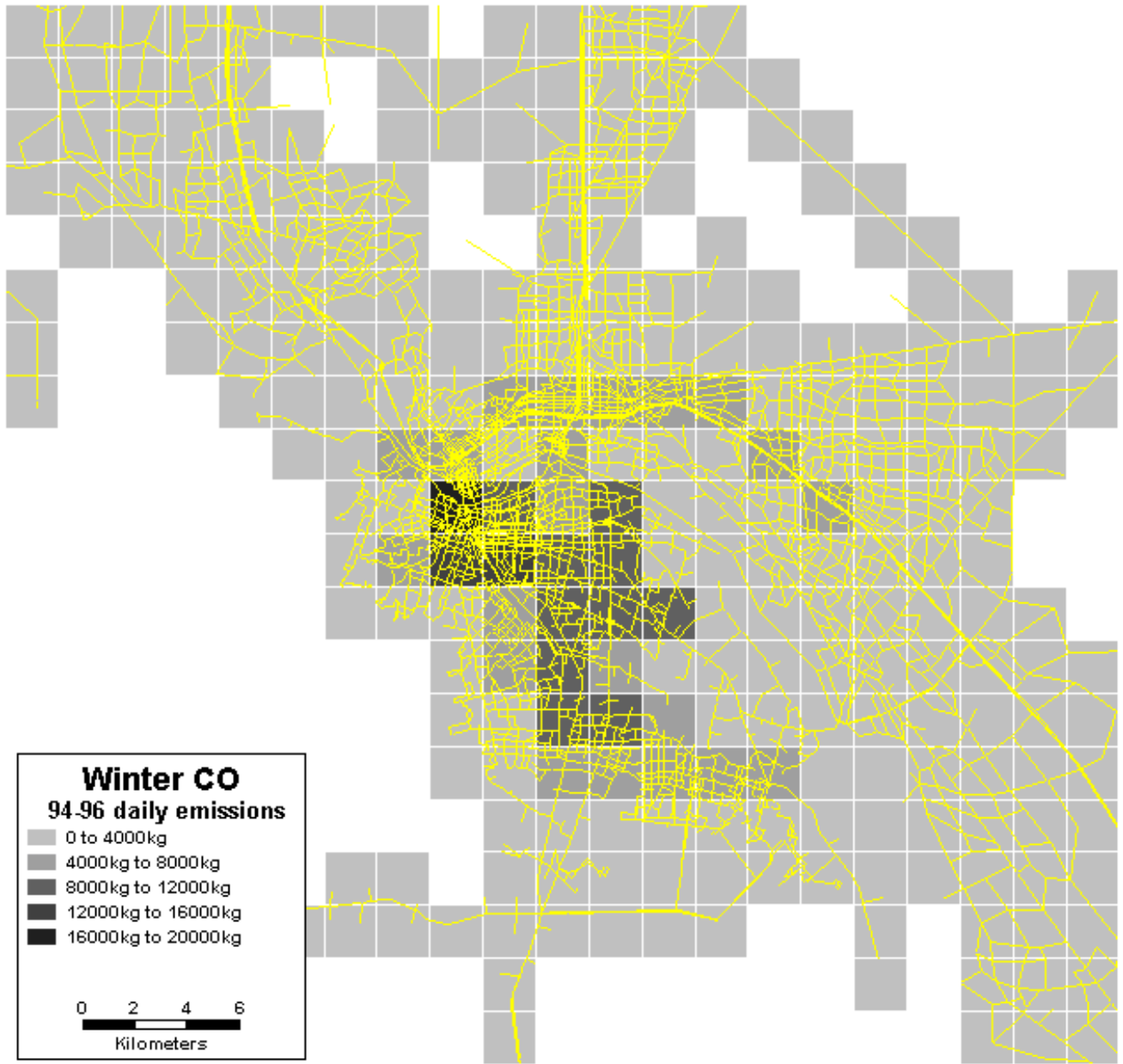
Note: Model does not reflect idling conditions at international crossings.

Figure D2. Daily emissions of VOC from mobile sources in the Paso del Norte region, during the winter.



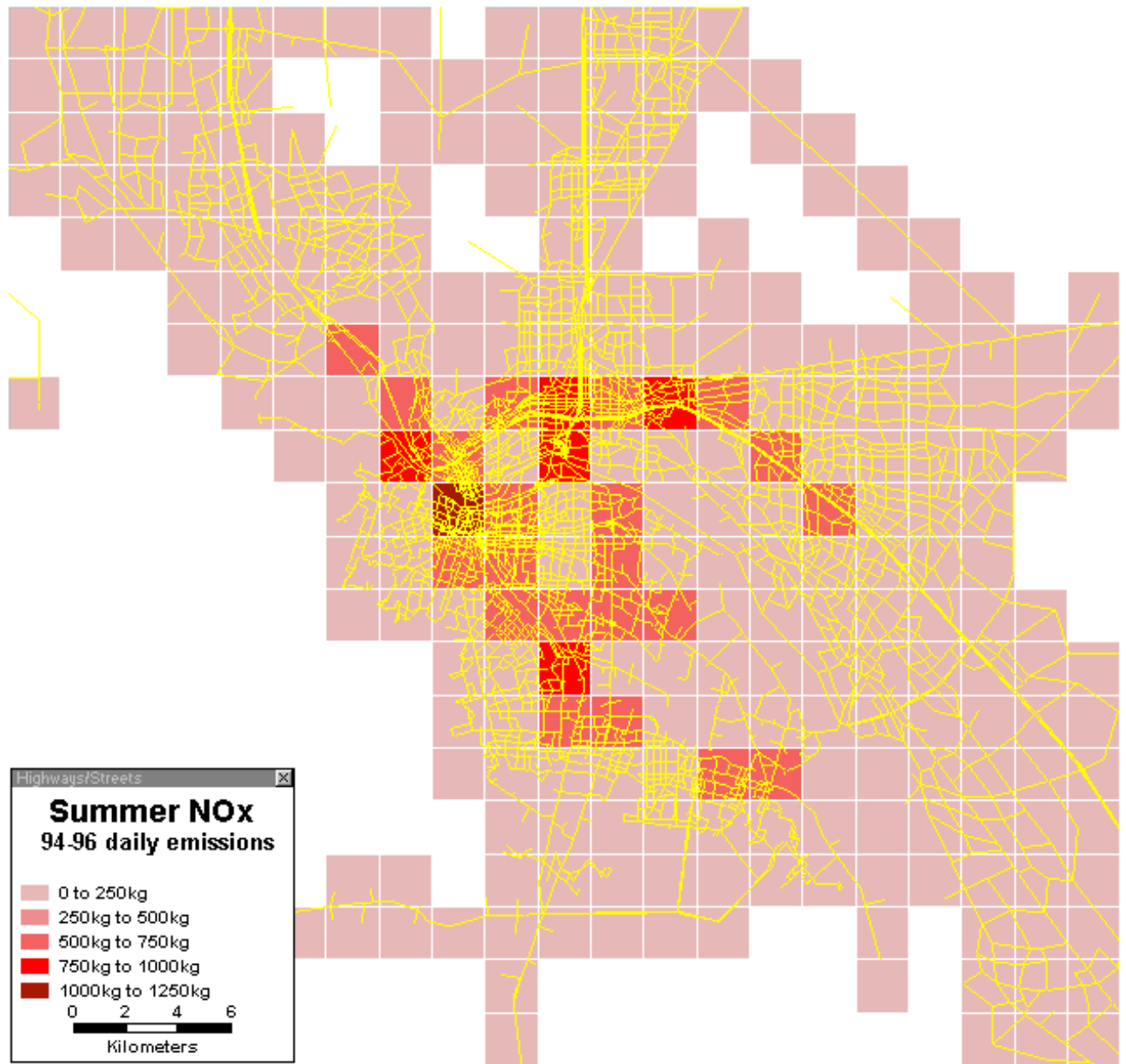
Note: Model does not reflect idling conditions at international crossings.

Figure D3. Daily emissions of CO from mobile sources in the Paso del Norte region, during the summer.



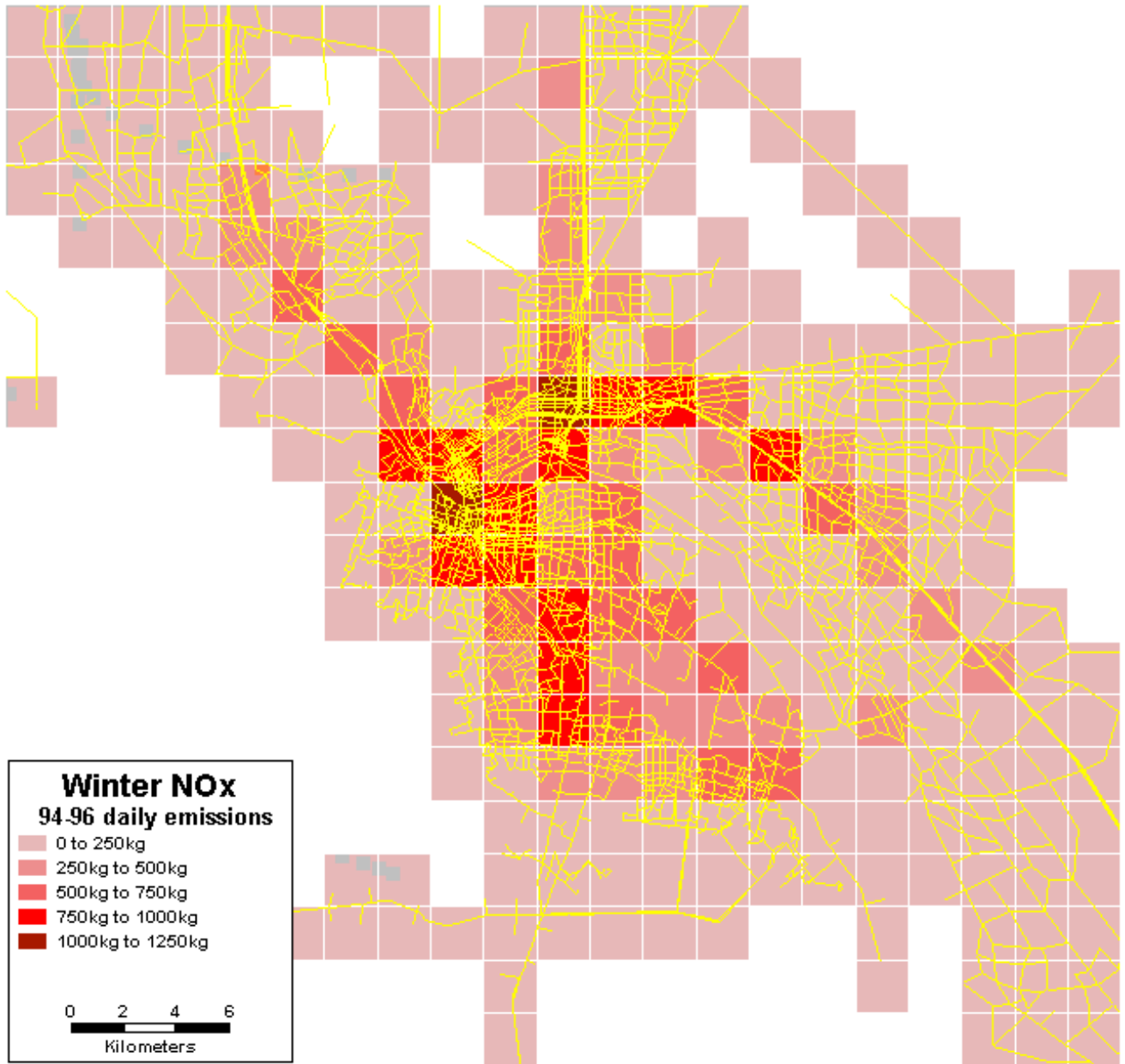
Note: Model does not reflect idling conditions at international crossings.

Figure D4. Daily emissions of CO from mobile sources in the Paso del Norte region, during the winter.



Note: Model does not reflect idling conditions at international crossings.

Figure D5. Daily emissions of NOx from mobile sources in the Paso del Norte region, during the summer.



Note: Model does not reflect idling conditions at international crossings.

Figure D6. Daily emissions of NOx from mobile sources in the Paso del Norte region, during the winter.

Table D1. Summary of daily mobile source emissions in the Paso del Norte region (94-96).

		daily VMT	Tons/day		
			VOC	CO	NOx
Juarez	Summer 1996	3.6 million	31.1	242.8	18.2
	Winter 1996	3.6 million	30.0	280.5	21.0
El Paso	Summer 1994	12.8 million	14.7	131.9	28.1
	Winter 1994	12.8 million	19.9	218.7	33.4