

Table of Contents

Summary

Chapter I - Purpose and Need

A. Project Overview.....	I-1
1. I-70 Background.....	I-1
2. Project History.....	I-1
3. Missouri Long-Range Transportation Plan and the Missouri Transportation Investment Strategy	I-2
B. Project Background Information.....	I-3
1. Regional Transportation System	I-3
a. Roadway System	I-3
b. Rail System	I-4
c. Other Elements	I-4
2. Existing I-70	I-4
3. Modeled Improvements.....	I-5
4. Proposed.....	I-5
C. Purpose and Need	I-6
1. Roadway Capacity	I-6
a. Traffic Trends on I-70	I-6
b. Travel Markets.....	I-7
c. Missouri Statewide Travel Demand Model.....	I-8
d. Population and Employment Forecasts	I-9
e. Highway Operations (Level-of-Service)	I-11
f. Need for Additional Capacity	I-14
2. Traffic Safety	I-14
a. Statewide Accident Statistics.....	I-14
b. I-70 Accident Statistics	I-15
c. Truck Accident Analysis	I-16
d. Property Damage Only (PDO) Accident Analysis	I-17
e. Injury Accident Analysis.....	I-18
f. Fatal Accident Analysis	I-19
g. Accident Severity Analysis.....	I-20
h. Accident Rates	I-20
i. Need for Safety Upgrades	I-21
3. Roadway Design Features	I-22
a. Roadside Features	I-22
b. Roadway Alignment Feature	I-22
c. Typical Interchanges	I-23
d. Ancillary Features.....	I-24
e. Need for Facility Upgrades	I-24
4. System Preservation	I-25
a. Pavement Condition	I-25
b. Condition of Bridges	I-27
c. Need for Preservation.....	I-30
5. Goods Movement.....	I-31
a. Overview of Freight Flow.....	I-31

b.	Statewide Truck Freight Analysis.....	I-32
c.	I-70 Truck Traffic	I-33
d.	Need for Efficient Movement of Goods	I-34
6.	Access to Recreational Facilities.....	I-35

Chapter II - Strategies and Conceptual Corridors

A.	Initial Strategies	II-3
1.	Overview of Initial Strategies.....	II-3
a.	Strategy No. 1 ("No-Build")	II-3
b.	Strategy No. 2 (TSM/TDM)	II-3
c.	Strategy No. 3 (Widen Existing I-70).....	II-5
d.	Strategy No. 4 (New Parallel Facility)	II-6
e.	Strategy No. 5 (New Parallel Toll Road)	II-7
f.	Strategy No. 6 (High-Occupancy Vehicle (HOV) lanes)	II-9
g.	Strategy No. 7 (High-Speed Rail)	II-9
2.	Screening of Initial Strategies.....	II-10
a.	Purpose and Need Screening.....	II-10
b.	Recommendation of Reasonable Strategies.....	II-13
B.	"No-Build" Strategy	II-13
1.	General Description	II-13
2.	2030 Build-Out Highway Network.....	II-13
3.	Pavement and Bridge Maintenance.....	II-14
4.	Other Improvements	II-14
5.	Capital Costs.....	II-15
a.	Construction Costs	II-15
b.	Rehabilitation and Operations and Maintenance Costs	II-15
C.	Widen Existing I-70 Strategy	II-15
1.	General Description	II-15
2.	Design Criteria	II-15
3.	Existing I-70 Sufficiency Review.....	II-16
a.	Geometrics.....	II-16
b.	Interchanges	II-17
c.	Pavement and Bridge Conditions	II-18
4.	Improvement Standards	II-19
a.	Roadway Improvements Options.....	II-19
b.	Interchange Improvement Options.....	II-24
c.	Access Management Guidelines	II-26
5.	Physical Characteristics	II-27
a.	Alignment	II-27
b.	Interchanges	II-28
c.	Localized Relocation Options	II-28
d.	Missouri River Crossing.....	II-29
e.	Mineola Hill.....	II-30
f.	Other Improvements.....	II-30
6.	Operational Characteristics	II-31
7.	Capital Costs.....	II-31
a.	Construction Costs	II-31
b.	Rehabilitation and Operations and Maintenance Costs	II-31
D.	New Parallel Facility Strategy.....	II-32
1.	General Description	II-32
2.	Design Criteria	II-32

3.	Improvement Standards	II-33
a.	Roadway Improvement Options	II-33
b.	Interchange Improvement Options.....	II-33
4.	Physical Characteristics	II-34
a.	Alignment	II-34
b.	Interchanges	II-35
c.	Missouri River Crossing.....	II-35
d.	Other Improvements.....	II-36
5.	Operational Characteristics	II-36
6.	Capital Costs.....	II-37
a.	Construction Costs	II-37
b.	Rehabilitation and Operations and Maintenance Costs	II-37
E.	New Parallel Toll Road Strategy	II-38
1.	General Description	II-38
a.	Minimum Interchange Spacing	II-38
b.	Moderate Interchange Spacing.....	II-38
c.	Frequent Interchange Spacing	II-38
2.	Design Criteria	II-39
3.	Improvement Standards	II-39
a.	Typical Roadway Section	II-39
b.	Typical Interchange Layout.....	II-39
c.	Typical Toll Plaza Configuration	II-40
d.	Typical Rest Area Locations	II-40
4.	Physical Characteristics	II-40
a.	General Features	II-40
b.	Toll Plaza Locations	II-41
c.	Existing I-70 Improvements	II-41
5.	Electronic Toll Collection (ETC).....	II-41
6.	Operational Characteristics	II-41
7.	Capital Costs.....	II-41
a.	Construction Costs	II-41
b.	Rehabilitation and Operations and Maintenance Costs	II-42
F.	Transportation Impacts of Reasonable Strategies.....	II-43
1.	Travel Demand Forecasts	II-43
a.	Forecasting Methodology	II-43
b.	Reasonable Strategy Travel Forecasts.....	II-45
2.	Operational Analysis	II-47
a.	Methodology.....	II-47
b.	Summary of Travel Efficiencies	II-50
3.	Traffic Accident Analysis	II-53
a.	Methodology.....	II-53
b.	Accident Forecasts	II-54
4.	Summary of User Benefits	II-54
a.	Methodology.....	II-54
b.	Vehicle Operating Benefits	II-54
c.	Travel Time Benefits.....	II-55
d.	Accident Benefits.....	II-56
e.	Total Benefits	II-56
G.	Overall Evaluation of Reasonable Strategies	II-57
1.	Overall Comparison of Reasonable Strategies.....	II-57
a.	Engineering	II-57

b.	Traffic	II-60
c.	Environmental	II-63
d.	Social and Economic.....	II-64
2.	Preferred Strategy Recommendation	II-66
a.	Effectiveness in Accomplishing Purpose and Need	II-66
b.	Comparison of Overall Benefits and Impacts	II-67
c.	Public/Agency Participation and Comment.....	II-68
d.	Preferred Strategy Recommendation	II-69
H.	Recommended Preferred Strategy.....	II-69
1.	General Description	II-70
2.	Design Criteria	II-71
3.	Design Standards.....	II-72
a.	Roadway Improvement Options	II-73
b.	Interchange Improvement Options.....	II-74
4.	Kansas City Area	II-74
5.	East and West Rural Areas	II-75
a.	Rural Widening.....	II-75
b.	Rural Alignment.....	II-76
c.	Rural Interchanges	II-76
d.	Future Transportation Improvements.....	II-78
e.	Overton Bottoms	II-79
f.	Mineola Hill.....	II-81
6.	Columbia Area	II-83
a.	Existing Conceptual Corridor	II-83
b.	Far North Conceptual Corridor	II-86
c.	Near North Conceptual Corridor	II-87
7.	Warrenton/Wright City/Wentzville Area	II-88
a.	Existing Conceptual Corridor	II-89
b.	Far North Conceptual Corridor	II-91
c.	Near North Conceptual Corridor	II-91
d.	South Conceptual Corridor	II-92
8.	ITS Improvements	II-92
a.	ITS-CVO.....	II-92
b.	R/WIS.....	II-93
c.	Incident Detection and Management System	II-93
d.	Traffic and Travel Information System	II-94
e.	Communications Network.....	II-95
f.	System Integration	II-96
g.	Operations and Maintenance Cost	II-96
9.	Other Improvements	II-96
a.	Rest Areas	II-96
b.	Weigh Stations	II-97
c.	Visitor Center.....	II-97
d.	Billboards	II-97
10.	Maintenance of Traffic.....	II-98
a.	Rural Areas	II-98
b.	Urban Areas	II-101
c.	Workzone Management	II-101
11.	Transportation Impacts.....	II-101
a.	Travel Demand Forecasts	II-101
b.	Connections to St. Louis Highway System	II-102
c.	Travel Demand Forecast Volumes	II-105

d.	Operational Analysis of Conceptual Corridors	II-106
e.	Regional Travel Efficiency Measures.....	II-109
f.	Traffic Accident Analysis	II-110
g.	Summary of User Cost and Benefits.....	II-111
12.	Capital Costs.....	II-114
a.	Rehabilitation and Operations and Maintenance Costs	II-114
I.	Overall Evaluation of Columbia Area Conceptual Corridors	II-115
1.	Overall Comparison of Conceptual Corridors	II-115
2.	Summary of Conceptual Corridors	II-117
J.	Overall Evaluation of Warrenton/Wright City/Wentzville Area Conceptual Corridors	II-117
1.	Overall Comparison of Conceptual Corridors	II-117
2.	Summary of Conceptual Corridors	II-119

Chapter III - Affected Environment

A.	Social and Economic Characteristics	III-1
1.	Existing Land Use	III-1
a.	Counties.....	III-2
b.	Urbanized Areas.....	III-9
2.	Demographics & Social Characteristics.....	III-10
a.	Population	III-10
b.	Employment	III-11
c.	Income and Poverty	III-12
d.	Minority Populations	III-13
B.	Natural Environment	III-14
1.	Air Quality	III-14
2.	Noise.....	III-15
3.	Parklands.....	III-18
a.	City and County Parks and Recreation Areas.....	III-18
b.	State Parks.....	III-21
c.	Conservation Areas	III-22
d.	Big Muddy National Fish and Wildlife Refuge (Overton Bottoms)	III-23
e.	Mark Twain National Forest.....	III-23
4.	Prime Farmland Soils	III-23
a.	Definition	III-23
b.	Extent of Prime Farmland.....	III-24
5.	Water Quality	III-30
a.	Lakes, Rivers and Streams.....	III-31
b.	Groundwater	III-36
c.	Floodplains.....	III-36
d.	Wetlands	III-40
6.	Physiography and Topography.....	III-50
a.	Geology.....	III-51
b.	Mining.....	III-51
c.	Caves.....	III-51
7.	Terrestrial and Aquatic Communities.....	III-53
a.	Significant Terrestrial and Aquatic Communities.....	III-53
b.	Wildlife and Aquatic Species	III-55
c.	Threatened and Endangered Species	III-56
8.	Historic and Archeological Resources	III-58
a.	National Register of Historic Places.....	III-58

b.	Historic Cemeteries	III-59
c.	Interstate 70	III-59
9.	Hazardous Waste Sites.....	III-61
a.	Survey Methodology.....	III-61
b.	Potential Sites	III-62
10.	Visual Quality	III-63
a.	Regional Visual Environment.....	III-63
b.	Visual Quality Rating	III-63
c.	Visual Resources	III-64
d.	Viewers	III-64
C.	Resources	III-65

Chapter IV - Environmental Consequences

A.	Introduction	IV-1
B.	Evaluation of Reasonable Strategies	IV-1
1.	Overall Summary and Comparison.....	IV-1
2.	Environmental Issues.....	IV-3
a.	Natural Resources Impacts	IV-3
b.	Missouri River Impacts	IV-4
c.	Cultural Resources Impacts.....	IV-4
d.	Hazardous Wastes Impacts.....	IV-5
e.	Parklands Impacts.....	IV-5
f.	Floodplains	IV-5
g.	Secondary and Cumulative Impacts	IV-5
h.	Joint Development Opportunities.....	IV-6
3.	Social and Economic Issues.....	IV-6
a.	Impacts to Existing Structures	IV-6
b.	Noise Impacts.....	IV-6
c.	Compatibility with Land Use	IV-6
d.	Impacts to Existing I-70 Business Operations.....	IV-7
e.	Environmental Justice	IV-8
C.	Evaluation of Widening Existing I-70 in Rural Areas.....	IV-8
1.	Overall Summary and Comparison.....	IV-8
2.	Environmental Issues.....	IV-9
a.	Natural Resources and Wetlands	IV-9
b.	Threatened and Endangered Species	IV-9
c.	Natural Communities	IV-10
d.	Floodplains	IV-10
e.	Parklands	IV-11
f.	Hazardous Waste Sites	IV-11
g.	Cultural Resources	IV-12
D.	Social and Economic Impacts	IV-12
1.	Land Use Impacts	IV-12
a.	"No-Build" Strategy	IV-12
b.	Widen Existing I-70 (Preferred Strategy)	IV-12
2.	Demographics and Social Impacts	IV-18
a.	"No-Build" Concept.....	IV-18
b.	Widen I-70	IV-18
E.	Natural Environment Impacts	IV-21
1.	Air Quality Impacts	IV-21
a.	Construction	IV-21

b. Impacts.....	IV-21
2. Noise.....	IV-21
a. Noise Abatement Criteria	IV-21
b. Noise Impact Prediction.....	IV-23
c. Construction Noise	IV-25
d. Project Impacts and Mitigation.....	IV-28
3. Parklands, Wildlife Refuges, Recreation Areas, and Public Lands	IV-28
a. "No-Build" Strategy	IV-28
b. Widen Existing I-70 (Preferred Strategy)	IV-28
4. Prime Farmland.....	IV-31
a. "No-Build" Strategy	IV-31
b. Widen Existing I-70 (Preferred Strategy)	IV-31
5. Water Quality	IV-34
a. "No-Build" Strategy	IV-34
b. Widen Existing I-70 (Preferred Strategy), Overton Bottoms, Mineola Hill	IV-34
6. Floodplains.....	IV-35
a. "No-Build" Strategy	IV-35
b. Widen Existing I-70 (Preferred Strategy)	IV-36
7. Wetlands.....	IV-41
a. "No-Build" Strategy	IV-41
b. Widen Existing I-70 (Preferred Strategy)	IV-41
8. Terrestrial and Aquatic Communities.....	IV-47
a. "No-Build" Strategy	IV-47
b. Widen Existing I-70 (Preferred Strategy).....	IV-47
9. Threatened and Endangered Species	IV-51
a. "No-Build" Strategy	IV-52
b. Widen Existing I-70 (Preferred Strategy)	IV-52
10. Historic and Archeological Resources	IV-55
11. Hazardous Waste Sites.....	IV-63
a. "No-Build" Strategy	IV-63
b. Build Strategies	IV-63
12. Visual Quality	IV-63
a. "No-Build" Strategy	IV-63
b. Widen Existing I-70 (Preferred Strategy)	IV-63
F. Joint Development and Transportation Enhancements	IV-66
1. "No-Build" Strategy.....	IV-66
2. Build Strategies	IV-66
a. Overton Bottoms	IV-67
b. Mineola Hill.....	IV-68
c. Missouri Department of Conservation Meeting	IV-69
G. Energy and Construction Impacts	IV-69
1. "No-Build" Strategy.....	IV-69
2. Build Strategies	IV-69
H. Secondary and Cumulative Impacts.....	IV-71
1. Land Use.....	IV-72
2. Parklands	IV-73
3. Prime Farmland.....	IV-73
4. Terrestrial and Aquatic Communities.....	IV-73
5. Threatened and Endangered Species	IV-74
6. Visual Quality	IV-74
7. Wetlands and Waters of the U.S.	IV-74

I.	Permits	IV-75
1.	Regulatory Permits.....	IV-75
a.	Section 404 of the Clean Water Act (U.S. Army Corps of Engineers)	IV-75
b.	Section 9 of the Rivers and Harbors Act (U.S. Coast Guard)	IV-75
c.	Section 10 of the Rivers and Harbors Act (U.S. Army Corps of Engineers)	IV-75
2.	Construction Permits.....	IV-75
J.	Relationship Between Local Short-term Uses versus Long-term Productivity.....	IV-76
1.	"No-Build" Strategy.....	IV-76
2.	Build Strategies	IV-76
K.	Irreversible and Irrecoverable Commitment of Resources.....	IV-76
L.	Resources.....	IV-77

Chapter V - Comments and Coordination

A.	Public Involvement.....	V-1
1.	Internet: Project Web Site and E-mail.....	V-1
2.	Public Meetings.....	V-2
a.	Round #1 Public Meetings.....	V-3
b.	Round #2 Public Meetings.....	V-3
c.	Round #3 Public Meetings.....	V-4
3.	Post Office Box and Hot Line	V-5
4.	Mailing Lists	V-5
5.	Media Relations	V-5
6.	Newsletters and Updates	V-6
7.	Stakeholder Coordination and Briefings	V-6
8.	Survey.....	V-7
a.	Sample Population	V-7
b.	Findings.....	V-7
9.	Billboards	V-8
B.	Summary of Public Input.....	V-8
1.	Public Input Prior to the Identification of the Preliminary Preferred Strategy	V-8
a.	Message #1: Concern for Safety	V-8
b.	Message #2: Improvement Strategy Preference.....	V-8
2.	Public Input after the Announcement of the Preliminary Preferred Strategy	V-9
a.	General Support for the Selected Strategy	V-9
b.	Concern for Timeline of Improvements	V-9
c.	Concern for Impacts at Interchanges	V-9
d.	Concern for Impact of By-pass in the Corridor between Warrenton and Wentzville	V-9
e.	Concern for Impact of By-pass on Columbia	V-10
C.	Agency Coordination.....	V-10
1.	Environmental Scoping Meeting.....	V-10
a.	General Discussion	V-11
2.	Study Team Progress Meetings	V-11
3.	Special Meetings.....	V-11
a.	Environmental Groups Briefing	V-11
b.	Overton Bottoms Resource Agency Meeting	V-12
c.	Mineola Hill Resource Agency Meeting	V-12
d.	Missouri Department of Conservation Meeting	V-12

Chapter VI - List of Preparers

A.	Federal Highway Administration.....	VI-1
----	-------------------------------------	------

B. Missouri Department of Transportation	VI-1
C. Consultant Team.....	VI-2

Chapter VII - Circulation List

A. Federal	VII-1
B. State Agencies.....	VII-2
C. Local Government Agencies	VII-2
D. Elected Officials	VII-4
E. Stakeholders	VII-6
F. Copies Available for Public Viewing	VII-6
1. Jackson County	VII-6
2. Lafayette County.....	VII-7
3. Saline County.....	VII-7
4. Cooper County.....	VII-8
5. Boone County	VII-8
6. Callaway County	VII-9
7. Montgomery County.....	VII-9
8. Warren County.....	VII-9
9. St. Charles County.....	VII-10
10. St. Louis County	VII-11
11. Other	VII-11

Chapter VIII - Index

List of Tables

Chapter I - Purpose and Need

Table I-1: I-70 Historical Average Annual Daily Traffic (AADT)	I-6
Table I-2: I-70 Daily Travel Demand and Roadway LOS – Base (1997) and Forecast (2030)	I-12
Table I-3: I-70 Interchange Operation Analyses LOS 2030	I-14
Table I-4: Statewide Accidents - Missouri Interstate Routes.....	I-15
Table I-5: I-70 Accident Rates by County (per 100MVMT)	I-15
Table I-6: Truck Accidents by Missouri Interstate Routes.....	I-16
Table I-7: Property Damage Only Accidents (1994-1998)	I-18
Table I-8: Injury Accidents (1994-1998)	I-18
Table I-9: I-70 Fatal Accidents (1994-1998)	I-19
Table I-10: Cross Median Accidents (1994-1998)	I-20
Table I-11: Out of Control Accidents (1994-1998)	I-20
Table I-12: Rear End Accidents (1994-1998)	I-20
Table I-13: I-70 Accident Rates (1997) by Severity	I-21
Table I-14: Existing Pavement Rating Measurements.....	I-26
Table I-15: Summary of I-70 Pavement Conditions.....	I-27
Table I-16: Summary of I-70 Bridge Conditions.....	I-27
Table I-17: I-70 Bridges Component Ratings	I-28
Table I-18: Existing Bridges Average Ratings	I-28
Table I-19: Bridge Category Ranking	I-29
Table I-20: Existing Bridges Sufficiency Rating	I-30

Table I-21: Annual Intrastate Freight Movement by Truck (in Thousands of Tons).....	I-33
Table I-22: I-70 Truck Traffic - 1994 and 1998	I-34
Table I-23: I-70 Travel Time and Speeds (1997 and 2030)	I-34

Chapter II - Strategies and Conceptual Corridors

Table II-1: Tiered Decision and Evaluation Process for I-70 Study Corridor.....	II-2
Table II-2: Capacity Reduction per Type of Incident	II-5
Table II-3: Strategy Screening	II-11
Table II-4: Purpose and Need Screening of Strategies.....	II-13
Table II-5: 30-year Rehabilitation and O&M Costs.....	II-15
Table II-6: Summary of Existing I-70 Interchange Configurations	II-17
Table II-7: Summary Evaluation of Rural Roadway Improvement Options.....	II-22
Table II-8: Construction Cost Estimates for Strategy No. 3 (Widen Existing I-70)	II-31
Table II-9: Rehabilitation and O&M Costs for Strategy No. 3 (Widen Existing I-70)	II-32
Table II-10: Candidate Interchange Locations/Types for New Parallel Facility Strategy.....	II-35
Table II-11: Construction Cost Estimates for Strategy No. 4 (New Parallel Facility)	II-37
Table II-12: Rehabilitation and O&M Costs for Strategy No. 4 (New Parallel Facility)	II-37
Table II-13: Toll Road Interchange Spacing Scenarios.....	II-38
Table II-14: Construction Cost Estimates for Strategy No. 5 (New Parallel Toll Road).....	II-42
Table II-15: Rehabilitation and O&M Costs for Strategy No. 5 (New Parallel Toll Road)	II-42
Table II-16: Assumed Toll Rates	II-45
Table II-17: Forecast Traffic 2030.....	II-46
Table II-18: Level of Service Lookup Table for a Two Lane Freeway.....	II-49
Table II-19: Base Capacity Adjustment Factors	II-49
Table II-20: Capacity Conversion Factors (24 Hour to Peak-Hour)	II-50
Table II-21: 2030 Levels of Service for Reasonable Strategies.....	II-51
Table II-22: Projected I-70 Accident Rates	II-54
Table II-23: Estimated 2030 Accident by Strategy and Severity.....	II-54
Table II-24: Vehicle Operating Costs.....	II-55
Table II-25: Travel Time Costs	II-55
Table II-26: Accident Costs	II-56
Table II-27: Cost Savings Summary for Reasonable Strategies (2030)	II-56
Table II-28: Overall Comparison of Reasonable Strategies (Summary of Impacts).....	II-58
Table II-29: Range of Environmental Impacts for Reasonable Strategies	II-64
Table II-30: Summary of Impacts.....	II-67
Table II-31: Recommended Preferred Strategy	II-69
Table II-32: First Tier EIS Approach to Preferred Strategy Issues	II-70
Table II-33: Limits of Rural and Urban Areas within Study Corridor	II-71
Table II-34: Design Criteria.....	II-72
Table II-35: Interchange Summary I-70 Kansas City Area	II-75
Table II-36: Summary of Rural Area Horizontal I-70 Alignment Adjustments	II-76
Table II-37: Interchange Summary I-70 Rural Areas.....	II-77
Table II-38: Interchange Summary I-70 Columbia Existing Conceptual Corridor	II-85
Table II-39: Summary of Warrenton/Wright City/Wentzville I-70 Alignment Adjustments ...	II-90
Table II-40: Interchange Summary Warrenton/Wright City/Wentzville Existing Conceptual Corridor	II-90
Table II-41: Forecast Traffic Volumes across the Missouri River (2030)	II-104
Table II-42: Conceptual Corridor Forecast Traffic Volumes (2030)	II-105
Table II-43: Forecast Level of Service for the Year 2030	II-107
Table II-44: Number of I-70 Through Travel Lanes	II-108
Table II-45: Regional Travel Efficiency Measures for State (2030)	II-109

Table II-46: Accident Rates Along I-70 Study Corridor	II-110
Table II-47: 2030 Accidents for Study Corridor - Widen Existing I-70 Strategy	II-110
Table II-48: 2030 Accident Costs for Widen Existing I-70 Strategy	II-111
Table II-49: 2030 Vehicle Operating Cost for Widen Existing I-70 Strategy	II-112
Table II-50: 2030 Travel Time Cost Savings for Widen Existing I-70 Strategy	II-113
Table II-51: 2030 Cost Summary for Widen Existing I-70 Strategy	II-113
Table II-52: 2030 Cost Savings for Widen Existing I-70 Strategy.....	II-113
Table II-53: Benefits for Widen Existing I-70 Strategy.....	II-114
Table II-54: Construction Cost Estimates for Strategy No. 3 (Widen Existing I-70) Urban Areas	II-114
Table II-55: Rehabilitation and O&M Costs for Strategy No. 3 (Widen Existing I-70)	II-115
Table II-56: Overall Comparison of Columbia Conceptual Corridors (Summary of Impacts)	II-115
Table II-57: Overall Comparison of Warrenton/Wright City/Wentzville Conceptual Corridors (Summary of Impacts)	II-118

Chapter III - Affected Environment

Table III-1: Population of Jackson County Communities.....	III-2
Table III-2: Population of Lafayette County Communities	III-3
Table III-3: Population of Saline County Communities.....	III-4
Table III-4: Pettis County Population	III-4
Table III-5: Population of Cooper County Communities	III-5
Table III-6: Population of Boone County Communities	III-5
Table III-7: Population of Callaway County Communities	III-6
Table III-8: Population of Montgomery County Communities	III-7
Table III-9: Population of Warren County Communities	III-7
Table III-10: Population of St. Charles County Communities	III-8
Table III-11: Population (Year 2000 Estimate).....	III-11
Table III-12: Employment by Industry (Year 2000 Estimate).....	III-12
Table III-13: Income and Poverty (Year 2000 Estimate)	III-13
Table III-14: Minority Demographics (Year 2000)	III-14
Table III-15: Missouri and National Ambient Air Quality Standards.....	III-15
Table III-16: Common Noise Levels	III-17
Table III-17: City and County Parks and Recreation Areas.....	III-19
Table III-18: Conservation Areas	III-22
Table III-19: Jackson County Prime Farmland.....	III-24
Table III-20: Lafayette County Prime Farmland	III-25
Table III-21: Johnson County Prime Farmland	III-25
Table III-22: Saline County Prime Farmland	III-26
Table III-23: Pettis County Prime Farmland	III-26
Table III-24: Cooper County Prime Farmland	III-27
Table III-25: Howard County Prime Farmland.....	III-27
Table III-26: Boone County Prime Farmland.....	III-27
Table III-27: Moniteau County Prime Farmland	III-28
Table III-28: Callaway County Prime Farmland	III-28
Table III-29: Montgomery County Prime Farmland	III-29
Table III-30: Warren County Prime Farmland	III-29
Table III-31: Lincoln County Prime Farmland.....	III-29
Table III-32: St. Charles County Prime Farmland	III-30
Table III-33: Summary of Estimated Prime Farmland	III-30
Table III-34: Potential Wetland Areas in acres (hectares)	III-41

Table III-35: Federal and State - Endangered and Threatened Species	III-57
Table III-36: Visual Quality of Visual Assessment Units.....	III-64
Table III-37: Views and Visual Receptors	III-65

Chapter IV - Environmental Consequences

Table IV-1: Reasonable Strategies Impacts	IV-2
Table IV-2: Noise Abatement Criteria Hourly A-Weighted Sound Level-Decibels (dBA)....	IV-22
Table IV-3: I-70 Noise Level (66dBA) Distances - Existing Location	IV-24
Table IV-4: I-70 Noise Level (66 dBA) Distances - Columbia	IV-25
Table IV-5: I-70 Noise Level (66 dBA) Distances – Warrenton, Wright City & Wentzville Area (South).....	IV-26
Table IV-6: I-70 Noise Level (55 (dBA) - Columbia	IV-26
Table IV-7: I-70 Noise Level (55 dBA) Distances – Warrenton, Wright City & Wentzville Area (North).....	IV-26
Table IV-8: I-70 Noise Level (55 dBA) Distances – Warrenton, Wright City & Wentzville Area (South).....	IV-27
Table IV-9: Construction Equipment Sound Levels	IV-27
Table IV-10: Wetlands and Waters of the U.S. Potential Impacts.....	IV-45
Table IV-11: Summary of Cemeteries and National Register Properties within Rural I-70 Areas	IV-56
Table IV-12: Summary of Archaeological Sites within Rural I-70 Areas	IV-56
Table IV-13: Summary of Cemeteries within the Columbia Near North Conceptual Corridor	IV-57
Table IV-14: Summary of Archaeological Sites within the Columbia Near North Conceptual Corridor	IV-57
Table IV-15: Summary of Cemeteries within the Columbia Far North Conceptual Corridor.....	IV-58
Table IV-16: Summary of Archaeological Sites within the Columbia Far North Conceptual Corridor.....	IV-58
Table IV-17: Summary of cemeteries within the Columbia Existing Conceptual Corridor	IV-59
Table IV-18: Summary of Archaeological Sites within the Columbia Existing Conceptual Corridor	IV-59
Table IV-19: Summary of Cemeteries within the Warrenton to Wentzville Area Near North Conceptual Corridor	IV-60
Table IV-20: Summary of Archaeological Sites within the Warrenton to Wentzville Area Near North Conceptual Corridor	IV-61
Table IV-21: Summary of Cemeteries within the Warrenton to Wentzville Area Far North Conceptual Corridor.....	IV-61
Table IV-22: Summary of Archaeological Sites within the Warrenton to Wentzville Area Far North Conceptual Corridor.....	IV-61
Table IV-23: Summary of Cemeteries within the Warrenton to Wentzville Area South Conceptual Corridor	IV-61
Table IV-24: Summary of Archaeological Sites within the Warrenton to Wentzville Area South Conceptual Corridor	IV-62
Table IV-25: Summary of Cemeteries within the Warrenton to Wentzville Area Existing Conceptual Corridor	IV-62
Table IV-26: Summary of Archaeological Sites within the Warrenton to Wentzville Area Existing Conceptual Corridor	IV-62

Chapter V - Comments and Coordination

Table V-1	Attendance at I-70 First Tier EIS Public Meetings.....	V-2
Table V-2	Stakeholder Group Presentations.....	V-6

List of Figures

Chapter I - Purpose and Need

Figure I-1:	I-70 Historical Traffic Trends (at Counter Locations)	I-7
Figure I-2:	Missouri Population Trends and Forecasts.....	I-10
Figure I-3:	I-70 Property Damage Only Accidents	I-17
Figure I-4:	I-70 Injury Accidents.....	I-18
Figure I-5:	I-70 Fatal Accidents	I-19
Figure I-6:	Typical Interchanges	I-23
Figure I-7:	Outbound Missouri Freight by Mode.....	I-31
Figure I-8:	Inbound Missouri Freight by Mode	I-32
Figure I-9:	Intrastate Freight Flow within Missouri by Mode.....	I-33

Chapter II - Strategies and Conceptual Corridors

Figure II-1:	Roadway Design Standard - Option 1	II-20
Figure II-2:	Roadway Design Standard - Option 2	II-20
Figure II-3:	Roadway Design Standard - Option 3	II-21
Figure II-4:	Roadway Design Standard - Option 4	II-21
Figure II-5:	Roadway Design Standard - Option 5	II-22
Figure II-6:	Typical Interchange Layout - Option 1.....	II-24
Figure II-7:	Typical Interchange Layout - Option 2.....	II-25
Figure II-8:	Access Management at Interchange Areas.....	II-26
Figure II-9:	Typical Roadway Section Strategy No. 4 (New Parallel Facility)	II-33
Figure II-10:	Typical Interchange Layouts for Strategy No. 4 (New Parallel Facility).....	II-34
Figure II-11:	Toll Road Typical Interchanges.....	II-39
Figure II-12:	Travel Demand Model Process	II-44
Figure II-13:	Rural I-70 Widening Typical Section.....	II-73
Figure II-14:	Local I-70 Relocation Typical Section.....	II-73
Figure II-15:	Urban I-70 Widening Without Frontage Roads Typical Section	II-73
Figure II-16:	Urban I-70 Widening With Frontage Roads Typical Section	II-74
Figure II-17:	Urban I-70 Elevated Widening Typical Section.....	II-74
Figure II-18:	New Rocheport Bridge (Westbound) Typical Section	II-80
Figure II-19:	Representative Cross Section at "Slave" Rock.....	II-81
Figure II-20:	Columbia Area Conceptual Corridors	II-83
Figure II-21:	Warrenton/Wright City/Wentzville Area Conceptual Corridors	II-88
Figure II-22:	Existing Condition Maintenance of Traffic Plan	II-99
Figure II-23:	Phase I Maintenance of Traffic Plan.....	II-99
Figure II-24:	Phase II Maintenance of Traffic Plan.....	II-100
Figure II-25:	Phase III Maintenance of Traffic Plan.....	II-100
Figure II-26:	Phase IV Maintenance of Traffic Plan	II-100
Figure II-27:	I-70 Relocation System Connection Options in St. Louis Area	II-103

Chapter V - Comments and Coordination

Figure V-1: Placement and Orientation of I-70 First Tier EIS Billboards..... V-8

List of Exhibits

(Exhibits are to be found at the end of each respective Chapter.)

Chapter I – Purpose and Need

- Exhibit I-1 Corridor Study Map
- Exhibit I-2 1997 Congestion Locations
- Exhibit I-3 2030 Congestion Locations
- Exhibit I-4 I-70 Traffic Volumes
- Exhibit I-5 Current and Projected Accidents (by County)
- Exhibit I-6 Existing and Current Standards
- Exhibit I-7 Current Pavement and Bridge Condition

Chapter II – Strategies and Conceptual Corridors

- Exhibit II-1 Work Flow Chart

Chapter III – Affected Environment

- Exhibits III-1 to III-9 Environmentally Sensitive Features
- Exhibits III-10 to III-12 Developed Areas
- Exhibit III-13 Prime Farmland

Guide to Acronyms and Abbreviations

AADT - average annual daily traffic

AASHTO - American Association of State and Highway Transportation Officials

ADT – average daily traffic

APE – area of potential effect

AQCR - air quality control region

CAP - community assistance program

CBP - county business plans

CD - collector-distributor

CEQ - The Council on Environmental Quality

CO - carbon monoxide

CVISN - commercial vehicle electronic clearance system

CVO - commercial vehicle operations

dB - decibel

DOLIR - Department of Labor and Industry Relations

EIS - environmental impact statement

EPA - Environmental Protection Agency

ESA - Endangered Species Act

ETC - electronic toll collection

EUAC - equivalent uniform annual cost

FEMA - Federal Emergency Management Agency

FHWA - Federal Highway Administration

FRA - Federal Railroad Administration

GIS – geographic information system

H₂S - hydrogen sulfide

H₂SO₄ - sulfuric acid

Ha - hectares

HAR - highway advisory radio

HOV - high-occupancy vehicle

IRI - international roughness index

ITS - intelligent transportation system

LOS - level of service

LWCF - Land and Water Conservation Fund

MDA - Missouri Department of Agriculture

MDC - Missouri Department of Conservation

MDNR - Missouri Department of Natural Resources

MOA - Missouri Office of Administration

MoDOT - Missouri Department of Transportation

NEPA - National Environmental Policy Act

NO₂ - nitrogen dioxide

NPV - net present value

NWI - National Wetlands Inventory

O&M - operations and maintenance

O₃ - ozone

Pb - lead

PDO - property-damage-only

PSR - pavement serviceability rating

R/WIS - road/weather information systems

RCI - ride condition index

ROD - record of decision

ROW - right-of-way

SIU - section of independent utility

SO₂ - sulfur dioxide

TAZ - traffic analysis zone

TDM - travel demand management

TOC - traffic operations center

TSM - transportation system management

USACE - United States Army Corps of Engineers

USDA - United States Department of Agriculture

USFWS - United States Fish and Wildlife Service

USGS - United States Geological Survey

VHT - vehicle hours of travel

VMS - variable message signs

VMT - vehicle miles of travel

