CONFORMITY OF THE 1995–99 T.I.P. 2010 L.R.P. WITH THE AMENDMENTS TO THE 1990 CLEAN AIR ACT

DADE COUNTY, FLORIDA

METROPOLITAN PLANNING ORGANIZATION

April 1994

This report was prepared by the Dade County MPO in collaboration with the Florida Department of Transportation District VI, and the Dade County Department of Environmental Resources Management.

CONFORMITY OF THE DADE COUNTY
1995-1999 TIP AND 2010 LRP
WITH THE AMENDMENTS OF THE 1990 CLEAN AIR ACT

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April 11, 1994

This report documents the conformity determination for the proposed 1995-1999 Dade County Transportation Improvement Program (TIP) and the Year 2010 Long Range Transportation Plan (LRTP) in fulfillment of the requirements of the 1990 Federal Clean Air Act Amendments. This Conformity Determination Report documents that implementation of the projects listed in the Dade County 1995 TIP and 2010 LRTP will contribute to emissions reductions compared to the emissions from the 1990 Base Year network in the analysis years of 1996, 2005, and 2010.

Furthermore, this report documents that the 1995 TIP and 2010 LRTP are in conformance with the emissions budgets contained in the State Implementation Plan (SIP) and the requirements of the Clean Air Act Amendment (CAAA). To illustrate said conformity determination, a brief synopsis of results are presented for the Baseline/Action Test; the Emission Budget Test; and the Conformity of the Year 2010 Long Range Transportation Plan.

Baseline/Action Test

Implementation of the projects contained in the 1995 TIP reduces emissions in each of the analysis years (1996, 2005 and 2010) when compared to a "Baseline" (or "No-Build") scenario. The daily emission reductions (in tons per day) for Volatile Organic Compounds (VOC's) and Oxides of Nitrogen (NOx) which result from the "Baseline" and "Action" scenarios are:

	1996		2005		2010	
	Baseline	Action	Baseline	Action	Baseline	Action
VOC	80.88	80.76	72.94	71.38	75.13	73.18
NOx	103.85	103.81	96.6	95.98	99.72	99

Emission Budget Test

Implementation of the projects contained in the 1995 TIP will result in emission reductions in each of the years for which an emissions budget has been established by the redesignation request maintenance plan submitted by Dade County (1994, 1997, 2000, and 2005). The daily emissions which result from the "Action" (or "Build") scenarios and emissions budgets for each of the analysis years (in tons per day) are:

	1994		1997		2000		2005	
	Action	Budget	Action	Budget	Action	Budget	Action	Budget
VOC	89.5	96.9	79.72	88.9	76.6	82.8	71.38	79.4
NOx	107.35	111.2	102.94	107	100.3	101.9	95.98	99

The complete emissions analysis results are summarized in Appendices 4 and 5.

Conformity of the Year 2010 Long Range Plan

Additionally, emissions resulting from the implementation of the current year 2010 Long Range Plan were compared to the emission budgets established by the redesignation request maintenance plan. Implementation of the 2010 LRTP will result in emissions which fall below the emissions budget set for the analysis years of 1994, 1997, 2000 and 2005. The projects contained in the 1995 TIP have been taken form the conforming 2010 LRTP.

	1994		1997		2000		2005	
	Action	Budget	Action	Budget	Action	Budget	Action	Budget
VOC	90.63	96.9	80.93	88.9	71.22	82.8	71.7	79.4
NOx	107.47	111.2	102.52	107	97.58	101.9	97.13	99

To establish conformity, the Metropolitan Planning Organization (MPO) has followed the Florida Department of Transportation Directive No. 525-010-014-c "District Review of Conformity Determinations by Metropolitan Planning Organizations in Nonattainment and Maintenance Areas" of February 23,1994. This directive supplements USEPA's transportation conformity regulation (40 CFR Part 51) and was prepared by the FDOT Office of Policy Planning . The FDOT Directive addresses the transportation and air quality planning methodology to be employed by the State's urban areas using the Florida Standard Urban Transportation Model Structure (FSUTMS) and the Mobile Emissions Series Models to assess the status of air quality compliance efforts.

The minor variations in results between the Emissions budget and the Long Range Transportation Plan Conformity Analysis are the result of the difference in methodology.

DEFINITIONS

CONFORMITY means, under Section 176 (c) of the CAA, "conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of such standards," ensuring that "such activities will not cause or contribute to any new violation of any standard in the area; increase the frequency or severity of any existing violation of any standard in the area; or delay timely implementation of any standard or any required interim emission reductions or other milestone in any area".

FLORIDA STANDARD URBAN TRANSPORTATION MODEL STRUCTURE (FSUTMS) means the software developed by the Florida Department of Transportation (FDOT) for long range urban area transportation modeling that is used in performing the required analyses to reach a conformity determination.

MOTOR VEHICLE EMISSIONS BUDGET means that portion of the total allowable emissions contained in a revision to the State Implementation Plan (SIP) or in an implementation plan revision submitted to, but not yet approved by, USEPA for the purpose of attainment or maintenance demonstrations for any criteria pollutant or its precursors allocated by the SIP to highway and transit vehicles (See 40 CFR Section 51.392) .

OZONE means a compound consisting of three oxygen atoms formed through photochemical reactions in the atmosphere involving volatile organic compounds (VOC) and oxides of nitrogen (NOx).

ACRONYMS:

CAA	Clean Air Act including the Clean Air Act Amendments of 1990
CFR	Code of Federal Regulations
CMAQ	Congestion Mitigation and Air Quality Improvement Program
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
LRTP	Long Range Transportation Plan
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NOx	Oxides of Nitrogen
SIP	State Implementation Plan
TCM	Transportation Control Measure
TIP	Transportation Improvement Program
U.S.C.	United States Code
USEPA	United States Environmental Protection Agency
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

DADE COUNTY CONFORMITY DETERMINATION REPORT

BACKGROUND

The rapid growth in Dade County's population over the last two decades, coupled with an associated increase in motor vehicle use, and commercial activities, has placed a significant strain on its air quality. The Dade County Commission has been proactive in its approach to air quality-related issues, adopting rules later required by federal law. This along with the excellent meteorological and climatological conditions, has helped Dade County to continue to enjoy better air quality than most metropolitan areas of the nation.

The purpose of this report is to comply with the requirements of the Clean Air Act Amendment of 1990 (Section 176 (c) (1), (2) and (3)) and requirements of the Intermodal Surface Transportation Efficiency Act of 1992 (ISTEA 23 USC 134); and to demonstrate the conformity of both the Transportation Improvement Program (TIP) and the Long Range Transportation Plan (LRTP) with the State Implementation Plan (SIP) through analysis of the transportation network and emissions. All federally funded projects for areas designated by the EPA as air quality nonattainment areas must come from a conforming TIP and long range plan.

The Metropolitan Planning Organization (MPO) has been designated as the air quality organization for the determination of the conformity of the TIP and Long Range Plan for the Miami urbanized area. The MPO was designated by the Governor on March 2, 1977. As required by the Federal-Aid Highway Act (23 USC S101 et seg), and the Urban Mass Transportation Act (49 USC 160 et seg), the MPO is the forum for cooperative decision making for urban transportation planning by principal elected officials and local governments (23 CFR S450.104 (b)).

To establish conformity, the MPO has followed the Florida Department of Transportation (FDOT) Directive No. 525-010-014-c, "District Review of Conformity Determinations by MPOs in Nonattainment and Maintenance Areas Directive" issued on February 23, 1994 which supplements the final transportation conformity regulation promulgated by the United States Environmental Protection Agency (40 CFR Part 51). Our conformity analysis has also followed the Federal Highway Administration (FHWA) metropolitan planning guidance (23 CFR Part 450 Subpart C) and has used analytical methodology approved by the USEPA (FSUTMS, Mobile Model, EMIS, Reid Vapor Pressure and National Defaults) and the FHWA (FSUTMS, National Defaults) and made available by the Offices of Policy Planning and Systems Planning of the FDOT and the Florida Department of Environmental Protection (FDEP).

In 1979, the USEPA designated Dade County as a Moderate non-attainment area for the air pollutant ozone. A base year inventory of emissions for Dade County for the year 1990 was submitted to the USEPA on November 14, 1992 (and approved on November 23, 1993), as part of a revision to Florida's State Implementation Plan (SIP). The SIP is the series of documents maintained by the FDEP which details the actions to be taken by State agencies and local

governments to achieve, maintain and enforce the National Ambient Air Quality Standards (NAAQS). The 1990 inventory represents the base level of daily pollution against which future improvements in air quality are measured. A second SIP revision requesting redesignation of Dade County from its status as a Moderate non-attainment area to status as a Maintenance Area was submitted to USEPA on November 15, 1993. This redesignation request contains emissions projections for the years 1994, 1997, 2000 and 2005. These projections are the motor vehicle emissions budgets for these years and represent the amount of emissions allowed in the air quality analyses of State and local transportation plans. The MPO supports implementation of these SIP goals and objectives, and the approved TIP supports the SIP in achieving and maintaining these standards and the NAAQS. Pending USEPA action on the request for redesignation as a Maintenance Area, Dade County is governed by the rules established for Transitional Areas, that is, those transitioning from non-attainment to attainment (or maintenance) status. Even after USEPA redesignation of Dade County as a Maintenance Area, air quality conformity requirements will continue to apply for another twenty years.

Even though there are no required Transportatoion Control Measutes (TCMs) in the Florida SIP; voluntary TCM strategies are included in the 1995 TIP. The 1995 TIP will contribute to emission reductions by means of implementation of these TCM's (see TCM list in Appendix 1). The TCMs are intended to reduce single occupant vehicles (SOV), reduce traffic congestion and increase transit usage and the use of high occupancy vehicles (HOVs). Existing TCM activities include Metrobus (72 routes), Metrorail (21 miles), Metromover (1.9 miles), Motor vehicle control program, Park-and-Ride and HOV Parking Lots, Exclusive Bus and Carpool Lanes, Metro-Dade Traffic Control System, Bikeways, Transportation System Management (TSM), Intelligent Corridor System (ICS), Incident Management, Transportation Demand Management Activities (TDM), Motor Vehicle Emissions Control Inspection and Maintenance (I/M) Programs, Stage II Vapor Recovery Ordinance, Stationary Source Permitting and Compliance Programs and Ambient Air Quality Monitoring,

The 1995 TIP also contributes to emission reductions with Congestion Management and Air Quality (CMAQ) projects (see appendix 2).

The conformity determination is based on the most recent planning assumptions applicable, derived from the estimates of current and future population, employment, travel and congestion. Reasonable assumptions about transit service and increases in transit fares, and road and bridge tolls over time were included were applicable. The most recent population, employment, travel and congestion estimates were obtained from the Dade County Planning Department, Demographics Section. The 1986 base year transportation network for the Dade County Urbanized Area is the latest validated network, which was projected from the 1980 Census. Subsequent networks have reflected projected 1990 data based on Census control figures. Current work has focused on updating the transportation network data files to a 1990 base line condition.

This conformity report and emissions analyses were developed in cooperation with the FDOT Central and District Six Offices, and the Metro-Dade Department of Environmental Regulation (DERM). It is expected to be endorsed by the Citizen's Transportation Advisory Committee (CTAC) on April 27, 1994. The conformity determination report is scheduled for endorsement by

the MPO Board on May 12, 1994. The April 7, 1994 Transportation Planning Technical Advisory Committee (TPTAC) and the April 11, 1994 Transportation Planning Council (TPC) endorsements will include representatives from State and local air quality agencies.

An interlocal agreement was passed by the Governing Board of the Metropolitan Planning Organization for the Miami Urbanized Area on January 29, 1979, by resolution No. MPO 3-79 authorizing and approving "an agreement concerning a transportation control plan for the Miami area" between itself, the Dade County Board of County Commissioners, the Florida Department of Transportation and the Florida Department of Environmental Regulation.

The MPOs that make up the Southeast Florida Airshed (Dade, Broward and Palm Beach) have coordinated their air quality improvement activities through the Inter-MPO Air Quality Technical Committee. This committee is made up of representatives from the MPOs, County Offices of Environmental Management, County Transit Agencies, and FDOT District Planning Offices. This group meets at least four times per year to discuss on-going work related to air quality. Additionally, the three counties held a joint public hearing on their SIP revision containing the redesignation request to USEPA. The meeting was held in Miami on September 30, 1993. The report will be presented as an informational item to the Inter-MPO Air Quality Technical Committee at its May 11th, 1994 meeting.

This conformity determination is being made during the Transitional period. The *Transitional Period* conformity requirements apply to Dade County until the SIP revisions are approved by USEPA. The *Maintenance Period* criteria will apply once USEPA approves the SIP redesignation revisions and motor vehicle emissions budget.

This conformity report and emissions analyses were developed in cooperation with the FDOT Central and District Six Offices, and the Metro-Dade Department of Environmental Regulation (DERM). Public participation and interagency consultation process followed as part of the development of this conformity report will include endorsement by the Citizen's Transportation Advisory Committee (CTAC) on April 27, 1994. The conformity determination report is scheduled for endorsement by the MPO Board at its public hearing on May 12, 1994. The April 7, 1994 Transportation Planning Technical Advisory Committee (TPTAC) and April 11, 1994 Transportation Planning Council (TPC) endorsements included representatives from State and local air quality agencies.

This Conformity Determination Report documents that Dade County's TIP will achieve the annual emission reductions identified in the SIP. In addition, the report documents that the LRTP is a conforming document. The projects contained in the TIP have been taken from the conforming 2010 LRTP.

Transitional Period: Conformity Criteria of Long Range Plan and TIP

During the transitional period, long range plans and TIPs must demonstrate:

(1) satisfaction of the "Baseline" and "Action" (build/no build) test: Regional VOC and NOx emissions predicted in the Action scenario are less than the emissions predicted in the Baseline scenario in each analysis year.

(2) the Action scenario contributes to a reduction in emissions from *1990 base year emissions inventory* by any non-zero amount. *(See Appendix 4)*

(3) emissions for each pollutant, or pollutant precursor projected from the Action scenario are equal to or less than emissions in the *motor vehicle emissions budgets. (See Appendix 5)*

This report documents that all three of these requirements are met by the 1995 TIP and 2010 LRTP for the Miami Urbanized Area.

COORDINATION WITH THE LONG RANGE PLAN

In November of 1990, the Governing Board of the MPO for the Miami Urbanized Area adopted the Year 2010 Long Range Plan. Every November thereafter, the Year 2010 Long Range Plan has been updated and amended to reflect changes in project priorities and implementation schedules based upon the desires of the Board and citizenry.

The Long Range Plan consists of four five-year groupings of roadway and transit improvement projects throughout the County. The LRTP conforms to the purpose of the SIP by eliminating the number of violations of NAAQS. These projects contribute to the expeditious implementation of the NAAQS. The LRTP, then, will not cause or contribute to any new violation of any standard, increase the frequency or severity of any exiting violations of any standards, or delay the timely attainment of any standards or any required interim emission reductions or other milestones in the area.

The emissions expected from the implementation of the LRTP are consistent with the estimates of emissions from motor vehicles (the motor vehicle emissions budget) and necessary emissions reductions contained in the SIP.

The 2010 LRTP is based on the latest planning assumptions available at the time of its development, the latest available emission estimation model (Mobile 5a), and will contribute to emissions reductions. No goals, directives or recommendations contained within the adopted Long Range Plan are in conflict with the goals and intent of the SIP. It describes the future transportation system specifically enough to allow determination of conformity as required by 40 CFR Section 51.410 and includes a written commitment that it will incorporate all federally assisted transportation projects that improve air quality committed to in the SIP.

The MPO for the Miami Urbanized Area fully endorses Florida's SIP. The Year 2010 Long Range Plan, as endorsed by the Board, is consistent with and furthers the goals of the SIP as they pertain to achieving and maintaining the National Ambient Air Quality Standards (NAAQS);

ANALYSIS METHODOLOGY

The conformity determination analysis is based upon emission results calculated using the FSUTMS traffic projection model, the Mobile 5a emissions model , and the EMIS emission interface.

The data used in these models include:

* highway and transit projects identified in the 1995 TIP,
* population and employment projections from the Metro-Dade Planning Department,
* climatological and meteorological data, information on the vehicle fleet, fuels, and emissions control programs from the FDOT Systems Planning Office in Tallahassee.

TIP Analysis Years

1. Base Year: 1990
2. First Analysis Year: 1996
3. Second Analysis Year: 2005
4. Third Analysis Year: 2010 (last year of the 2010 Long Range Plan)

Base Year Network - 1990

The 1990 base year network was developed from the 1986 validated base network created as part of the 2010 LRTP process. It is the most current validated network available. Projects added to the 1986 base network to create the 1990 are listed in Appendix 3

The TIP "Baseline" and "Action" Scenarios

The requirements for the "Baseline" and "Action" scenarios (the "build" and "no build" test) are detailed in 40 CFR Section 51.438 for the TIP.

Highway Network Scenarios:

The **Baseline Scenario** for the 1995 TIP

The Baseline Scenario is defined in the final rule as "the future transportation system that would result from current programs" composed of specific elements as follows:

* The 1990 base year network;
* Highway and transit projects completed since 1990;
* Projects under construction or projects for which right-or-way acquisition is underway;
* Completed transportation projects from the first three years of the previously conforming TIP;

* Regionally significant projects from the first three years of the previously conforming TIP (1993/94, 1994/95 and 1995/96) that would have been completed by December 31, 1996.

The list of projects included in this network are on Appendix 3

The **Action Scenarios** for the 1994 TIP

* Analysis Year 1996: The "Action" scenario includes the "Baseline" scenario and all projects in the nonconforming TIP that are expected to be completed by December 31, 1996. The list of projects included in this network are on Appendix 3

* Analysis Year 2005: The "Action" scenario includes the "Baseline" scenario, the 1996 "Action" scenario, and all other transportation projects in the nonconforming TIP that were expected to be completed by December 31, 2005. Projects in the last two years of the nonconforming TIP with clear right-of-way funding that would be completed by the end of the second analysis year (2005) were considered as completed project for inclusion in the 2005 "Action" Scenario.
The list of projects included in this network are on Appendix 3

* Analysis Year 2010: The "Action" scenario includes the "Baseline" scenario, the 1996 "Action" scenario, the 2005 "Action" scenario and all transportation projects in nonconforming TIP that are expected to be completed by December 31, 2010.
The list of projects included in this network are on Appendix 3

Baseline/Action Test

Implementation of the projects contained in the 1995 TIP reduces emissions in each of the analysis years (1996, 2005 and 2010) when compared to a "Baseline" (or "No-Build") scenario. The daily emission reductions (in tons per day) for Volatile Organic Compounds (VOC's) and Oxides of Nitrogen (NOx) which result from the "Baseline" and "Action" scenarios are:

	1996		2005		2010	
	Baseline	Action	Baseline	Action	Baseline	Action
VOC	80.88	80.76	72.94	71.38	75.13	73.18
NOx	103.85	103.81	96.6	95.98	99.72	99

Emission Budget Test

Implementation of the projects contained in the 1995 TIP will result in emission reductions in each of the years for which an emissions budget has been established by the redesignation request maintenance plan submitted by Dade County (1994, 1997, 2000, and 2005). The daily emissions which result from the "Action" (or "Build") scenarios and emissions budgets for each of the analysis years (in tons per day) are:

	1994		1997		2000		2005	
	Action	Budget	Action	Budget	Action	Budget	Action	Budget
VOC	89.5	96.9	79.72	88.9	76.6	82.8	71.38	79.4
NOx	107.35	111.2	102.94	107	100.3	101.9	95.98	99

The 1994, 1997 and 2000 Action results are interpolated between calculated results from a 1993 model of existing facilities and from the 1996, 2005 and 2010 analysis years. The complete emission analysis results are summarized in Appendices 4 and 5. The EMIS.OUT report generated by each model scenario are included as Appendix 7.

Conformity of the Year 2010 Long Range Plan

Additionally, emissions resulting from the implementation of the current year 2010 Long Range Plan were compared to the emission budgets established by the redesignation request maintenance plan. Implementation of the 2010 LRTP will result in emissions which fall below the emissions budget set for the analysis years of 1994, 1997, 2000 and 2005. The projects contained in the 1995 TIP have been taken from the conforming 2010 LRTP.

	1994		1997		2000		2005	
	Action	Budget	Action	Budget	Action	Budget	Action	Budget
VOC	90.63	96.9	80.93	88.9	71.22	82.8	71.7	79.4
NOx	107.47	111.2	102.52	107	97.58	101.9	97.13	99

The 1994, 1997 and 2005 Action results are interpolated between calculated results from a 1993 model of existing facilities and from year 2000 and 2010 LRTP models developed during the 2010 LRTP planning process. The minor variations in results between the Emissions Budget and the LRTP Conformity Analysis are the result of this difference in methodology.

Tools Used for Emission Analysis:

EPA/FHWA have accepted the following models for use in analyzing air quality conformity in compliance with the CAAA of 1990.

Florida Standard Urban Transportation Model Structure (FSUTMS)

FSUTMS has been approved by USEPA and FHWA calculating Vehicle Miles Traveled (VMT) by speed, facility type, area type and geographic location.
FSUTMS is a series of integrated, menu-driven programs designed to provide transportation tools for use in multimodal urban systems planning to include the latest population and employment figures. FSUTMS was used to simulate traffic conditions in the Dade County urbanized area for the 1990, 1996, 2005 and 2010 Baseline and Action scenarios. Average speeds and total vehicle miles were calculated and utilized by Mobile 5a to estimate emissions.

Mobile Source Emission Factor Model (MOBILE 5)

Mobile 5a is the current USEPA approved emissions model used to calculate highway emissions. Mobile 5a is an integral set of FORTRAN routines for use in the analysis of the air pollution impact of gasoline-fueled and diesel-fueled highway mobile sources. The program calculates emission factors for hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NOx). Mobile 5a has the ability to model emission factors for the Year 1960 through 2020 inclusive, and uses the following data inputs to its calculation of vehicle emissions:

Reid Vapor Pressure (RVP)

An RVP of 9.2 psi (pounds per square inch) is used for the 1990 base year analysis and 7.8 psi for 1992 forward. The RVP data for 1992 and beyond is based on USEPA specifications provided in the Federal Registers of November 6, 1991 and December 12, 1991.

National Defaults

The national defaults for Mileage Accrual and Model Year, for all vehicle types, as found in the current USEPA approved emissions model were used.

Inspection/Maintenance (I/M) and Anti-Tampering Programs

An I/M program was started in Florida in 1991. Values used in this conformity process were supplied by the FDOT Systems Planning Office .

Refueling Emissions

Refueling emissions are not included in this air quality analysis because they are consider point , rather than mobile emission sources.

Appendix 6 reflects these input stream values for 1990, 1996, 2005 and 2010.

EMIS

A customized utility program supplied by FDOT which applies the Mobile 5a vehicle emission rates to the vehicle miles of travel and average speed data from FSUTMS.

VMT FACTOR

The emission calculated by the EMIS program have been converted by a factor in order to be consistent with the 1990 highway statistics collected for the Highway Performance Monitoring System (HPMS). This HPMS factor is the ratio of the 1990 HPMS total vehicle miles travelled (VMT) to the VMT calculated for the same year by EMIS:

$$\frac{\text{HPMS VMT: } 35{,}184{,}445}{\text{EMIS VMT: } 33{,}811{,}056} = 1.04$$

The Highway Performance Monitoring Systems (HPMS) VMT data is required to be used for estimating all emission values (40 CFR Subsection 51.452 (b) (2)).

The HPMS factor has been applied to both the VOC and NOx emissions calculated by the EMIS program. This is the same method as described in Appendix 3 of the FDOT Conformity Review Directive.

Overview of Activities Conducted

The Conformity Determination Directive for the 1994 cycle was received by the MPO Office from the FDOT Central Office on March 9, 1994.

In cooperation with the Central Office of FDOT in Tallahassee and District Six office in Miami, the Dade MPO conducted the appropriate transportation assessment and analyzed the emissions impact of the projects listed in the to-be-adopted 1995 Transportation Improvement Program (TIP) and the adopted Year 2010 Long Range Transportation Plan.

The Highway Systems Planning Office of FDOT provided the FSUTMS, EMIS and Mobile 5a models and input data to the MPO and assisted in completing the technical and analytical tasks in the Conformity Determination process. Specialists in both transportation and air quality modeling were on hand to assist others in running FSUTMS and MOBILE 5a models for conformity purposes.

All Mobile 5a input parameters apply to the Dade County geographical area and have been approved by the USEPA for use in the conformity determination analysis.

All Mobile 5a input and output files are included in Appendices 6 and 7

The 1996, 2005 and 2010 Baseline and Action networks were coded by FDOT District Six Office staff and reviewed by the staff of the MPO Office. The interpolations for the Productions and Attractions for 1996, 2005 and 2010 were conducted at the District 6 Office. The actual runs of the networks under FSUTMS were performed at the MPO Office as well as the Emissions using the MPO's AIX/UNIX operating platform for the IBM-RS6000.

Emission Analysis Run Results

For the Year 1995 TIP: estimated area-wide volatile organic compounds (VOC) and Nitrogen oxides (NOx's) for the Base Year 1990 and for the 1996, 2005 and 2010 "Baseline TIP" and "Action TIP" scenarios are reported in Appendix 5. These findings demonstrate emissions reduction consistent with those requiredby the SIP.

For the Year 2010 LRTP: estimated area-wide volatile organic compounds (VOC) and Nitrogen oxides (NOx) for the Base Year 1990 and for the 1994, 1997, 2000, and 2005 "Emissions Budget Projection" scenarios and for the 1996, 1997, 2000, 2005, and 2010 "Action" scenarios are reported in Appendix 4. These findings demonstrate emissions reduction consistent with those required by the SIP

Projected results obtained in the County for all five scenarios show reduced daily emission of VOCs and NOx in 1996, 2005, and 2010 when compared to the 1990 base emissions inventory.

Implementation of proposed projects in the 1995 TIP from the conforming Year 2010 LRTP will positively contribute to emission reductions.

FINDINGS

The 1996 Action TIP Mobile source emission results show a reduction in VOC of % when compared to the 1990 Base Year Network. The 1996 Action TIP also shows a reduction in VOC of 0.12 tons per day when compared to the 1996 Baseline TIP scenario. The NOx emissions are reduced 11.8 % when comparing the 1990 Base Year Network to the 1996 Action TIP network. The NOx emissions are again reduced an additional 0.04 tons/day for the 1996 Action TIP scenario as compared to the 1996 Baseline TIP. The VOCs emissions are reduced 9.15 % when comparing the 1996 Action TIP to the 1997 motor vehicle emissions budget. The NOx emissions are again reduced an additional 3.19 tons/day for the 1996 Action TIP as compared to the 1997 motor vehicle emissions budget.

The 2005 Action TIP Mobile source emission results show a reduction in VOC of 54 % when compared to the 1990 Base Year Network. The 2005 Action TIP also shows a reduction in VOC of 1.56 tons per day when compared to the 2005 Baseline TIP scenario. The NOx emissions are reduced 18.4 % when comparing the 2005 Action TIP Network to the 1990 Base Year network. The NOx emissions are again reduced an additional 0.62 tons/day for the 2005 Action TIP scenario as compared to the 2005 Baseline TIP. The VOCs emissions are reduced 10.1 % when comparing the 2005 Action TIP to the 2005 motor vehicle emissions budget. The NOx emissions are again reduced an additional 3.02 tons/day for the 2005 Action TIP as compared to the 2005 motor vehicle emissions budget.

The Action years of 1994, 1997, 2000, and 2005 of the current year 2010 LRTP show lower mobile source emission results than the established motor vehicle budget emissions for those same years of analysis.

Conclusions

Implementation of the proposed 1995 Transportation Improvement Program from the conforming Year 2010 LRTP will positively contribute to annual emission reductions when compared to the 1990 Base Year Network.

Implementation of the proposed 1995 Transportation Improvement Program from the conforming Year 2010 LRTP will positively contribute to annual emission reductions when compared to the milestone years in the motor vehicle emissions budget for Dade County.

Implementation of the proposed 1995 Transportation Improvement Program from the conforming Year 2010 LRTP will positively contribute to annual emission reductions when compared to the no implementation of those proposed highway and transit improvements contained in the 1995 TIP. In every case for 1996, 2005 and 2010 scenarios improvements in air quality are derived from the implementation of proposed improvements. The "Action" ("Build") scenario is more advantageous to the community than the "Baseline" ("No build") scenario regarding air quality.

This is true for both the 1996, 2005 and 2010 Action TIP scenarios. The level of emission reductions is shown in Appendix 5. Conformity is achieved when the Action TIP scenario emissions results are less than the Baseline TIP scenario for the years 1996, 2005 and 2010.

Achievement of this emissions reduction was noted in the Findings section above. The reduction in emissions demonstrates conformity with emission reduction goals of the MPO and with the goals of the SIP.. Conformity means that the 2010 LRTP and its subset, the 1995 TIP have achieved their intended purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards (NAAQS), and expeditiously attaining and maintaining those standards.

Implementation of the voluntary TCMs programmed in the 1995 TIP will further reduce mobile source emissions even though these projects are not included in the modeling analysis. Therefore, it is clearly demonstrated that the 1995 Metro-Dade County TIP is in conformance with the SIP and with the Clean Air Act Amendments of 1990.

APPENDICES

APPENDIX I

TCM PROJECTS IN THE 1995-1999 TIP

WPI #	PROJECT	YEAR IN TIP	TIP PAGE #	BENEFIT
6141828	1-95/SR 9A (US-1 to West Palm Beach Airport)	96/97	62	IVHS
6810015	Dade County Park-and-Ride Lots	94/95	81	Ridesharing/discourage SOVs
6810284	Dade County Park-and-Ride Lots	95/96	81	Ridesharing/discourage SOVs
6810277	Dade County TMA's	94/95	81	Ridesharing promotion
6810283	Dade County TMA's	95/96	81	Ridesharing promotion
6810303	Dade County Park-and-Ride Lots	96/97	82	Ridesharing promotion
6810304	Dade County Ridesharing	96/97	82	Ridesharing promotion
6810305	Dade County TMA's	96/97	82	Ridesharing promotion
6810305	Dade County Ridesharing Promotion & Assist.	96/97	82	Ridesharing promotion
6810305	Dade Gold Coast Commuting Service	95/96	91	Ridesharing promotion
6810336	Dade County Park-and-Ride Lots	97/98	83	Ridesharing promotion
6810337	Dade County Ridesharing	97/98	84	Ridesharing promotion
6810342	Dade County Ridesharing	97/98	84	Ridesharing promotion
6810345	Dade County Park-and-Ride Lots	96/99	84	Ridesharing promotion
6810347	Dade County Ridesharing	98/99	85	Ridesharing promotion
6819037	Dade Gold Coast Commuting Service	94/95	91	Ridesharing promotion

APPENDIX II

PROJECTS ALLOCATED WITH CMAQ FUNDING IN THE 1995-1999 TIP

WPI #	PROJECT	IMPROVEMENT	PAGE #
6114094 53	S.R 836/Dolphin Expressway	P.D.E. Study	
6141893	Dist/St-Wide Districtwide OFA	Unknown	74
6119993	Dist/St-Wide Districtwide Supplmt Agrmt/OFA	Funding Action	76
6830310	MDTA/Metrorail Extension	Fixed Guideway Improvements	90
6830331	Intermodal Center	Fixed Guideway Improvements	90

APPENDIX III: NETWORK DESCRIPTIONS

Baseline Scenario

The Baseline Scenario is made up of

1) the 1990 network

2) Projects since 1990 which are complete or under construction (and will be complete by December 31, 1996).

A. Completed Projects (through April, 1993).

Primary System/ Interstate/ Turnpike/ Off State System		
6113002	Gratigny Pkwy: NW 52 St to NW 32 St	new 6 lanes
6113213	SW 88 St: HEFT to SW 152 Ave	4 to 6 & 8 lane
6113230	NW 27 Ave: NW 11 St to NW 42 St	4 to 6 lanes
6113235	NW 36 St: SR 826 to NW 57 Ave	4 to 6 lanes
6113370	US-1: NE 123 St to NE 135 St	4 to 6 lanes
6113555	SW 8 St: E of SW 112 Ave to SR 826	4 to 6 & 8 lane
6113839	SW 8 St: SW 127 Ave to SW 112 Ave	4 to 8 lanes
6113886	Grat Pkway: NW 32 Ave to NW 25 Ave	new 8 lanes
6141769	I-95: SR 836 to SW 8 St	8 to 10 lanes
6141774	I-95: SR 836 to SR 112	10 to 12 lanes
6141775	I-95: NW 58 St to NW 95 St	8 to 10 lanes
6141777	I-95: NW 129 St to NW 151 St	10 to 12 lanes
6151837	HEFT @ NW 41 St	Interchange
6151849	HEFT: SW 8 St to SR 836	4 to 6 lanes
6151855	HEFT @ SW 120 St	Interchange

Secondary System/Road Impact Fee/Private Sector		
662306	Coral Way: SW 137 Ave to SW 127 Ave	2 to 4 lanes
662348	NW 36/41 St: NW 114 Ave to NW 102 Ave	2 to 5 lanes
"	NW 36/41 St: NW 102 Ave to NW 87 Ave	2 to 6 lanes
662271	SW 104 St: SW 122 Ave to SW 117 Ave	4 to 6 lanes
662186	NW 119 St: NW 57 Ave to NW 42 Ave	2 to 4 lanes
662190	NW 25 St: NW 107 Ave to NW 72 Ave	4 lanes & Interchange
671501	SW 42 St: SW 147 Ave to SW 142 Ave	2 to 4 lanes
671901	NW 87 Ave: NW 106 St to NW 138 St	2 to 5 lanes

B. Projects Completed or Under Construction and Will be Complete (April, 1993 through December 31, 1996).

Primary System/ Interstate/ Turnpike/ Off State System/ Transit		
6113373	US-1: NE 135 St to NE 151 St	4 to 6 lanes
6113603	NW 57 Ave: NW 138 St to NW 183 St	4 to 6 lanes
6113759	NW 135 St: NW 27 Ave to I-95	4 to 6 lanes
6141873	Ives Dairy Road over I-95	4 to 6 lanes
6810140	MetroMover System Extensions	

Secondary System/Road Impact Fee/Private Sector

662189	NW 37 Ave: SR 826 to Broward Co line	2 to 5 lanes
	NW 107 Ave: NW 33 St to NW 41 St	New 5 lanes
662327	SW 42 St: SW 122 Ave to SW 117 Ave	widen to 6 lanes
662191	Hlh Grdns Blvd: Okee Rd to NW 138 St	new 4 lanes
662272	SW 117 Ave: SW 56 St to SW 40 St	2 to 4 lanes
662373	SW 120 St: SW 147 Ave to SW 137 Ave	4 lanes

3) Projects from the 93/94, 94/95, and 95/96 years of the 1994 TIP which will be complete by December 31, 1996 (cst phase included in FY 93/94 or 94/95).

Primary System/ Interstate/ Turnpike/ Off State System/ Transit

6113290	SR 826: NW 103 St to NW 122 St	6 to 8 lanes
6113605	US-1: NE 151 St to NE 163 St	4 to 8 lanes
6113757	SW/NW 27 Ave: SW 8 St to NW 11 St	4 to 6 lanes
6113760	Quail Roost Dr: SW 127 Ave to US-1	2 to 4 lanes
6113785	W Flagler St: SR 826 to W 71 St	4 to 6 lanes
6114105	US-1 Busway: SW 112 Ave to SW 173 St	2 new HOV lanes
6114106	US-1 Busway: SW 173 St to SW 124 St	2 new HOV lanes
6114107	US-1 Busway: SW 124 St to Dadeland	2 new HOV lanes
6123212	SW 26 St: SW 147 Ave to SW 137 Ave	2 to 4 lanes
6123216	NW 37 Ave: SR 826 to Broward Co line	2 to 4 lanes

Secondary System/Road Impact Fee/Private Sector

662279	NW 7 St: NW 60 Ct to NW 57 Ave	widen to 5 lanes
662214	NW 12 St: NW 97 Ave to NW 87 Ave	add 2 and 4 lanes
662250	NW 17 Ave: NW 79 St to NW 103 St	widen to 5 lanes
	NW 17 Ave: NW 103 St to NW 119 St	widen to 5 lanes
662320	SW 24 St: SW 87 Ave to SW 77 Ave	add 1 lane EB & WB
662307	NW 79 Ave: NW 58 St to NW 25 St	widen to 5 lanes
662273	SW 117 Ave: SW 72 St to SW 56 St	2 to 4 lanes
662274	SW 117 Ave: SW 152 St to SW 104 St	2 to 4 lanes
662359	SW 120 St: SW 137 Ave to SW 127 Ave	2 to 4 lanes
662244	SW 127 Ave: SW 120 St to SW 88 St	2 to 5 lanes
662243	SW 127 Ave: SW 42 St to SW 26 St	2 to 5 lanes
662243	SW 137 Ave SW 152 St to SW 120 St	2 to 6 lanes
662251	NE 151 St: US-1 to Main Road	2 to 4 lanes
662283	SW 152 St: SW 137 Ave to Zoo Entrance	2 to 4 lanes divided
662311	Miami Lakes Dr: SR 826 to NW 57 Ave	2 to 4 lanes (divided)
671104	NW 36/41 St: NW 87 Ave to NW 77 Ave	4 to 6 lanes
	NE 10 Ave: NE 79 St to NE 81 St	2 to 4 lanes
671303	NW 151 St: NW 37 Ave to NW 22 Ave	widen to 5 lanes
671308	NW 17 Ave: NW 119 St to Opa Locka Bld	widen to 5 lanes
671502	SW 152 St: SW 142 Ave to SW 147 Ave	2 to 4 lanes
	NW 77 Ave: NW 186 St to NW 77 Ct	new 4 lane road
	NW 36 St: NW 82 Ave to SR 826	4 to 6 lanes

1996 Action Scenario

The 1996 Action Scenario is made up of:

1) The Baseline Scenario, plus

2) Projects from the 1995 TIP which will be complete by December 31, 1996.

Primary System/ Interstate/ Turnpike/ Off State System/ Transit

6113371	US-1: NE 163 St to Miami Gardens Dr	4 to 8 lanes
6113700	NW 72 Ave: NW 12 St to NW 74 St	4 to 6 lanes

Secondary System/Road Impact Fee/Private Sector

No projects.

2005 Action Scenario

The 2005 Action Scenario is made up of:

1) The 1996 Action Scenario, plus

2) Projects from the 1995 TIP which will be complete by December 31, 2005.

Primary System/ Interstate/ Turnpike/ Off State System/ Transit

6113212	SR 826: N of SW 72 St to SW 32 St	4 to 8 lanes
6113372	US-1: Miami Gardens Dr to Lehman CWay	6 to 8 lanes
6113684	SR 826: US-1 to N of SW 72 St	4 to 6 lanes
6113712	SR 874: SW 137 Ave to HEFT	new 6 lanes
6113758	SR 826: SW 2 St to S of NW 25 St	8 to 10 lanes
6113791	Krome Ave: US-1 to Tamiami Trail	2 to 4 lanes
6113792	Krome Ave: Tamiami Trail to Okeechobee Rd	2 to 4 lanes
6113823	SR 874: SW 112 St to SR 826	4 to 6 lanes
6113827	SR 826: N of NW 25 St to NW 47 St	8 to 10 lanes
6113828	SR 826: NW 47 Ave to NW 62 Ave	8 to 10 lanes
6113830	SR 826: N of FEC RR to S of NW 103 St	8 to 10 lanes
6113864	SR A1A: 5th St to 26th St	2 to 4 lanes
6113949	NW 47 Ave: NW 183 St to Broward Co	2 to 4 lanes
6114017	US-1: Lehman CWay to NE 209 St	6 to 8 lanes
6114033	US-1: STR S-18 Rd to Card Sound Rd	2 to 4 lanes
6123165	Port of Miami Tunnel	new 4 lanes
6123218	SW 127 Ave: SW 88 St to SW 42 St	2 to 4 lanes
6123220	SW 184 St: SW 97 Ave to Old Cutler Rd	2 to 4 lanes
6123221	NW 32/37 Ave: NW 21 St to NW N River Dr	2 to 4 lanes
6123249	SW 137 Ave: HEFT to SW 344 St	2 to 4 lanes
6830310	MRail Extension to Lehman Center	Fixed Guideway

Secondary System/Road Impact Fee/Private Sector

662281	NW 47 Ave: SR 826 to NW 183 St	widen to 5 lanes
	NW 87 Ave: NW 138 St to NW 186 St	2 to 4 lanes
	SW 107 Ave: Quail Roost Dr to SW 160 St	2 to 4 lanes

Secondary System/Road Impact Fee/Private Sector (continued)

662274	SW 117 Ave: SW 152 St to SW 184 St	2 to 4 lanes
	SW 117 Ave: SW 184 St to US-1	2 to 4 lanes
	SW 137 Ave: SW 184 St to SW 152 St	2 to 6 lanes
662285	Miami Ave: N 103 St to N 163 St	2 to 5 lanes

2010 Action Scenario

The 2010 Action Scenario is made up of:

1) The 2005 Action Scenario, plus

2) Projects from the 1995 TIP which will be complete by December 31, 2010.

Primary System/ Interstate/ Turnpike/ Off State System/ Transit

6113601	SR 836: HEFT to I-95	6 to 10 lanes
6113860	SR 836: SW 137 Ave to HEFT	New 6 lanes
6113862	SR 112: Okeechobee Rd to I-95	6 to 8 lanes
6113863	US-1: SW 344 St to SW 112 Ave	4 to 6 lanes
6113880	SR 826: NW 154 St to Golden Glades Intch	8 to 10 lanes
6114052	SR 836: NW 57 Ave to NW 37 Ave	6 to 10 lanes
6114053	SR 836: NW 72 Ave to NW 57 Ave	6 to 10 lanes
6114054	SR 836: NW 37 Ave to NW 7 Ave	6 to 10 lanes
6830294	East/West MetroRail: Airport to Seaport	Fixed Guideway
6814275	27th Ave MetroRail: MLK Station to JRS	Fixed Guideway

Secondary System/Road Impact Fee/Private Sector

No Projects

DADE COUNTY - MIAMI URBANIZED AREA

APPENDIX IV
AIR QUALITY CONFORMITY FOR 1995

PARAMETER	1990 Base Year	1994 Emissions Budget Projection (3)	1996 Action Scenario	1997 Emissions Budget Projection (3)	1997 Action Scenario (4)	2000 Emissions Budget Projection (3)	2000 Action Scenario (4)	2005 Emissions Budget Projection (3)	2005 Action TIP	2010 Action TIP
POPULATION	1,902,280	N/A	2,012,615	N/A	N/A	N/A	N/A	N/A	2,178,117	2270062
Vehicle Miles Traveled (VMT) 2	35,184,445	N/A	36,605,752	N/A	N/A	N/A	N/A	N/A	42,447,740	45,559,688
TOTAL VOC (Tons per Day) 2	156.6 2	96.9	80.76	88.9	79.72	82.8	76.60	79.4	71.38	72.97
TOTAL NOx (Tons per Day) 2	117.7 2	111.2	103.81	107.0	102.94	101.9	100.33	99.0	95.98	98.80

1 Source: EMIS.OUT
2 Source: 1990 Emission Inventory (FDEP)
3 Source: SIP redesignation request revision (See Appendix 2)
4 Interpolated values as described in (4)(a) of the Directive

DADE COUNTY - MIAMI URBANIZED AREA

APPENDIX V

AIR QUALITY CONFORMITY FOR 1995

PARAMETER	1990 Base Year	1996 Baseline TIP	1996 Baseline TIP	2005 Baseline TIP	2005 Action TIP	2010 Baseline TIP	2010 Action TIP
POPULATION	1,902,280	2,012,615	2,012,615	2,178,117	2,178,117	2,270,062	2,270,062
CONGESTION INDEX 1	0.2864	0.1545	0.1522	0.2093	0.1880	0.2349	0.2098
INTERZONAL TRIPS 1	4,622,330	5,131,330	5,131,238	5,732,676	5,733,518	6,064,721	6,049,769
INTRAZONAL TRIPS 1	127,176	27,739	27,429	33,251	33,048	36,900	36,528
TOTAL TRIPS 1	4,749,506	5,158,669	5,158,667	5,765,927	5,766,566	6,101,621	6,086,297
Vehicle Miles Traveled (VMT) 2	33,811,056	36,612,332	36,605,752	42,677,204	42,447,740	45,986,292	45,559,688
Vehicle Hours Traveled (VHT) 1	1,493,354	1,407,473	1,404,285	1,735,246	1,687,897	1,924,871	1,854,590
AVERAGE SPEED 1	22.64	26.04	26.09	24.62	25.17	23.91	24.59
NUMBER OF LINKS 3	4,441	4,450	4,450	4,450	4,460	4,450	4,463
SYSTEM MILES 3	1,397.26	1,397.76	1,397.76	1,397.76	1,404.31	1,397.76	1,407.60
LANES MILES 3	4,540.10	4,699.34	4,711.98	4,699.34	4,902.73	4,699.34	5,022.13
DIRECTIONAL MILES 3	2,672.87	2,673.87	2,673.87	2,673.87	2,686.97	2,673.87	2,693.39
TOTAL VOC (Tons per Day) 2	156.60	80.88	80.76	72.94	71.38	75.13	72.97
TOTAL NOx (Tons per Day) 2	117.70	103.85	103.81	96.60	95.98	99.72	98.80

** Source: HASSIGN.OUT
** Source: EMIS.OUT
** Source: HEVAL.OUT
** Source: 1990 Emission Inventory (FDEP)

APPENDIX VI: MOBILE 5a INPUT STREAM

The input values to MOBILE 5a are:

```
1           PROMPT - vertical flag input, no prompting
MOBILE5a FDOT: Dade County - Miami Urban Area Study
1           TAMFLG - default tampering rates
1           SPDFLG - one speed per scenario
1           VMFLAG - default vmt mix
1           MYMRFG - default registration and mileage accrual rates
1           NEWFLG - default exhaust emission rates
2           IMFLAG - with I/M program
1           ALHFLG - no additional correction factor inputs
2           ATPFLG - with anti-tampering program
5           RLFLAG - no refueling losses, treated as stationary source
2           LOCFLG - read in local area parameters as one time
1           TEMFLG - calculate exhaust temperatures
4           OUTFMT - 80 column portrait output format
4           PRTFLG - print exhaust HC, CO and NOx emission factor results
1           IDLFLG - Not applicable
3           NMHFLG - print VOCs
3           HCFLAG - print HC components
91 23 75 20 00 00 100 1 1 2221 1 11                 I&M Program Parameter
91 75 20 2221 11 100. 12111112                      AT Program Parameters
Dade   FL         C 69.3 91.2  9.2  7.8 92          Local Area Parameters
1 90  3.0 84.  20.6 27.3 20.6  7                    1st scenario record
1 90  6.0 84.  20.6 27.3 20.6  7
1 90  9.0 84.  20.6 27.3 20.6  7
1 90 12.0 84.  20.6 27.3 20.6  7
1 90 15.0 84.  20.6 27.3 20.6  7
1 90 18.0 84.  20.6 27.3 20.6  7
1 90 21.0 84.  20.6 27.3 20.6  7
1 90 24.0 84.  20.6 27.3 20.6  7
1 90 27.0 84.  20.6 27.3 20.6  7
1 90 30.0 84.  20.6 27.3 20.6  7
1 90 33.0 84.  20.6 27.3 20.6  7
1 90 36.0 84.  20.6 27.3 20.6  7
1 90 39.0 84.  20.6 27.3 20.6  7
1 90 42.0 84.  20.6 27.3 20.6  7
1 90 45.0 84.  20.6 27.3 20.6  7
1 90 48.0 84.  20.6 27.3 20.6  7
1 90 51.0 84.  20.6 27.3 20.6  7
1 90 54.0 84.  20.6 27.3 20.6  7
1 90 57.0 84.  20.6 27.3 20.6  7
1 90 60.0 84.  20.6 27.3 20.6  7
1 90 63.0 84.  20.6 27.3 20.6  7
1 90 65.0 84.  20.6 27.3 20.6  7

*****Detail of I/M record format*****

91 = Start yr of program  23 = Stringency level (expected failure rate)
75 = First Model Year insp (1975)  20 = Last Model Year insp (2020)
00 00 = Waiver rate for pre 1981 and 1981+ model year
100 = Compliance Rate for inspection
```

*****Detail of ATP record format*****

91 = Start yr of program 75 20 = Model years (1975 2020)
2221 = 2 is yes flag, 1 is no flag for types of vehicles inspected
LDGV, LDGT1, LDGT2 are Yes and HDGV is no
1 = Centralized program 1 = Annual inspection
100 = Compliance rate for inspection
12111112 = 2 is for yes flag, 1 is for no flag for items inspected
The catalyst and missing gas caps are checked others are not

*****Detail of Local Area Parameter record*****

Dade FL = Scenario name
67.3 and 94.5 = Min-Max temps
9.2 and 7.8 = RVPs for period 1 and period 2
92 = Start year for period 2 RVP

*****Detail of Scenario record*****

1 = Region (altitude) 90 = Cal yr of analysis 3.0 speed
84 = Ambient temp 20.6 = PCCN (% cold start not catalyst)
27.3 = PCHC (% hot start with catalyst)
20.6 = PCCC (% cold start with catalyst) 7 = July 1 of 1990

APPENDIX VII: EMIS.OUT FILES

The emissions summary section of the output report created by the EMIS interface program for each model scenario is shown below. Both the "raw" calculated emissions and the emissions adjusted by the Highway Performance Monitoring System (HPMS) factor are shown. The HPMS factor is used to make the EMIS output consistent with the HPMS traffic statistics collected in 1990. The HPMS factor is discussed in detail on page 10 of the conformity report.

1996 Baseline Scenario

FLORIDA STANDARD URBAN TRANSPORTATION MODELING STRUCTURE --
EMISSION MODEL FOR MOBILE 5.a -- PROGRAM DATE: 26MAR93
- RUN TIME: 10:17:15 9Apr94

EMISSIONS IN GRAMS PER DAY

ALL GEOGRAPHIC LOCATIONS

FT	AT	TOTAL VOC	EXHAUST HC	EVAPORATE HC	REFUELING HC	RUN LOSS HC	EXHAUST CO	EXHAUST NOx
1	1	77484.	50103.	12657.	0.	11804.	645225.	91241.
1	2	215342.	137107.	38019.	0.	31318.	1752928.	273275.
1	3	11725533.	7215696.	2427566.	0.	1579242.	91683784.	17590624.
1	4	5428938.	3355057.	1101246.	0.	744947.	42701536.	7963234.
1	5	2186263.	1308759.	506757.	0.	251883.	16676030.	3755389.
2	1	110058.	70585.	18747.	0.	16332.	907457.	134883.
2	2	466049.	305587.	66111.	0.	79514.	3975495.	485664.
2	3	11265039.	7097482.	2085840.	0.	1637027.	90862560.	15048214.
2	4	10688955.	6836820.	1782146.	0.	1681215.	88158728.	12981701.
2	5	853670.	528956.	171833.	0.	116754.	6733242.	1245427.
3	1	365684.	240788.	50362.	0.	63323.	3135203.	370465.
3	2	335483.	222157.	44446.	0.	59205.	2897536.	327780.
3	3	7839712.	4968277.	1407284.	0.	1158116.	63710304.	10158574.
3	4	4667502.	2984051.	784206.	0.	725497.	38431888.	5693778.
3	5	1100659.	686985.	213208.	0.	155415.	8767929.	1537101.
4	1	117003.	77232.	14995.	0.	21506.	1009423.	111220.
4	2	79835.	52930.	9642.	0.	15104.	693595.	72426.
4	3	2806962.	1793833.	489099.	0.	409824.	22972442.	3514798.
4	4	1280944.	820018.	216737.	0.	195255.	10546671.	1567553.
4	5	642039.	409721.	112632.	0.	93315.	5243668.	809155.
5	1	113654.	76943.	9196.	0.	25623.	1032551.	76781.
5	2	271265.	180129.	29111.	0.	55607.	2375377.	225575.
5	3	5192374.	3447921.	556959.	0.	1064633.	45469616.	4316329.
5	4	1813029.	1203928.	194371.	0.	371839.	15877502.	1506547.
5	5	976187.	648229.	104662.	0.	200203.	8548851.	811207.
SUM		70619672.	44719212.	12447794.	0.	10764534.	574809472.	90669072.
(TONS)		77.77	49.25	13.71	.00	11.86	633.05	99.86
PMS Adjusted Emissions (EMIS Result x 1.04)								
(TONS)		80.88						103.85

1996 Action Scenario

FLORIDA STANDARD URBAN TRANSPORTATION MODELING STRUCTURE --
EMISSION MODEL FOR MOBILE 5.a -- PROGRAM DATE: 26MAR93
- RUN TIME: 18:06:59 9Apr94

EMISSIONS IN GRAMS PER DAY

ALL GEOGRAPHIC LOCATIONS

FT	AT	TOTAL VOC	EXHAUST HC	EVAPORATE HC	REFUELING HC	RUN LOSS HC	EXHAUST CO	EXHAUST NOx
1	1	77133.	49875.	12595.	0.	11755.	642350.	90798.
1	2	214663.	136686.	37860.	0.	31261.	1747654.	272186.
1	3	11718331.	7212409.	2424746.	0.	1578251.	91641248.	17569758.
1	4	5382350.	3324456.	1094321.	0.	737828.	42309020.	7914236.
1	5	2199327.	1316442.	510132.	0.	253143.	16772996.	3780325.
2	1	110960.	71139.	18920.	0.	16460.	914578.	136128.
2	2	467822.	306882.	66254.	0.	79858.	3992574.	486761.
2	3	11193943.	7047582.	2082487.	0.	1619392.	90190560.	15017558.
2	4	10450668.	6674782.	1771392.	0.	1618375.	85961056.	12871679.
2	5	854676.	529739.	171883.	0.	116906.	6742960.	1245795.
3	1	366867.	241622.	50473.	0.	63537.	3146145.	371251.
3	2	339563.	224770.	44781.	0.	60275.	2932324.	330515.
3	3	8043896.	5103686.	1421318.	0.	1209625.	65539616.	10277937.
3	4	4656629.	2977400.	783714.	0.	722276.	38344192.	5688458.
3	5	1098832.	685745.	212863.	0.	155370.	8754730.	1534820.
4	1	118441.	78272.	15072.	0.	21801.	1023571.	111986.
4	2	79904.	52976.	9642.	0.	15128.	694221.	72443.
4	3	2839463.	1815555.	493339.	0.	415446.	23255688.	3545802.
4	4	1286233.	823748.	217109.	0.	196378.	10595894.	1570326.
4	5	641410.	409335.	112495.	0.	93243.	5238685.	808183.
5	1	113656.	76945.	9196.	0.	25623.	1032578.	76783.
5	2	271183.	180075.	29102.	0.	55590.	2374662.	225507.
5	3	5193068.	3448386.	557034.	0.	1064777.	45475920.	4316914.
5	4	1810193.	1202043.	194066.	0.	371259.	15852672.	1504182.
5	5	977303.	648970.	104781.	0.	200431.	8558624.	812135.
SUM		70506432.	44639456.	12445583.	0.	10734012.	573735936.	90632656.
(TONS)		77.65	49.16	13.71	.00	11.82	631.87	99.82
PMS Adjusted Emissions (EMIS Result x 1.04)								
(TONS)		80.76						103.81

2005 Baseline Scenario

FLORIDA STANDARD URBAN TRANSPORTATION MODELING STRUCTURE --
EMISSION MODEL FOR MOBILE 5.a -- PROGRAM DATE: 26MAR93
- RUN TIME: 15:02:23 9Apr94

EMISSIONS IN GRAMS PER DAY

ALL GEOGRAPHIC LOCATIONS

FT	AT	TOTAL VOC	EXHAUST HC	EVAPORATE HC	REFUELING HC	RUN LOSS HC	EXHAUST CO	EXHAUST NOx
1	1	71846.	50646.	9067.	0.	10676.	645860.	85009.
1	2	187979.	129990.	26914.	0.	26194.	1604302.	250810.
1	3	10161563.	6827392.	1710067.	0.	1289337.	79840936.	15949973.
1	4	4682938.	3179547.	762111.	0.	606596.	37606864.	7092956.
1	5	2400081.	1569994.	452069.	0.	290136.	17531288.	4265372.
2	1	100180.	70194.	13673.	0.	14184.	883819.	127089.
2	2	431928.	298569.	44735.	0.	81605.	3844501.	431150.
2	3	9740570.	6711018.	1469226.	0.	1316993.	81495416.	13669714.
2	4	9061137.	6287594.	1203455.	0.	1368836.	78448320.	11314594.
2	5	835504.	568515.	127371.	0.	115106.	6817544.	1197569.
3	1	350344.	248585.	35323.	0.	60918.	3222403.	343486.
3	2	361355.	252056.	33095.	0.	71046.	3277022.	326320.
3	3	7217926.	4999785.	997530.	0.	1056740.	61761352.	9352465.
3	4	4302760.	2979648.	548613.	0.	684501.	37203892.	5187085.
3	5	1220851.	838049.	185868.	0.	164142.	10137269.	1731076.
4	1	126248.	87865.	11172.	0.	25407.	1141693.	111009.
4	2	83189.	59255.	7619.	0.	15062.	770975.	75645.
4	3	2870916.	1999880.	393288.	0.	409656.	24998604.	3670490.
4	4	1490947.	1040632.	176444.	0.	245570.	13146166.	1682964.
4	5	850507.	593345.	113530.	0.	123998.	7462202.	1060765.
5	1	88425.	63049.	6140.	0.	18066.	815240.	66048.
5	2	227621.	162168.	20526.	0.	41994.	2104802.	205234.
5	3	4293369.	3058794.	386986.	0.	792302.	39699996.	3869782.
5	4	1560371.	1111677.	140584.	0.	288027.	14428237.	1405969.
5	5	960246.	684122.	86521.	0.	177242.	8879094.	865278.
SUM		63678856.	43872212.	8961919.	0.	9294311.	537766784.	84337936.
(TONS)		70.13	48.32	9.87	.00	10.24	592.25	92.88
PMS Adjusted Emissions (EMIS Result x 1.04)								
(TONS)		72.93						96.60

2005 Action Scenario

FLORIDA STANDARD URBAN TRANSPORTATION MODELING STRUCTURE --
EMISSION MODEL FOR MOBILE 5.a -- PROGRAM DATE: 26MAR93
- RUN TIME: 11:15:20 10Apr94

EMISSIONS IN GRAMS PER DAY

ALL GEOGRAPHIC LOCATIONS

FT	AT	TOTAL VOC	EXHAUST HC	EVAPORATE HC	REFUELING HC	RUN LOSS HC	EXHAUST CO	EXHAUST NOx
1	1	70507.	49672.	8994.	0.	10409.	632460.	84216.
1	2	189008.	130671.	27100.	0.	26326.	1612010.	252517.
1	3	10444515.	7018560.	1762803.	0.	1325206.	81969720.	16441712.
1	4	4701060.	3175858.	777228.	0.	602007.	37354248.	7238828.
1	5	2139891.	1390932.	415444.	0.	253641.	15336690.	3924425.
2	1	96296.	67500.	13108.	0.	13620.	850651.	121874.
2	2	380956.	268712.	43070.	0.	62389.	3456595.	410238.
2	3	9669530.	6658100.	1467897.	0.	1302586.	80678192.	13654880.
2	4	8661014.	5990836.	1178628.	0.	1294284.	74277480.	11065396.
2	5	904596.	613018.	140595.	0.	123085.	7311363.	1322213.
3	1	330206.	234707.	34220.	0.	55958.	3039129.	331158.
3	2	306752.	217186.	30694.	0.	53977.	2825174.	297799.
3	3	6970682.	4827498.	984774.	0.	995408.	59428256.	9214202.
3	4	4002924.	2786380.	535724.	0.	593740.	34718056.	5030676.
3	5	1123359.	769766.	173874.	0.	149196.	9274592.	1617361.
4	1	114656.	80372.	10739.	0.	21838.	1044418.	105539.
4	2	80268.	57234.	7461.	0.	14336.	744808.	73839.
4	3	2710971.	1887250.	375561.	0.	382743.	23562556.	3499778.
4	4	1455700.	1013373.	171476.	0.	243078.	12764684.	1639556.
4	5	854842.	595086.	114442.	0.	125658.	7478844.	1068432.
5	1	88948.	63421.	6176.	0.	18174.	820055.	66435.
5	2	226453.	161336.	20421.	0.	41779.	2093999.	204179.
5	3	4286388.	3053820.	386355.	0.	791015.	39635396.	3863472.
5	4	1559498.	1111055.	140504.	0.	287868.	14420157.	1405172.
5	5	959750.	683768.	86477.	0.	177151.	8874502.	864830.
SUM		62328828.	42906056.	8913758.	0.	8965483.	524203360.	83798928.
(TONS)		68.64	47.25	9.82	.00	9.87	577.32	92.29
PMS Adjusted Emissions (EMIS Result x 1.04)								
(TONS)		71.38						95.98

2010 Baseline Scenario

FLORIDA STANDARD URBAN TRANSPORTATION MODELING STRUCTURE --
EMISSION MODEL FOR MOBILE 5.a -- PROGRAM DATE: 26MAR93
- RUN TIME: 15:55:55 10Apr94

EMISSIONS IN GRAMS PER DAY

ALL GEOGRAPHIC LOCATIONS

FT	AT	TOTAL VOC	EXHAUST HC	EVAPORATE HC	REFUELING HC	RUN LOSS HC	EXHAUST CO	EXHAUST NOx
1	1	78977.	58261.	8640.	0.	10899.	743415.	91223.
1	2	194739.	140932.	25076.	0.	24856.	1728493.	262017.
1	3	11130417.	7906138.	1638453.	0.	1338000.	92850304.	17044050.
1	4	5219556.	3749162.	727664.	0.	641582.	45016796.	7565958.
1	5	2801382.	1946793.	469704.	0.	319050.	21450266.	4932544.
2	1	95459.	69830.	11830.	0.	12282.	874472.	123093.
2	2	414117.	303976.	39639.	0.	65222.	3899387.	428109.
2	3	9692332.	6979770.	1322252.	0.	1210864.	84205824.	13762119.
2	4	9026579.	6506585.	1053592.	0.	1319054.	80678704.	11133972.
2	5	884639.	630405.	117854.	0.	118671.	7480046.	1244199.
3	1	389327.	283438.	31971.	0.	69590.	3657010.	354949.
3	2	349743.	253653.	28749.	0.	63369.	3282246.	317886.
3	3	6873656.	4973018.	880719.	0.	900117.	60838012.	9217487.
3	4	4132660.	2975607.	481173.	0.	610762.	36941072.	5077578.
3	5	1375943.	988671.	187688.	0.	172381.	11918523.	1955160.
4	1	120855.	88127.	9936.	0.	21424.	1140321.	110053.
4	2	78626.	58298.	6534.	0.	12860.	754770.	72598.
4	3	2896745.	2106791.	366604.	0.	370090.	26107932.	3822062.
4	4	1613918.	1137576.	157953.	0.	297386.	14310750.	1701478.
4	5	1018990.	742201.	116892.	0.	143326.	9325630.	1231662.
5	1	86303.	64055.	5499.	0.	16137.	821733.	66271.
5	2	228072.	169101.	18800.	0.	37565.	2186830.	209893.
5	3	4272254.	3167542.	351973.	0.	703868.	40963000.	3930286.
5	4	1587566.	1177022.	130708.	0.	261653.	15221351.	1459806.
5	5	1032762.	765701.	85057.	0.	170182.	9902118.	949875.
SUM		65595576.	47242620.	8274966.	0.	8911195.	576297920.	87064176.
(TONS)		72.24	52.03	9.11	.00	9.81	634.69	95.89
PMS Adjusted Emissions (EMIS Result x 1.04)								
(TONS)		75.13						99.72

2010 Action Scenario

FLORIDA STANDARD URBAN TRANSPORTATION MODELING STRUCTURE --
EMISSION MODEL FOR MOBILE 5.a -- PROGRAM DATE: 26MAR93
- RUN TIME: 18:20:56 14Apr94

EMISSIONS IN GRAMS PER DAY

ALL GEOGRAPHIC LOCATIONS

FT	AT	TOTAL VOC	EXHAUST HC	EVAPORATE HC	REFUELING HC	RUN LOSS HC	EXHAUST CO	EXHAUST NOx
1	1	70629.	52040.	8065.	0.	9488.	660972.	84615.
1	2	192154.	138955.	24986.	0.	24309.	1702636.	260707.
1	3	10744503.	7579282.	1646190.	0.	1269650.	87442600.	17129462.
1	4	4924586.	3475691.	747525.	0.	582988.	40274168.	7772694.
1	5	2374521.	1640447.	423158.	0.	261391.	17515078.	4462518.
2	1	95001.	69760.	11462.	0.	12305.	879781.	119452.
2	2	383409.	280937.	37771.	0.	59739.	3596948.	405739.
2	3	9446943.	6788144.	1307836.	0.	1172799.	81508720.	13603246.
2	4	8698397.	6273596.	1045920.	0.	1234196.	77542936.	11009209.
2	5	977825.	689842.	133850.	0.	133302.	8084571.	1412326.
3	1	349498.	257467.	30982.	0.	56815.	3320991.	339388.
3	2	330401.	240044.	27878.	0.	58633.	3106922.	306483.
3	3	7210614.	5205715.	890400.	0.	991651.	63908664.	9362032.
3	4	3869246.	2801395.	469604.	0.	534617.	34633928.	4935086.
3	5	1216420.	873706.	167010.	0.	151739.	10526660.	1737919.
4	1	130716.	94193.	9982.	0.	25202.	1217037.	112284.
4	2	84454.	62666.	6933.	0.	13881.	810732.	77339.
4	3	2778642.	2023561.	349292.	0.	355158.	25136392.	3641969.
4	4	1688455.	1181184.	158322.	0.	327644.	14885773.	1715476.
4	5	956468.	697680.	113104.	0.	129852.	8754261.	1185927.
5	1	86129.	63926.	5488.	0.	16105.	820070.	66136.
5	2	223709.	165866.	18439.	0.	36847.	2144992.	205872.
5	3	4244228.	3146762.	349664.	0.	699251.	40694204.	3904496.
5	4	1581630.	1172620.	130218.	0.	260676.	15164421.	1454336.
5	5	1043452.	773627.	85939.	0.	171943.	10004616.	959712.
SUM		63701992.	45749088.	8200003.	0.	8590188.	554337472.	86264504.
(TONS)		70.16	50.38	9.03	.00	9.46	610.50	95.00
PMS Adjusted Emissions (EMIS Result x 1.04)								
TONS)		72.96						98.80