

REVISIONS TO THE STATE IMPLEMENTATION PLAN  
FOR THE CONTROL OF OZONE AIR POLLUTION

ATTAINMENT DEMONSTRATION FOR THE  
HOUSTON/GALVESTON  
OZONE NONATTAINMENT AREA

**Appendix D**

**Details of Future Year (2007) Emissions Inventory Development**

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## **Appendix D**

### **Details of Future Year (2007) Emissions Inventory Development**

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## **Appendix D**

### **Details of Future Year (2007) Emissions Inventory Development**

This appendix contains the specific details of the future year (2007) projected emissions inventory. This appendix also provides other data and narrative that would not be required for the cursory reader of the *Revisions to the State Implementation Plan for the Control of Ozone Air Pollution -- Attainment Demonstration for the Houston/Galveston Ozone Nonattainment Area* (SIP document), but may be of some use to discerning parties. The structure of this appendix will follow that of Section n, *Future Year (2007) EI*, of the SIP document, commencing with a more detailed discussion of Emissions Growth Factor Development, and concluding with emissions summary tables by nonattainment county (8 Houston-Galveston and 3 Beaumont-Port Arthur) and regions.

## **Emissions Growth Factor Development**

## Emissions Growth Factor Development

The REMI model procured by the TNRCC had a total of 31 economic regions, comprised of 21 individual regions (with each region being a single county) and 10 multi-county regions. The 31 regions are as follows:

21 Texas single counties were each specified to be separate REMI model economic regions, which is composed of the 16 NAA counties and 5 near-nonattainment counties:

### DFW NAA:

- #1) Collin
- #2) Dallas
- #3) Denton
- #4) Tarrant

### H/G NAA:

- #5) Brazoria
- #6) Chambers
- #7) Fort Bend
- #8) Galveston
- #9) Harris
- #10) Liberty
- #11) Montgomery
- #12) Waller

### B/PA NAA:

- #13) Hardin
- #14) Jefferson
- #15) Orange

### El Paso NAA:

- #16) El Paso

### Near-NAA:

- #17) Bexar
- #18) Gregg
- #19) Nueces
- #20) Travis
- #21) Victoria

The remainder of the state was divided into 10 economic regions, corresponding to the Texas State Comptroller's Economic Regional Boundaries map (as reproduced in Figure D-1 on the following page):

- #22) The "High Plains" economic region
- #23) The "Northwest Texas" economic region
- #24) The "Metroplex" economic region (excludes #1-#4 above)
- #25) The "Upper East Texas" economic region (excludes #18 above)
- #26) The "Southeast Texas" economic region (excludes #13-#15 above)
- #27) The "Gulf Coast" economic region (excludes #5-#12 above)
- #28) The "South Texas" economic region (excludes #17, #19, #21 above)
- #29) The "Upper Rio Grande" economic region (excludes #16 above)
- #30) The "West Texas" economic region
- #31) The "Central Texas" economic region (excludes #20 above)

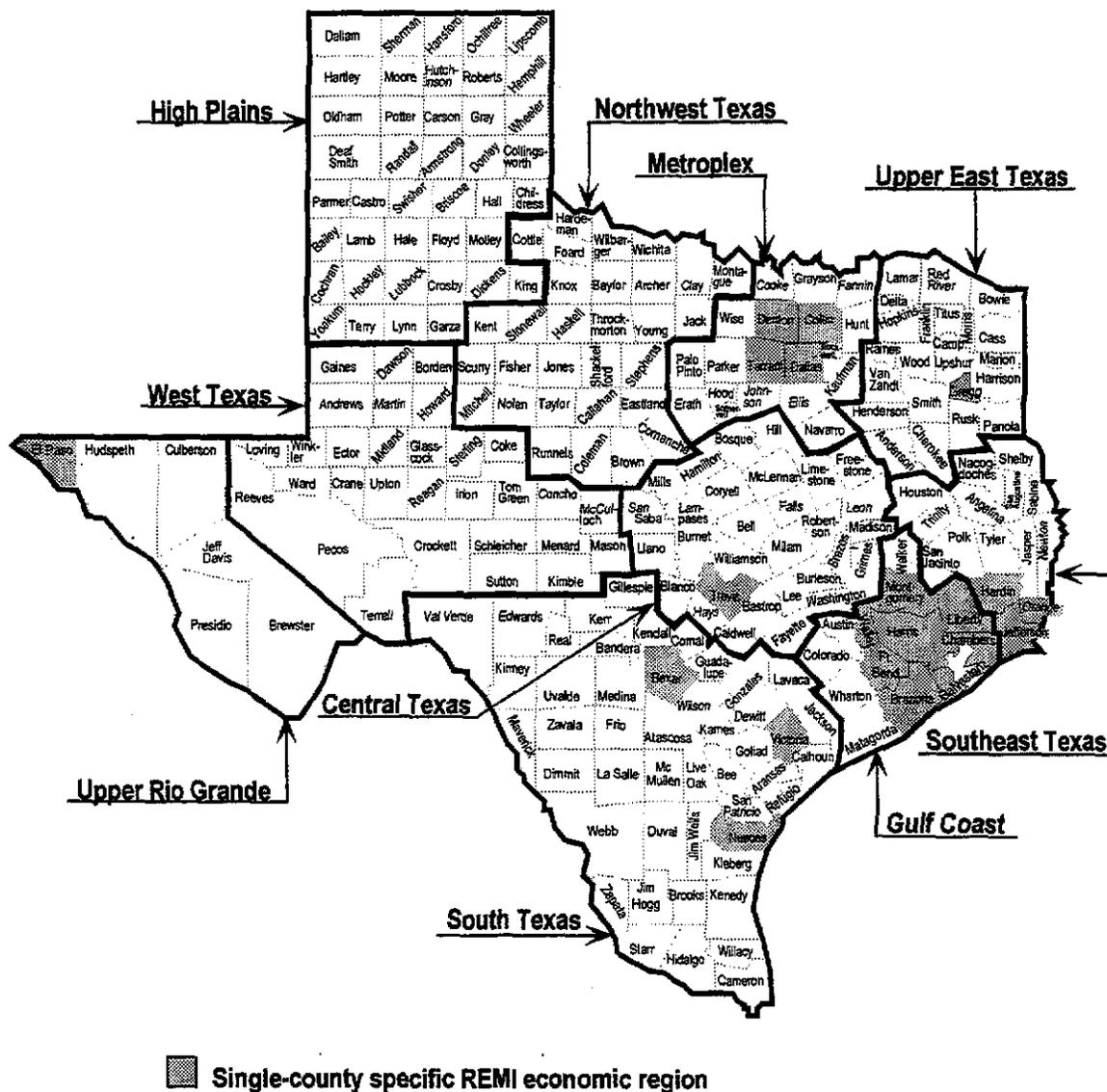


Figure D-1. Texas State Comptroller's Economic Regional Boundaries Map

The REMI model was executed for the period 1991 through 2015. The modeled results, which consisted of economic forecasts specific to each of the 53 economic sectors for each of the 31 Texas regions, were then used as input files to the "Crosstalk" growth factor module of EGAS, version 3. This module took the categorized economic forecast data from REMI and converted them into emissions growth factors classified by Area Mobile Source (AMS) code or Source Classification Code (SCC). The growth factors were then written to one of seven ASCII output file types:

1. *res\_fuel.scc* -- contains factors for approximately 15 AMS codes associated with residential fuel combustion
2. *com\_fuel.scc* -- contains factors for 65 total SCC and AMS codes associated with commercial fuel combustion
3. *ind\_fuel.scc* -- contains factors for approximately 210 total SCC and AMS codes associated with industrial fuel combustion
4. *electric.scc* -- contains factors for approximately 55 total SCC and AMS codes associated with electric utility fuel combustion
5. *vmt.scc* -- contains factors for 560 AMS codes associated with on-road mobile sources
6. *phy.scc* -- contains factors for approximately 6000 total SCC and AMS codes covering most industrial processes
7. *other.scc* -- contains factors for approximately 350 total miscellaneous SCC and AMS codes not otherwise covered above

One growth factor file, the union of these 7 files, is available for download from a TNRCC ftp location. The file contains every county FIP and region to which growth was applied, along with every SCC to which growth was applied. Please call Mr. Bright Dornblaser at (512)239-1978 for details about download location.

The TNRCC believes that this specialized Texas-version of the REMI model, in conjunction with EGAS, provided considerably more accurate growth factors than would have EGAS used alone. In summary, the REMI model was used for several reasons, including:

- ◆ The REMI model categorizes industries into 53 groups (due to use of 2-digit SIC); EGAS only provides for 14 industry groups (due to use of 1-digit SIC).
- ◆ The REMI model divided Texas into 31 economic regions, whereas EGAS divides Texas into only 4 regions: the El Paso, Houston-Galveston-Brazoria, and Beaumont-Port Arthur ozone NAAs, and the remainder of the state of Texas.
- ◆ The TNRCC was able to use more recent (November 16, 1995) economic data via REMI than was available with EPA's EGAS.

Hence, the TNRCC REMI-EGAS methodology should yield higher precision growth factors for Texas than would be expected by the use of EGAS alone.

## ***On-Road Mobile Sources***

Because TTI produced 2007 emissions estimates for only the August 17-21, 1993 episode, TNRCC staff developed adjustment factors to produce emissions for September 6-11, 1993 based on temperature and seasonal activity differences. Additionally, the TNRCC applied an adjustment to account for the differences between the travel demand model-generated VMT and Highway Performance Monitoring System (HPMS) VMT. The process followed is similar to that used to develop emissions for the September episode in the base case, described in detail in Appendix B, Chapter 3, *On-road Mobile Source Emissions*.

Staff from the TNRCC Emissions Inventory Section (EI) and TTI coordinated the multi-agency effort to develop mobile source emissions and supporting vehicle activity estimates modeled in the base case and projected inventories. TTI, TxDOT, and the Houston-Galveston Area Council provided detailed transportation activity forecasts, travel demand modeling and emissions modeling support. The TNRCC EI staff provided MOBILE5a emissions modeling support for perimeter counties, and overall coordination and storing of the large amount of data needed for this project. Detailed nonattainment county emissions for H/G and B/PA were developed by TTI. Emissions for Victoria county were also developed by TTI using a less detailed methodology consistent with the 1993 base case modeling. The TNRCC EI staff provided the projected 2007 emissions for the remaining attainment counties based on projected VMT estimates developed by TxDOT. Table D-9 (below) summarizes the sources of data for the projected 2007 COAST on-road mobile emissions inventories.

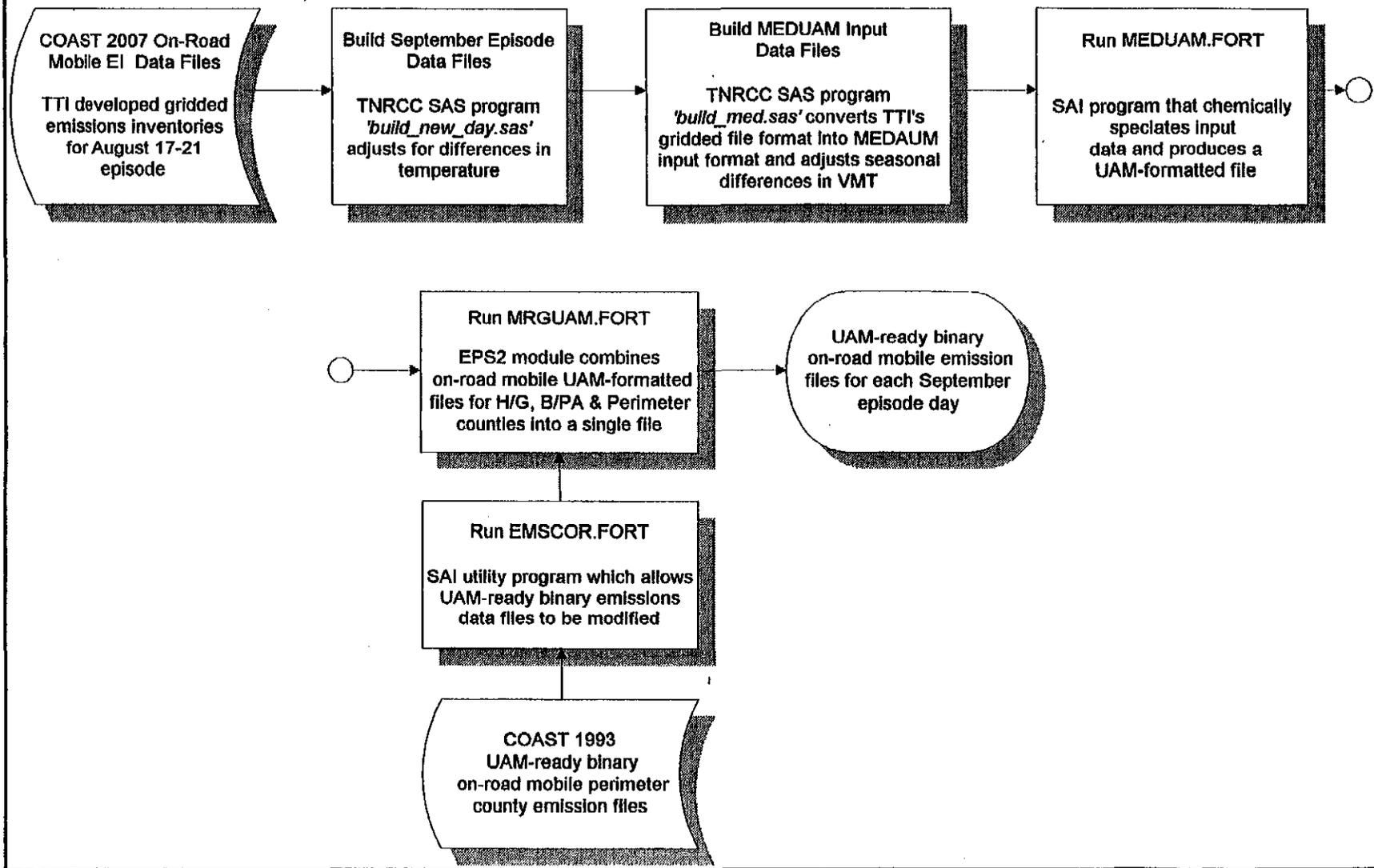
Table D-9. Mobile Source Emissions Data Sources			
Region	Source	Episode Day	
		August 17-21, 2007	September 6-11, 2007
H/G, B/PA Nonattainment Counties	TTI	<ul style="list-style-type: none"> <li>Day-specific hourly gridded emissions for 8 vehicle types</li> <li>HPMS adjustment factor</li> </ul>	<ul style="list-style-type: none"> <li>VMT adjustment factors</li> </ul>
	TNRCC	N/A	<ul style="list-style-type: none"> <li>Day-specific hourly temperature adjustment factors</li> </ul>
Victoria County	TTI	<ul style="list-style-type: none"> <li>Episode-specific gridded daily total emissions for 8 vehicle types</li> </ul>	N/A
	TNRCC	N/A	<ul style="list-style-type: none"> <li>Episode-specific temperature adjustment factors</li> <li>Temporal profiles</li> </ul>
Remaining COAST counties	TNRCC	N/A	<ul style="list-style-type: none"> <li>1993 UAM-ready emissions data files</li> <li>2007 county-wide emissions based on MOBILE5a emission factors and projected 2007 VMT *</li> <li>1993 to 2007 adjustment factors</li> </ul>

\* MOBILE5a input parameters unchanged from 1993 except for year of evaluation. Projected 2007 VMT estimates provided by TxDOT.

The methodology for deriving emissions for days which were not directly modeled by TTI remains unchanged from the base case modeling study. In general, temperature adjustment factors developed by the TNRCC EI staff were applied to adjust for temperature differences between the original August and September episodes. Each "derived day" (adjusted day for September episode) was based on a TTI-modeled day in the August 17-21 episode which fell on the same day of the week, except for Monday, September 6, which was based on the TTI-modeled day of Tuesday, August 17. The association of derived days to corresponding TTI-modeled days can be found in Appendix B, Chapter 3, *On-road Mobile Source Emissions*.

UAM-ready emissions data files for each derived day were generated using a series of computer programs, some of which were written by the TNRCC SIP Modeling staff and others which were written by Systems Applications Incorporated (SAI). Emissions processing for year 2007 includes the same major steps as performed for the base case processing; however, some of the computer programs were replaced with more efficient versions. Figure D-2 (following page) summarizes the flow of data and programs used for processing the 2007 COAST mobile source emissions.

## Data Flow for COAST 2007 On-Road Mobile Source Emissions Processing



**Figure D-2.** Data Flow Diagram for On-Road Mobile Source Emissions Processing

The first program in the series is a TNRCC-developed SAS program, *build\_new\_day.sas*, which reads the gridded emission files of the assigned TTI-modeled day, makes adjustments for temperature differences, and writes a new set of gridded emission data files for the derived day. Detailed documentation for the *build\_new\_day.sas* program can be found in Appendix B, Chapter 3, *On-road Mobile Source Emissions*.

Continuing with the data flow of Figure D-2, data reformatting and seasonal VMT adjustments were applied with the next program in the series, *build\_med.sas*, also written by TNRCC staff. *Build\_med.sas* replaces the program *build\_link.sas* used in the base case modeling. *Build\_med.sas* performs the same seasonal VMT adjustments and data aggregation as does *build\_link.sas*; however, the new program does not build pseudo-links. *Build\_med.sas* is also different from the previous program in that emissions data is reformatted for input into *meduam.fort* instead of the EPS2 entry module *lbase.fort*. *Build\_med.sas* also corrects a programming error in which diurnal loss emissions were inadvertently replaced with running loss emissions. For reference, the *build\_med.sas* program code is available from a TNRCC ftp download site. Please call Mr. Bright Dornblaser at (512)239-1978 for more information. Output from *build\_med.sas* are emissions data files that are spatially and temporally allocated, but are not yet chemically speciated.

The *meduam* FORTRAN (hence, the “.fort” extension) computer program, developed by SAI, was designed specifically to process gridded mobile source emissions, such as the emissions data developed by TTL. *Meduam.fort* chemically speciates the input emissions data and produces a UAM-formatted emissions data file. Using *meduam.fort* greatly streamlined emissions processing for the 2007 COAST study by eliminating the need to run three EPS2 modules: *lbase.fort*, *chmspl.fort*, and *grdem.fort*.

Conversion of reported VOC emissions into Carbon Bond IV (CB-IV) classes was performed by *meduam*. A cross-reference file links each Area Source Code (ASC) to a specific chemical speciation profile, which *meduam* uses to split the VOC into ten CB-IV classes. The speciation profiles used for the 2007 COAST modeling have been updated since the 1993 COAST modeling was performed. Development of these improved profiles is discussed below. Table D-10 (following page) summarizes emissions by NAA for the original TTI-developed August episode and the final September episode emissions after speciation.

The final step in processing projected mobile source emissions for H/G and B/PA was to merge them together with emissions files for the remainder of the modeling domain, using the EPS2 module, MRGUAM. The output of this program is a single binary emissions file per episode day, containing the hourly gridded mobile source emissions for the entire modeling domain.

**TABLE D-10. Projected 2007 On-Road Mobile Emissions and VMT Summary  
for August 17-21 and September 7-11**

<b>H/G NAA</b>	<b>Aug. 17 Tuesday</b>	<b>Sept. 7 Tuesday</b>	<b>Aug. 18 Wednesday</b>	<b>Sept. 8 Wed.</b>	<b>Aug. 19 Thursday</b>	<b>Sept. 9 Thursday</b>	<b>Aug. 20 Friday</b>	<b>Sept. 10 Friday</b>	<b>Aug. 21 Saturday</b>	<b>Sept. 11 Saturday</b>
CB-IV HC (t/d)	-	220.3	-	234.2	-	226.0	-	247.9	-	202.2
VOC (t/d)	210.1	-	220.6	-	221.4	-	221.8	-	186.2	-
CO (t/d)	1962.8	1952.0	1962.4	1976.6	1962.7	1908.6	2071.2	2187.6	1693.5	1713.1
NO <sub>x</sub> (t/d)	464.7	477.7	464.4	478.4	464.6	479.0	496.1	533.7	386.1	400.5
VMT (mi/d)	187,726,526	-	187,726,526	-	187,726,526	-	197,814,212	-	121,303,425	-
<b>B/PA NAA</b>	<b>Aug. 17 Tuesday</b>	<b>Sept. 7 Tuesday</b>	<b>Aug. 18 Wednesday</b>	<b>Sept. 8 Wed.</b>	<b>Aug. 19 Thursday</b>	<b>Sept. 9 Thursday</b>	<b>Aug. 20 Friday</b>	<b>Sept. 10 Friday</b>	<b>Aug. 21 Saturday</b>	<b>Sept. 11 Saturday</b>
CB-IV HC (t/d)	-	18.3	-	18.4	-	18.5	-	27.4	-	17.8
VOC (t/d)	18.4	-	18.4	-	18.4	-	25.2	-	17.1	-
CO (t/d)	166.8	158.6	166.8	158.6	166.8	159.3	236.3	244.4	166.0	161.5
NO <sub>x</sub> (t/d)	34.6	34.2	34.5	34.2	34.6	34.2	37.1	40.7	27.7	27.5
VMT (mi/d)	13,495,113	-	13,495,113	-	13,495,113	-	14,772,171	-	12,058,245	-

**Notes:**

August totals are from 2007 TTI \*.lst files

September totals are from MRGUAM tileplots; hence, these values are not necessarily those that were modeled.

t/d -- tons per day

mi/d -- miles per day

Descriptions of the NAA control strategies modeled in the projected 2007 COAST inventories are outlined in a memorandum dated March 24, 1995 from the TNRCC to TTI. A copy of the memorandum and attachment are available upon request. To summarize this memorandum and attachment, the MOBILE5a basic exhaust emission rates that incorporate new exhaust emission standards under the 1990 Clean Air Act Amendments were modeled (NEWFLAG=1). Hence, the 1993 anti-tampering program (the extent of the I/M program) in Harris county was modeled. Emissions credits from the reformulated gasoline rules were not modeled and gasoline Reid Vapor Pressure (RVP) was modeled at measured 1993 levels: 7.2 psi in H/G, and 7.1 psi in B/PA.

A factor-based approach was used to develop 2007 projected emissions based on 1993 modeled emissions in counties and parishes outside the NAAs. These emissions adjustment factors were developed by the TNRCC SIP Modeling staff based on 1993 base case and projected 2007 county-specific emissions. The TNRCC EI staff provided baseline total 1993 and projected 2007 emissions by county and pollutant category. The TNRCC SIP Modeling Staff calculated a ratio of 1993 to 2007 emissions by county and pollutant category. The factor-based adjustments for carbon monoxide (CO) and oxides of nitrogen (NOx) were then calculated by averaging county- specific ratios.

The following example, using perimeter county, Austin county, illustrates this methodology:

Assuming speed, temperature, and RVP are held constant, it is assumed that fleet turnover and VMT are responsible for changes in on-road mobile source emissions between the years 1993 and 2007; hence, fleet turnover and VMT are used in this example to calculate a year 2007 emission rate.

MOBILE5a modeling produced the following emission factors for total VOC:

1993 3.82 g/mi  
2007 2.41 g/mi

so that the ratio due to fleet turnover,  $FT_g = 0.631$

We'll use the equation

$$VOC_{07emission} = K * VOC_{93emission}$$

where  $K =$  the contribution due to VMT growth and Fleet turnover  
 $VOC_{93emission} =$  1993 VOC emission total, calculated below  
 $VOC_{07emission} =$  2007 VOC emission total; the variable we are solving for.

such that  $K = (VMT_g) (FT_g)$

where  $VMT_g =$  VMT growth factor (1993 to 2007)  
 $FT_g =$  fleet turnover growth factor

For Austin county,

1993 VMT = 914,308 mi/day (actual)

2007 VMT = 1,079,905 mi/day (grown)

so that we can calculate  $VOC_{93emission} = 7,700 \text{ lb/day} = 3.82 \text{ g/mi} * 914,308 \text{ mi/day} * 1.0 \text{ lb/453.6 g}$

and the ratio due to VMT growth is then

$$VMT_g = 1.181 = 1,079,905 / 914,308$$

such that  $K = 0.7452 = 1.181 * 0.631$

Hence,  $VOC_{07emission} = 5,738 \text{ lb/day} = .7542 * 7,700 \text{ lb/day}$

The factor-based adjustment for VOC required additional calculations to correctly weight the VOC sub-categories: exhaust, running and resting losses, hot soak, crank case, and diurnal losses. Using base case emissions data, weighting factors by sub-category were calculated based on the relative contribution of each sub-category to total VOC. The weighting factors were then applied to the county-wide averaged VOC ratios by sub-category. Weighted VOC sub-categories were then summed to produce a final VOC factor-based adjustment. Three factor-based adjustments, one each for VOC, CO, and NOx, were applied (using *emscor.fort*) to the existing 1993 UAM-ready binary data files.

Projected 2007 perimeter county emissions inventory modeling was performed using the MOBILE5a emission factor model and projected 2007 vehicle activity data by functional class by county. Vehicle activity data was based on HPMS-based projections provided by TxDOT. Emissions were developed at the same level of detail for 2007 as for 1993. Except for changes in the year of evaluation and VMT mix, all other modeling inputs were unchanged from 1993. VMT mix was adjusted from 1993 to 2007 using the 2007 MOBILE5a gasoline-to-diesel ratio by vehicle type. This adjustment is consistent with past TNRCC EI MOBILE5a modeling. In general, this perimeter county adjustment method was selected due to time constraints, combined with the level of effort needed to develop perimeter county data files at a level of spatial detail comparable to the 1993 modeling. For a complete discussion of 1993 perimeter county emissions development, please refer to the 1993 COAST base case modeling reports.

No new control strategies were modeled for the projected 2007 COAST attainment (perimeter) counties. Except for the year of evaluation, MOBILE5a modeling parameters remained unchanged from the base case modeling.

### ***Area and Non-road Mobile Sources***

The growth factor file used for area (including non-road mobile) sources was very similar to that used for point sources. The file contains every county FIP and region to which growth was applied, and it contains every ASC (as opposed to SCC for the point sources) code to which growth was applied. This area source growth factor file is also available for download from a TNRCC ftp location. Please call Mr. Bright Dornblaser of the TNRCC SIP Modeling staff at (512)239-1978 for details about download location.

The area source control factors are provided in the SIP document as Table 18. This table contains each ASC to which a VOC control factor was applied, along with a list of the counties/regions which were affected by the specific control.

### ***Biogenic Sources***

As stated in the SIP document, essentially the same biogenic emission inventory files were used for the future year (2007) modeling as for the base case (1993) modeling. It was assumed that the biogenic EI will remain approximately constant between the year 1993 and 2007; hence no growth factors were applied to the biogenic sources. It was also not feasible to apply controls to these sources.

## Emissions Summary Tables

**Table D-11. COAST Total NOx Emissions**

Tons per day

Episode		1992/1993 Actual Emissions					2007 Projected Emissions				
Date	Day	Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	591	85	1,516	886	3,079					
10/24/92	Sat	544	87	1,506	661	2,799			NA		
10/25/92	Sun	486	93	1,515	572	2,667					
08/16/93	Mon	492	128	1,620	768	3,008					
08/17/93	Tues	492	129	1,638	768	3,026					
08/18/93	Wed	492	127	1,620	768	3,007			NA		
08/19/93	Thur	492	127	1,612	768	2,999					
08/20/93	Fri	492	125	1,612	851	3,080					
08/21/93	Sat	460	123	1,593	630	2,805					
08/31/93	Tues	492	117	1,530	770	2,909					
09/01/93	Wed	492	119	1,556	769	2,935			NA		
09/02/93	Thur	492	124	1,562	769	2,947					
09/06/93	Mon	501	112	1,514	768	2,895	581	112	1,579	677	2,950
09/07/93	Tues	501	118	1,543	767	2,929	581	118	1,613	675	2,987
09/08/93	Wed	501	114	1,549	768	2,931	581	114	1,620	676	2,990
09/09/93	Thur	501	114	1,540	768	2,923	581	114	1,609	676	2,980
09/10/93	Fri	501	119	1,563	867	3,050	581	119	1,637	754	3,090
09/11/93	Sat	467	112	1,561	638	2,778	538	112	1,631	590	2,871

## Emissions Summary Tables

**Table D-11. COAST Total NOx Emissions**

Tons per day

Episode		1992/1993 Actual Emissions					2007 Projected Emissions				
Date	Day	Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	591	85	1,516	886	3,079					
10/24/92	Sat	544	87	1,506	661	2,799			NA		
10/25/92	Sun	486	93	1,515	572	2,667					
08/16/93	Mon	492	128	1,620	768	3,008					
08/17/93	Tues	492	129	1,638	768	3,026					
08/18/93	Wed	492	127	1,620	768	3,007			NA		
08/19/93	Thur	492	127	1,612	768	2,999					
08/20/93	Fri	492	125	1,612	851	3,080					
08/21/93	Sat	460	123	1,593	630	2,805					
08/31/93	Tues	492	117	1,530	770	2,909					
09/01/93	Wed	492	119	1,556	769	2,935			NA		
09/02/93	Thur	492	124	1,562	769	2,947					
09/06/93	Mon	501	112	1,514	768	2,895	1,261	112	1,922	677	3,973
09/07/93	Tues	501	118	1,543	767	2,929	445	118	1,545	675	2,783
09/08/93	Wed	501	114	1,549	768	2,931	445	114	1,551	676	2,786
09/09/93	Thur	501	114	1,540	768	2,923	445	114	1,541	676	2,776
09/10/93	Fri	501	119	1,563	867	3,050	445	119	1,568	754	2,886
09/11/93	Sat	467	112	1,561	638	2,778	402	112	1,563	590	2,666

**Table D-12. COAST Total VOC Emissions**

Tons per day

Date	Day	1992/1993 Actual Emissions					2007 Projected Emissions				
		Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	800	4,226	823	409	6,258	NA				
10/24/92	Sat	968	4,687	809	335	6,799					
10/25/92	Sun	865	5,413	805	306	7,389					
08/16/93	Mon	765	9,658	783	434	11,639	NA				
08/17/93	Tues	765	9,741	798	434	11,737					
08/18/93	Wed	768	9,625	788	433	11,614					
08/19/93	Thur	781	9,583	788	433	11,585					
08/20/93	Fri	784	9,114	777	473	11,148					
08/21/93	Sat	1,083	8,234	770	373	10,460					
08/31/93	Tues	765	7,615	783	418	9,581	NA				
09/01/93	Wed	768	8,410	783	429	10,390					
09/02/93	Thur	781	8,973	783	429	10,966					
09/06/93	Mon	767	7,334	783	404	9,288	822	7,334	666	357	9,178
09/07/93	Tues	763	8,380	783	409	10,336	818	8,380	666	360	10,224
09/08/93	Wed	767	8,496	783	410	10,456	822	8,496	666	375	10,359
09/09/93	Thur	780	7,249	783	402	9,214	837	7,249	666	366	9,118
09/10/93	Fri	784	8,292	783	460	10,318	841	8,292	666	407	10,206
09/11/93	Sat	1,083	7,307	768	358	9,516	1,201	7,307	650	335	9,494

**Table D-12. COAST Total VOC Emissions**

Tons per day

Date	Day	1992/1993 Actual Emissions					2007 Projected Emissions				
		Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	800	4,226	823	409	6,258	NA				
10/24/92	Sat	968	4,687	809	335	6,799					
10/25/92	Sun	865	5,413	805	306	7,389					
08/16/93	Mon	765	9,658	783	434	11,639	NA				
08/17/93	Tues	765	9,741	798	434	11,737					
08/18/93	Wed	768	9,625	788	433	11,614					
08/19/93	Thur	781	9,583	788	433	11,585					
08/20/93	Fri	784	9,114	777	473	11,148					
08/21/93	Sat	1,083	8,234	770	373	10,460					
08/31/93	Tues	765	7,615	783	418	9,581	NA				
09/01/93	Wed	768	8,410	783	429	10,390					
09/02/93	Thur	781	8,973	783	429	10,966					
09/06/93	Mon	767	7,334	783	404	9,288	904	7,334	725	357	9,320
09/07/93	Tues	763	8,380	783	409	10,336	801	8,380	654	360	10,195
09/08/93	Wed	767	8,496	783	410	10,456	805	8,496	654	375	10,330
09/09/93	Thur	780	7,249	783	402	9,214	821	7,249	654	366	9,089
09/10/93	Fri	784	8,292	783	460	10,318	825	8,292	654	407	10,178
09/11/93	Sat	1,083	7,307	768	358	9,516	1,185	7,307	638	335	9,465

**Table D-13. Brazoria County Total NOx Emissions**

Tons per day

Episode		1992/1993 Actual Emissions					2007 Projected Emissions				
Date	Day	Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	16	3	109	24	152					
10/24/92	Sat	14	3	109	17	144					
10/25/92	Sun	12	4	109	15	139					
08/16/93	Mon	16	5	107	19	147					
08/17/93	Tues	16	5	107	19	147					
08/18/93	Wed	16	5	107	19	147					
08/19/93	Thur	16	5	107	19	147					
08/20/93	Fri	16	5	107	22	150					
08/21/93	Sat	15	5	107	17	144					
08/31/93	Tues	16	4	107	19	146					
09/01/93	Wed	16	5	107	19	146					
09/02/93	Thur	16	5	107	19	147					
09/06/93	Mon	16	4	107	19	146	19	4	111	38	172
09/07/93	Tues	16	4	107	19	146	19	-4	111	38	173
09/08/93	Wed	16	4	107	19	146	19	4	111	38	172
09/09/93	Thur	16	4	107	19	146	19	4	111	38	173
09/10/93	Fri	16	5	107	23	151	19	5	111	42	177
09/11/93	Sat	15	4	107	17	143	18	4	111	37	170

**Table D-14. Brazoria County Total VOC Emissions**

Tons per day

Episode		1992/1993 Actual Emissions					2007 Projected Emissions				
Date	Day	Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	24	57	58	9	148					
10/24/92	Sat	32	66	58	8	164					
10/25/92	Sun	30	75	58	7	170					
08/16/93	Mon	25	131	56	8	221					
08/17/93	Tues	25	130	56	8	220					
08/18/93	Wed	25	127	56	8	217					
08/19/93	Thur	25	127	56	8	217					
08/20/93	Fri	25	123	56	10	215					
08/21/93	Sat	44	110	56	8	219					
08/31/93	Tues	25	99	56	8	189					
09/01/93	Wed	25	117	56	8	207					
09/02/93	Thur	25	121	56	8	211					
09/06/93	Mon	22	101	56	8	187	23	101	46	15	185
09/07/93	Tues	22	114	56	8	200	23	114	46	15	198
09/08/93	Wed	22	113	56	8	200	23	113	46	15	197
09/09/93	Thur	22	98	56	8	185	23	98	46	15	183
09/10/93	Fri	22	110	56	10	198	23	110	46	17	196
09/11/93	Sat	28	99	56	8	191	30	99	46	16	191

**Table D-15. Chambers County Total NOx Emissions**

Tons per day

Episode		1992/1993 Actual Emissions					2007 Projected Emissions				
Date	Day	Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	1	1	51	11	64					
10/24/92	Sat	3	1	41	10	54					
10/25/92	Sun	3	2	56	9	69					
08/16/93	Mon	12	2	93	9	116					
08/17/93	Tues	12	2	96	9	119					
08/18/93	Wed	12	2	89	9	112					
08/19/93	Thur	12	2	93	9	115					
08/20/93	Fri	12	2	93	10	117					
08/21/93	Sat	12	2	78	9	101					
08/31/93	Tues	12	2	44	9	66					
09/01/93	Wed	12	2	43	9	66					
09/02/93	Thur	12	2	44	9	67					
09/06/93	Mon	14	2	48	9	72	18	2	53	6	79
09/07/93	Tues	14	2	53	9	77	18	-2	58	6	85
09/08/93	Wed	14	2	56	9	81	18	2	62	6	89
09/09/93	Thur	14	2	56	9	80	18	2	62	6	88
09/10/93	Fri	14	2	61	10	87	18	2	68	8	96
09/11/93	Sat	16	2	53	9	80	21	2	59	8	89

**Table D-16. Chambers County Total VOC Emissions**

Tons per day

Date	Day	1992/1993 Actual Emissions					2007 Projected Emissions				
		Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	11	34	17	3	66					
10/24/92	Sat	50	38	17	4	109					
10/25/92	Sun	49	44	17	4	115					
08/16/93	Mon	8	79	17	3	108					
08/17/93	Tues	8	80	17	3	108					
08/18/93	Wed	8	78	17	3	107					
08/19/93	Thur	8	79	17	3	107					
08/20/93	Fri	8	77	17	4	105					
08/21/93	Sat	13	66	17	3	100					
08/31/93	Tues	8	61	17	3	90					
09/01/93	Wed	8	74	17	3	102					
09/02/93	Thur	8	73	17	3	101					
09/06/93	Mon	13	61	17	3	95	16	61	9	2	88
09/07/93	Tues	13	67	17	3	101	16	-67	9	2	94
09/08/93	Wed	13	67	17	3	101	16	67	9	2	94
09/09/93	Thur	13	62	17	3	96	16	62	9	2	89
09/10/93	Fri	14	68	17	4	103	16	68	9	3	95
09/11/93	Sat	43	62	17	4	127	53	62	9	3	127

**Table D-17. Fort Bend County Total NOx Emissions**

Tons per day

Episode		1992/1993 Actual Emissions					2007 Projected Emissions				
Date	Day	Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	8	3	67	24	102					
10/24/92	Sat	7	3	57	15	82			NA		
10/25/92	Sun	6	3	54	12	76					
08/16/93	Mon	8	4	112	23	147					
08/17/93	Tues	8	4	112	23	148					
08/18/93	Wed	8	4	110	23	145			NA		
08/19/93	Thur	8	4	111	23	147					
08/20/93	Fri	8	4	113	26	151					
08/21/93	Sat	7	4	109	16	137					
08/31/93	Tues	8	4	75	23	110					
09/01/93	Wed	8	4	90	23	125			NA		
09/02/93	Thur	8	4	91	23	127					
09/06/93	Mon	8	4	82	23	117	9	4	92	22	127
09/07/93	Tues	8	4	86	23	121	9	-4	96	22	131
09/08/93	Wed	8	4	87	23	122	9	4	98	22	133
09/09/93	Thur	8	4	89	23	124	9	4	99	22	134
09/10/93	Fri	8	4	89	26	127	9	4	100	25	137
09/11/93	Sat	7	4	113	17	141	9	4	126	17	155

**Table D-18. Fort Bend County Total VOC Emissions**

Tons per day

Date	Day	1992/1993 Actual Emissions					2007 Projected Emissions				
		Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	19	21	4	10	53	NA				
10/24/92	Sat	23	23	4	7	57					
10/25/92	Sun	20	27	4	6	57					
08/16/93	Mon	16	47	4	11	78	NA				
08/17/93	Tues	16	48	4	11	79					
08/18/93	Wed	16	47	4	11	78					
08/19/93	Thur	16	47	4	11	78					
08/20/93	Fri	16	46	4	12	78					
08/21/93	Sat	13	42	4	8	67					
08/31/93	Tues	16	36	4	10	66	NA				
09/01/93	Wed	16	43	4	11	74					
09/02/93	Thur	16	44	4	11	75					
09/06/93	Mon	16	37	4	10	67	16	37	4	10	67
09/07/93	Tues	16	42	4	10	72	16	42	4	10	72
09/08/93	Wed	16	42	4	11	72	16	42	4	10	72
09/09/93	Thur	16	35	4	10	65	17	35	4	10	65
09/10/93	Fri	16	41	4	12	73	17	41	4	11	73
09/11/93	Sat	14	37	4	8	62	15	37	3	8	63

**Table D-19. Galveston County Total NOx Emissions**

Tons per day

Episode		1992/1993 Actual Emissions					2007 Projected Emissions				
Date	Day	Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	56	1	95	22	174					
10/24/92	Sat	56	1	95	17	169					
10/25/92	Sun	55	1	102	15	173					
08/16/93	Mon	22	1	107	17	148					
08/17/93	Tues	22	1	106	17	147					
08/18/93	Wed	22	1	107	17	148					
08/19/93	Thur	22	1	107	17	148					
08/20/93	Fri	22	1	107	20	151					
08/21/93	Sat	22	1	107	17	148					
08/31/93	Tues	22	1	119	17	160					
09/01/93	Wed	22	1	121	17	162					
09/02/93	Thur	22	1	121	17	162					
09/06/93	Mon	26	1	111	17	156	33	1	121	17	172
09/07/93	Tues	26	1	116	17	161	33	-1	126	17	177
09/08/93	Wed	26	1	108	17	152	33	1	116	17	167
09/09/93	Thur	26	1	111	17	155	33	1	120	17	171
09/10/93	Fri	26	1	107	20	155	33	1	116	20	170
09/11/93	Sat	28	1	106	17	153	35	1	115	19	170

**Table D-20. Galveston County Total VOC Emissions**

Tons per day

Date	Day	1992/1993 Actual Emissions					2007 Projected Emissions				
		Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	33	19	69	10	131					
10/24/92	Sat	67	23	67	9	166					
10/25/92	Sun	65	26	67	8	166					
08/16/93	Mon	25	46	69	9	150					
08/17/93	Tues	25	45	73	9	151					
08/18/93	Wed	25	44	65	9	142					
08/19/93	Thur	25	44	71	9	149					
08/20/93	Fri	25	44	69	10	148					
08/21/93	Sat	47	39	66	10	162					
08/31/93	Tues	25	34	69	8	137					
09/01/93	Wed	25	42	69	9	145					
09/02/93	Thur	25	42	69	9	146					
09/06/93	Mon	26	36	69	8	140	26	36	52	8	122
09/07/93	Tues	26	40	69	9	144	26	40	52	8	126
09/08/93	Wed	26	40	69	9	144	26	40	52	8	125
09/09/93	Thur	26	36	69	9	140	26	36	52	8	122
09/10/93	Fri	26	39	69	10	145	26	39	52	10	127
09/11/93	Sat	51	36	66	9	163	53	36	51	10	150

**Table D-21. Hardin County Total NOx Emissions**

Tons per day

Episode		1992/1993 Actual Emissions					2007 Projected Emissions				
Date	Day	Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	2	0	6	2	10					
10/24/92	Sat	2	0	7	1	11			NA		
10/25/92	Sun	2	0	7	3	12					
08/16/93	Mon	2	0	6	5	14					
08/17/93	Tues	2	0	10	5	18					
08/18/93	Wed	2	0	4	5	12			NA		
08/19/93	Thur	2	0	4	5	12					
08/20/93	Fri	2	0	4	6	12					
08/21/93	Sat	3	0	7	4	14					
08/31/93	Tues	2	0	6	5	14					
09/01/93	Wed	2	0	6	5	14			NA		
09/02/93	Thur	2	0	6	5	14					
09/06/93	Mon	2	0	6	5	13	3	0	6	4	12
09/07/93	Tues	2	0	6	5	13	3	0	6	4	12
09/08/93	Wed	2	0	6	5	13	3	0	6	4	12
09/09/93	Thur	2	0	6	5	13	3	0	6	4	12
09/10/93	Fri	2	0	6	5	14	3	0	6	4	13
09/11/93	Sat	2	0	7	4	14	3	0	7	3	13

**Table D-22. Hardin County Total VOC Emissions**

Tons per day

Date	Day	1992/1993 Actual Emissions					2007 Projected Emissions				
		Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	7	140	8	1	156					
10/24/92	Sat	10	154	8	1	172					
10/25/92	Sun	9	172	8	2	191					
08/16/93	Mon	7	335	8	3	353					
08/17/93	Tues	7	342	8	3	359					
08/18/93	Wed	7	339	8	3	356					
08/19/93	Thur	7	341	8	3	359					
08/20/93	Fri	7	317	8	3	335					
08/21/93	Sat	11	276	8	2	297					
08/31/93	Tues	7	273	8	2	291					
09/01/93	Wed	7	309	8	3	326					
09/02/93	Thur	7	314	8	3	332					
09/06/93	Mon	6	264	8	2	280	7	264	7	2	279
09/07/93	Tues	6	284	8	2	301	7	284	7	2	300
09/08/93	Wed	6	284	8	2	300	7	284	7	2	300
09/09/93	Thur	7	264	8	2	281	7	264	7	2	280
09/10/93	Fri	7	293	8	2	310	7	293	7	2	309
09/11/93	Sat	9	268	8	2	287	11	268	7	2	287

**Table D-23. Harris County Total NOx Emissions**

Tons per day

Episode		1992/1993 Actual Emissions					2007 Projected Emissions				
Date	Day	Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	163	3	302	360	829					
10/24/92	Sat	131	3	311	228	673					
10/25/92	Sun	99	3	306	182	590					
08/16/93	Mon	146	4	318	312	780					
08/17/93	Tues	146	4	319	312	781					
08/18/93	Wed	146	4	319	312	781					
08/19/93	Thur	146	4	317	313	780					
08/20/93	Fri	146	4	315	341	806					
08/21/93	Sat	121	4	312	222	659					
08/31/93	Tues	146	4	299	314	763					
09/01/93	Wed	146	4	309	313	772					
09/02/93	Thur	146	4	313	313	776					
09/06/93	Mon	149	4	280	311	744	181	4	279	344	808
09/07/93	Tues	149	4	295	310	758	181	4	297	343	825
09/08/93	Wed	149	4	305	310	768	181	4	308	343	837
09/09/93	Thur	149	4	292	311	756	181	4	293	344	822
09/10/93	Fri	149	4	314	350	817	181	4	318	374	878
09/11/93	Sat	118	4	299	226	647	145	4	300	282	731

**Table D-24. Harris County Total VOC Emissions**

Tons per day

Date	Day	1992/1993 Actual Emissions					2007 Projected Emissions				
		Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	247	153	267	154	822					
10/24/92	Sat	190	184	261	110	744					
10/25/92	Sun	151	218	258	97	723					
08/16/93	Mon	207	375	253	161	996					
08/17/93	Tues	207	383	261	161	1,012					
08/18/93	Wed	207	371	260	160	999					
08/19/93	Thur	210	374	255	161	1,000					
08/20/93	Fri	211	367	253	173	1,003					
08/21/93	Sat	177	328	246	121	873					
08/31/93	Tues	207	264	253	150	874					
09/01/93	Wed	207	344	253	158	963					
09/02/93	Thur	210	350	253	158	972					
09/06/93	Mon	202	281	253	149	885	197	281	188	149	815
09/07/93	Tues	201	322	253	153	929	197	322	188	151	857
09/08/93	Wed	202	328	253	153	936	197	328	188	160	873
09/09/93	Thur	205	247	253	146	851	201	247	188	163	798
09/10/93	Fri	206	322	253	173	955	201	322	188	165	877
09/11/93	Sat	152	281	246	118	798	154	281	179	136	751

**Table D-25. Jefferson County Total NOx Emissions**

Tons per day

Episode		1992/1993 Actual Emissions					2007 Projected Emissions				
Date	Day	Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	42	2	110	35	189					
10/24/92	Sat	38	2	110	23	173					
10/25/92	Sun	33	2	110	18	163					
08/16/93	Mon	24	2	103	28	157					
08/17/93	Tues	24	2	102	28	156					
08/18/93	Wed	24	2	104	28	158					
08/19/93	Thur	24	2	103	28	157					
08/20/93	Fri	24	2	104	33	163					
08/21/93	Sat	20	2	104	21	147					
08/31/93	Tues	24	2	103	28	157					
09/01/93	Wed	24	2	103	28	157					
09/02/93	Thur	24	2	103	28	157					
09/06/93	Mon	24	2	103	28	157	30	2	102	22	157
09/07/93	Tues	24	2	103	28	157	30	2	102	22	157
09/08/93	Wed	24	2	103	28	157	30	2	102	22	157
09/09/93	Thur	24	2	103	28	157	31	2	102	22	157
09/10/93	Fri	24	2	103	35	165	31	2	102	25	160
09/11/93	Sat	21	2	104	22	148	26	2	102	18	148

**Table D-26. Jefferson County Total VOC Emissions**

Tons per day

Date	Day	1992/1993 Actual Emissions					2007 Projected Emissions				
		Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	40	46	165	16	268					
10/24/92	Sat	52	51	163	12	277					
10/25/92	Sun	47	55	163	10	274					
08/16/93	Mon	28	104	142	15	289					
08/17/93	Tues	28	106	143	15	293					
08/18/93	Wed	28	105	141	15	289					
08/19/93	Thur	28	105	143	15	291					
08/20/93	Fri	28	97	141	17	284					
08/21/93	Sat	29	81	141	12	262					
08/31/93	Tues	28	87	142	14	271					
09/01/93	Wed	28	99	142	15	283					
09/02/93	Thur	28	98	142	15	283					
09/06/93	Mon	29	84	142	14	269	30	84	112	12	237
09/07/93	Tues	29	90	142	14	276	30	90	112	12	243
09/08/93	Wed	29	89	142	14	275	30	89	112	12	243
09/09/93	Thur	30	89	142	14	275	30	89	112	12	243
09/10/93	Fri	30	92	142	17	282	30	92	112	18	252
09/11/93	Sat	37	82	140	12	270	38	82	109	12	241

**Table D-27. Liberty County Total NOx Emissions**

Tons per day

Episode		1992/1993 Actual Emissions					2007 Projected Emissions				
Date	Day	Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	5	1	4	8	19					
10/24/92	Sat	5	1	4	6	16			NA		
10/25/92	Sun	4	2	4	5	15					
08/16/93	Mon	4	2	4	7	18					
08/17/93	Tues	4	2	4	7	18					
08/18/93	Wed	4	2	4	7	17			NA		
08/19/93	Thur	4	2	4	7	18					
08/20/93	Fri	4	2	4	8	19					
08/21/93	Sat	4	2	4	5	16					
08/31/93	Tues	4	2	4	7	17					
09/01/93	Wed	4	2	4	7	17			NA		
09/02/93	Thur	4	2	4	7	17					
09/06/93	Mon	5	2	4	7	17	5	2	5	6	18
09/07/93	Tues	5	2	4	7	17	5	2	5	6	18
09/08/93	Wed	5	2	4	7	17	5	2	5	6	18
09/09/93	Thur	5	2	4	7	17	5	2	5	6	18
09/10/93	Fri	5	2	4	8	19	5	2	5	7	18
09/11/93	Sat	5	2	4	5	17	5	2	5	5	17

**Table D-28. Liberty County Total VOC Emissions**

Tons per day

Date	Day	1992/1993 Actual Emissions					2007 Projected Emissions				
		Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	9	149	4	3	165					
10/24/92	Sat	18	171	4	2	196					
10/25/92	Sun	18	198	4	2	222					
08/16/93	Mon	8	356	4	3	372					
08/17/93	Tues	8	361	4	3	376					
08/18/93	Wed	8	350	4	3	366					
08/19/93	Thur	9	354	4	3	370					
08/20/93	Fri	9	344	4	3	360					
08/21/93	Sat	11	301	4	3	319					
08/31/93	Tues	8	267	4	3	283					
09/01/93	Wed	8	327	4	3	343					
09/02/93	Thur	9	332	4	3	348					
09/06/93	Mon	10	272	4	3	288	11	272	3	3	287
09/07/93	Tues	10	303	4	3	319	11	303	3	3	319
09/08/93	Wed	10	305	4	3	322	11	305	3	3	321
09/09/93	Thur	10	262	4	3	278	11	262	3	3	278
09/10/93	Fri	10	307	4	4	324	11	307	3	3	323
09/11/93	Sat	17	277	4	2	301	19	277	2	2	301

**Table D-29. Montgomery County Total NOx Emissions**

Tons per day

Episode		1992/1993 Actual Emissions					2007 Projected Emissions				
Date	Day	Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	6	0	21	29	57					
10/24/92	Sat	6	0	18	20	45					
10/25/92	Sun	6	0	18	16	40					
08/16/93	Mon	6	1	21	25	53					
08/17/93	Tues	6	1	27	25	59					
08/18/93	Wed	6	1	18	25	51					
08/19/93	Thur	6	1	18	25	50					
08/20/93	Fri	6	1	18	28	53					
08/21/93	Sat	7	1	18	20	45					
08/31/93	Tues	6	0	21	25	53					
09/01/93	Wed	6	1	21	25	53					
09/02/93	Thur	6	1	21	25	53					
09/06/93	Mon	7	0	21	25	53	8	0	23	23	54
09/07/93	Tues	7	0	21	25	53	8	0	23	23	54
09/08/93	Wed	7	0	21	25	53	8	0	23	23	54
09/09/93	Thur	7	0	21	25	53	8	0	23	23	54
09/10/93	Fri	7	0	21	29	57	8	0	23	26	57
09/11/93	Sat	7	0	18	20	46	8	0	19	20	48

**Table D-30. Montgomery County Total VOC Emissions**

Tons per day

Date	Day	1992/1993 Actual Emissions					2007 Projected Emissions				
		Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	26	160	4	10	200					
10/24/92	Sat	40	185	3	8	237					
10/25/92	Sun	37	216	3	8	264					
08/16/93	Mon	23	373	4	11	410					
08/17/93	Tues	23	376	4	11	414					
08/18/93	Wed	23	367	4	11	405					
08/19/93	Thur	24	370	4	11	408					
08/20/93	Fri	24	364	4	12	403					
08/21/93	Sat	39	331	3	9	382					
08/31/93	Tues	23	285	4	10	322					
09/01/93	Wed	23	339	4	10	376					
09/02/93	Thur	24	348	4	10	386					
09/06/93	Mon	22	283	4	10	319	22	283	3	10	318
09/07/93	Tues	22	314	4	10	350	21	314	3	10	349
09/08/93	Wed	22	322	4	10	358	22	322	3	10	357
09/09/93	Thur	23	264	4	10	300	22	264	3	10	299
09/10/93	Fri	23	324	4	12	363	22	324	3	11	361
09/11/93	Sat	34	291	3	9	337	34	291	3	9	337

**Table D-31. Orange County Total NOx Emissions**

Tons per day

Episode		1992/1993 Actual Emissions					2007 Projected Emissions				
Date	Day	Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	17	0	66	15	98					
10/24/92	Sat	16	0	69	10	96					
10/25/92	Sun	16	0	69	9	93					
08/16/93	Mon	7	0	66	12	85					
08/17/93	Tues	7	0	67	12	86					
08/18/93	Wed	7	0	68	12	87					
08/19/93	Thur	7	0	64	12	83					
08/20/93	Fri	7	0	65	14	86					
08/21/93	Sat	7	0	69	9	85					
08/31/93	Tues	7	0	66	12	85					
09/01/93	Wed	7	0	66	12	85					
09/02/93	Thur	7	0	66	12	85					
09/06/93	Mon	7	0	66	12	85	8	0	74	9	92
09/07/93	Tues	7	0	66	12	85	8	0	74	9	92
09/08/93	Wed	7	0	66	12	85	8	0	74	9	92
09/09/93	Thur	7	0	66	12	85	8	0	74	9	92
09/10/93	Fri	7	0	66	15	88	8	0	74	10	93
09/11/93	Sat	7	0	69	9	85	8	0	78	7	93

**Table D-32. Orange County Total VOC Emissions**

Tons per day

Date	Day	1992/1993 Actual Emissions				2007 Projected Emissions					
		Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	11	39	30	7	87	NA				
10/24/92	Sat	14	41	29	5	89					
10/25/92	Sun	13	45	29	4	91					
08/16/93	Mon	9	87	29	6	132	NA				
08/17/93	Tues	9	91	30	6	136					
08/18/93	Wed	9	89	30	6	134					
08/19/93	Thur	9	90	29	6	134					
08/20/93	Fri	9	81	28	7	126					
08/21/93	Sat	16	68	31	5	120					
08/31/93	Tues	9	76	29	6	120	NA				
09/01/93	Wed	9	84	29	6	129					
09/02/93	Thur	9	84	29	6	129					
09/06/93	Mon	8	70	29	6	113	9	70	25	4	109
09/07/93	Tues	8	74	29	6	117	9	-74	25	4	112
09/08/93	Wed	8	74	29	6	117	9	74	25	4	112
09/09/93	Thur	8	76	29	6	119	9	76	25	4	114
09/10/93	Fri	8	79	29	7	123	9	79	25	5	118
09/11/93	Sat	10	69	28	5	112	12	69	25	4	109

**Table D-33. Waller County Total NOx Emissions**

Tons per day

Episode		1992/1993 Actual Emissions					2007 Projected Emissions				
Date	Day	Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	2	1	6	7	15					
10/24/92	Sat	2	1	6	4	13					
10/25/92	Sun	1	2	6	3	12					
08/16/93	Mon	2	2	6	5	15					
08/17/93	Tues	2	2	6	5	15					
08/18/93	Wed	2	2	6	5	15					
08/19/93	Thur	2	2	6	5	15					
08/20/93	Fri	2	2	6	6	16					
08/21/93	Sat	2	2	6	4	13					
08/31/93	Tues	2	2	6	6	15					
09/01/93	Wed	2	2	6	5	15					
09/02/93	Thur	2	2	6	6	15					
09/06/93	Mon	2	2	6	5	15	2	2	7	6	17
09/07/93	Tues	2	2	6	5	15	2	-2	7	6	17
09/08/93	Wed	2	2	6	5	15	2	2	7	6	17
09/09/93	Thur	2	2	6	5	15	2	2	7	6	17
09/10/93	Fri	2	2	6	6	16	2	2	7	7	17
09/11/93	Sat	2	2	6	4	13	2	2	7	5	15

**Table D-34. Waller County Total VOC Emissions**

Tons per day

Date	Day	1992/1993 Actual Emissions					2007 Projected Emissions				
		Area	Biogenic	Point	Mobile	Total	Area	Biogenic	Point	Mobile	Total
10/23/92	Fri	6	35	3	2	45					
10/24/92	Sat	8	40	3	2	52			NA		
10/25/92	Sun	8	47	3	1	59					
08/16/93	Mon	4	79	3	2	88					
08/17/93	Tues	4	80	3	2	89					
08/18/93	Wed	4	78	3	2	87			NA		
08/19/93	Thur	4	79	3	2	87					
08/20/93	Fri	4	77	3	2	86					
08/21/93	Sat	4	71	3	2	79					
08/31/93	Tues	4	61	3	2	70					
09/01/93	Wed	4	72	3	2	81			NA		
09/02/93	Thur	4	74	3	2	83					
09/06/93	Mon	4	61	3	2	70	5	61	1	2	69
09/07/93	Tues	4	68	3	2	77	5	-68	1	2	76
09/08/93	Wed	4	69	3	2	78	5	69	1	2	78
09/09/93	Thur	4	58	3	2	67	5	58	1	2	66
09/10/93	Fri	4	69	3	2	79	5	69	1	3	78
09/11/93	Sat	6	62	3	2	73	8	62	1	2	73