

TABLE OF CONTENTS

	<u>PAGE</u>
SECTION 1 – INTRODUCTION.....	1.1
1.1 <u>PURPOSE</u>	1.1
1.2 <u>THE PLANNING PROCESS</u>	1.1
Establish Goals and Objectives.....	1.1
Identify Transportation Issues.....	1.3
Develop Analysis Procedures, Tools, and Data.....	1.3
Identify Transportation Deficiencies	1.3
Development And Evaluation Of Alternatives	1.3
Identify Funding, Project Priority, and Implementation Schedule	1.3
1.3 <u>STUDY AREA</u>	1.3
1.4 <u>COMMUNITY BACKGROUND</u>	1.5
SECTION 2 – GOALS, OBJECTIVES AND STANDARDS.....	2.1
2.1 <u>INTRODUCTION AND FRAMEWORK</u>	2.1
Goal #1 – Provide A Safe Transportation System	2.2
Goal #2 – Provide An Efficient Transportation System	2.2
Goal #3 – Provide Mobility And Accessibility To Users Of The Transportation System.....	2.3
Goal #4 – Provide Compatible Transportation And Land Use Systems.....	2.3
Goal #5 – Minimize Adverse Impacts From Transportation	2.4
Goal #6 – Finance The Transportation System.....	2.4
Goal #7 – Promote A Balanced, Compact Land Use Growth Pattern	2.5
SECTION 3 – TRANSIT PLAN	3.1
3.1 <u>INTRODUCTION</u>	3.1
3.2 <u>PUBLIC TRANSIT GOALS, OBJECTIVES AND STANDARDS</u>	3.1
3.2.1 <u>INTRODUCTION AND FRAMEWORK</u>	3.1

TABLE OF CONTENTS CONTINUED

	<u>PAGE</u>
3.2.2 <u>GOALS, OBJECTIVES, AND STANDARDS</u>	3.2
3.3 <u>EXISTING CONDITIONS</u>	3.7
3.3.1 <u>INTRODUCTION</u>	3.7
3.3.2 <u>2002 EXISTING OPERATIONS</u>	3.7
3.3.3 <u>FIXED ROUTE SERVICE</u>	3.8
Description.....	3.8
Bike Rack Installation And Policy.....	3.14
Ridership.....	3.14
Operating Revenues.....	3.21
Performance Measures.....	3.21
Comparison With Other Systems.....	3.28
3.3.4 <u>NIGHT BUS</u>	3.29
Description.....	3.29
Ridership.....	3.29
Operating Revenues And Expenses.....	3.29
Performance Measures.....	3.33
3.3.5 <u>TRIPPER SERVICE</u>	3.33
Description.....	3.33
Ridership.....	3.34
Operating Revenues And Expenses.....	3.34
Performance Measures.....	3.39
3.3.6 <u>DIAL-A-RIDE SERVICE</u>	3.41
Description.....	3.41
Ridership.....	3.41
Operating Expenses.....	3.46
Performance Measures.....	3.46
3.3.7 <u>SENIOR RIDER SERVICE</u>	3.47
Description.....	3.47
Ridership.....	3.47

TABLE OF CONTENTS CONTINUED

	<u>PAGE</u>
Operating Revenues And Expenses	3.50
Performance Measures	3.50
3.4 <u>TRANSIT MARKET IDENTIFICATION</u>	3.52
3.4.1 <u>INTRODUCTION</u>	3.52
3.4.2 <u>CENSUS INFORMATION</u>	3.52
3.4.3 <u>ENVIRONMENTAL JUSTICE</u>	3.60
3.4.4 <u>ON-BOARD BUS SURVEY</u>	3.64
Survey Development	3.64
Survey Instructions	3.64
Survey Information	3.65
Origin And Destination	3.65
Demand Response Survey	3.71
3.4.5 <u>OVERALL MARKET IDENTIFICATION</u>	3.75
3.4.6 <u>TRANSIT USER PROFILE</u>	3.75
3.4.7 <u>FUTURE GROWTH/LAND USE PATTERNS</u>	3.78
3.4.8 <u>CONCLUSIONS</u>	3.78
3.5 <u>ALTERNATIVES ANALYSIS</u>	3.81
3.5.1 <u>INTRODUCTION</u>	3.81
3.5.2 <u>ALTERNATIVES CONSIDERED BUT NOT RECOMMENDED</u>	3.81
3.5.3 <u>ALTERNATIVES CONSIDERED AND RECOMMENDED</u>	3.85
3.6 <u>RECOMMENDED PLAN</u>	3.86
3.6.1 <u>SHORT TERM STRATEGIES</u>	3.86
Combine Demand Response Services	3.86
Privatization Of H-Tripper	3.88
Fixed Route Tweaks	3.88

TABLE OF CONTENTS CONTINUED

	<u>PAGE</u>
1. Currently Identified Route 1/2	3.90
2. Currently Identified Route 8/9	3.90
3. Currently Identified Route 10/11	3.90
4. Night Bus Route.....	3.90
5. Shifting School Trippers To Private Sector	3.90
Capital Replacement Program	3.91
Bus Shelter Enhancements.....	3.91
Upgrade Demand Response Fleet.....	3.91
Integrating Transit With Development	3.91
Increased Marketing.....	3.91
3.6.2 <u>LONG TERM STRATEGIES</u>	3.92
Transit Coverage.....	3.92
Marketing.....	3.92
Integration With Land Use Decisions.....	3.93
3.7 <u>FINANCIAL ANALYSIS</u>	3.94
3.7.1 <u>FORECASTED REVENUES/EXPENDITURES</u>	3.95
3.7.2 <u>RECOMMENDED PLAN OPERATING FINANCIAL ANALYSIS</u> ...	3.96
3.7.3 <u>CAPITAL</u>	3.98
Rolling Stock	3.99
Buildings.....	3.99
3.7.4 <u>LONG TERM FINANCIAL</u>	3.101
3.8 <u>RECOMMENDED IMPLEMENTATION</u>	3.103
Year 2005.....	3.103
Year 2006.....	3.104
Year 2007.....	3.105
Year 2008.....	3.105
Year 2009.....	3.107

TABLE OF CONTENTS CONTINUED

	<u>PAGE</u>
SECTION 4 - BICYCLE AND PEDESTRIAN PLAN GOALS, OBJECTIVES AND STANDARDS	4.1
4.1 <u>OVERVIEW</u>	4.1
4.2 <u>COMMUNITY BACKGROUND</u>	4.1
4.3 <u>DEFINITIONS</u>	4.2
4.4 <u>VISION STATEMENT</u>	4.4
4.5 <u>GOALS, OBJECTIVES, AND STANDARDS</u>	4.4
4.6 <u>EXISTING CONDITIONS</u>	4.10
4.6.1 <u>LOCAL TRENDS IN BIKE AND PEDESTRIAN TRAVEL</u>	4.10
4.6.2 <u>2004 TRAIL USAGE STUDY</u>	4.10
4.6.2.1 <u>Introduction</u>	4.10
4.6.2.2 <u>Parameters</u>	4.10
4.6.2.3 <u>Results</u>	4.11
4.6.2.4 <u>Bicycle And Pedestrian Trip Generators</u>	4.13
4.6.2.5 <u>Transit Access</u>	4.17
4.6.2.6 <u>Non-motorized Travel Obstacles</u>	4.17
4.6.2.7 <u>Curb Ramp Study</u>	4.18
4.6.2.8 <u>Americans With Disabilities Act</u>	4.20
4.6.2.9 <u>Location Prioritization</u>	4.20
4.6.2.10 <u>Implementation By The Numbers</u>	4.21
4.6.2.11 <u>Financial Implementation</u>	4.21
4.6.2.12 <u>Non-motorized Traffic/Automobile Conflict Areas</u>	4.26
4.6.2.13 <u>Violations</u>	4.28
4.6.2.14 <u>Education</u>	4.28
4.6.2.15 <u>School Crossing Measures</u>	4.29
4.6.2.16 <u>Current Speed Limit Requirements</u>	4.29
4.6.2.17 <u>Location Of Flashing Beacons</u>	4.29
4.6.2.18 <u>Crossing Guards</u>	4.31
4.6.2.19 <u>School District Policy</u>	4.31

TABLE OF CONTENTS CONTINUED

	<u>PAGE</u>
4.7 <u>INVENTORY OF EXISTING BICYCLE AND PEDESTRIAN FACILITIES</u>	4.32
4.7.1 <u>EXISTING BIKEWAY NETWORK</u>	4.32
4.7.2 <u>EXTRATERRITORIAL BIKEWAY NETWORK</u>	4.33
4.7.3 <u>OFF ROAD PATH LOCATIONS</u>	4.36
4.7.4 <u>SIGNAGE AND AMENITIES</u>	4.40
4.7.5 <u>BICYCLE AND PEDESTRIAN CONVENIENCE</u>	4.40
4.7.6 <u>THE SIDEWALK NETWORK</u>	4.42
4.7.7 <u>CURRENT SIDEWALK REQUIREMENTS</u>	4.42
4.7.8 <u>CURRENT GUIDELINES FOR SIDEWALKS IN NEW DEVELOPMENTS</u>	4.43
4.7.9 <u>SIDEWALK REPLACEMENT PROGRAMS</u>	4.43
4.7.10 <u>SIDEWALK FUNDING</u>	4.43
4.8 <u>ASSESSMENT OF BIKEWAY AND PEDESTRIAN NETWORK NEEDS</u>	4.44
4.8.1 <u>BIKEWAY NETWORK NEEDS</u>	4.44
4.8.1.1 <u>Selection Criteria</u>	4.44
4.8.1.2 <u>Bicycle Facilities</u>	4.46
4.8.1.3 <u>Road Classification</u>	4.47
4.8.1.4 <u>Types Of Supplemental Bicycle Facilities</u>	4.48
4.8.1.5 <u>Bikeway System Gaps</u>	4.51
4.8.1.6 <u>Access Assessment Of Bicycle Travel Trip Generators</u>	4.52
4.8.1.7 <u>Future Generators</u>	4.57
4.9 <u>RECOMMENDED BIKEWAY PLAN</u>	4.58
4.9.1 <u>FUTURE BIKEWAY SYSTEM</u>	4.58

TABLE OF CONTENTS CONTINUED

	<u>PAGE</u>
4.9.2 <u>FUTURE BIKE LANE SITE ANALYSIS</u>	4.60
4.10 <u>UNPAVED TRAILS PLAN</u>	4.68
4.10.1 <u>BACKGROUND</u>	4.68
4.10.2 <u>UNPAVED TRAILS (FIGURES 4.31 AND 4.32)</u>	4.69
4.10.3 <u>UNPAVED TRAIL SURFACE OPTIONS</u>	4.69
4.10.4 <u>WEARING COURSE RECOMMENDATION</u>	4.72
4.10.5 <u>FLOOD FREQUENCY ESTIMATE FOR THE UNPAVED TRAILS</u>	4.72
4.10.6 <u>TRAIL USE CONFLICTS</u>	4.72
4.11 <u>IMPLEMENTATION AND STAGING PLAN</u>	4.73
4.11.1 <u>PROJECTS BY TIME PERIOD</u>	4.73
4.11.2 <u>TRANSPORTATION ENHANCEMENT (T.E.) PROJECTS</u>	4.75
4.11.3 <u>RIGHT-OF-WAY ACQUISITION</u>	4.75
4.11.4 <u>PLANNED STRUCTURES</u>	4.77
4.11.5 <u>COORDINATION WITH STATE BIKEWAY PLANS</u>	4.78

LIST OF TABLES

		<u>PAGE</u>
TABLE 3.1	Land Use And Transportation Facilities.....	3.6
TABLE 3.2	Bus Fleet Characteristics.....	3.10
TABLE 3.3	Transit Effectiveness Matrix For 2002 Route Structure – Transit Time (In Minutes	3.11
TABLE 3.4	Transit Effectiveness Matrix For 2002 Route Structure – Frequency (Trips Per Hour).....	3.12
TABLE 3.5	Transit Effectiveness Matrix For 2002 Route Structure – Number Of Transfers... ..	3.13
TABLE 3.6	Fixed Route Fare Structure Fare Structure	3.14
TABLE 3.7	2002 CAT Ridership By Route And Month	3.19
TABLE 3.8	2002 CAT Ridership Percentage By Route And Fare Category.....	3.20
TABLE 3.9	2002 CAT Ridership By Route And Season.....	3.20
TABLE 3.10	1998-2002 Operating Revenues And Expenses For Fixed Route, Tripper, Dial-A-Ride, Senior Rider, And Night Bus	3.22
TABLE 3.11	1998-2002 Operating Revenues And Expenses For Fixed Route And Tripper Services.....	3.23
TABLE 3.12	2002 CAT Fixed Route Operating Statistics And Performance Measures Summary By Day Of Week (12 Month Total).....	3.25
TABLE 3.13	2002 CAT Fixed Route Operating Statistics By Route And Day Of Week (12 Month Total).....	3.26
TABLE 3.14	2002 CAT Fixed Route Operating Statistics And Performance Measures Summary By Season	3.27
TABLE 3.15	Peer Review.....	3.28
TABLE 3.16	2002 Night Bus Operating Statistics And Performance	3.33
TABLE 3.17	2002 Tripper Ridership By Route And Month	3.37

LIST OF TABLES CONTINUED

	<u>PAGE</u>
TABLE 3.18 2002 Tripper Operating Statistics And Performance.....	3.38
TABLE 3.19 2002 Tripper Operating Statistics By Route.....	3.40
TABLE 3.20 2002 Tripper Performance Measures By Route.....	3.40
TABLE 3.21 2002 Dial-A-Ride Ridership By Month.....	3.45
TABLE 3.22 1990-2002 Operating And Non-Operating Revenues And Expenses For Dial-A-Ride Services	3.46
TABLE 3.23 2002 Dial-A-Ride Operating Statistics And Performance.....	3.47
TABLE 3.24 1990-2002 Operating Revenues And Expenses For Senior Rider Services.....	3.50
TABLE 3.25 2002 Senior Rider Operating Statistics And Performance	3.51
TABLE 3.26 Population Trends For Grand Forks-East Grand Forks Metropolitan Area 1980-2000.....	3.52
TABLE 3.27 Transit Service Comparisons (Fully Allocated Costs).....	3.86
TABLE 3.28 Farebox Recovery Rate Comparisons.....	3.87
TABLE 3.29 Projected Federal Operating Funding For The Urbanized Area Through 2009.....	3.94
TABLE 3.29a U.S. Department Of Transportation Federal Transit Administration Grand Forks, ND-MN Urbanized Area Funding (5307 Urban Formula Program) (Grand Forks Funding Level)	3.94
TABLE 3.29b U.S. Department Of Transportation Federal Transit Administration Grand Forks, ND-MN Urbanized Area Funding (5307 Urban Formula Program) (East Grand Forks Funding Level)	3.94
TABLE 3.29c U.S. Department OF Transportation Federal Transit Administration Grand Forks, ND-MN Urbanized Area Funding (5307 Urban Formula Program) (Metro Funding Level).....	3.94

LIST OF TABLES CONTINUED

	<u>PAGE</u>
TABLE 3.30 Forecasted Revenues And Expenses For The Grand Forks System.....	3.95
TABLE 3.31 Forecasted Revenues And Expenses For The East Grand Forks System	3.96
TABLE 3.32 Financial Forecast As A Result Of Implementing Transit Plan	3.97
TABLE 3.33 Financial Forecast As A Result Of Implementing Transit Plan With Senior Rider Continuing	3.97
TABLE 3.34 East Grand Forks Bus Planned Capital Expenditures For 2004-2009	3.101
TABLE 3.35 Capital Improvements Program FY 2006-2010 – Cities Area Transit – Grand Forks	3.102
TABLE 4.1 1999-2004 Bicycle/Automobile Conflict Data By Roadway Classification	4.27
TABLE 4.2 2000-2004 Pedestrian/Automobile Conflict Data By Roadway Classification	4.27
TABLE 4.3 Off-Road Path Funding, Grand Forks, ND.....	4.38
TABLE 4.4 Off-Road Path Funding, East Grand Forks, MN	4.39
TABLE 4.5 Grand Forks Generators.....	4.54
TABLE 4.6 East Grand Forks Generators	4.56
TABLE 4.7 Bikeway Facility Cost.....	4.58
TABLE 4.8 Bikeway Cost By Project Period.....	4.74

LIST OF FIGURES

		<u>PAGE</u>
FIGURE 1.1	Transportation Planning Process.....	1.2
FIGURE 1.2	Grand Forks-East Grand Forks Metropolitan Planning Organization Study Area.....	1.4
FIGURE 3.1	Fixed Route System	3.9
FIGURE 3.2	City Bus Fixed Route Annual Ridership – 1992-2002	3.15
FIGURE 3.3	City Bus Fixed Route Ridership By City – 1992-2002	3.17
FIGURE 3.4	2002 City Bus Fixed Route Monthly Ridership	3.18
FIGURE 3.5	City Bus Fixed Route And Tripper Revenues And Expenses – 1998-2002	3.24
FIGURE 3.6	Map Of Night Bus Route	3.30
FIGURE 3.7	Night Bus Annual Ridership – 1999-2002.....	3.31
FIGURE 3.8	2002 Night Bus Monthly Ridership.....	3.32
FIGURE 3.9	Tripper Annual Ridership – 1992-2002.....	3.35
FIGURE 3.10	2002 Tripper Monthly Ridership	3.36
FIGURE 3.11	Dial-A-Ride Annual Ridership – 1992-2002.....	3.42
FIGURE 3.12	Dial-A-Ride Annual Ridership By City – 1992-2002	3.43
FIGURE 3.13	2002 Dial-A-Ride Monthly Ridership	3.44
FIGURE 3.14	Senior Rider Annual Ridership – 2001-2002.....	3.48
FIGURE 3.15	2002 Senior Rider Monthly Ridership.....	3.49
FIGURE 3.16	Population Density.....	3.54
FIGURE 3.17	Income Below Poverty Level.....	3.55
FIGURE 3.18	Minority Population	3.56

LIST OF FIGURES CONTINUED

		<u>PAGE</u>
FIGURE 3.19	Transit Age 14-18	3.57
FIGURE 3.20	College Students As A Percentage Of Persons 18 Years Of Age Or Older	3.58
FIGURE 3.21	Physically Impaired Population	3.59
FIGURE 3.22	Zero Auto Households	3.61
FIGURE 3.23	Bus Travel To Work	3.62
FIGURE 3.24	Metro Average Of Minority Or Low-Income Population.....	3.63
FIGURE 3.25	Ridership Versus Surveys	3.65
FIGURE 3.26	Origin Of Trip	3.66
FIGURE 3.27	Origin For A.M. Peak Hours (7-10 A.M.)	3.66
FIGURE 3.28	Origin For P.M. Peak Hours (3-6 P.M.)	3.67
FIGURE 3.29	Destination	3.68
FIGURE 3.30	Destination For A.M. Peak Hours (7-10 A.M.)	3.68
FIGURE 3.31	Destination For P.M. Peak Hours (3-6 P.M.)	3.69
FIGURE 3.32	Days Per Week Riding Dial-A-Ride And Senior Bus	3.71
FIGURE 3.33	Types Of Trip Taken On Dial-A-Ride And Senior Bus	3.72
FIGURE 3.34	Percent Of Denied Service On Dial-A-Ride And Senior Bus	3.72
FIGURE 3.35	Past Regular Rider On Senior Bus And Dial-A-Ride.....	3.73
FIGURE 3.36	Past Regular Ridership Of City Bus (Dial-A-Ride And Senior Rider)	3.73
FIGURE 3.37	Preferred Dial-A-Ride Changes And Senior Bus Changes.....	3.74
FIGURE 3.38	Days Per Week Of Riding With Another Paying Dial-A-Ride Passenger.....	3.74

LIST OF FIGURES CONTINUED

		<u>PAGE</u>
FIGURE 3.39	Transit Service Need (Criteria Based On Previous Figures)	3.76
FIGURE 3.40	2002 Ridership By Fare Type	3.77
FIGURE 3.41	Change In Fixed Route Ridership By Fare Category – 1998-2002 (Routes 1-11, Excluding Transfers).....	3.77
FIGURE 3.42	2000 Grand Forks-East Grand Forks Model Refined TAZ Boundaries	3.79
FIGURE 3.43	Grand Forks-East Grand Forks Model 1995 To 2000 Change In Dwelling Units	3.80
FIGURE 3.44	Tweaking Fixed Route Concepts Transit Development Plan	3.89
FIGURE 3.45	5309 Apportionments 1999-2003 – Grand Forks	3.99
FIGURE 3.46	Tweaking Fixed Route Concepts Transit Development Plan	3.106
FIGURE 4.1	Grand Forks – East Grand Forks Trail Usage Study (Count Locations)	4.12
FIGURE 4.2	Grand Forks – East Grand Forks Trail Usage Study (16 Hour Counts)	4.14
FIGURE 4.3	Grand Forks – East Grand Forks Bicycle And Pedestrian Trip Generators	4.15
FIGURE 4.4	Grand Forks – East Grand Forks Non-Motorized Travel Obstacles.....	4.19
FIGURE 4.5	Grand Forks Curb Ramp Plan – Number Of Curb Ramps Needed In 1992	4.22
FIGURE 4.6	Grand Forks Curb Ramp Plan – Number Of Curb Ramps Needed In 2002	4.23
FIGURE 4.7	East Grand Forks Curb Ramp Plan – Number Of Curb Ramps Needed In 1993	4.24
FIGURE 4.8	East Grand Forks Curb Ramp Plan – Number Of Curb Ramps Needed In 2002	4.25
FIGURE 4.9	Grand Forks – East Grand Forks Pedestrian Crossing Beacons	4.30

LIST OF FIGURES CONTINUED

		<u>PAGE</u>
FIGURE 4.10	Grand Forks – East Grand Forks Existing And Planned Bikeway Network	4.34
FIGURE 4.11	Grand Forks – East Grand Forks Extraterritorial Bikeway Network	4.35
FIGURE 4.12	Grand Forks – East Grand Forks Existing And Planned Off-Road Trail Network	4.37
FIGURE 4.13	Grand Forks – East Grand Forks Pedestrian And Bicycle Facilities	4.41
FIGURE 4.14	Grand Forks – East Grand Forks Trail Lighting Corridor Map.....	4.50
FIGURE 4.15	Grand Forks – East Grand Forks Bikeway Network Gaps	4.53
FIGURE 4.16	Grand Forks – East Grand Forks Existing And Planned Bikeway Network	4.59
FIGURE 4.17	North 42 nd Street	4.61
FIGURE 4.18	6 th Avenue North.....	4.61
FIGURE 4.19	University Avenue	4.62
FIGURE 4.20	North 47 th Street.....	4.62
FIGURE 4.21	South 38 th Street.....	4.63
FIGURE 4.22	24 th Avenue South.....	4.63
FIGURE 4.23	Belmont Road	4.64
FIGURE 4.24	40 th Avenue South.....	4.64
FIGURE 4.25	4 th Avenue Northwest	4.65
FIGURE 4.26	5 th Avenue Northwest	4.65
FIGURE 4.27	14 th Street Northwest	4.66
FIGURE 4.28	6 th Street Northwest	4.66

LIST OF FIGURES CONTINUED

	<u>PAGE</u>
FIGURE 4.29	2 nd Avenue Northeast4.67
FIGURE 4.30	Greenway Boulevard4.67
FIGURE 4.31	Grand Forks – East Grand Forks Proposed Unpaved Trail Corridors4.70
FIGURE 4.32	Grand Forks – East Grand Forks Proposed Unpaved Trail Corridors4.71
FIGURE 4.33	Grand Forks – East Grand Forks Potential Transportation Enhancement Projects4.76

APPENDICES

	<u>PAGE</u>
APPENDIX I – COST ALLOCATION METHODOLOGY	A-I.1
<u>FIXED-ROUTE, TRIPPER, NIGHT, SENIOR AND DIAL-A-RIDE SERVICE.....</u>	A-I.2
APPENDIX II – SURVEY DEVELOPMENT AND INSTRUCTIONS	AII.1
<u>SURVEY.....</u>	A-II.2
<u>SURVEY DEVELOPMENT.....</u>	A-II.2
<u>SURVEY INSTRUCTIONS.....</u>	A-II.2
<u>SURVEY INFORMATION.....</u>	A-II.3
<u>INSTRUCTIONS</u>	A-II.5
<u>SURVEY PURPOSE.....</u>	A-II.5
<u>SURVEY CONDUCT AND RESPONSIBILITIES.....</u>	A-II.5
<u>PASSINGER OPINION SURVEY.....</u>	A-II.6
APPENDIX III – SURVEY COMMENTS.....	A-III.1
APPENDIX IV – FINANCIAL DATA	A-IV.1