Technical Support Document

Carbon Monoxide Maintenance Plan Revision For the Longmont Attainment Area

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Prepared by the Technical Services Program
Air Pollution Control Division
Colorado Department of Public Health and Environment

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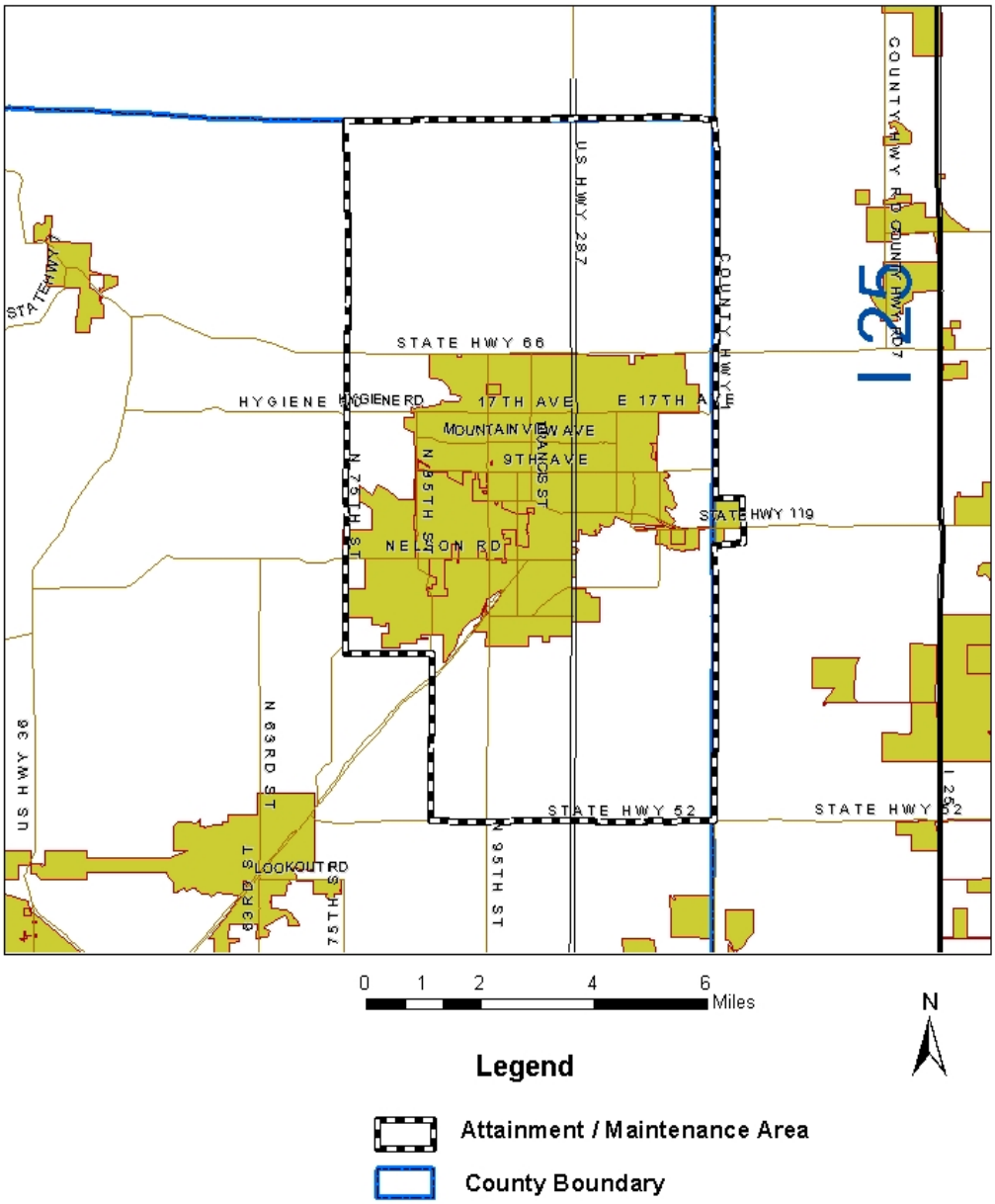
1.0 Background

The Environmental Protection Agency (EPA) approved a carbon monoxide (CO) redesignation request and maintenance plan for the Longmont area on September 24, 1999 (64 FR 51694), which became effective on November 23, 1999. The action, which was adopted by the Colorado Air Quality Control Commission (AQCC) in December 1997, established an attainment year of 1993 and a maintenance year of 2015, provided for the continuation of the State's enhanced inspection and maintenance (I/M) program and the oxygenated gasoline program in the Longmont area, established a carbon monoxide emission budget of 27 tons per day for mobile sources to be utilized in transportation conformity determinations (the EPA subsequently set the budget at 16.76 tons per day due to a calculation error), and established a contingency plan in the event a violation of the CO National Ambient Air Quality Standards (NAAQS) was measured. The most recent revision to the maintenance plan updated the emission updated the emissions inventories using the latest EPA-approved tools (including the MOBILE6 on-road mobile sources emissions model), maintained the current enhanced I/M program and the oxygenated gasoline program, and revised the CO emission budget from a MOBILE5-based budget to a MOBILE6-based budget.

This maintenance plan revision removes the enhanced I/M 240 program and the oxygenated gasoline program, effective January 1, 2007. This plan moves the maitenance plan to the year 2020 and revises the transportation-related CO emissions budget to reflect the removal of these mobile source related control strategies.

Figure 1 shows the geographical area incorporated by the Longmont attainment area boundaries.

Figure 1. Longmont Carbon Monoxide Attainment/Maintenance Area



Map created by the APCD Technical Services Program.
Colorado Department of Public Health and Environment

2.0 Emission Inventories and Maintenance Demonstration

The emission inventories for the 1993 attainment year, the 2001, 2009, 2010, 2015, 2020 interim years, and the 2021 maintenance year are presented in Tables 1. The 1993 and 2001 inventories inventories account for the emission control programs effective during those specific years. As shown in these tables, emissions for all future years are less than emissions for the 1993 attainment year. Therefore, maintenance of the CO NAAQS is demonstrated.

Table 1 - Longmont Carbon Monoxide Maintenance Plan Emission Inventories (tons/day)

	1993	2001	2009	2010	2015	2020
Source Category						
Aircraft	0.74	0.82	0.82	0.82	0.82	0.82
Commercial Cooking	0.03	0.03	0.03	0.03	0.04	0.04
Fuel Combustion	0.15	0.31	0.34	0.35	0.37	0.39
Railroads	0.03	0.03	0.03	0.03	0.04	0.04
Structure Fires	0.01	0.02	0.02	0.02	0.02	0.02
Residential Wood Combustion	2.54	1.67	1.70	1.70	1.72	1.74
Agricultural Equipment	0.00	0.00	0.00	0.00	0.00	0.00
Commercial Equipment	2.80	3.84	3.92	4.16	4.32	4.56
Construction and Mining Equipment	0.63	0.42	0.43	0.43	0.40	0.36
Industrial Equipment	1.53	1.25	0.90	0.77	0.29	0.20
Lawn and Garden Equipment (Commercial)	1.17	0.47	0.59	0.59	0.67	0.72
Lawn and Garden Equipment (Residential)	0.21	0.03	0.03	0.03	0.03	0.03
Other Oil Field Equipment	0.00	0.00	0.00	0.00	0.00	0.00
Railroad Equipment	0.01	0.01	0.01	0.01	0.01	0.01
Recreational Equipment	0.01	0.06	0.10	0.11	0.11	0.11
Points Sources	0.18	0.04	0.05	0.05	0.06	0.07
Mobile Sources	43.26	42.45	39.95	40.45	36.46	35.46
Grand Total	53.30	51.44	48.94	49.57	45.35	44.56

Note: Results are reported with two decimal place precision to provide representation of smaller source categories. This level of precision is not intended to suggest a level of accuracy. A detailed description of all point sources is shown in Table 4.

The area/non-road inventories provide emissions estimates for a weekday during the winter CO season (November through February). The maximum and minimum temperatures used for the Mobile6 input are consistent with those used in the redesignation request and previous maintenance plan revision. The modeling domain consists of the Longmont attainment/maintenance area, which encompasses the City of Longmont and the surrounding area. The inventories were developed using EPA-approved emissions modeling methods, including the MOBILE6.2 emissions model, and the latest transportation and demographic data from the Denver Regional Council of Governments (DRCOG). DRCOG is the "Metropolitan Planning Organization" for transportation in the Longmont area. This technical support document for this maintenance plan contains detailed information on model assumptions and parameters for each source category.

The Denver Regional Council of Governments has provided the demographic and vehicle miles traveled data for use in this technical analysis. Table 2 shows the 1993 – 2020 demographic data used for these inventories.

Table 2 – 1993 – 2020 Demographic Data

	1993	2001	2005	2015	2020
Population	59,340	77,560	82,172	89,007	93,094
Households	22,912	29,207	31,252	31,252	35,940
Employment	25,725	31,930	31,114	39,486	41,894
Vehicle Miles Traveled	750,122	1,131,672	1,345,160	1,577,202	1,746,746

3.0 Mobile Source Emission Inventories

3.1 Vehicle Miles Traveled Activity Estimates

The Denver Regional Council of Government (DRCOG) travel demand modeling provides the base vehicle miles traveled for the mobile source emission inventories. The 2001, 2005, 2015 and 2020 networks from the 2030 Regional Transportation Plan (January 2005) were used to estimate the VMT for 2001, 2009, 2010, 2020, 2015 and 2020 vehicle miles traveled in the Longmont attainment area. The 1993 VMT was estimated using the last travel demand modeling DRCOG performed for 1993 (1993DA).

3.2 Travel Demand Model based Mobile6.2 Inputs

The following Mobile6.2 inputs parameters for 1993, 2001, 2000, 2010, 2015 and 2020 were derived from the VMT and vehicle speeds resulting from DRCOG 2030 RTP travel demand modeling:

- Vehicle speeds (SPEED VMT command)
- Diurnal distribution of VMT (VMT BY HOUR command)
- Distribution of VMT by Facility class (VMT BY FACILITY command)

A FORTRAN program was written to convert the speeds and VMT, as a function of AM, PM and Off peak periods, facility type and area type, into the proper formats for the Mobile6.2 command files. This FORTRAN program, m6inputa.f, is included in the Appendix, available upon request. The diurnal distribution of VMT for each area type is normalized to unity, resulting in the files referenced by the VMT BY HOUR command. The Mobile6.2 default VMT BY HOUR distribution was used to distribute the AM, PM and OFF Peak period VMT from the PPACG travel demand modeling into 24 hours. This 24-hour distribution of VMT was than normalized to unity. The SPEED VMT files are processed in a similar manner. The freeway and expressway speeds are VMT weighted for the 'freeway' speeds in the SPEED VMT files. The principal arterial, minor arterial and collector speeds are VMT weighted for the 'arterial' speeds in the SPEED VMT files. The file referenced by the VMT BY FACILITY command results from a summary of VMT by facility type for each area type.

Finally, the FORTRAN processing program writes a text file of five scenarios, one for each area type. The text for each scenario references the appropriate files through the SPEED VMT, VMT BY FACILITY and VMT BY HOUR commands. The scenarios text is then appended to the 'header' and 'run' sections to complete the Mobile6.2 input file.

3.3 Local Vehicle Mix and Vehicle Registration Distribution

Colorado data for the fleet mix of vehicle miles traveled or 'VMT mix' (the fractional distribution miles driven by the various vehicle types driven on Colorado roadways) and vehicle registration distribution (vehicle age distribution) was updated based on 2001 data. The previous survey of this information in 1988 indicated that the mobile fleet in Colorado tends to be older than the national average and that the VMT mix is comprised of more heavy duty vehicles than the national average VMT mix. The 2001 registration distribution and VMT mix survey information indicates that this trend of an older fleet and a VMT mix of heavier vehicles continues in Colorado. As a result of these continuing trends, a Colorado fleet of vehicles will have higher emission rates than the national average. These new local data sets were included in this budget revision for 2001, 2009, 2010, 2015 and 2020. Since the 1993 base year inventory is closer to the 1988 survey data, the 1993 vehicle mix resulting from the 1988 survey information was used for 1993 (1988 survey data is 'aged' to 1993 using Mobile6.2 default VMT mix). The VMT mix by area type is appended to each area type scenario as described in the previous section. The reference to the registration distribution is included in the 'RUN DATA' section of the Mobile6.2 input files. The VMT mix information and registration distribution are included in the Appendix (available upon request) in the Mobile6.2 inputs.

3.4 Control Strategy Parameterization

For purposes of this technical demonstration, it is assumed that the I/M 240 program and the oxygenated fuel program will terminate on December 31, 2007. Consequently, the year 2009 (January 1, 2009) is proposed as the first interim year for an emissions inventory estimate to recognize the reduced emissions benefits of the I/M 240 program. The year 2010 is proposed as the second interim year for an emissions inventory estimate to recognize the elimination of emissions benefits of the I/M 240 program in the SIP. The 2009 emissions inventory estimate will recognize the elimination of the oxygenated fuel program in the SIP.

3.5 Mobile Source Emission Inventory Summaries

The mobile source emission factors were calculated using Mobile6.2. Table 3 summarises the VMT, emissions factors and resulting on-road mobile source emissions inventories:

Table 3 - VMT, Emissions Factors and Resulting On-Road Mobile Source Emissions Inventories

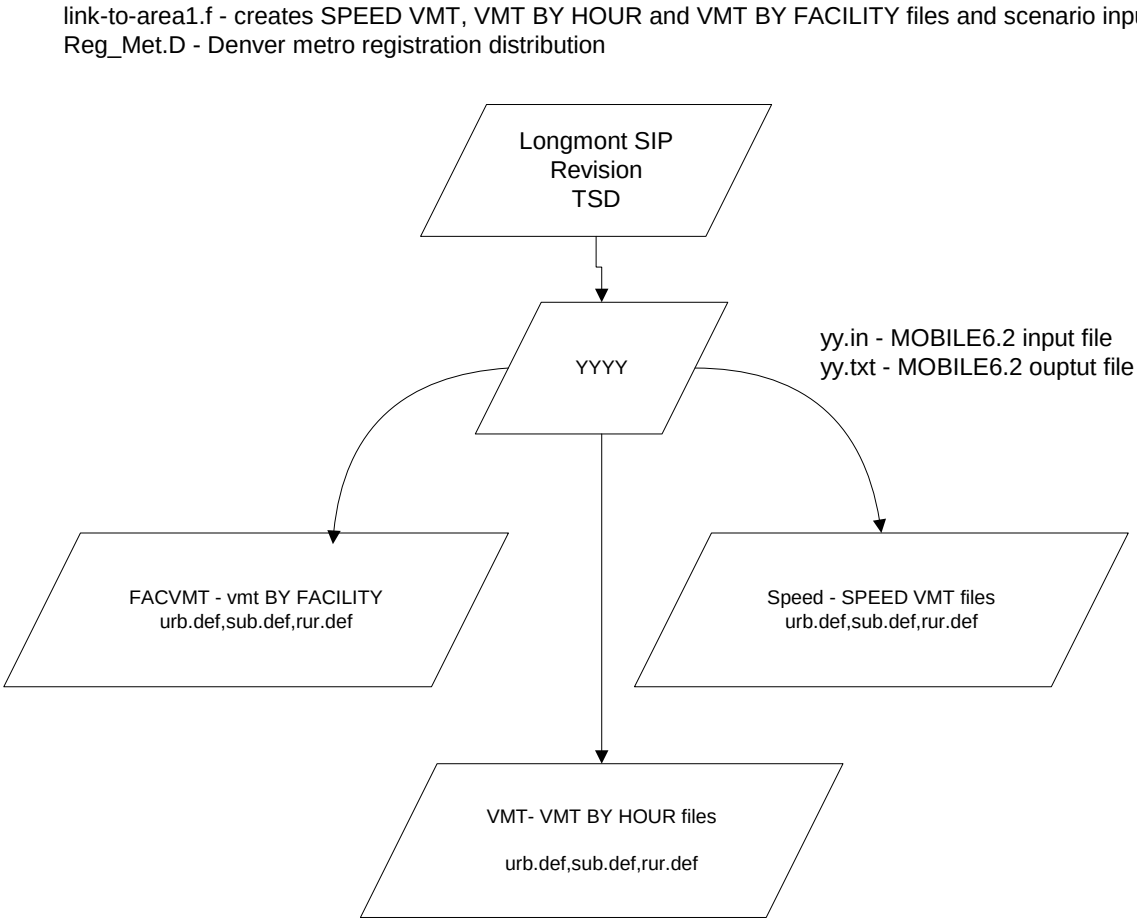
1993	VMT	CO g/mi	Tons/day
Urban	22,024	52.3	1.270
Suburban	433,196	52.345	24.995
Rural	294,902	52.265	16.990
	750,122		43.255
2001	VMT	CO g/mi	Tons/day
Urban	465,474	32.962	16.912
Suburban	272,429	34.186	10.266
Rural	393,769	35.188	15.273
	1,131,672		42.452
2009	VMT	CO g/mi	Tons/day
Urban	558,628	24.532	15.106
Suburban	487,044	25.273	13.568
Rural	392,305	26.082	11.279
	1,437,977		39.953
2010	VMT	CO g/mi	Tons/day
Urban	563,054	24.478	15.192
Suburban	504,382	25.135	13.974
Rural	393,745	26.001	11.285
	1,461,181		40.452

2015	VMT	CO g/mi	Tons/day
Urban	585,185	20.494	13.220
Suburban	591,072	20.938	13.642
Rural	400,945	21.717	9.598
	1,577,202		36.459
2020	VMT	CO g/mi	Tons/day
Urban	633,429	17.947	12.531
Suburban	665,633	18.324	13.445
Rural	447,684	18.989	9.371
	1,746,746		35.346

3.6 Mobile6.2 Input/Output File Documentation

Due to the volume and complexity of files utilized in the emission processing for this budget revision, the Mobile6.2 input and output files as well as all ancillary input files are included on a CD as an Appendix, available on request. The subdirectory structure of the files on this CD is described in the following diagram.

Diagram 1: Directory structure of digital files for Longmont SIP Revision Technical Support Document



This is the file definition and directory structure for the 1993, 2001, 2009, 2010, 2015 and 2020 Mobile6.2 I/O

4.0 Area, Non-road and Point Source Emission Inventories

Emissions for 1993 were based on the most recent revision to the maintenance plan.

The Non-Road emissions were based on the EPA Non-road model. Non-road Emissions were apportioned to the Longmont attainment area by households using the 1990 Census. Based on the 1993 Revised Longmont SIP Inventory, the following categories of non-road and area sources were excluded from the Longmont inventory because they are insignificant or nonexistent: airport service equipment, logging equipment, recreational equipment, recreational marine equipment, aircraft/rocket engine testing, charcoal grilling, firefighter training, forest wildfires, managed burning, and orchard heaters.

Railroad Locomotive Emissions for 1993 were based on Version 1.5 of the 1999 EPA National Emissions Inventory (NEI) for Boulder County and were apportioned to the nonattainment area by miles of track. Projections from 1999 to 1993 were based on the change in population.

Wood burning emissions for 1993 are from the 1993 Revised Longmont SIP.
1993 Point Source Emissions were taken from the 1993 Revised Longmont SIP.

For 2001 and future years, the Non-Road emissions were based on the EPA Non-road model. Non-road Emissions were apportioned to the Denver CO Grid by households or employment using the DRCOG demographic data. The railroad and agriculture Non-road Emissions are an exception to this apportionment methodology. Railroad related Non-road Emissions were apportioned to the attainment area by the miles of track. Agricultural Non-road Emissions were apportioned to the Denver CO Grid by land area, and airports were apportioned according to airport location. The Airport Authority provided emissions for DIA for the base and future years. For Commercial Equipment, Emissions were calculated for 2001 using the Non-road Model, but were grown to future years using the growth in Production and Distribution Employment from the DRCOG LUPT. The following equipment categories were excluded from the Lawn and Garden categories in computing the winter emissions: Commercial Turf Equipment, Front Mowers, Lawn & Garden Tractors, Lawn mowers, Other Lawn & Garden Eqp., Rear Engine Riding Mowers, Rotary Tillers < 6 HP, Trimmers/Edgers/Brush Cutter. The following lawn and garden equipment winter emissions were included: Chippers/Stump Grinders, Chain Saws < 6 HP, Leafblowers/Vacuums, Shredders < 6 HP, Snowblowers.

Railroad Locomotive Emissions for 2001were based on The February 2005 Version of the 2002 EPA National Emissions Inventory (NEI) and were apportioned to the nonattainment area by miles of track. Projections from 2002 to 2001 and to future years were based on the change in population.

Wood burning emissions for 2001 and future years were developed by calculating per-household wood burning rates from the the 2002 Wood Burning Survey, and multiplying by the appropriate AP-42 emission factors. The number of households for each year was taken from the DRCOG LUTP. Daily emissions were obtained from annual emissions by multiplying by the ratio of heating degree days in the high CO season (November, December and January) to the entire year (0.517161, based on National Weather Service data for Denver for 1948 to 2004 with a base of 60 degrees F) and dividing by 92(the number of days in the season).

2001 Point Source Emissions were taken from the Colorado Air Inventory System which is based on the stationary source permit data. Point Source Emissions were grown to future years using the EPA's Economic Growth and Analysis System (EGAS) model.

Table 4 – Area, Non-road and Point Source Emissions Within Nonattainment Area

Longmont CO Nonattainment Emissions (Tons per Day) by Year.

Source Category	93	01	09	10	15	20	25	30
AREA SOURCES								
Aircraft	0.74	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Commercial Cooking	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04
Fuel Combustion	0.15	0.31	0.34	0.35	0.37	0.39	0.41	0.43
Railroads	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04
Structure Fires	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
woodburning	2.54	1.67	1.70	1.70	1.72	1.74	1.76	1.78
SubTotal Area	**3.50**	**2.87**	**2.95**	**2.96**	**3.00**	**3.05**	**3.10**	**3.15**
NON_ROAD SOURCES								
Agricultural Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Commercial Equipment	2.80	3.84	3.92	4.16	4.32	4.56	4.80	5.05
Construction and Mining Equipment	0.63	0.42	0.43	0.43	0.40	0.36	0.35	0.35
Industrial Equipment	1.53	1.25	0.90	0.77	0.29	0.20	0.17	0.18
Lawn and Garden Equipment (Com)	1.17	0.47	0.59	0.59	0.67	0.72	0.78	0.85
Lawn and Garden Equipment (Res)	0.21	0.03	0.03	0.03	0.03	0.03	0.04	0.04
Other Oil Field Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Railroad Equipment	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Recreational Equipment	0.01	0.06	0.10	0.11	0.11	0.11	0.12	0.12
SubTotal NonRoad	**6.36**	**6.08**	**5.98**	**6.10**	**5.83**	**5.99**	**6.27**	**6.60**
POINT SOURCES								
SubTotal Points	**0.18**	**0.04**	**0.05**	**0.05**	**0.06**	**0.07**	**0.07**	**0.08**
TOTAL POINT / AREA / NON-ROAD	**10.04**	**8.99**	**8.99**	**9.11**	**8.89**	**9.10**	**9.44**	**9.82**

Non-road Model Input File For 1993

The “Non-road Model Input File for 1993 ” was produced automatically by the NonRoad Model. There is no High Altitude Option available for the Model. The inputs to the model that are reflected in this file are those within the */NAME/…/END/* delimiters such as:

/OPTIONS/
Title 1 : Longmont 93
Title 2 :
Fuel RVP for gas : 12.4
Oxygen Weight % : 3.0
Gas sulfur % : 0.034
Diesel sulfur % : 0.3300
CNG/LPG sulfur % : 0.003
Minimum temper. (F): 21
Maximum temper. (F): 53
Average temper. (F): 36
Altitude of region : LOW
/END/

Written by Nonroad interface at 3/12/2003 7:57:46 AM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information. Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

10/8/1999 changed default RVP from 9.0 to 8.0

PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated. The order of the
records matter. The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1 - Char 10 - Period type for this simulation.
Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2 - Char 10 - Type of inventory produced.
Valid responses are: TYPICAL DAY and PERIOD TOTAL
3 - Integer - year of episode (4 digit year)
4 - Char 10 - Month of episode (use complete name of month)
5 - Char 10 - Type of day
Valid responses are: WEEKDAY and WEEKEND

/PERIOD/
Period type : Seasonal
Summation type : Typical day
Year of episode : 1993
Season of year : Winter
Month of year :
Weekday or weekend : Weekday
/END/

OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model. Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1 - Char 80 - First title on reports
2 - Char 80 - Second title on reports
3 - Real 10 - Fuel RVP of gasoline for this simulation
4 - Real 10 - Oxygen weight percent of gasoline for simulation
5 - Real 10 - Percent sulfur for gasoline
6 - Real 10 - Percent sulfur for diesel
7 - Real 10 - Percent sulfur for LPG/CNG
8 - Real 10 - Minimum daily temperature (deg. F)
9 - Real 10 - maximum daily temperature (deg. F)
10 - Real 10 - Representative average daily temperature (deg. F)
11 - Char 10 - Flag to determine if region is high altitude
Valid responses are: HIGH and LOW
12 - Char 10 - Flag to determine if RFG adjustments are made
Valid responses are: YES and NO

/OPTIONS/
Title 1 : Boulder 1993 Winter
Title 2 :
Fuel RVP for gas : 12.4
Oxygen Weight % : 0
Gas sulfur % : 0.034
Diesel sulfur % : 0.3300
CNG/LPG sulfur % : 0.003
Minimum temper. (F): 16
Maximum temper. (F): 39
Average temper. (F): 25
Altitude of region : LOW
/END/

REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and
allocation to perform.

Valid responses are:
US TOTAL - emissions are for entire USA without state
breakout.

50STATE - emissions are for all 50 states
and Washington D.C., by state.

STATE - emissions are for a select group of states
and are state-level estimates

COUNTY - emissions are for a select group of counties
and are county level estimates. If necessary,
allocation from state to county will be performed.

SUBCOUNTY - emissions are for the specified sub counties
and are subcounty level estimates. If necessary,
county to subcounty allocation will be performed.

The remaining records define the regions to be included.
The type of data which must be specified depends on the

region level.

US TOTAL - Nothing needs to be specified. The FIPS code 00000 is used automatically.

50STATE - Nothing needs to be specified. The FIPS code 00000 is used automatically.

STATE - state FIPS codes

COUNTY - state or county FIPS codes. State FIPS code means include all counties in the state.

SUBCOUNTY - county FIPS code and subregion code.

```
/REGION/
Region Level      : COUNTY
Boulder County CO : 08013
/END/

or use -
Region Level      : STATE
Michigan          : 26000
```

SOURCE CATEGORY PACKET

This packet is used to tell the model which source categories are to be processed. It is optional. If used, only those source categories list will appear in the output data file. If the packet is not found, the model will process all source categories in the population files.

All Equipment - just put semicolon at start of packet name line
or use the following SCC list -

```
:2260000000
:2265000000
:2267000000
:2268000000
:2270000000
:2282000000
:2285000000
```

Diesel Only -

```
:2270000000
:2282020000
:2285002015
```

Spark Ignition Only -

```
:2260000000
:2265000000
:2267000000
:2268000000
:2282005010
:2282005015
:2282010005
:2285004015
:2285006015
```

This is the packet that lists the names of output files and some of the input data files read by the model. If a drive:\path\ is not given, the location of the NONROAD.EXE file itself is assumed. You will probably

```
 want to change the names of the Output and Message files
 to match that of the OPTion file, e.g., MICH-97.OPT,
 MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.
-------------------------------------------------------
/RUNFILES/
ALLOC XREF        : c:\nonroad\data\allocate\allocate.xrf
ACTIVITY          : c:\nonroad\data\activity\activity.dat
TECHNOLOGY        : c:\nonroad\data\tech\tech.dat
SEASONALITY       : c:\nonroad\data\season\season.dat
REGIONS           : c:\nonroad\data\season\season.dat
MESSAGE           : c:\nonroad\outputs\longco93.msg
OUTPUT DATA       : c:\nonroad\outputs\longco93.out
EPS2 AMS          :
/END/

-------------------------------------------------------
This is the packet that defines the equipment population
files read by the model.
-------------------------------------------------------
/POP FILES/
Population File    : c:\nonroad\data\pop\co.pop
/END/

POPULATION FILE    : c:\nonroad\data\POP\MI.POP


-------------------------------------------------------
This is the packet that defines the growth files
files read by the model.
-------------------------------------------------------
/GROWTH FILES/
National defaults  :C:\nonroad\data\growth\nation.grw
/END/

-------------------------------------------------------
This is the packet that defines the spatial
allocation files read by the model.
-------------------------------------------------------
/ALLOC FILES/
Air Transportation :c:\nonroad\data\allocate\co_airtr.alo
Contruction empl.  :c:\nonroad\data\allocate\co_const.alo
Havested Cropland  :c:\nonroad\data\allocate\co_farms.alo
Golf Course estab. :c:\nonroad\data\allocate\co_golf.alo
Wholesale establis.:c:\nonroad\data\allocate\co_holsl.alo
Family housing     :c:\nonroad\data\allocate\co_house.alo
Logging empl.      :c:\nonroad\data\allocate\co_loggn.alo
Landscape empl.    :c:\nonroad\data\allocate\co_lscap.alo
Metal mining empl. :c:\nonroad\data\allocate\co_metal.alo
Manufacturing empl.:c:\nonroad\data\allocate\co_mnfg.alo
Oil & Gas employees:c:\nonroad\data\allocate\co_oil.alo
Census population  :c:\nonroad\data\allocate\co_pop.alo
RV Park employees  :c:\nonroad\data\allocate\co_rvprk.alo
Surface water area :c:\nonroad\data\allocate\co_water.alo
Allocation File    :c:\nonroad\data\allocate\co_sbr.alo
Allocation File    :c:\nonroad\data\allocate\co_sbc.alo
Allocation File    :c:\nonroad\data\allocate\co_snowm.alo
Allocation File    :c:\nonroad\data\allocate\co_wob.alo
Allocation File    :c:\nonroad\data\allocate\co_wib.alo
Allocation File    :c:\nonroad\data\allocate\co_coal.alo
/END/

-------------------------------------------------------
This is the packet that defines the emssions factors
files read by the model.
-------------------------------------------------------
```

```
/EMFAC FILES/
THC exhaust       : c:\nonroad\data\emsfac\exhthc.emf
CO exhaust        : c:\nonroad\data\emsfac\exhco.emf
NOX exhaust       : c:\nonroad\data\emsfac\exhnox.emf
PM exhaust        : c:\nonroad\data\emsfac\exhpm.emf
BSFC              : c:\nonroad\data\emsfac\bsfc.emf
Crankcase         : c:\nonroad\data\emsfac\crank.emf
Spillage          : c:\nonroad\data\emsfac\spillage.emf
Diurnal           : c:\nonroad\data\emsfac\diurnal.emf
/END/

------------------------------------------------------
This is the packet that defines the deterioration factors
files read by the model.
------------------------------------------------------
/DETERIORATE FILES/
THC exhaust       : c:\nonroad\data\detfac\exhthc.det
CO exhaust        : c:\nonroad\data\detfac\exhco.det
NOX exhaust       : c:\nonroad\data\detfac\exhnox.det
PM exhaust        : c:\nonroad\data\detfac\exhpm.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/
Control Factor    : 0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

MODELYEAR OUT/
by-model-year out  : C:\nonroad\outputs\template.bmy
/END/

SI REPORT/
SI report file-CSV :C:\NONROAD\OUTPUTS\NRPOLLUT.CSV
/END/
```