

Regional Transportation Plan 2030

Madison Metropolitan Area and Dane County

Table of Contents

Executive Summary

Part I: Introduction and Background

Background to the Regional Transportation Plan

Introduction	5
The Madison Area Metropolitan Planning Organization (MPO)	6
Madison Urban and Metropolitan Planning Areas	6
Governance Structure	6
Madison Area MPO Responsibilities.....	8
Intergovernmental Coordination and Public Involvement	8
Requirements for the Regional Transportation Plan	9
Metropolitan Planning Factors	9
Congestion Management System	10
Environmental Justice	10

Emerging Socio-Economic and Land Use Trends and the Transportation System

Introduction	13
Demographic	13
Population Growth	13
Households and Household Size	14
Housing	16
Economic	18
Labor Force	18
Employment	19
Land Use	20

Transportation Trends, Conditions and Issues

Travel Characteristics	25
Why Do People Travel?	25
How Do People Travel?	25
How Much and How Far Do People Travel?.....	25
Overall Travel Patterns	26
Work Trip Commuting Patterns	26
Streets and Roadways	33
Federal Functional Classification System of the Regional Roadways	33
Traffic Growth and Congestion	34
Transportation System Management and Operations	34
Motor Vehicle Safety and Crash Data	41
Roadway Pavement and Bridge Conditions	44
Congestion Management System for the Madison Urban Area	49
CMS Network and Performance Measures	49
System Monitoring and Data Collection	50
Congestion Management Strategies	50
System Evaluation and Review	51
Intelligent Transportation Systems (ITS) and the Regional ITS Architecture	53
Public Transit	57
Introduction	57

Current Transit Services in the Madison Metropolitan Area	57
Metro Transit Fixed-Route Service, Ridership, and Performance Trends	60
Metro Service Operating Costs and Revenues	63
Transit Service Needs	64
Metro's Major Transit Capital Needs	65
Bicycle Transportation	67
Introduction	67
Bicycle Travel	67
Existing Bicycle Facilities in Dane County.....	69
Bicyclist Safety Data and Education	71
Existing Bicycle Plans and Bicycle-Related Policies	73
Issues	76
Pedestrian Transportation	79
Introduction	79
Pedestrian Travel	79
Inventory of Sidewalks/Walkways Along the Regional Roadway System	80
Pedestrian Safety Data and Education	81
Existing Pedestrian-Related Policies, Standards, and Requirements	86
Issues	94
Transportation Demand Management (TDM)/Ridesharing	99
Current TDM Programs and Activities	99
Parking Management	102
Freight	105
Overall Freight Movement	105
Freight Facilities	107
Air Transportation	111

Part II: Regional Transportation Plan 2030

Land Use Assumptions and the Plan Development Process

Formulation of Goals and Policy Objectives	117
Inventory of Land Use, Socio-Economic, and Travel Characteristics and Trends and the Transportation System	117
Growth Forecasts and Allocation	118
Countrywide Composite of Local Land Use Plans	118
Major Employment/Activity Centers	119
The Madison Area MPO Travel Simulation Model	121
Travel Demand Modeling Scenarios	121
Existing plus Committed Projects	121
Transit Scenarios	121
Roadway Scenarios	123

Goals, Policy Objectives, Key Plan Concepts, and Recommendations / Implementation Strategies

Overall Transportation System	127
Land Use and Transportation System Coordination	129
Key Plan Concepts	130
Transportation System Elements	131
Streets and Roadways	131
Public Transit	144
Paratransit/Specialized Transportation	147
TDM/Ridesharing	148
Bicycle Transportation	150

Pedestrian Transportation	154
Inter-regional Travel	157
Freight	157
Rail Transportation	158
Air Transportation	159
Parking	159
Corridor Preservation	160

Financial Capacity Analysis

Introduction	163
Historical Funding Trends	163
Projected Transportation Expenses and Revenues	166
Recommended Plan Projects	167
System Preservation Beyond the Recommended Plan	169

Environmental Justice Analysis

Environmental Justice Population and Areas of Concentration Within the Madison MPO Planning Area	173
Means of Transportation and Travel Time to Work for Environmental Justice Populations	174
Transportation Project Analysis	175
Transit Service Analysis	180
Accessibility Analysis	182

Further Planning and Concluding Comments

Meeting SAFETEA-LU Requirements	189
Plan Update Following Completion of Ongoing Major Corridor Studies	190
Projects Beyond Financial Constraint	190
Regional Indicators: Measuring Progress Towards the Region’s Transportation Goals	190
Critical Role of Land Use in Transportation Planning	191

Appendices

A. Air Quality Impacts Analysis of the Recommended Regional Transportation Plan 2030	A-1
Introduction	A-1
Regional Transportation Plan Air Quality Impacts	A-1
B. Discussion of Roadway Levels of Service (LOS) for Motorists	B-1
C. List of Significant Public Comments on the Draft Plan and MPO Responses	C-1

List of Tables

Table 1	Population Growth: 1970-2000	13
Table 2	Population Projections: 2000-2030	14
Table 3	Household Growth: 1970-2000	15
Table 4	Household Projections: 2000-2030	15
Table 5	Distribution of Persons per Household: 1990-2000	16
Table 6	Average Household Size: 1980-2000	16
Table 7	Growth of Year-Round Housing Stock by Type: 1970-2000	17
Table 8	Housing Projections: 2000-2030	17
Table 9	Civilian Labor Force Growth: 1980-2000	18
Table 10	Civilian Labor Force Projections: 2000-2030	18
Table 11	Employment Projections: 2000-2030	19
Table 12	Mode of Transportation for Work: 1990 & 2000	32
Table 13	Urban Federal Functional Classification (FFC) of Roadways	33

Table 14	2004 Motor Vehicle Crashes in Madison Area Cities and Villages with 5,000+ Population	44
Table 15	Southwest Wisconsin ITS Architecture Stakeholders within Dane County	54
Table 16	Metro Fixed-Route Transit System, Annual Service Levels and Ridership: 2000-2005	61
Table 17	Metro Fixed-Route Transit System, Operating Costs, Revenue, and Deficits: 2000-2005	63
Table 18	City of Madison Bicycle Traffic Counts	68
Table 19	Bicycle/Pedestrian Traffic at Selected Madison Area Locations (from Wis. Trail/Path Study)	69
Table 20	Pedestrian Facility Requirements and Policies and Street Standards for Cities and Villages in the Madison Metropolitan Planning Area	87
Table 21	Guidelines for Installing Sidewalks	92
Table 22	Inbound and Outbound Commodities (All Modes), Dane County (2003)	107
Table 23	Forecast 2030 Population and Place of Work Employment by Urban Service Area	119
Table 24	Potential Arterial and Collector Street and Roadway Improvements: 2007-2030	135
Table 25	High Priority Off-Street Bicycle Facility Projects on the Identified Regional Bikeway System	153
Table 26	Historical Local Street and Roadway Expenses	164
Table 27	Federal and State Spending Costs By Funding Source, Non-Transit Projects, 2002-2006	165
Table 28	Summary of Federal and State Spending Costs by Funding Source, Non-Transit Projects, 2002-2006	166
Table 29	Metro Transit Operating Revenues and Expenses, 2002-2006	167
Table 30	Projected Expenses and Revenues of Transportation Projects, Madison Metropolitan Planning Area, 2007-2030	168
Table 31	Environmental Justice Populations in Selected Municipalities within the Madison Metropolitan Planning Area	174
Table 32	2006 Weekday A.M. Peak Period Transit Travel Times from EJ Areas to Major Employment, Other Centers	184
Table 33	2000 (Base Year) Weekday A.M. Peak Period Auto Travel Times (In Minutes) From EJ Areas to Major Employment, Other Centers	184
Table 34	Comparison of A.M. Peak Period In-Vehicle Transit Travel Times (In Minutes) From EJ Areas to Major Employment, Other Centers for the 2030 “Existing Plus Committed (E & C) Projects” And Recommended Plan Scenarios	186
Table 35	Comparison of Auto Travel Times (In Minutes) From EJ Areas to Major Employment, Other Centers for the 2030 “Existing Plus Committed (E & C) Projects” And Recommended Plan Scenarios	186
Table A-1	Regional Transportation Plan 2030 Air Quality Impacts	A-1

List of Figures

Figure 1	Madison Area Metropolitan Planning Organization Boundaries	7
Figure 2	Population Growth and Projections: 1970-2030	14
Figure 3	Household Growth and Projections: 1970-2030	15
Figure 4	Urban Service Areas of Dane County, Wisconsin	21
Figure 5	Average Trip Length (miles) By Trip Purpose for Dane County Trips	26
Figure 6	2001 Total Daily Trip Flows from Madison’s Southwest and Southeast Areas	27
Figure 7	Work Trip Commuting Between Dane County and Adjacent Counties: 2000	28
Figure 8	Work Trip Commuting to City of Madison: 1970-2000	29
Figure 9	Percent of Workers Commuting to City of Madison: 1970	30
Figure 10	Percent of Workers Commuting to City of Madison: 2000	31
Figure 11	Departure Time of Work of Dane County Commuters: 1990-2000	29
Figure 12	Roadway Functional Classification System, Dane County Wisconsin (2004)	35
Figure 13	1990-2000 Madison Urban Area Annual Average Daily Traffic Growth (Arterial Roadways)	36
Figure 14	2000 Roadway Congestion Levels, Madison Area, Dane County	37
Figure 15	Motor Vehicle High Crash Frequency Locations in the City of Madison	43
Figure 16	Motor Vehicle Crash Rate Summary for State Roadways, Madison Area, Dane County	45

Figure 17	Pavement Condition of Regional Arterial and Collector Roadways (2005)	47
Figure 18	Madison Metro and Monona Transit Systems Service Area (2005)	59
Figure 19	Metro Fixed-Route Ridership and Service Hours: 1990-2005	60
Figure 20	Distribution of Trip Purposes for Trips on Metro’s Regular Fixed-Route System	61
Figure 21	Metro Transit Regular Fixed-Route Average Weekday Ridership by Bus Stop (Fall 2005)	62
Figure 22	2005 Metro Transit Operating Revenue Distribution	63
Figure 23	Distribution of Trip Purposes for Bicycle Trips	67
Figure 24	Existing Bicycle Facilities	70
Figure 25	Bicycle Crashes in Dane County: 2001-2004	71
Figure 26	Pavement Condition of City of Madison Multi-Use Paths (2005)	77
Figure 27	Distribution of Trip Purposes for Walk Trips	80
Figure 28	Sidewalk Inventory of Regional Roadways (2005).....	82
Figure 29	Pedestrian/Motorist Crashes in Dane County: 2000-2004	83
Figure 30	Location of Pedestrian Crashes in City of Madison: 2002-2004.....	85
Figure 31	Vehicle Stopping Distance on Dry Pavement	86
Figure 32	Likelihood of Pedestrian Fatality in Pedestrian/Motorist Crash	86
Figure 33	Rideshare Program Service Area	99
Figure 34	Commodity Flow by Mode, Dane County (2003)	105
Figure 35	Commodity Flow Tonnages (Truck, Air & Rail), Dane County (2003)	106
Figure 36	Freight Facilities and Service	108
Figure 37	Dane County Regional Airport Passengers: 1996-2005	111
Figure 38	Planned Future Land Use Growth	120
Figure 39	Major Employment/Activity Centers	122
Figure 40	Commuter Rail (Hybrid) Transit Alternative	131
Figure 41	Major Transportation Improvements and Studies	134
Figure 42	Future Planned Roadway Functional Classification System (2030)	140
Figure 43	Park and Ride Lot System	149
Figure 44	Bicycle Way System Plan	152
Figure 45	Major Transportation Improvements and Studies and Areas with Concentrations of Minority Populations (2000)	176
Figure 46	Major Transportation Improvements and Studies and Areas with Concentrations of Low Income Families / Individuals and Autoless Households (2000)	177
Figure 47	Future Roadway Preservation and Bikeway Projects and Areas with Concentrations of Minority Populations (2000)	178
Figure 48	Future Roadway Preservation and Bikeway Projects and Areas with Concentrations of Low Income Families / Individuals and Autoless Households (2000)	179
Figure 49	Locations for Accessibility Analysis of Areas with Concentrations of Minorities and/or Low Income Families/Households	183

