

**2002 Status of the Nation's
Highways, Bridges, and Transit:**

Conditions & Performance



REPORT TO CONGRESS



U.S. Department
of Transportation

**Federal Highway
Administration**

**Federal Transit
Administration**

Table of Contents

Introduction	xxv
Highlights	xxxi
Executive Summary	
The Role of Highways and Transit	ES-1
System and Use Characteristics: Highway and Bridge	ES-2
System and Use Characteristics: Transit	ES-3
System Conditions: Highway and Bridge	ES-4
System Conditions: Transit	ES-5
Operational Performance: Highway	ES-6
Operational Performance: Transit	ES-7
Safety Performance: Highway	ES-8
Safety Performance: Transit	ES-9
Finance: Highway and Bridge	ES-10
Finance: Transit	ES-11
Capital Investment Requirements: Highway and Bridge	ES-12
Capital Investment Requirements: Transit	ES-13
Comparison of Spending and Investment Requirements: Highway and Bridge	ES-14
Comparison of Spending and Investment Requirements: Transit	ES-15
Impacts of Investment: Highway and Bridge	ES-16
Impacts of Investment: Transit	ES-17
Sensitivity Analysis: Highway and Bridge	ES-18
Sensitivity Analysis: Transit	ES-19
Federal Bridge Program/Status of the Nation's Bridges	ES-20
National Security	ES-21
Highway Transportation in Society	ES-22
The Importance of Public Transportation	ES-22
Macroeconomic Benefits of Highway Investment	ES-23
Pricing	ES-23
Asset Management	ES-24
Travel Model Improvement Program	ES-24
Air Quality	ES-25
Federal Safety Initiatives	ES-26
Operations Strategies	ES-27
Freight	ES-27
Interstate System	ES-28
National Highway System	ES-28
NHS Freight Connectors	ES-29
Highway-Rail Grade Crossings	ES-29
Transit on Federal Lands	ES-30
Investment Requirements Methodology	ES-30

Part I: Description of Current System	I-1
Introduction	I-2
Chapter 1: The Role of Highways and Transit	1-1
The Nation's Transportation System	1-2
The Role of Highway Transportation	1-2
The Role of Public Transportation	1-3
Balanced Transportation: The Complementary Roles of Highways and Transit	1-4
Chapter 2: System and Use Characteristics	2-1
Summary	2-2
Highway and Bridge System and Use Characteristics	2-4
System Characteristics	2-4
Highways and Bridges by Ownership	2-4
Highways and Bridges by Purpose	2-6
Intelligent Transportation System Characteristics	2-12
Use Characteristics	2-13
U.S. Transit System Characteristics	2-17
Transit Services and Jurisdiction	2-17
Urban Transit Systems	2-17
Coverage of Transit Systems (Urban Route Miles)	2-19
System Capacity	2-19
Passenger Travel	2-20
Vehicle Occupancy	2-20
Rural Transit Systems	2-21
Transit System Characteristics for Americans with Disabilities and the Elderly	2-22
Chapter 3: System Conditions	3-1
Summary	3-2
Highway Conditions	3-3
Transit	3-4
Road Conditions	3-5
Pavement Terminology & Measurements	3-5
Overall Pavement Conditions	3-8
Rural and Urban Pavement Conditions	3-8
Pavement Condition by Functional Classification	3-11
Roadway Alignment	3-13
Lane Width	3-13
Pavement Condition Based on Old Classification System	3-16
Bridge Conditions	3-19
Bridge Condition Ratings	3-19
Number of Deficient Bridges	3-20
Deck Area on Deficient Bridges	3-29
Transit System Conditions	3-31
Bus Vehicle Conditions	3-32
Urban Bus Maintenance Facilities	3-32

Age	3-32
Condition	3-34
Rail Vehicle Conditions	3-34
Urban Rail Maintenance Facilities	3-36
Other Urban Rail Infrastructure	3-37
Rural Transit Vehicles and Facilities	3-38
Special Service Vehicles	3-39
 Chapter 4: Operational Performance	 4-1
Summary	4-2
Highway Operational Performance	4-4
The Concern with Operational Performance	4-5
New Operational Performance Measures	4-6
Percent of Additional Travel Time	4-6
Annual Hours of Delay	4-8
Percent of Travel Under Congested Conditions	4-10
Cost of Congestion	4-12
Safety Effects of Congestion	4-12
Other Operational Performance Measures:	4-13
Length of Time of Trip and Average Trip Speed	4-13
DVMT per Lane-Mile	4-13
V/SF Ratio	4-14
Future Research	4-15
System Reliability	4-16
Bottlenecks	4-16
Deployment of ITS Systems	4-17
Transit Operational Performance	4-18
Frequency and Reliability of Services	4-18
Seating Conditions	4-19
Operating Speeds	4-20
Vehicle Utilization	4-21
 Chapter 5: Safety Performance	 5-1
Summary	5-2
Highway Safety Performance	5-4
Overall Fatalities and Injuries	5-4
Cost of Highway Crashes	5-8
Types of Highway Fatalities	5-8
Crashes by Vehicle Type	5-10
Crashes by Age Group	5-12
Transit Safety	5-14
 Chapter 6: Finance	 6-1
Summary	6-2
Highway and Bridge Finance	6-4
Revenue Sources	6-4

Historical Revenue Trends	6-6
Highway Expenditures	6-8
Types of Highway Expenditures	6-9
Historical Expenditure and Funding Trends	6-10
Constant Dollar Expenditures	6-14
Constant Dollar Expenditures per VMT	6-16
Highway Capital Outlay Expenditures	6-17
Capital Outlay by Improvement Type	6-17
Transit Finance	6-22
Transit Funding	6-22
Level and Composition of Public Funding	6-22
Federal Funding	6-23
State and Local Funding	6-23
Level and Composition of System-Generated Funds	6-24
Trends in Public Funding	6-24
Funding in Current and Constant Dollars	6-26
Capital Funding and Expenditures	6-29
Operating Expenditures	6-31
Operating Expenditures by Transit Mode	6-31
Operating Expenditures by Transit Operations	6-32
Rural Transit	6-33
Innovative Finance	6-34
TIFIA	6-34
State Infrastructure Banks	6-34
GARVEE	6-34
Part II: Investment/Performance Analyses	II-1
Introduction	II-2
Highway and Bridge Investment Requirements	II-3
Investment Requirements for Highway Preservation and Capacity Expansion	II-3
Investment Requirements for Bridge Preservation	II-4
Investment Requirements for System Enhancements	II-5
Transit Investment Requirements	II-5
Comparisons between Reports	II-5
The Economic Approach to Transportation Investments	II-6
Background	II-6
Economic Focus versus Engineering Focus	II-7
Multimodal Analysis	II-9
Uncertainty in Transportation Investment Requirements Modeling	II-10
Chapter 7: Capital Investment Requirements	7-1
Summary	7-2
Highways and Bridges	7-3
Transit	7-4
Highway and Bridge Investment Requirements	7-5

Cost to Improve Highways and Bridges	7-5
Cost to Maintain Highways and Bridges	7-5
Investment Requirements by Improvements Type	7-6
System Preservation	7-6
System Expansion	7-7
System Enhancements	7-7
Sources of the Highway and Bridge Investment Requirements Estimates	7-9
External Adjustments	7-9
Adjustments for Missing State Data	7-10
Highway Economic Requirements System (HERS)	7-10
Highway Investment Backlog	7-12
HERS Investment Scenarios	7-12
National Bridge Investment Analysis System (NBIAS)	7-14
Bridge Investment Backlog	7-14
Bridge Investment Requirements Scenarios	7-15
Transit Investment Requirements	7-17
Investment Requirements	7-17
Average Annual Costs to Maintain and Improve Conditions and Performance	7-18
Average Annual Investment Requirements by Detailed Asset Type	7-21
Existing Deficiencies in the Transit Infrastructure	7-23
 Chapter 8: Comparison of Spending and Investment Requirements	 8-1
Summary	8-2
Highways and Bridges	8-2
Transit	8-3
Highway and Bridge Spending Versus Investment Requirements	8-4
Average Annual Investment Requirements Versus 2000 Spending	8-4
Types of Improvements	8-4
Investment Requirements Versus Projected 2001-2003 Spending	8-5
State and Local Funding	8-6
Projected Federal, State, and Local Expenditures	8-6
Comparison of Investment Requirements and Projected 2001-2003 Spending	8-6
Comparison with Previous Reports	8-7
Transit Capital Spending and Estimated Average Annual Investment Requirements	8-10
2000 Capital Spending and Estimated Average Annual Investment Requirements	8-10
Total Capital Spending	8-10
Capital Spending by Asset Type	8-10
Capital Spending on Vehicles	8-11
Capital Spending on Non-vehicle Infrastructure	8-11
Investment Requirements versus Projected 2001-2003 Spending	8-12
A Comparison of Authorized Capital Expenditures with Estimated Investment Requirements (2000-2003)	8-13
Comparison with Previous Reports	8-13

Chapter 9: Impacts of Investment	9-1
Summary	9-2
Impacts of Highway and Bridge Investment	9-3
Linkage Between Recent Condition and Performance Trends and Recent	
Spending Trends	9-3
Physical Conditions	9-3
Operational Performance	9-4
Impact of Future Investment on Highway Conditions and Performance	9-4
Impact on Physical Conditions	9-4
Impact on Performance	9-6
Impact of Investment on Different Types of Highway User Costs	9-8
Impact of Investment Levels on Future Travel Growth	9-9
Historic Travel Growth	9-10
Projected Average Annual Travel Growth	9-10
Overall Projected Travel, Year by Year	9-12
Impact of Investment on the Bridge Preservation Backlog	9-12
Transit Investment Impacts	9-15
Transit Investment, Historical Conditions, and Performance Trends	9-15
Historical Condition Trends	9-15
Historical Performance Trends	9-15
Historical Transit Investment and Estimated Rehabilitation and Replacement Needs	9-16
Impact of Investment Levels on Future Transit Use (PMT Growth)	9-16
Chapter 10: Sensitivity Analysis	10-1
Summary	10-2
Highway Sensitivity Analysis	10-3
Alternative Travel Growth Assumptions	10-3
Alternative Model Parameters	10-4
Elasticity Values	10-5
Value of Ordinary Travel Time	10-5
Value of Incident Delay Reduction	10-5
Value of a Statistical Life	10-6
Improvement Costs	10-6
Truck VMT Shares	10-7
Impacts of Alternative Parameters on the Cost to Maintain Highways and Bridges	10-7
Transit Sensitivity Analyses	10-9
Sensitivity to Changes in PMT	10-9
Sensitivity to a 25 Percent Increase in Capital Costs	10-10
Impact of Change in the Value of Time	10-10
Part III: Federal Bridge Program/Status of the Nation's Bridges	III-1
Introduction	III-2
Chapter 11: Federal Bridge Program/Status of the Nation's Bridges	11-1
Overview and Evolution of the Bridge Programs	11-2
Initiation and Evolution of the Bridge Programs	11-2

Information Collected Through the Bridge Inspection Program	11-4
Composition and Status of the Bridge System	11-6
Composition	11-6
Deficiencies	11-11
Actions Taken to Remove Deficiencies	11-13
Specific Bridge Types	11-15
Year of Construction by Functional Classification	11-15
Superstructure Material Types	11-18
Concrete Superstructure Bridges (Excluding Prestressed Concrete)	11-22
Steel Superstructure Bridges	11-25
Prestressed Concrete	11-27
Timber Bridges	11-30
Other Superstructure Materials	11-32
Culverts	11-34
Conclusion	11-38
Part IV: Special Topics	IV-1
Introduction	IV-2
Chapter 12: National Security	12-1
Introduction	12-2
Recovery Operations	12-2
Departmental Review of Transportation Security	12-2
Military Mobilization	12-3
Emergency Response Activities	12-5
Truck and Container Security	12-6
Highways and Transit Systems as Strategic Assets	12-7
Conclusion	12-7
Chapter 13: Highway Transportation in Society	13-1
Introduction	13-2
Changes in Travel Demand	13-2
Commuting	13-3
Shopping-related Travel	13-4
Education-related Travel	13-5
Leisure and Recreation Travel	13-6
Household Transportation Expenditures	13-7
Truck Travel	13-9
Future Mobility	13-19
Societal and Demographic Factors	13-10
An Aging Population	13-10
Environmental Factors	13-11
Research Opportunities	13-12

Chapter 14: Transit User Characteristics and System Benefits	14-1
The Role of Mass Transit	14-2
Transit Performance Monitoring System (TPMS)	14-2
User Characteristics	14-3
Public Policy Benefits of Transit	14-7
 Chapter 15: Macroeconomic Benefits of Highway Investment	 15-1
Introduction	15-2
Sources of Macroeconomic Benefits	15-2
Macroeconomic and User Benefit Measures	15-3
Research on Macroeconomic Benefits	15-3
 Chapter 16: Pricing	 16-1
Introduction	16-2
Types of Pricing Projects	16-3
Variable Tolls on Existing Toll Facilities	16-3
Variable Tolls on Added Highway Lanes	16-3
Conversion of HOV Lanes to HOT Lanes	16-4
FAIR Lanes	16-4
Other Pricing Concepts	16-4
The Value Pricing Pilot Program	16-5
The Benefits and Costs of Pricing	16-5
 Chapter 17: Transportation Asset Management	 17-1
Introduction	17-2
Transportation Asset Management: Background	17-2
What is TAM?	17-2
Why TAM?	17-3
What are the Key Elements of the TAM Framework?	17-3
Transportation Asset Management: 2000-2001 Accomplishments	17-4
Data and Information	17-5
Analytical Tools and Techniques and Business Processes and Practices	17-5
Training, Education, and Awareness	17-6
Related Activities	17-6
 Chapter 18: Travel Model Improvement Program	 18-1
Introduction	18-2
Outreach	18-2
Near Term Improvements-Updating Existing Forecasting Methods	18-3
Long Term Improvements-Developing a New Methodology	18-3
Freight Forecasting, Data Collection, and Land Use Modeling	18-4
Future Directions	18-4

Chapter 19: Air Quality	19-1
Introduction	19-2
The Clean Air Act and Air Quality	19-2
National Ambient Air Quality Standards	19-3
Hazardous Air Pollutants	19-3
Cleaner Air	19-4
Emissions Trends in Transportation	19-6
ISTEA and TEA-21	19-7
Congestion Mitigation Air Quality Improvement Program	19-8
Transportation Control Measures	19-9
Inspection and Maintenance Programs and Other Control Measures	19-10
Public Education	19-11
Transportation Planning and Conformity	19-11
Transit and Clean Air	19-11
Conclusion	19-16
Chapter 20: Federal Safety Initiatives	20-1
Introduction	20-2
Highway Safety Programs	20-3
Safety Restraint Systems	20-3
Responsible Driving Initiatives	20-4
Operations Strategies	20-4
Motor Carrier Safety	20-6
Infrastructure Enhancement	20-6
Uniform Traffic Standards	20-7
Data Collection	20-8
Transit Safety Programs	20-9
Modal Safety Program	20-9
Information Sharing and Technical Assistance Program	20-10
Training and Education	20-10
Substance Abuse Program	20-11
Security Review Program	20-11
Data Collection and Analysis Program	20-11
Intelligent Vehicle Initiative	20-12
Chapter 21: Operations Strategies	21-1
Introduction	21-2
The Need for Operations Strategies	21-2
Operations and Reliability	21-2
Operations and Timeliness	21-4
Operations and Safety and Security	21-5
Implementation of Operations Strategies	21-5
Infostructure	21-7
Regional Collaborations	21-8
Conclusion	21-9

Chapter 22: Freight	22-1
Introduction	22-2
Freight Transportation and the Economy	22-2
The Effects of Highway on Freight Transportation	22-3
Estimates of Commercial Vehicle Cost	22-3
Delays at International Border Crossings	22-4
Gateway Infrastructure	22-6
How Freight Transportation Affects the Highway System	22-7
Rest Areas	22-11
FHWA and Freight Transportation	22-12
Investment Requirements	22-13
Part V: Supplemental Analyses of System Components	V-1
Introduction	V-2
Chapter 23: Interstate System	23-1
History of the Interstate System	23-2
System and Use Characteristics	23-2
Physical Conditions	23-4
Pavement Condition	23-4
Lane Width, Alignment, and Access Control	23-5
Bridge Conditions	23-6
Operational Performance	23-7
Safety	23-7
Finance	23-8
Capital Investment Requirements	23-9
Rural Interstates	23-9
Urban Interstates	23-12
Bridge Preservation	23-14
Current Spending Versus Investment Requirements	23-14
Chapter 24: National Highway System	24-1
Introduction	24-2
History of the National Highway System	24-2
System and Use Characteristics	24-2
Physical Conditions	24-4
Operational Performance	24-6
Finance	24-6
Investment Requirements	24-7
Comparison of Spending and Investment Requirements	24-8
Chapter 25: NHS Freight Connectors	25-1
Summary of the Nation's Freight Connectors	25-2
Analytical Approach	25-3
Linear Deficiencies	25-4

Spot Deficiencies	25-5
Improvement Strategies	25-6
Spot Improvement Costs	25-8
Total NHS Freight Connector Investment Requirements	25-8
 Chapter 26: Highway-Rail Grade Crossings	 26-1
Introduction	26-2
Grade Separation Improvements	26-3
Grade Crossing Traffic Distribution Scenarios	26-4
Peak Traffic	26-4
Uniform Traffic	26-6
Delay and Time in Queue at Individual Grade Crossings	26-7
 Chapter 27: Transit Systems on Federal Lands	 27-1
Introduction	27-2
Description of Federal Lands	27-2
Funding Sources	27-3
Transit Needs	27-3
 Appendices	 VI-1
Introduction	VI-2
 Appendix A: Changes in Highway Investment Requirements Methodology	 A-1
Highway Economic Requirements System (HERS)	A-2
High Cost Capacity Improvements	A-3
Allocating HERS and NBIAS Results Across Improvement Types	A-3
Highway Investment Backlog	A-3
Travel Demand Elasticity	A-4
Changes in HERS Elasticity Procedures	A-5
HERS Congestion Analysis	A-5
Congestion Delay	A-6
Zero-Volume Delay	A-6
Incident Delay	A-6
Operations Strategies	A-6
HERS Emissions Cost Estimates	A-6
HERS Benefit Cost Analysis	A-8
BCA Period Length	A-8
Remaining Service Life	A-9
 Appendix B: Bridge Investment/Performance Methodology	 B-1
Overview of the Model	B-2
NBIAS Structure	B-2
NBIAS and Earlier Models	B-3
Planned Modifications to NBIAS	B-4

Appendix C: Transit Investment Condition and Investment Requirements Methodology	C-1
Transit Economic Requirements Model	C-2
TERM Investment Scenarios	C-2
Description of Model	C-3
Asset Rehabilitation and Replacement Module	C-3
Asset Expansion Module	C-4
Performance Enhancement Module	C-5
Benefit-Cost Tests	C-5
Investment Requirements for Rural and Specialized Transit Service Providers	C-6

List of Exhibits

Exhibit 2-1	Comparison of System and Use Characteristics with Those in the 1999 C&P Report	2-2
Exhibit 2-2	Highway Mileage by Owner, 1993 and 2000	2-4
Exhibit 2-3	Highway Mileage by Owner and by Size of Area, Selected Years 1993-2000	2-5
Exhibit 2-4	Bridges by Owner, 1996, 1998, and 2000	2-6
Exhibit 2-5	Highway Bridges by Owner, 2000	2-6
Exhibit 2-6	Highway Functional Classification Hierarchy	2-7
Exhibit 2-7	Percentage of Highway Miles, Lane Miles, and Vehicle Miles Traveled by Functional System and by Size of Area, 2000	2-9
Exhibit 2-8	Highway Route Miles by Functional System and by Size of Area, Selected Years 1993-2000	2-10
Exhibit 2-9	Highway Lane Miles by Functional System and by Size of Area, Selected Years 1993-2000	2-11
Exhibit 2-10	Bridges by Functional System, 1996, 1998, and 2000	2-12
Exhibit 2-11	Percentage of Deck Area by Functional System, 1996, 1998, and 2000	2-12
Exhibit 2-12	Deployment of Intelligent Transportation Systems (ITS) in 75 Metropolitan Areas, 1997, 1999, and 2000	2-13
Exhibit 2-13	Vehicle Miles (VMT) and Passenger Miles of Travel (PMT), 1993-2000	2-14
Exhibit 2-14	Highway Travel by Vehicle Type, 1993-2000	2-15
Exhibit 2-15	Highway Travel by System and Vehicle Type, 1993-2000	2-16
Exhibit 2-16	Urban Mass Transit Active Fleet and Infrastructure, 2000	2-18
Exhibit 2-17	Urban Transit Route Miles, 1991-2000	2-19
Exhibit 2-18	Transit Capacity, Urban Transit Capacity-Equivalent Vehicle Revenue Miles, 1991-2000	2-20
Exhibit 2-19	Urban Transit Passenger Miles, 1991-2000	2-20
Exhibit 2-20	Vehicle Occupancy, Passengers per Capacity-Equivalent Transit Vehicle, 1991-2000	2-21
Exhibit 2-21	Fleet Composition of Rural Transit Operators, 1999	2-21
Exhibit 2-22	Composition of Special Service Vehicles, 2000	2-22
Exhibit 2-23	Urban Transit Operators' ADA Vehicle Fleets, 2000	2-23
Exhibit 3-1	Comparison of System Conditions Statistics with Those in the 1999 Report	3-2
Exhibit 3-2	Present Serviceability Rating (PSR)	3-5
Exhibit 3-3	Pavement Condition Criteria (Old - New)	3-6
Exhibit 3-4	Ride Quality on the National Highway System	3-7
Exhibit 3-5	Acceptable Pavement	3-8
Exhibit 3-6	Acceptable Pavement By Area	3-9
Exhibit 3-7	Acceptable Rural Area Pavement	3-9
Exhibit 3-8	Acceptable Small Urban Area Pavement	3-10
Exhibit 3-9	Acceptable Urbanized Area Pavement	3-11
Exhibit 3-10	Ride Quality by Functional System, For Selected Years 1993 - 2000	3-12
Exhibit 3-11	Alignment Rating	3-13
Exhibit 3-12	Rural Horizontal Alignment Adequacy	3-14
Exhibit 3-13	Rural Vertical Alignment Adequacy	3-14

Exhibit 3-14	Rural Lane Width by Functional System, 2000	3-15
Exhibit 3-15	Small Urban and Urbanized Lane Width by Functional System, 2000	3-15
Exhibit 3-16	Miles of 12+ Foot Lane Width, 1993 - 2000	3-16
Exhibit 3-17	Percent Miles by Condition by Year	3-17
Exhibit 3-18	Rural Areas Pavement Condition by Functional Class, 2000	3-17
Exhibit 3-19	Small Urban Areas Pavement Condition by Functional System, 2000	3-18
Exhibit 3-20	Urbanized Areas Pavement Condition by Functional Class, 2000	3-18
Exhibit 3-21	Bridge Condition Ratings	3-19
Exhibit 3-22	Bridge Condition Conditions	3-20
Exhibit 3-23	Deficiencies for All Bridges, 2000	3-21
Exhibit 3-24	Percentage of Deficient Bridges, 1994-2000	3-21
Exhibit 3-25	Bridges: Percent Deficient by Ownership, 2000	3-21
Exhibit 3-26	Ownership of Structurally Deficient Bridges, 2000	3-22
Exhibit 3-27	Ownership of Functionally Obsolete Bridges, 2000	3-22
Exhibit 3-28	Rural and Urban Bridge Deficiencies, 1994-2000	3-23
Exhibit 3-29	Bridges: Percent Deficient by Functional System, 2000	3-24
Exhibit 3-30	Interstate Bridge Deficiencies, 1994-2000	3-25
Exhibit 3-31	Other Arterial Bridge Deficiencies, 1994-2000	3-26
Exhibit 3-32	Collector Bridge Deficiencies, 1994-2000	3-27
Exhibit 3-33	Local Bridge Deficiencies, 1994-2000	3-28
Exhibit 3-34	Deficient Bridge Deck Area by Owner, 1996, 1998, and 2000	3-29
Exhibit 3-35	Deck Area on Deficient Bridges by Functional System, 1996, 1998, and 2000	3-29
Exhibit 3-36	Deficient Bridge Deck Area by Functional Area, 2000	3-30
Exhibit 3-37	Definitions of Transit Asset Condition	3-32
Exhibit 3-38	Urban Transit Bus Fleet Count, Age and Condition 1987-2000	3-33
Exhibit 3-39	Age of Urban Bus Maintenance Facilities	3-33
Exhibit 3-40	Percentage Distribution of Condition of Urban Bus Maintenance Facilities, 2000	3-34
Exhibit 3-41	Urban Transit Rail Fleet Count, Age and Condition 1987-2000	3-35
Exhibit 3-42	Age of Urban Rail Maintenance Facilities	3-36
Exhibit 3-43	Percentage Distribution of Condition of Urban Rail Maintenance Facilities, 2000	3-36
Exhibit 3-44	Physical Condition of U.S. Transit Rail Infrastructure -- Selected Years, 1992-2000	3-37
Exhibit 3-45	Number of Overage Vehicles and Average Vehicle Age in Rural Transit	3-38
Exhibit 3-46	Condition of Rural Bus Maintenance Facilities	3-39
Exhibit 4-1	Comparison of Highway and Transit Operational Performance Statistics with Those in the 1999 C&P Report	4-2
Exhibit 4-2	Percent of Additional Travel Time, 1987-2000	4-6
Exhibit 4-3	Percent of Additional Travel Time by Urbanized Area Size, 1987 - 2000	4-7
Exhibit 4-4	Percent Additional Travel Time by Urbanized Area Size, 1987 vs 2000	4-8
Exhibit 4-5	Annual Hours of Traveler Delay, 1987 to 2000	4-8
Exhibit 4-6	Annual Hours of Traveler Delay by Urbanized Area Size, 1987 to 2000	4-9
Exhibit 4-7	Annual Hours of Traveler Delay by Urbanized Area Size, 1987 vs 2000	4-10
Exhibit 4-8	Percent of Travel Under Congested Conditions, 1987 - 2000	4-10
Exhibit 4-9	Percent of Travel Under Congested Conditions, 1987 - 2000	4-11
Exhibit 4-10	Annual Cost of Congestion - Top 20 Urban Areas	4-12

Exhibit 4-11	DVMT per Lane-Mile for Rural Systems	4-13
Exhibit 4-12	DVMT per Lane-Mile for Small Urban Systems	4-14
Exhibit 4-13	DVMT per Lane-Mile for Urbanized Systems	4-14
Exhibit 4-14	Percent of Peak-Hour Travel Exceeding V/SF Thresholds	4-15
Exhibit 4-15	Transit Passenger Waiting Times and Service Reliability	4-18
Exhibit 4-16	Percentage of Passengers Unable to Find A Seat Upon Boarding According to Trip Type	4-19
Exhibit 4-17	Passenger-Mile Weighted Average Operating Speed by Transit Mode, 1987-2000	4-20
Exhibit 4-18	Rail Vehicles' Average Operating Speeds, 2000	4-21
Exhibit 4-19	Non-rail Vehicles' Average Operating Speeds, 2000	4-22
Exhibit 4-20	Transit Vehicle Utilization Annual Passenger Miles Per Capacity-Equivalent Vehicle by Mode 1987-2000	4-22
Exhibit 4-21	Transit Vehicle Utilization Passenger Miles per Capacity-Equivalent Vehicle, 1987-2000	4-23
Exhibit 5-1	Comparison of Safety Statistics with Those in the 1999 C&P Report	5-2
Exhibit 5-2	Summary of Fatality and Injury Rates, 1966-2000	5-5
Exhibit 5-3	Fatalities, 1980-2000	5-6
Exhibit 5-4	Fatality Rate, 1980-2000	5-6
Exhibit 5-5	Fatalities by Functional System, 1994-2000	5-7
Exhibit 5-6	Fatality Rates by Functional System, 1994-2000	5-7
Exhibit 5-7	Crashes by Severity, 1994-2000	5-7
Exhibit 5-8	Cost by Crash Type	5-8
Exhibit 5-9	Highway Fatalities by Type, 2000	5-9
Exhibit 5-10	Alcohol-Related Fatalities, 1993-2000	5-9
Exhibit 5-11	Fatalities for Vehicle Occupants by Type of Vehicle, 1993-2000	5-11
Exhibit 5-12	Injuries for Vehicle Occupants by Type of Vehicle, 1993-2000	5-11
Exhibit 5-13	Motorcycle Occupants Killed or Injured Per Registered Vehicle, 1993-2000	5-12
Exhibit 5-14	Age of Drivers Involved in Fatal Crashes, 2000	5-12
Exhibit 5-15	Annual Transit-Related Incidents, Injuries, and Fatalities, 1990-2000 Directly Operated Service	5-14
Exhibit 5-16	Transit-Related Incidents, Injuries and Fatalities per 100 Million Passenger Miles Traveled, 1990-2000	5-15
Exhibit 5-17	Transit-Related Incidents, Injuries, and Fatalities Annual Rates Per 100 Million Passenger Miles by Mode, 1990-2000 Directly Operated Service Only (Purchased Transportation not included)	5-16
Exhibit 5-18	Transit-Related Incident Rates per 100 Million Passenger Miles Traveled By Mode, 1990-2000	5-16
Exhibit 5-19	Transit-Related Injuries per 100 Million Passenger Miles Traveled By Mode, 1990-2000	5-17
Exhibit 5-20	Transit-Related Fatalities per 100 Million Passenger Miles Traveled By Mode, 1990-2000	5-17
Exhibit 6-1	Comparison of Highway and Transit Finance Statistics with Those in the 1999 C&P Report	6-2

Exhibit 6-2	Revenue Sources for Highways, 2000	6-4
Exhibit 6-3	Disposition of Highway-User Revenue By Level of Government, 2000	6-5
Exhibit 6-4	Highways Revenue Sources by Type, All Units of Government 1921-2000	6-6
Exhibit 6-5	Percent of Highway Revenue Derived From User Charges, for each Level of Government, 1957-2000	6-7
Exhibit 6-6	Direct Expenditures for Highways, by Expending Agencies and by Type, 2000	6-9
Exhibit 6-7	Expenditures for Highways by Type, All Units of Government 1957-2000	6-11
Exhibit 6-8	Funding for Highways by Level of Government, 1957-2000	6-12
Exhibit 6-9	Total Highway Expenditures in Current and Constant 2000 Dollars, All Units of Government, 1957-2000	6-14
Exhibit 6-10	Highway Capital, Maintenance, and Other Non-Capital Expenditures in Current and Constant 2000 Dollars, All Units of Government 1957-2000	6-15
Exhibit 6-11	Highway Expenditures per Vehicle Mile of Travel, All Units of Government 1957-2000	6-16
Exhibit 6-12	Highway Capital Outlay by Functional System, 2000	6-17
Exhibit 6-13	Highway Capital Outlay by Improvement Type, 2000	6-19
Exhibit 6-14	Distribution of Highway Capital Outlay By Improvement Type, 1993, 1995, 1997 and 2000	6-20
Exhibit 6-15	Distribution of Capital Outlay By Improvement Type and Functional System, 2000	6-21
Exhibit 6-16	Revenue Sources for Transit Financing, 2000	6-22
Exhibit 6-17	Transit System Revenue Sources, 2000	6-22
Exhibit 6-18	Federal Sources of Transit Financing	6-23
Exhibit 6-19	State Sources of Transit Financing, 2000	6-23
Exhibit 6-20	Local Sources of Transit Finance, 2000	6-24
Exhibit 6-21	Growth in Public Funding for Transit by Government Jurisdiction, 1960-2000	6-24
Exhibit 6-22	Sources of FHWA Flexible Fund Transfers to FTA, 2000	6-25
Exhibit 6-23	Federal Share of Public Funding for Transit, 1961-2000	6-26
Exhibit 6-24	Public Funding for Transit by Government Jurisdiction Selected Years, 1960-2000	6-27
Exhibit 6-25	A Comparison of Current and Constant 2000 dollar Total Transit Funding Levels, 1956-2000	6-28
Exhibit 6-26	Public Funding for Transit 1956-2000	6-28
Exhibit 6-27	Sources of Funds for Transit Capital Expenditures, 1990-2000	6-29
Exhibit 6-28	New Starts Funding, 1998-2001	6-30
Exhibit 6-29	Transit Capital Expenditures by Type of Expenditure, 2000	6-31
Exhibit 6-30	Composition of Transit Operational Expenditures by Mode, 2000	6-31
Exhibit 6-31	Mass Transit Operating Expenses by Mode, 1988-2000	6-32
Exhibit 6-32	Disbursements for Transit Operations - All Modes by Function, 2000	6-32
Exhibit 6-33	Sources of Rural Transit Operators Budget for Operating Expenditures, 2000	6-33
Exhibit II-1	Economically Efficient Investment Requirements	II-8
Exhibit 7-1	Highway, Bridge and Transit Investment Requirement Projections Compared With Data from the 1999 C&P Report	7-2
Exhibit 7-2	Average Annual Investment Required to Improve Highways and Bridges	7-6
Exhibit 7-3	Average Annual Investment Required to Maintain Highways and Bridges	7-7

Exhibit 7-4	Cost to Improve Highways and Bridges 2001-2020, Distribution by Improvement Type	7-8
Exhibit 7-5	Sources of the Highway and Bridge Investment Requirements Estimates	7-9
Exhibit 7-6	HERS Investment Requirements Scenarios 2001-2020	7-13
Exhibit 7-7	NBIAS Investment Requirements Scenarios 2001-2020	7-15
Exhibit 7-8	Summary of Average Annual Transit Investment Requirements, 2001-2020	7-18
Exhibit 7-9	Average Annual Transit Investment Requirements by Type of Improvement	7-18
Exhibit 7-10	Transit Infrastructure Annual Average Cost To Maintain and Conditions and Performance, 2001-2020	7-19
Exhibit 7-11	Transit Infrastructure Average Annual Investment Requirements by Asset Type, 2001-2020	7-22
Exhibit 8-1	Highway, Bridge and Transit Spending Versus Investment Requirements Compared With Data from the 1999 C&P Report	8-2
Exhibit 8-2	Average Annual Investment Requirements versus 2000 Capital Outlay	8-5
Exhibit 8-3	Highways and Bridges Investment Requirements and 2000 Capital Outlay, Percentage by Improvement Type	8-5
Exhibit 8-4	Projected Highway Capital Expenditures 2000-2003, All Levels of Government	8-7
Exhibit 8-5	Average Annual Investment Required to Maintain and Improve Highways and Bridges Versus Projected 2001-2003 Capital Outlay	8-7
Exhibit 8-6	Average Annual Investment Requirements Versus Current Spending: 1995, 1997, 1999, and 2002 C&P Reports	8-8
Exhibit 8-7	2000 Transit Capital Expenditures Versus Estimated Average Annual Investment Requirements	8-10
Exhibit 8-8	Average Annual Transit Investment Requirements Versus 2000 Capital Spending by Asset Type	8-11
Exhibit 8-9	A Comparison of 2000 Transit Capital Spending with Average Annual Investment Requirements	8-12
Exhibit 8-10	Transit Capital Funding Levels, 2000-2003	8-12
Exhibit 8-11	Projected Transit Available Capital Funding Versus Investment Requirements, 2000-2003	8-14
Exhibit 8-12	Average Annual Transit Investment Requirements Versus Current Spending: 1995, 1997, and 1999 Conditions and Performance Reports	8-14
Exhibit 9-1	Projected Changes in Highway Physical Conditions Compared to 2000 Levels for Different Possible Funding Levels	9-5
Exhibit 9-2	Projected Changes in Highway Performance Compared to 2000 Levels for Different Possible Funding Levels	9-6
Exhibit 9-3	Projected Changes in Highway Performance Compared to 2000 Levels for Different Possible Funding Levels	9-7
Exhibit 9-4	Projected Changes in Highway User Costs Compared to 2000 Levels for Different Possible Funding Levels	9-8
Exhibit 9-5	Annual VMT Growth Rates, 1980 to 2000	9-10
Exhibit 9-6	Projected Average Annual VMT Growth Rates 2001-2020 for Different Possible Funding Levels	9-11

Exhibit 9-7	Annual Projected Highway VMT at Different Funding Levels	9-13
Exhibit 9-8	Projected Changes in Bridge Preservation Backlog Compared to 2000 Levels for Different Possible Funding Levels	9-14
Exhibit 9-9	Current Transit Capital Spending Levels vs Rehabilitation and Replacement Needs, 1993-2000	9-16
Exhibit 10-1	Impact of Alternate VMT Growth Assumptions on Investment Requirements	10-4
Exhibit 10-2	Impact of Alternate Model Features and Parameters on Investment Requirements: Cost to Improve Highways & Bridges	10-5
Exhibit 10-3	Impact of Alternate Model Features and Parameters on Investment Requirements: Cost to Maintain Highways & Bridges	10-7
Exhibit 10-4	Impact of Alternative PMT Growth Rates on Transit Investment Requirements	10-9
Exhibit 10-5	Impact of a 25 Percent Increase in Capital Costs on Transit Investment Requirements	10-10
Exhibit 10-6	Impact of Change in the Value of time on Transit Investment Requirements	10-11
Exhibit 11-1	Summary of Major Bridge Inspection and Bridge Program Funding Legislation and Noteworthy Changes	11-4
Exhibit 11-2	Bridges by Ownership and Functional Classification	11-7
Exhibit 11-3	Percent Bridges by Owner	11-8
Exhibit 11-4	State Owned Bridges	11-9
Exhibit 11-5	Locally Owned Bridges	11-9
Exhibit 11-6	Average Year of Construction by Functional Classification and Ownership - All Structures	11-10
Exhibit 11-7	Year of Construction and Cumulative ADT - All Structures	11-10
Exhibit 11-8	Number and Percent of Deficient Bridges by Ownership and Functional Class	11-12
Exhibit 11-9	Percent Deficient - All Bridges	11-12
Exhibit 11-10	Percent Deficient Bridges by Numbers, ADT and Deck Area by Rural and Urban Designation and Functional Class	11-13
Exhibit 11-11	Number of Bridges Reconstructed or Rehabilitated and Average Number of Years Before the Action was Undertaken	11-14
Exhibit 11-12	Year of Construction and Cumulative ADT - All Superstructure Materials	11-15
Exhibit 11-13	Interstate Bridges	11-16
Exhibit 11-14	Other Arterial Bridges	11-16
Exhibit 11-15	Collector Bridges	11-17
Exhibit 11-16	Local Bridges	11-17
Exhibit 11-17	Bridges by Type of Superstructure Material	11-18
Exhibit 11-18	Bridges by Type of Superstructure Material and Functional Class	11-19
Exhibit 11-19	Bridges by Type of Superstructure Material, by Owner and Functional Classification	11-20
Exhibit 11-20	Rural Superstructure Materials by Owner and Functional Classification	11-21
Exhibit 11-21	Urban Superstructure Materials by Owner and Functional Classification	11-22
Exhibit 11-22	Average Year of Construction and Standard Deviation for Concrete Bridges by Functional Classification and Ownership	11-23
Exhibit 11-23	Year of Construction and Cumulative ADT - Concrete Superstructure Bridges (excluding prestressed concrete superstructures)	11-23

Exhibit 11-24	Percent Deficient - Concrete Superstructure Bridges	11-24
Exhibit 11-25	Year of Construction and Cumulative ADT - Deficient Concrete Superstructure Bridges (excluding prestressed concrete superstructures)	11-24
Exhibit 11-26	Average Year of Construction and Standard Deviation for Steel Bridges by Functional Classification and Owner	11-25
Exhibit 11-27	Year of Construction and Cumulative ADT - Steel Superstructure Bridges	11-26
Exhibit 11-28	Percent Deficient - Steel Superstructure Bridges	11-26
Exhibit 11-29	Year of Construction and Cumulative ADT - Deficient Steel Superstructure Bridges	11-27
Exhibit 11-30	Average Year of Construction and Standard Deviation for Concrete Bridges by Functional Classification and Ownership	11-28
Exhibit 11-31	Year of Construction and Cumulative ADT - Prestressed Concrete Superstructure Bridges	11-28
Exhibit 11-32	Percent Deficient - Prestressed Concrete Superstructure Bridges	11-29
Exhibit 11-33	Year of Construction and Cumulative ADT - Deficient Prestressed Concrete Superstructure Bridges	11-29
Exhibit 11-34	Average Year of Construction and Standard Deviation for Timber Bridges by Functional Classification and Ownership	11-30
Exhibit 11-35	Year of Construction and Cumulative ADT - Timber Superstructure Bridges	11-31
Exhibit 11-36	Percent Deficient - Timber Superstructure Bridges	11-31
Exhibit 11-37	Year of Construction and Cumulative ADT - Deficient Timber Superstructure Bridges	11-32
Exhibit 11-38	Average Year of Construction and Standard Deviation for Concrete Bridges by Functional Classification and Ownership	11-33
Exhibit 11-39	Year of Construction and Cumulative ADT - Other Superstructure Materials	11-33
Exhibit 11-40	Percent Deficient - Other Superstructure Materials	11-34
Exhibit 11-41	Year of Construction and Cumulative ADT - Deficient Bridges with Otheer Superstructure Materials	11-34
Exhibit 11-42	Percentage of NBI Records by Design Type	11-35
Exhibit 11-43	Bridges and Culverts by Functional Classification and Ownership	11-36
Exhibit 11-44	Average Year of Construction for Traditional Bridge Designs by Ownership and Functional Classification	11-36
Exhibit 11-45	Year of Construction and Cumulative ADT for Traditional Bridge Designs	11-37
Exhibit 11-46	Average Year of Construction for Culverts by Ownership & Functional Classification	11-37
Exhibit 11-47	Year of Construction and Cumulative ADT for Culvert Designs	11-38
Exhibit 12-1	Strategic Highway Corridor Network (STRAHNET) Mileage, 2000	12-3
Exhibit 12-2	Strategic Highway Corridor Network (STRAHNET) Condition, 2000	12-3
Exhibit 12-3	Percent of STRAHNET Mileage Rated Acceptable, 1995-2000	12-3
Exhibit 12-4	Number of Deficient STRAHNET Bridges, 2000	12-4
Exhibit 12-5	Percent of STRAHNET Bridges Rated Deficient, 1995-2000	12-5
Exhibit 12-6	Percentage of Deficient Deck Area on STRAHNET Bridges, 2000	12-5
Exhibit 12-7	Percent of STRAHNET Routes Under Bridges With Clearance Greater Than 16 Feet, 1995-2000	12-5

Exhibit 13-1	Percent Change in Travel and Demand: 1969-1995	13-3
Exhibit 13-2	Distribution of Travel Time to Work	13-4
Exhibit 13-3	Percent of Travel for Shopping, 1983-1995	13-4
Exhibit 13-4	Trends in Means of Transportation to School	13-5
Exhibit 13-5	Percent of School Trips by Age Group	13-6
Exhibit 13-6	Person Trips by Means of Travel for Leisure	13-6
Exhibit 13-7	Private Vehicle Share of Total Private Vehicle/Airplane Recreation Long Distance Trips by Roundtrip Distance and Income, 1995	13-7
Exhibit 13-8	Long-distance Travel by Season	13-7
Exhibit 13-9	Consumer Expenditure Trends	13-8
Exhibit 13-10	Household Transportation Expenditures, 1999	13-8
Exhibit 13-11	Trucks, Truck Miles, and Average Miles Per Truck by Major Use	13-9
Exhibit 13-12	Percent of the U.S. Population Under 17 years and 55 and over	13-10
Exhibit 13-13	The Proportion of Elderly who Drive	13-11
Exhibit 13-14	Age of Household Vehicle Fleet by Vehicle Type	13-12
Exhibit 14-1	Categorization of Transit Authorities by the TPMS Project	14-2
Exhibit 14-2	Car Availability	14-3
Exhibit 14-3	Frequency of Use	14-3
Exhibit 14-4	Percentage of Trips According to Duration of Rider Use	14-4
Exhibit 14-5	Transit Access	14-4
Exhibit 14-6	Trip Purpose	14-5
Exhibit 14-7	Work Trips as a Percentage of Total Trips	14-5
Exhibit 14-8	College and School Trips as a Percentage of Total Trips	14-5
Exhibit 14-9	Alternative Means of Making a Transit Trip	14-6
Exhibit 14-10	Percentage Distribution of Trips by Passenger Age	14-6
Exhibit 14-11	Distribution of Trips by Passenger Household Income Level: All Trips, Bus Trips and Rail Trips	14-7
Exhibit 14-12	Classification of Transit Trips by Public Benefit Provided	14-8
Exhibit 14-13	Benefits of Transit to Riders	14-8
Exhibit 14-14	Participating Transit Systems	14-9
Exhibit 16-1	Annual Net Benefits of Alternative Pricing Strategies in Conjunction with Expansion of a Prototypical Highway	16-6
Exhibit 19-1	Percent Decrease in Concentration of Criteria Pollutants, 1990-1992	19-4
Exhibit 19-2	Number of Areas Designated Nonattainment, 1992-2002	19-4
Exhibit 19-3	Percentage of Change in Demographics and Transportation, 1970-1999	19-5
Exhibit 19-4	Difference Between Travel and Highway Capacity Growth, 1990-1994	19-6
Exhibit 19-5	Mode Share for Home to Work Travel, 2000	19-6
Exhibit 19-6	Total Emissions of Carbon Monoxide, NO _x , VOCs, and PM-10, 1970-1999	19-7
Exhibit 19-7	Light-Duty Vehicle Emissions Under Tier II and Low Sulfur Gasoline Rule, 2004-2030	19-8
Exhibit 19-8	Heavy-Duty Vehicle Emissions under Heavy-Duty Engine/Fuel Rule, 2007-2030	19-8
Exhibit 19-9	CMAQ Obligation Levels and Projects	19-9
Exhibit 19-10	Transportation Control Measures	19-10

Exhibit 19-11	Areas Meeting On-Road Mobile Source Emissions Goals Fiscal Years, 1996-2001	19-12
Exhibit 19-12	Comparison of Emissions by Vehicle Type, 1998	19-13
Exhibit 19-13	Total Bus Purchases, 1998-1999	19-13
Exhibit 19-14	Transit Fuel Consumption Trends, 1996-2000	19-14
Exhibit 19-15	Percent of National Bus Fleet Using Alternative Fuels, 1992-2000	19-14
Exhibit 19-16	Number of Transit Agencies with Alternative Fuel Bus Purchases, 1998-1999	19-15
Exhibit 19-17	Alternative Fuel Investments, 1999-2001	19-15
Exhibit 20-1	Estimated Number of Lives Saved by Restraint Systems, 1994-2000	20-4
Exhibit 20-2	Highway-Rail Intersections Under Electronic Surveillance	20-10
Exhibit 21-1	Traveler Problems and Operational Responses	21-3
Exhibit 22-1	Comparison of Outbound and Inbound Times Obtained	22-5
Exhibit 22-2	International Gateway Projects	22-8
Exhibit 22-3	The WEFA Long-Term Baseline Forecast Assumptions	22-9
Exhibit 22-4	Top Commodities in 1998 and 2020	22-10
Exhibit 22-5	Comparison of Growth in Truck VMT, 1998 to 2020	22-10
Exhibit 23-1	Interstate Route & Lane Miles, Selected Years 1993-2000	23-1
Exhibit 23-2	Number of Interstate Bridges, 1996, 1998, and 2000	23-2
Exhibit 23-3	Interstate Vehicle Miles Traveled (VMT), 1993-2000	23-3
Exhibit 23-4	Interstate Miles Traveled by Vehicle Type, 1993-2000	23-4
Exhibit 23-5	Percent of Interstate Miles with Acceptable Ride Quality for Selected Years	23-4
Exhibit 23-6	Percent of Interstate Miles with Good Ride Quality for Selected Years	23-5
Exhibit 23-7	Rural Interstate Vertical/Horizontal Alignment Status for 2000	23-5
Exhibit 23-8	Age Composition of Rural Interstate Bridges	23-6
Exhibit 23-9	Age Composition of Urban Interstate Bridges	23-6
Exhibit 23-10	Urbanized Interstate Operational Performance Measures	23-7
Exhibit 23-11	Number of Fatalities on the Interstate System, 1994 to 2000	23-8
Exhibit 23-12	Fatality Rates on the Interstate System, 1994 - 2000	23-8
Exhibit 23-13	Interstate Capital Expenditures, 2000	23-8
Exhibit 23-14	Projected Rural Interstate Pavement Condition in 2020 for Different Possible Funding Levels	23-10
Exhibit 23-15	Projected Rural Interstate Conditions and Performance in 2020 for Different Possible Funding Levels	23-11
Exhibit 23-16	Projected Urban Interstate Pavement Condition in 2020 for Different Possible Funding Levels	23-12
Exhibit 23-17	Projected Urban Interstate Conditions and Performance in 2020 for Different Possible Funding Levels	23-13
Exhibit 23-18	Projected Changes in the Interstate Bridge Preservation Backlog Compared to 2000 Levels for Different Possible Funding Levels	23-14
Exhibit 24-1	Highway Route Mileage, Lane Mileage, and Vehicle-Miles Traveled on the National Highway System Compared to All Roads, by Functional System, 2000	24-3

Exhibit 24-2	NHS Mileage by Owner, 2000	24-4
Exhibit 24-3	NHS Miles with Acceptable Pavement and DVMT on Acceptable NHS Pavement	24-4
Exhibit 24-4	Rural NHS DVMT on Good and Acceptable Pavements	24-5
Exhibit 24-5	Urban NHS DVMT on Good And Acceptable Pavements	24-5
Exhibit 24-6	Percent of NHS Bridges Rated Deficient	24-5
Exhibit 24-7	Percent of Deck Area on NHS Bridges Rated Deficient	24-6
Exhibit 24-8	Highway Capital Outlay on the NHS by Functional System, 2000	24-6
Exhibit 24-9	NHS Component of Cost to Improve Highways and Bridges	24-7
Exhibit 24-10	NHS Component of Cost to Maintain Highways and Bridges	24-8
Exhibit 24-11	Average Annual Investment Required to Maintain and Improve Highways and Bridges Versus 2000 Capital Outlay on and off the NHS	24-8
Exhibit 25-1	Total NHS Connector Mileage by Functional Class	25-2
Exhibit 25-2	Freight Connectors Analysis Approach	25-3
Exhibit 25-3	Linear Deficiencies by Improvement Type	25-4
Exhibit 25-4	Linear Deficiencies by Population Groups	25-5
Exhibit 25-5	Spot Deficiencies	25-5
Exhibit 25-6	Spot Improvements by Linear Type	25-6
Exhibit 25-7	Cost to Eliminate Linear Deficiency Backlog	25-6
Exhibit 25-8	Cost of Program to Eliminate Linear Deficiency Backlog	25-7
Exhibit 25-9	Cost to Improve Linear Performance Level by Population Group	25-7
Exhibit 25-10	Cost of Program to Improve Linear Performance	25-7
Exhibit 25-11	Spot Improvement Costs	25-8
Exhibit 25-12	Cost to Eliminate Backlog Deficiencies	25-8
Exhibit 26-1	Projected Change In 2022 Highway User and Emissions Costs at Grade Crossings Compared To 2002 Levels For Different Possible Funding Levels	26-4
Exhibit 26-2	Annual Increase in Delay and Associated Costs for Sample Crossings in 2022 Compared to 2003 Levels	26-5
Exhibit 26-3	Annual Increase in Delay and Associated Costs for Sample Crossings in 2022 Compared to 2003 Levels	26-6
Exhibit 26-4	Delay and Time in Queue Per Lane for All Vehicles per 3.6 Minute Grade Crossing Closure	26-7
Exhibit 26-5	Delay and Time in Queue Per Lane for All Vehicles per 4.5 Minute Grade Crossing Closure	26-8
Exhibit 27-1	Summary of Transit Needs on Federally Managed Lands 2001-2020	27-4
Exhibit 27-2	Potential Transit Needs by Agency, System Status and Type of Expenditure, 2001-2020	27-6
Exhibit C-1	Asset Decay Curves	C-1