



CLARKSVILLE AREA METROPOLITAN PLANNING ORGANIZATION

2035 Metropolitan Transportation Plan (MTP)

March 10, 2010 . Final

*Un resumen de este documento está disponible el español, bajo petición.
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The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 (or Metropolitan Planning Program, Section 104(f)) of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.



TABLE OF CONTENTS

1.0	Introduction	1-1
1.1	Metropolitan Planning	1-2
1.2	Legal Requirements of the Plan.....	1-3
1.3	Plan Adoption and Amendment Process.....	1-4
1.4	Plan Implementation	1-5
2.0	Community Structure	2-1
2.1	Demographics	2-1
2.1.1	Population Trends and Forecasts	2-1
2.1.2	Household Trends and Forecasts.....	2-4
2.1.3	Employment Trends and Forecasts	2-7
2.2	Land Development Patterns	2-10
2.2.1	Current and Future Land Use	2-10
2.2.2	Growth Boundaries.....	2-11
2.3	Natural/Cultural Environment.....	2-15
2.4	Summary	2-19
3.0	Public & Stakeholder Participation	3-1
3.1	Public Meetings	3-1
3.2	Online Public Survey	3-1
3.3	Media Outreach	3-1
3.4	Conformity IAC Meetings.....	3-2
3.5	Stakeholder Meetings	3-2
3.6	MPO Board Presentations	3-3
3.7	Disposition of Comments.....	3-3
4.0	Transportation System	4-1
4.1	Existing and Future Transportation System Conditions.....	4-1
4.1.1	Streets and Highways.....	4-1
4.1.1.1	Existing Conditions	4-3
4.1.1.2	Future Conditions	4-3
4.1.1.3	Level of Service	4-7
4.1.2	Public Transportation.....	4-13
4.1.2.1	Fixed Route Services	4-13
4.1.2.2	Demand Response Services	4-15
4.1.2.3	Transit Fleets.....	4-17
4.1.2.4	Other Transit and Travel Demand Management Activities	4-19
4.1.2.5	Future Conditions	4-21
4.1.3	Walkways and Bikeways	4-27
4.1.3.1	Current Conditions.....	4-28
4.1.3.2	Future Conditions	4-37
4.1.4	Intelligent Transportation Systems (ITS)	4-43
4.1.5	Aviation	4-46
4.1.5.1	Airport Facility.....	4-46
4.1.5.2	Airport Operations	4-48

4.1.5.3	Recent Studies	4-49
4.1.5.4	Future Conditions	4-50
4.1.6	Rail.....	4-50
4.1.6.1	Current Conditions.....	4-52
4.1.6.2	Recent Studies	4-53
4.1.6.3	Future Conditions	4-53
4.1.7	Waterways.....	4-54
4.1.7.1	Current Conditions.....	4-54
4.1.7.2	Recent Studies	4-55
4.1.7.3	Future Conditions	4-55
4.1.8	Freight Transportation and Intermodal Connectivity.....	4-58
4.1.8.1	Commodity Flows	4-58
4.1.8.2	Industry Survey	4-68
4.1.8.3	Intermodal Connections.....	4-69
4.1.8.4	Future Conditions	4-72
4.1.9	Transportation Safety	4-72
4.1.9.1	Vehicular Crashes	4-72
4.1.9.2	Bicycle and Pedestrian Crashes	4-75
4.1.9.3	Large Truck Crashes	4-76
4.1.9.4	Railroad Train/Vehicular Crashes	4-76
4.1.9.5	Tennessee and Kentucky Strategic Highway Safety Plans	4-77
4.1.10	Security Element	4-92
5.0	Goals and Objectives	5-1
5.1	National Emphasis.....	5-1
5.2	Local Emphasis	5-1
5.3	Project Assessment.....	5-4
6.0	Financial Plan	6-1
6.1	Overview of Funding Sources.....	6-1
6.2	Historic Transportation Revenue Trends	6-6
6.2.1	Public Transportation.....	6-7
6.2.2	Air, Rail, and Waterways	6-8
6.2.3	Funding Forecast.....	6-9
6.2.4	Streets and Highways.....	6-11
6.2.5	Public Transportation.....	6-14
6.2.6	Air, Rail, and Waterways	6-15
6.2.7	Relationship of MTP to the Transportation Improvement Program.....	6-15
6.3	Fiscal Constraint.....	6-17
6.3.1	Operations and Maintenance . Revenue & Expenses.....	6-17
6.3.2	Capital . Revenue & Expenses	6-19
7.0	Recommended Planned Improvements	7-1
7.1	Planned Transportation Improvements	7-1
7.1.1	Streets & Highways	7-2
7.1.1.1	Roadways.....	7-2
7.1.1.2	Bridges	7-6
7.1.1.3	Transportation System Management (TSM)/Safety and ITS.....	7-7

7.1.1.4	Walkways and Bikeways	7-9
7.1.2	Public Transportation.....	7-10
7.1.2.1	Transit	7-10
7.2	Un-Funded Needs (Illustrative List).....	7-11
7.3	Short Range Strategies	7-11
8.0	Environmental Review	8-1
8.1	Air Quality Conformity.....	8-1
8.2	Title VI and Environmental Justice.....	8-2
8.3	Historic, Cultural, and Natural Resources	8-3
8.4	Environmental Mitigation Strategies.....	8-3
8.5	Climate Change.....	8-5

APPENDIX

Appendix I: Clarksville Area MPO 2035 MTP Documentation Report

Appendix II: Regional Bicycle and Pedestrian Assessment

Appendix III: Intermodal Facilities Assessment

Appendix IV: Project Assessment

Appendix V: Title VI and Environmental Justice Assessment

Appendix VI: Environmental Review

Please Note:

If Appendix items have not been provided as part of this
document, please visit the MPO website at
<http://www.cuampo.com> *or contact the MPO at 931.645.7448*
to obtain a copy of these items.

TABLES

Table 2-1	Total Population (1990-2035)	2-1
Table 2-2	MPO Area Population Density (2000-2035).....	2-4
Table 2-3	MPO Area Household Density (2000-2035)	2-4
Table 2-4	MPO Area Total Employment (2008-2035).....	2-8
Table 2-5	10 Largest Private Employers	2-10
Table 3-1	Disposition of Public Comments	3-3
Table 4-1	Existing Miles of Classified Roadways (2008)	4-1
Table 4-2	Projects Completed Since 2005 and Committed Transportation Projects	4-5
Table 4-3	General Descriptions of Levels of Service (LOS).....	4-7
Table 4-4	Level of Service (LOS) Thresholds by Roadway Type.....	4-8
Table 4-5	Current & Future Vehicle Hours Traveled Without Additional Improvements	4-10
Table 4-6	2035 Vehicle Hours Traveled With & Without Future Planned Improvements ..	4-12
Table 4-7	Clarksville Transit System . Transit Fleet.....	4-18
Table 4-8	MCHRA Public Transit System . Transit Fleet	4-19
Table 4-9	Clarksville Area Transit Trips Per Capita (2008, 2025, and 2035)	4-26
Table 4-10	Existing Sidewalks	4-30
Table 4-11	State Bicycle & Pedestrian Related Laws - Tennessee & Kentucky	4-31
Table 4-12	Local Bicycle & Pedestrian Related Laws - City of Clarksville	4-32
Table 4-13	City of Clarksville Sidewalk Program Ordinance.....	4-35
Table 4-14	Montgomery County Sidewalk Program Ordinance	4-36
Table 4-15	Sidewalk Priority Indicator	4-37
Table 4-16	Bike Route Needs	4-39
Table 4-17	Multi-Use Path Needs	4-40
Table 4-18	Greenway Needs	4-40
Table 4-19	Sidewalk Needs	4-41
Table 4-20	Based Aircraft by Type (2008).....	4-48
Table 4-21	Average Daily Aircraft Operations (2008)	4-48
Table 4-22	Outlaw Field Operating Budget	4-49
Table 4-23	Top Ten Commodities (By Weight) . From Montgomery Co By Truck (2007) ..	4-61
Table 4-24	Top Ten Commodities (By Weight) . From Christian Co By Truck (2007)	4-62
Table 4-25	Top Ten Commodities (By Weight) . To Montgomery Co By Truck (2007)	4-63
Table 4-26	Top Ten Commodities (By Weight) . To Christian Co By Truck (2007)	4-64
Table 4-27	Top Ten Destinations (By Weight) . From Montgomery Co By Truck (2007) ...	4-65

Table 4-28	Top Ten Destinations (By Weight) . From Christian Co By Truck (2007)	4-65
Table 4-29	Top Ten Destinations (By Weight) . To Montgomery Co By Truck (2007).....	4-66
Table 4-30	Top Ten Destinations (By Weight) . To Christian Co By Truck (2007)	4-66
Table 4-31	Number of Crashes by Type (2004-2008)	4-73
Table 4-32	Number of Fatalities (2004-2008).....	4-74
Table 4-33	Alcohol Related Fatalities (2004-2008).....	4-74
Table 4-34	Unrestrained Fatalities (2004-2008)	4-74
Table 4-35	Bicycle and Pedestrian Crashes (2004-2008)	4-75
Table 4-36	Bicycle and Pedestrian Fatalities (2004-2008).....	4-75
Table 4-37	Large Truck Crashes (2006-2008).....	4-76
Table 5-1	MTP Goals Addressing SAFETEA-LU Planning Factors	5-2
Table 6-1	Federal Transportation Funding Programs	6-2
Table 6-2	Tennessee Transportation Funding Sources	6-4
Table 6-3	Kentucky Transportation Funding Sources	6-6
Table 6-4	Summary of Historic Revenue for Transportation in the MPO Area	6-7
Table 6-5	CTS Operating Funding	6-8
Table 6-6	CTS Capital Funding.....	6-8
Table 6-7	2035 MTP Surface Transportation Revenues - Summary.....	6-10
Table 6-8	2035 Streets & Highways Operating and Maintenance Funding Forecast	6-12
Table 6-9	2035 Streets & Highways Capital Funding Forecast.....	6-13
Table 6-10	2035 Public Transportation Operating Funding Forecast.....	6-14
Table 6-11	2035 Public Transportation Capital Funding Forecast	6-15
Table 6-12	TIP Highway Related Projects . Summary List	6-16
Table 6-13	Streets & Highways Operations & Maintenance Revenues and Expenditures..	6-18
Table 6-14	Transit Operations & Maintenance Revenues and Expenditures.....	6-19
Table 6-15	Streets & Highways Capital Revenues and Expenditures - Tennessee	6-21
Table 6-16	Streets & Highways Capital Revenues and Expenditures - Kentucky	6-22
Table 6-17	Public Transportation Capital Revenues and Expenditures	6-22
Table 7-1	Summary of 2035 Planned Transportation Improvements.....	7-1
Table 7-2	2035 Planned Roadway Improvements - Tennessee	7-3
Table 7-3	2035 Planned Roadway Improvements - Kentucky	7-4
Table 7-4	2035 Planned Bridge Improvements	7-6
Table 7-5	2035 Planned TSM/Safety Improvements	7-7
Table 7-6	2035 Planned ITS Improvements	7-8

Table 7-7	2035 Planned Sidewalks and Bikeways Improvements	7-9
Table 7-8	2035 Planned Transit Improvements	7-10
Table 8-1	On-Road Mobile Source Emissions by Analysis Year in Tons per Day	8-2
Table 8-2	Potential Mitigation Activities	8-5
Table 8-3	2035 MTP Greenhouse Gas Reduction Strategies	8-6

FIGURES

Figure 2-1	Clarksville MPO Planning Area Map	2-2
Figure 2-2	Population Change (2008-2035) Map	2-3
Figure 2-3	Population Density (2008-2035) Map	2-5
Figure 2-4	Household Density (2008-2035) Map	2-6
Figure 2-5	Employment Trends (1970-2035) . By Sector.....	2-7
Figure 2-6	Employment Density (2008-2035) Map	2-9
Figure 2-7	Current Land Use Map	2-12
Figure 2-8	Future Land Use Map	2-13
Figure 2-9	Clarksville-Montgomery County Growth Boundary Map	2-14
Figure 2-10	Potential Karst Development Map	2-16
Figure 2-11	Floodplain Map	2-17
Figure 2-12	Historic Districts Map	2-18
Figure 4-1	Roadway Functional Classification Map	4-2
Figure 4-2	2008 Average Daily Traffic (ADT) Map.....	4-4
Figure 4-3	Projects Completed Since 2005 and Committed Roadway Improvements	4-6
Figure 4-4	2035 Level of Service - Without Additional Transportation Improvements	4-9
Figure 4-5	2035 Level of Service . With Planned Transportation Improvements.....	4-11
Figure 4-6	Vehicle Hours Traveled by Roadway Type . 2035 Plan.....	4-12
Figure 4-7	Clarksville Transit System - Routes.....	4-14
Figure 4-8	CTS Annual Fixed Route Ridership (1989-2008)	4-15
Figure 4-9	CTS - Demand Response Service Ridership (2000-2008)	4-16
Figure 4-10	MCHRA - Demand Response Service Ridership (2000-2008)	4-17
Figure 4-11	Commuting Patterns (1990 - 2000)	4-21
Figure 4-12	Multi-Use Paths, Bike Routes, and Greenways Needs Map	4-42
Figure 4-13	Outlaw Field Map	4-47
Figure 4-14	Rail System Map.....	4-51
Figure 4-15	Waterways & Ports Map.....	4-56

Figure 4-16 Mississippi Inland Waterway System Map..... 4-57
Figure 4-17 Total Freight Share By Mode - Montgomery & Christian Counties (2007) 4-60
Figure 4-18 Percentage of Truck Tons From Montgomery County 4-61
Figure 4-19 Percentage of Truck Tons From Christian County..... 4-62
Figure 4-20 Percentage of Truck Tons To Montgomery County 4-63
Figure 4-21 Percentage of Truck Tons To Christian County..... 4-64
Figure 4-22 Freight Analysis Framework Daily Truck Flows (2002. 2035) 4-67
Figure 4-23 Air, Water, Rail & Truck Facilities Map 4-70
Figure 4-24 Freight System & Industrial Lands Map..... 4-71
Figure 6-1 Annual Inflation Rate - Historic..... 6-20
Figure 7-1 2035 Planned Roadway Improvements..... 7-5

ACRONYM LIST

ADA	Americans with Disabilities Act (ADA) of 1990
ADT	Average Daily Traffic
APD	Appalachia Development
AVL	Automated Vehicle Locator System
AWOS	Automated Weather Observation System
BCI	Bicycle Compatibility Index
BRR or BR	Bridge Replacement and Rehabilitation
CAA/CAAA	Clean Air Act or Clean Air Act Amendments
CBD	Central Business District
CIP	Capital Improvement Program
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CMCRPC	Clarksville-Montgomery County Regional Planning Commission
CO	Carbon Monoxide
CPTHSTP	Coordinated Public Transit Human Services Transportation Plan
CRITS	Clarksville Regional Intelligent Transportation System
CSS	Context Sensitive Solutions
CTS	Clarksville Transit System
DWL	Dual Wheel Load
E+C	Existing Plus Committed
EJ	Environmental Justice
EPA/USEPA	United States Environmental Protection Agency
FAA	Federal Aviation Administration
FBO	Fixed Base Operator
FH/PLHP	Forest Highway/Public Lands Highway Program
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FY	Fiscal Year
GHG	Greenhouse Gas
GIS	Geographic Information System
HIRL	High Intensity Runway Lights
HOV	High-Occupancy Vehicle Lanes
HPP	High Priority Projects
I	Interstate
IAC	Interagency Consultation
IM	Interstate Maintenance
IMC	Instrument Meteorological Conditions
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITS	Intelligent Transportation Systems
JIT	Just-In-Time Delivery
KRS	Kentucky Revised Statutes
KY	Kentucky
KYTC	Kentucky Transportation Cabinet
LOS	Level of Service
LRTP	Long Range Transportation Plan
MALS	Medium-Intensity Approach Lighting System
MITL	Medium Intensity Taxiway Lighting
MOA	Military Operations Area

MOBILE6.2	Vehicle Emission Modeling Software
MPH	Miles Per Hour
MPO	Metropolitan Planning Organization
MSA	Metropolitan Statistical Area
MTP	Metropolitan Transportation Plan
MUTCD	Manual on Uniform Traffic Control Devices
NAAQS	National Ambient Air Quality Standards
NCPD	National Corridor Planning and Development
ND	National Defense
NEPA	National Environmental Policy Act
NHS	National Highway System
NOx	Nitrogen Oxide
ORNL	Oak Ridge National Laboratory
PGA	Planned Growth Area
PPM	Parts Per Million
PPP	Public Participation Plan
RA	Rural Area
RJCM	R.J. Corman Railroad
RTA	Regional Transportation Authority
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SP	State Construction Program
SPPR	State Primary Pavement Rehabilitation
SR	State Route
STB	Surface Transportation Board
STIP	State Transportation Improvement Program
STP	Surface Transportation Program
TAZ	Traffic Analysis Zone
TCA	Tennessee Code Annotated
TCC	Technical Coordinating Committee
TDM	Travel Demand Management
TDOS	Tennessee Department of Safety
TDOT	Tennessee Department of Transportation
TE	Transportation Enhancement
TEA-21	Transportation Equity Act of the 21 st Century of 1998
TIP	Transportation Improvement Program
TN	Tennessee
TSM	Transportation System Management
UGB	Urban Growth Boundary
US	United States
V/C Ratio	Volume to Capacity Ratio
VHT	Vehicle Hours Traveled
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

1.0 INTRODUCTION

The Clarksville Area Metropolitan Planning Organization (MPO) was established in 1977, pursuant to federal requirements, to provide a coordinated, cooperative, and comprehensive approach to transportation planning for the Clarksville metropolitan area (which today includes the cities of Clarksville, Tennessee and Oak Grove, Kentucky, as well as Montgomery County, Tennessee and portions of the City of Hopkinsville and Christian County, Kentucky).

Since that time, major changes in the region have occurred . a significant increase in the number of residents living within the area, a greater number and diversity of jobs, and substantial changes in other social and demographic characteristics within the region.

With these changes has come the challenge of being able to provide transportation for nearly 98,000 persons resided in the Clarksville MPO area. Today, the number of residents is over 161,000, and by 2035, the population is projected to be nearly 274,000.

Roadways, such as State Route 374, that did not exist in the 1980s and 1990s are already at or exceeding their capacity, and trends indicate that travel situations on other roadways in the region are only going to worsen in the future. In 1987, public transit was just starting in the city, and today nearly 730,000 transit trips are made annually on the Clarksville Transit System (CTS).

As the region develops this transportation plan, it must address three important questions. What does the future hold in store for this area relative to future growth and development? How does the region balance these demands with the desires of existing residents and businesses when it comes to providing adequate and sound transportation choices?

The plan presented in this document provides a 25-year blueprint for transportation investments in the MPO area to the year 2035. This plan is multimodal, meaning it addresses travel by all modes on the transportation system -- streets and highways, bikeways and walkways, public transportation, aviation, rail and waterways. Consideration is given to population and employment trends, land development patterns, travel characteristics, current and future transportation system performance, and other planning factors. This plan was developed in coordination with the state and local agencies that are responsible for environmental protection, land use management, natural resources, and historic preservation. The recommended plan is based on a series of stated community goals, financial capability, environmental considerations, and public guidance.

The plan is organized into eight sections:

- 1.0 Introduction . the legal basis of the plan and planning requirements
- 2.0 Community Structure . current and future demographic and development conditions
- 3.0 Public and Stakeholder Participation . outreach, involvement, and consultation efforts during the planning effort with the public, stakeholders, and interested parties

- 4.0 Transportation System . current and future conditions of the transportation system
- 5.0 Goals and Objectives . guiding goals and objectives
- 6.0 Financial Plan . current and future funding for transportation
- 7.0 Recommended Planned Improvements . recommended capital and operating improvements
- 8.0 Environmental Review . an assessment of the planned improvements on the physical and social environment

1.1 METROPOLITAN PLANNING

Federal law requires metropolitan areas (defined as urbanized areas with a population of greater than 50,000 people, based on the latest U.S. Census) undertake a continuing, comprehensive, and cooperative transportation planning process. The Clarksville Area Metropolitan Planning Organization (MPO) is the governing entity that is charged with carrying out this process for the Clarksville Urbanized Area. The planning area of the Clarksville MPO consists of the cities of Clarksville and Oak Grove, Montgomery County, and portions of the City of Hopkinsville and Christian County.

The Clarksville Area MPO is lead by an Executive Board, which is the policy board of the MPO, a technical committee that provides recommendations to the Executive Board, and a professional staff. The MPO Executive Board consists of the following nine (9) elected and appointed officials from these state and local governments:

- City of Clarksville, Tennessee Mayor
- Montgomery County, Tennessee Mayor
- City of Oak Grove, Kentucky Mayor
- City of Hopkinsville, Kentucky Mayor
- Christian County, Kentucky County Executive
- Clarksville Transit System Director
- Greater Nashville Regional Council Executive Director
- Kentucky Transportation Cabinet (KYTC) Secretary
- Tennessee Department of Transportation (TDOT) Commissioner

Plus representation from the Federal Highway Administration and Federal Transit Administration as non-voting members.

The MPO Technical Coordinating Committee (TCC) is comprised of a diverse group of transportation professionals, who advise the Executive Board members on all aspects of the planning process. The TCC includes engineers, transportation and land use planners, from federal, state, and local agencies, as well as representatives from the transit, air, bicycle/pedestrian, and rail industries. Organizations represented on the TCC include professional staff from:

- Christian County, Kentucky
- City of Clarksville, Tennessee
- City of Oak Grove, Kentucky
- Clarksville Transit System
- Clarksville-Montgomery County Regional Planning Commission
- Fort Campbell Military Reserve
- Greater Nashville Regional Council

- Hopkinsville-Christian County Planning Commission
- John F. Outlaw Field
- Kentucky Department for Environmental Protection
- Kentucky Transportation Cabinet
- Mid-Cumberland HRA
- Montgomery County Administration and Development
- Pennyrille Area Development District
- R.J. Corman Railroad Company
- Tennessee Department of Environment and Conservation
- Tennessee Department of Transportation
- U.S. Environmental Protection Agency

Plus representation from the Federal Highway Administration and Federal Transit Administration as non-voting members.

The MPO staff is physically housed at the Clarksville-Montgomery County Regional Planning Commission and is responsible for all planning and administrative functions of the MPO. The MPO staff serve as a liaison between the MPO Executive Board and TCC and the Tennessee Department of Transportation, the Kentucky Transportation Cabinet, the Federal Highway Administration, the Federal Transit Authority, local governments, and other groups and individuals interested in transportation issues within the MPO area.

1.2 LEGAL REQUIREMENTS OF THE PLAN

Federal legislation provides the guiding framework that governs the transportation planning process for all MPOs. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005 requires that each MPO develop a transportation plan with at least a 20-year horizon of both long-range and short-range strategies/actions that lead to the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand. The plan must be updated every four years to keep consistent with existing conditions, re-evaluate proposed plans, programs and projects, and validate air quality conformity analysis.

The SAFETEA-LU legislation places continued emphasis on the relationships between land use, air quality, and transportation, including modes other than automobile. The Clean Air Act Amendments (CAAA) of 1977 and 1990 require that transportation plans, programs, and projects in non-attainment areas not cause or contribute to violations of the National Ambient Air Quality Standards (NAAQS).

In 1997, the U.S. Environmental Protection Agency (EPA) revised the NAAQS for ozone from 0.12 parts per million (ppm) measured over 1-hour intervals to 0.08 ppm measured over 8-hour intervals in order to reflect the best scientific evidence available on the public health effects of ozone. On April 15, 2004, Montgomery and Christian Counties were designated non-attainment of the NAAQS for violations of the new 8-hour ozone standard.

In determining conformity of the Clarksville Area MPO 2035 Metropolitan Transportation Plan (MTP), emission estimates were performed using the MOBILE6.2 emissions model

for the ozone non-attainment area for the analysis years 2016, 2025, and 2035. The technical analysis and findings of the air quality determination are described in the Clarksville Area Transportation Conformity Analysis Report, which is available as a separate document and incorporated by reference in the 2035 MTP.

Other requirements of the MPO planning process include compliance with a number of existing laws and regulations which are described below.

- The Americans with Disabilities Act (ADA) of 1990 which mandates equal opportunity for, and prohibits discrimination against, individuals with disabilities. In particular, Title II of the ADA and Section 504 of the Rehabilitation Act of 1973 requires State, local and regional agencies to provide transportation programs, services and activities that are accessible to all individuals.
- Title VI of the Civil Rights Act of 1964 which prohibits discrimination on the basis of race, color or national origin. Section 324 of the Federal Aid Highway Act, the enabling legislation of the Federal Highway Administration, which prohibits discrimination based on sex.
- The Uniform Relocation Assistance and Real Property Acquisition Act of 1970 which prohibits unfair and inequitable treatment of persons as a result of projects that are undertaken with federal financial assistance. The Civil Rights Restoration Act of 1987 clarified the intent of Title VI to include all programs and activities of federal aid recipients and contractors whether those programs and activities are federally-funded or not. Environmental Justice is a concept founded in the intent of the non-discrimination prohibitions of the federal legislation.
- Executive Order #12898 which reaffirms that each federal agency must make Environmental Justice part of its mission. Each agency must identify and address disproportionately high and/or adverse environmental or human health effects that any of its programs, policies and activities may have on minority and low-income populations. Further, each agency must work to prevent the denial, reduction or delay of benefits received by minority and low-income populations. Most importantly, each agency must develop policies and strategies to ensure full and fair participation by affected populations in transportation decisions.

The 2035 MTP for the Clarksville Area MPO reflects compliance of the federal requirements of SAFETEA-LU, the CAAA, and the above provisions. Throughout this document data and analysis are presented illustrating consideration and compliance with these requirements.

1.3 PLAN ADOPTION AND AMENDMENT PROCESS

Developing and updating a metropolitan transportation plan (MTP) takes considerable time (generally ten to twelve months or longer) given the amount of data and information that must be considered in the plan. As part of the plan development process, opportunities are provided for public and stakeholder input, which is an important activity in determining transportation needs and priorities, and aiding in the ultimate recommendations of the plan.

Appendix I - Clarksville Area MPO 2035 MTP Documentation Report, provides details on the outreach and involvement processes used in the development of the 2035 MTP and the input received.

Once a draft plan has been developed, a formal review process is required of the draft document. The MTP does not become an approved plan until after the formal public review and comment period, which is a minimum of 14 days. After the MPO has initiated the public review process on the draft metropolitan transportation plan, the MPO generally holds an advertised public meeting to review and obtain final comments from the public. At the end of the public comment period and after public comments have been addressed or considered, the MPO endorses/adopts the MTP for approval and submits it to the appropriate state and federal agencies so that determination of compliance with various federal transportation planning and air quality conformity requirements can be made. Once compliance with federal requirements has been determined, the plan becomes an approved document.

Amendments to the metropolitan transportation plan can and do occur once a plan has been adopted. These amendments can occur for various reasons . changes in project schedules, unknown development changes, or changes in priorities. While the intent is to avoid such mid-cycle changes, amendments do occur. Any such amendment to the MTP must follow the same public review process and procedures as that of adopting the plan, as per c @^ Á T Ú U q Participation Plan (PPP).

1.4 PLAN IMPLEMENTATION

Implementation of project recommendations from the metropolitan transportation plan (MTP) occurs through the programming of transportation improvements on an annual and semi-annual basis. For projects within the MPO area that are federally or state funded or considered regionally significant, the MPO, in consultation with the appropriate city, county, and state transportation agency determines which projects are to be advanced from the metropolitan c | æ} •] [! c æ c ã [} Á] | æ} Á-term c [Á c @^ transportation improvement program (TIP).

The transportation improvement program (TIP) is a planning/programming document developed and adopted by the MPO in response to the transportation needs in the MPO area. The TIP updates and advances a four-year implementation program for all modes of transportation. This document is important because it not only addresses major transportation improvements (constructing a new bridge or road), but it also contains small-scale transportation improvements (intersection improvements, etc.). All projects that are added to the TIP for funding and implementation must be consistent with the metropolitan transportation plan.

2.0 COMMUNITY STRUCTURE

Situated along the borders of northern Tennessee and southwestern Kentucky, the Clarksville MPO planning area comprises 572 square miles incorporating the cities of Clarksville, Tennessee and Oak Grove, Kentucky and Montgomery County, Tennessee, and portions of Hopkinsville and Christian County, Kentucky. Figure 2-1 illustrates the planning area of the Clarksville MPO.

Since 1977, when the Clarksville area was first designated by the federal government as a metropolitan area, significant changes have occurred in the region. The number of residents living within the area has grown exponentially. A greater number and diversity of jobs has come to the region, and development patterns have changed with most of the new residential and commercial development occurring outside of downtown Clarksville.

This section describes the community structure of the MPO area - relative to population and employment trends, land-use and development patterns, and projected demographic changes over the next 25 years. State and local agencies assisted in determining the latest available estimates and assumptions for land-use, population, travel, employment, congestion, and economic activity, which were utilized in the development of this plan.

2.1 DEMOGRAPHICS

This sub-section discusses the population, housing, and employment characteristics of the MPO area.

2.1.1 Population Trends and Forecasts

The total population of the Clarksville MPO area in 2000 was 121,189, which represented 59 percent of the total populations of both Montgomery and Christian counties. By 2035, the MPO area is projected to have 273,340 persons, which is a 69 percent increase over the 2008 population count. While a large portion of the growth will occur within the urban growth portion of the region, trends indicate an outward migration of persons from the central areas to suburban portions of the MPO area.

Table 2-1 depicts recent population trends and projections for the MPO area. Figure 2-2 illustrates the projected absolute increase in population for the MPO area from 2008 to 2035.

**Table 2-1
Total Population (1990-2035)**

	1990	2000	2008	2035	Percent Change (1990-2000)	Percent Change (2008-2035)
Clarksville MPO Area	97,581	121,189	161,320	273,340	24%	69%
Christian County	68,941	72,265	79,820	124,142	5%	56%
Montgomery County	100,498	134,768	157,955	255,349	34%	62%
Total Population (2 Counties)	169,439	207,033	237,775	379,491	22%	60%
MPO% of 2 County Population	56%	59%	68%	72%	3%	6%

Sources: Woods & Poole Economics, Inc. 2008 and KY State Data Center, 2009

Figure 2-1
Clarksville MPO Planning Area Map

