

TABLE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	ES-1
1.0 PURPOSE AND NEED	1-1
1.1 <i>Project Location and Purpose</i>	<i>1-1</i>
1.2 <i>Project History and Status</i>	<i>1-3</i>
1.3 <i>Project Needs and Objectives</i>	<i>1-5</i>
1.4 <i>Detailed Identification of the Project Needs.....</i>	<i>1-6</i>
2.0 ALTERNATIVES	2-1
2.1 <i>Public and Agency Involvement in Alternatives Development.....</i>	<i>2-1</i>
2.2 <i>Alternatives Development and Screening Process</i>	<i>2-4</i>
2.3 <i>Alternatives Considered and Eliminated</i>	<i>2-7</i>
2.4 <i>System Alternatives Considered in Detail</i>	<i>2-22</i>
2.5 <i>Future Redevelopment and Transportation Improvements Near I-25 and Broadway</i>	<i>2-63</i>
2.6 <i>Preferred Alternative</i>	<i>2-65</i>
3.0 TRANSPORTATION ANALYSIS	3-1
3.1 <i>Existing Roadway and Traffic Conditions</i>	<i>3-1</i>
3.2 <i>Compatibility with Transportation Plans and Programmed Projects.....</i>	<i>3-8</i>
3.3 <i>Future Travel Demand</i>	<i>3-9</i>
3.4 <i>Freeway and Street Safety</i>	<i>3-33</i>
3.5 <i>Transit / HOV Access</i>	<i>3-34</i>
3.6 <i>Pedestrian and Bicycle Facilities</i>	<i>3-35</i>
3.7 <i>Freight and Rail Operations</i>	<i>3-37</i>
4.0 ENVIRONMENTAL CONSEQUENCES	4-1
4.1 <i>Socio-Economics and Community.....</i>	<i>4.1-1</i>
4.2 <i>Right-of-Way and Displacements</i>	<i>4.2-1</i>
4.3 <i>Parks and Recreation</i>	<i>4.3-1</i>
4.4 <i>Aesthetics and Urban Design</i>	<i>4.4-1</i>
4.5 <i>Air Quality</i>	<i>4.5-1</i>
4.6 <i>Noise and Vibration</i>	<i>4.6-1</i>
4.7 <i>Historic Preservation</i>	<i>4.7-1</i>
4.8 <i>Paleontology.....</i>	<i>4.8-1</i>
4.9 <i>Water Resources.....</i>	<i>4.9-1</i>
4.10 <i>Floodplains</i>	<i>4.10-1</i>
4.11 <i>Wetlands, Waters of the U.S. and Open Water.....</i>	<i>4.11-1</i>
4.12 <i>Vegetation and Wildlife.....</i>	<i>4.12-1</i>
4.13 <i>Hazardous Waste.....</i>	<i>4.13-1</i>

TABLE OF CONTENTS (Continued)

	<u>Page</u>
4.14 Soils and Geology	4.14-1
4.15 Energy	4.15-1
4.16 Short-term Uses and Long-term Productivity	4.16-1
4.17 Irreversible and Irrecoverable Commitments of Resources	4.17-1
4.18 Construction Impacts.....	4.18-1
4.19 Permits Required.....	4.19-1
4.20 Cumulative Impacts.....	4.20-1
4.21 Summary of Environmental Consequences, Mitigation Measures and Monitoring Commitments	4.20-1
5.0 SECTION 4(f) EVALUATION.....	5-1
5.1 Parks	5-6
5.2 Coordination	5-21
5.3 Section 4(f) Finding	5-21
6.0 PUBLIC INVOLVEMENT	6-1
6.1 Objectives.....	6-1
6.2 Elements of Program.....	6-1
6.3 Agency Input	6-6
6.4 Public Input.....	6-11
6.5 Special Outreach to Low-Income and Minority Populations.....	6-20
6.6 Release of Draft EIS.....	6-25
6.7 Coordination Subsequent to Release of Final EIS	6-26
7.0 PHASED PROJECT IMPLEMENTATION.....	7-1
7.1 Phased Implementation Requirements	7-1
7.2 Identification of Logical Project Phases and Priorities.....	7-4
7.3 Detailed Discussion of Project Phases.....	7-7
7.4 Further Coordination and Decision Making after Final EIS	7-43
8.0 LIST OF PREPARERS.....	8-1
9.0 AVAILABILITY OF TECHNICAL REPORTS	9-1
10.0 REFERENCES	10-1
11.0 INDEX	11-1
APPENDIX A AGENCY COORDINATION	
APPENDIX B PUBLIC COORDINATION	
APPENDIX C WETLAND FINDING	

LIST OF FIGURES

	<u>Page</u>
Figure 1-1	Valley Highway EIS Study Area 1-2
Figure 1-2	Metro Denver Regional Highways 1-4
Figure 1-3	Existing Lane Continuity and Balance Deficiencies 1-7
Figure 1-4	Study Area Transit System 1-9
Figure 1-5	Mainline I-25 Geometric Deficiencies 1-14
Figure 1-6	I-25 / 6th Avenue Geometric Deficiencies 1-15
Figure 1-7	I-25 / Broadway Interchange Geometric Deficiencies 1-16
Figure 1-8	I-25 / Santa Fe Drive Geometric Deficiencies 1-17
Figure 1-9	I-25 / Alameda Avenue Geometric Deficiencies 1-18
Figure 2-1	Alternatives Development and Screening Results 2-8
Figure 2-2	No Action Alternative 2-23
Figure 2-3	System Alternative 1 – Maximize Use of Existing Right-of-Way 2-24
Figure 2-4	System Alternative 2 – Maximize Operational Performance / Safety 2-25
Figure 2-5	System Alternative 3 – Maximize Facilitation of Local Objectives 2-26
Figure 2-6	I-25 Common Sections 2-29
Figure 2-7	Common Elements at Broadway 2-30
Figure 2-8	Common Elements at Santa Fe Drive 2-31
Figure 2-9	Common Elements at Alameda Avenue 2-32
Figure 2-10	Common Elements at US 6 / I-25 2-33
Figure 2-11	Arterial Streets Common Sections with System Alternatives 2-34
Figure 2-12	System Alternative 1, I-25 Typical Section, Broadway to Santa Fe Drive 2-38
Figure 2-13	System Alternative 1, US 6/Federal Boulevard/Bryant Street Improvements .. 2-39
Figure 2-14	System Alternative 1, US 6 Typical Section, I-25 to Federal Boulevard 2-40
Figure 2-15	System Alternative 1, Broadway Interchange 2-41
Figure 2-16	System Alternative 1, Alameda Avenue Interchange 2-42
Figure 2-17	System Alternative 1 Simulation, Alameda / Santa Fe / Kalamath 2-43
Figure 2-18	System Alternative 1, Santa Fe Drive and Kalamath Street Grade Separation 2-44
Figure 2-19	System Alternative 1, Santa Fe Drive and Kalamath Street Typical Section ... 2-44
Figure 2-20	System Alternative 1, Broadway Bicycle / Pedestrian Facilities 2-45
Figure 2-21	System Alternative 1, Bayaud Avenue Bicycle / Pedestrian Structure 2-46
Figure 2-22	System Alternative 2, I-25 Typical Section, Broadway to Santa Fe Drive 2-48
Figure 2-23	System Alternative 2, US 6 / Federal Boulevard / Bryant Street Interchange .. 2-49
Figure 2-24	System Alternative 2, US 6 Typical Section, I-25 to Federal Boulevard 2-49
Figure 2-25	System Alternative 2, Broadway Interchange 2-50
Figure 2-26	System Alternative 2, Santa Fe Drive Interchange 2-51
Figure 2-27	System Alternative 2, Alameda Avenue Interchange 2-52
Figure 2-28	System Alternative 2, Alameda Avenue – Santa Fe Drive to Cherokee Street 2-52
Figure 2-29	System Alternative 2 Simulation, Santa Fe / Kalamath / Alameda 2-53
Figure 2-30	System Alternative 2, Broadway Bike / Pedestrian Facilities 2-54
Figure 2-31	System Alternative 3, US 6/Federal Boulevard/Bryant Street Improvements .. 2-56
Figure 2-32	System Alternative 3, Broadway Interchange 2-57
Figure 2-33	System Alternative 3, Santa Fe Drive Interchange 2-58
Figure 2-34	System Alternative 3, Alameda Avenue Interchange and Grade Separation ... 2-59
Figure 2-35	System Alternative 3 Simulation, Santa Fe / Kalamath / Alameda 2-60

LIST OF FIGURES (Continued)

		<u>Page</u>
Figure 2-36	System Alternative 3, Broadway Bike / Pedestrian Facilities	2-62
Figure 2-37	System Alternative 3, Bayaud Avenue Bike / Pedestrian Structure	2-62
Figure 2-38	Preferred Alternative	2-66
Figure 2-39	Preferred Alternative – I-25 Typical Sections	2-77
Figure 2-40	Arterial Street Typical Sections with the Preferred Alternative	2-78
Figure 2-41	Preferred Alternative, Broadway Interchange.....	2-79
Figure 2-42	Preferred Alternative, Broadway Bicycle/Pedestrian Facilities	2-80
Figure 2-43	Preferred Alternative, Santa Fe Drive Interchange.....	2-81
Figure 2-44	Preferred Alternative, Alameda Avenue Interchange	2-83
Figure 2-45	Preferred Alternative Simulation – Santa Fe/Kalamath/Alameda.....	2-84
Figure 2-46	Preferred Alternative, Santa Fe Drive and Kalamath Street Grade Separation.....	2-85
Figure 2-47	Preferred Alternative, Santa Fe Drive and Kalamath Street Typical Section ...	2-86
Figure 2-48	Preferred Alternative, Bayaud Avenue Bicycle/Pedestrian Structure	2-86
Figure 2-49	Preferred Alternative, US 6/I-25 Interchange	2-87
Figure 2-50	Preferred Alternative, US 6/Federal Boulevard/Bryant Street Interchange	2-89
Figure 2-51	Preferred Alternative, US 6 Typical Section, I-25 to Federal Boulevard.....	2-89
Figure 3-1	Traffic Analysis Study Area	3-2
Figure 3-2	System Traffic Movements, Existing Conditions	3-4
Figure 3-3	Existing Conditions: Logan Street to Alameda Avenue, Levels of Service and Lane Geometry	3-6
Figure 3-4	Existing Conditions: US 6 Area, Levels of Service and Lane Geometry	3-7
Figure 3-5	System Traffic Movements, Year 2025 Forecasts.....	3-11
Figure 3-6	No Action Alternative: Logan Street to Alameda Avenue, 2025 Levels of Service and Lane Geometry	3-13
Figure 3-7	No Action Alternative: US 6 Area, 2025 Levels of Service And Lane Geometry	3-14
Figure 3-8	System Alternative 1: Logan Street to Alameda Avenue 2025 AM/PM Peak Hour Levels of Service and Lane Geometry.....	3-16
Figure 3-9	System Alternative 1: US 6 2025 AM/PM Peak Hour Levels of Service and Lane Geometry	3-17
Figure 3-10	System Alternative 2: Logan Street to Alameda Avenue 2025 AM/PM Peak Hour Level of Service and Lane Geometry	3-18
Figure 3-11	System Alternative 2: US 6 2025 AM/PM Peak Hour Levels of Service and Lane Geometry	3-19
Figure 3-12	System Alternative 3: Logan Street to Alameda Avenue 2025 AM/PM Peak Hour Levels of Service and Lane Geometry.....	3-20
Figure 3-13	System Alternative 3: US 6 2025 AM/PM Peak Hour Levels of Service and Lane Geometry	3-21
Figure 3-14	Preferred Alternative: Logan Street to Alameda Avenue 2025 AM/PM Hour Levels of Service and Lane Geometry.....	3-22
Figure 3-15	Preferred Alternative: US 6 2025 AM/PM Peak Hour Levels of Service and Lane Geometry	3-23
Figure 3-16	CORSIM Network 2025 Delay Comparisons.....	3-26
Figure 3-17	Surface Street Subnetwork Delay Comparisons	3-29

LIST OF FIGURES (Continued)

	<u>Page</u>
Figure 4.1-1 Neighborhood Study Area	4.1-3
Figure 4.1-2 Existing Land Use - Generalized	4.1-5
Figure 4.1-3 Existing Zoning	4.1-6
Figure 4.1-4 Areas of Stability and Change	4.1-8
Figure 4.1-5 Future Concept Land Use	4.1-9
Figure 4.1-6 Baker Neighborhood Proposed Land Use	4.1-10
Figure 4.1-7 Cherokee Denver Transit Oriented Development Plan	4.1-12
Figure 4.1-8 Public and Community Facilities	4.1-14
Figure 4.1-9 Population by Neighborhood	4.1-18
Figure 4.1-10 Racial Minority Population by Census Block	4.1-19
Figure 4.1-11 African American Population by Census Block	4.1-20
Figure 4.1-12 Asian American Population by Census Block	4.1-21
Figure 4.1-13 Native American Population by Census Block	4.1-22
Figure 4.1-14 Hispanic Population by Census Block	4.1-23
Figure 4.1-15 Employment by Neighborhood	4.1-25
Figure 4.1-16 Low-Income Population by Census Block Group	4.1-26
Figure 4.1-17 Denver Enterprise Zone	4.1-27
Figure 4.1-18 Land Use Concept – System Alternative 1	4.1-32
Figure 4.1-19 Land Use Concept – System Alternative 2	4.1-33
Figure 4.1-20 Land Use Concept – System Alternative 3	4.1-34
Figure 4.1-21 Land Use Concept – Preferred Alternative	4.1-35
Figure 4.2-1 Displacements	4.2-9
Figure 4.3-1 Parks and Recreation Resources	4.2-2
Figure 4.3-2 Barnum East Park Concept - Preferred Alternative	4.2-13
Figure 4.4-1 Existing Land Use and Views along the Corridor	4.4-2
Figure 4.4-2 Photographs of Existing Views	4.4-3
Figure 4.4-3 Washington Park View Plane	4.4-5
Figure 4.4-4 System Alternative 1 – Recommended Aesthetic Features	4.4-19
Figure 4.4-5 System Alternative 2 – Recommended Aesthetic Features	4.4-20
Figure 4.4-6 System Alternative 3 – Recommended Aesthetic Features	4.4-21
Figure 4.4-7 Preferred Alternative – Recommended Aesthetic Features	4.4-22
Figure 4.5-1 Predicted National MSAT Emissions	4.5-7
Figure 4.6-1 Noise-Sensitive Areas	4.6-2
Figure 4.6-2 Typical Noise Levels	4.6-3
Figure 4.6-3 A-Weighting Adjustments	4.6-3
Figure 4.6-4 Noise Measurement Locations and Results	4.6-6
Figure 4.6-5 Noise Model Receiver Locations	4.6-7
Figure 4.6-6 Existing Conditions: Noise Contours	4.6-8
Figure 4.6-7 Existing Noise-Impacted Areas	4.6-12
Figure 4.6-8 Railroad Corridor Relocation Area	4.6-15
Figure 4.6-9 No Action Alternative: 2025 Noise Contours	4.6-18
Figure 4.6-10 System Alternative 1: 2025 Noise Contours	4.6-20
Figure 4.6-11 System Alternative 2: 2025 Noise Contours	4.6-21
Figure 4.6-12 System Alternative 3: 2025 Noise Contours	4.6-23

LIST OF FIGURES (Continued)

	<u>Page</u>
Figure 4.6-13 Preferred Alternative: 2025 Noise Contours.....	4.6-25
Figure 4.6-14 Mitigation Barriers Evaluated	4.6-28
Figure 4.6-15 South Lincoln Street Mitigation Barrier	4.6-32
Figure 4.6-16 West Short Place Mitigation Barrier	4.6-34
Figure 4.6-17 South Platte Trail Mitigation Barrier.....	4.6-35
Figure 4.7-1 Historical Properties	4.7-3
Figure 4.7-2 Historic Properties – System Alternative 1	4.7-11
Figure 4.7-3 Historic Properties – System Alternative 2	4.7-13
Figure 4.7-4 Historic Properties – System Alternative 3	4.7-15
Figure 4.7-5 Historic Properties – Preferred Alternative	4.7-17
Figure 4.8-1 Geologic Map of the Valley Highway Project Area	4.8-3
Figure 4.9-1 South Platte River Basin	4.9-2
Figure 4.9-2 South Platte River Segments 14 and 15	4.9-4
Figure 4.9-3 Surface Waters.....	4.9-7
Figure 4.9-4 Existing Basins – US 6 Area	4.9-18
Figure 4.9-5 Existing Basins – 6th Avenue Interchange Area	4.9-19
Figure 4.9-6 Existing Basins – Alameda Area	4.9-20
Figure 4.9-7 Existing Basins - Broadway Area	4.9-21
Figure 4.9-8 Water Quality Ponds (BMPs)	4.9-25
Figure 4.10-1 Floodplains	4.10-2
Figure 4.11-1 Wetlands, Waters of the U.S., Open Water – Northern Project Area	4.11-3
Figure 4.11-2 Wetlands, Waters of the U.S., Open Water – Central Project Area	4.11-4
Figure 4.11-3 Wetlands, Waters of the U.S., Open Water – Southern Project Area	4.11-5
Figure 4.12-1 Vegetation and Wildlife – Northern Project Area	4.12-2
Figure 4.12-2 Vegetation and Wildlife – Central Project Area	4.12-3
Figure 4.12-3 Vegetation and Wildlife – Southern Project Area	4.12-4
Figure 4.13-1 Sites with Environmental Conditions – Northern Project Area	4.13-4
Figure 4.13-2 Sites with Environmental Conditions – Central Project Area.....	4.13-5
Figure 4.13-3 Sites with Environmental Concerns – Southern Project Area	4.13-6
Figure 4.13-4 Historical Fill / Landfill Areas	4.13-14
Figure 4.20-1 Cumulative Impact Study Area	4.20-4
Figure 4.20-2 Land Use – 1956	4.20-10
Figure 4.20-3 Land Use – 1962	4.20-11
Figure 4.20-4 Land Use – 1975	4.20-13
Figure 4.20-5 Land Use – 2002	4.20-14
Figure 4.20-6 Air Quality Monitoring Data from Nearby Monitoring Stations	4.20-25
Figure 5-1 Historic Properties and Parks Subject to Section 4(f) Use	5-3
Figure 5-2 Parks Impacts – System Alternative 1	5-7
Figure 5-3 Parks Impacts – System Alternative 2.....	5-8
Figure 5-4 Parks Impacts – System Alternative 3.....	5-9
Figure 5-5 Parks Impacts - Preferred Alternative.....	5-10

LIST OF FIGURES (Continued)

		Page
Figure 5-6	Barnum East Park Concept – Preferred Alternative	5-19
Figure 6-1	Mailing Distribution Area.....	6-3
Figure 7-1	Phased Implementation Process.....	7-3
Figure 7-2	Phasing Plan	7-6
Figure 7-3	Phase 1 Layout for I-25	7-8
Figure 7-4	Phase 1 Layout for US 6	7-10
Figure 7-5	Phase 1 2025 AM/PM Peak Hour LOS – Logan to Alameda Avenue	7-12
Figure 7-6	Phase 1 2025 AM/PM Peak Hour LOS – US 6	7-13
Figure 7-7	Phase 2 Layout	7-19
Figure 7-8	Phase 3 Layout	7-24
Figure 7-9	Phase 4 Layout	7-29
Figure 7-10	Phase 5 Layout	7-34
Figure 7-11	Phase 6 Layout	7-39

LIST OF TABLES

	<u>Page</u>
Table 1-1	Comparison of Roadway Deficiencies and Current Design Standards 1-19
Table 1-2	Current and Future Traffic at the Consolidated Main Line..... 1-23
Table 1-3	Current and Future Exposure Factors at the Consolidated Main Line 1-24
Table 2-1	Major Public Meetings2-2
Table 2-2	Transportation Management Alternative Elements Considered2-9
Table 2-3	Results of Element Screening2-12
Table 2-4	System Alternatives Initially Considered2-17
Table 2-5	Element Alternatives Packaged into System Alternatives2-18
Table 2-6	Results of System Screening2-18
Table 2-7	Value Engineering Proposals and Recommendations2-20
Table 2-8	Elements Common to System Alternatives2-27
Table 2-9	System Alternative 1 Differentiating Elements2-37
Table 2-10	System Alternative 2 Differentiating Elements2-47
Table 2-11	System Alternative 3 Differentiating Elements2-55
Table 2-12	I-25 / Broadway Element Identified for the Preferred Alternative2-69
Table 2-13	I-25/Alameda/Santa Fe/Kalamath Element Identified for the Preferred Alternative2-71
Table 2-14	US 6/ Federal/ Bryant Element Identified for the Preferred Alternative2-74
Table 2-15	Preferred Alternative Refinements2-75
Table 3-1	System Alternative Treatment of Bryant Street Access..... 3-10
Table 3-2	Existing and 2025 No Action CORSIM Measures of Effectiveness..... 3-15
Table 3-3	Daily Hours of Congestion at Signalized Intersections..... 3-24
Table 3-4	Daily Hours of Congestion along I-25 Freeway Sections 3-25
Table 3-5	Peak Hour Travel Rate Index Comparison..... 3-27
Table 3-6	Relative Operational Performance of System Alternatives..... 3-33
Table 3-7	Relative Safety Performance of System Alternatives 3-34
Table 4.1-1	Demographics of the Neighborhood Study Area – 2000 4.1-17
Table 4.1-2	Employment and Income within the Neighborhood Study Area – 2000 4.1-24
Table 4.2-1	Additional Right-of-Way Required 4.2-2
Table 4.2-2	Property Impacts 4.2-4
Table 4.2-3	Displacements 4.2-10
Table 4.3-1	Park and Recreation Resources..... 4.3-1
Table 4.3-2	Impacts to Parks and Recreation Resources 4.3-6
Table 4.3-3	Elements of Barnum East Park Reconstruction 4.3-15
Table 4.4-1	Citizen Working Group Preferences for Corridor and Individual Element Identities..... 4.4-17
Table 4.5-1	National Ambient Air Quality Standards 4.5-1
Table 4.5-2	Project Intersection Levels of Service 4.5-2
Table 4.5-3	Maximum Modeled CO Concentrations..... 4.5-4
Table 4.6-1	Noise Abatement Criteria 4.6-4
Table 4.6-2	Noise Model Results 4.6-9
Table 4.6-3	Vibration Impact Criteria 4.6-14
Table 4.6-4	FTA Screening Distances..... 4.6-15

LIST OF TABLES (Continued)

		<u>Page</u>
Table 4.6-5	Noise Impact Summary	4.6-17
Table 4.6-6	Vibration Impact Projections without Mitigation	4.6-26
Table 4.6-7	Noise Mitigation Barrier Summary	4.6-29
Table 4.7-1	Significant (NRHP-Eligible) Historic Resources in the Area of Potential Effects	4.7-4
Table 4.7-2	Impacts to Significant (NRHP-Eligible) Historic Resources	4.7-9
Table 4.8-1	Geologic Units within the Project Area and their Paleontologic Sensitivities...	4.8-2
Table 4.8-2	Fossil Localities within the Valley Highway EIS Project Area	4.8-2
Table 4.9-1	Summary of Historical Water Quality Events	4.9-5
Table 4.9-2	Summary of Key Pollutants in Segment 14	4.9-9
Table 4.9-3	General Water Quality Conditions for South Platte River	4.9-10
Table 4.9-4	State of Colorado Groundwater Standards	4.9-14
Table 4.9-5	Existing Basin Information	4.9-16
Table 4.9-6	Existing Major Flooding Areas	4.9-17
Table 4.9-7	BMP Summary	4.9-27
Table 4.10-1	Existing Major Flooding Areas	4.10-4
Table 4.10-2	Drainage Basin Area	4.10-6
Table 4.10-3	Summary of Mitigation Measures for System Alternatives	4.10-8
Table 4.11-1	Area and Jurisdictional Status of Wetlands	4.11-6
Table 4.11-2	Area and Jurisdictional Status of Open Water	4.11-8
Table 4.11-3	Preliminary Estimates of Direct Impacts to Wetlands	4.11-10
Table 4.11-4	Preliminary Estimates of Direct Impacts to Open Water	4.11-11
Table 4.13-1	Summary of Sites with Potential and Recognized Environmental Conditions	4-13-8
Table 4.13-2	Recommendations for Additional Assessment / Investigation – System Alternative 1	4.13-19
Table 4.13-3	Recommendations for Additional Assessment / Investigation – System Alternative 2	4.13-22
Table 4.13-4	Recommendations for Additional Assessment / Investigation – System Alternative 3	4.13-25
Table 4.13-5	Recommendations for Additional Assessment / Investigation – Preferred Alternative	4.13-28
Table 4.18-1	Summary of Citizen Working Group Recommendations for Construction-Related Mitigation Strategies	4.18-6
Table 4.19-1	Summary of Permits and Approvals	4.19-1
Table 4.20-1	Key Cumulative Impact Resources and Area of Analysis	4.20-3
Table 4.20-2	Current and Future Transportation Projects within the Study Area	4.20-6
Table 4.20-3	Current Local Agency Planning Projects	4.20-7
Table 4.20-4	Current and Future Development Projects within the Study Area	4.20-7
Table 4.20-5	Potential Impacts of Other Projects	4.20-15
Table 4.20-6	Regional Conformity Emissions Results	4.20-24
Table 4.21-1	Summary of Direct and Indirect Impacts	4.21-1
Table 4.21-2	Summary of Mitigation Measures and Monitoring	4.21-9

LIST OF TABLES (Continued)

		<u>Page</u>
Table 5-1	Summary of Section 4(f) Use by Alternative.....	5-4
Table 5-2	Section 4(f) Protected Parks Subject to Use	5-6
Table 5-3	Elements of Barnum East Park Reconstruction	5-20
Table 6-1	Local Media Contact List	6-5
Table 6-2	Agency and Local Government Involvement Activities.....	6-7
Table 6-3	Summary of Citizen Working Group Meetings	6-13
Table 6-4	Local Neighborhood Associations and Business Groups.....	6-15
Table 6-5	Neighborhood and Local Businesses Public Involvement Activities.....	6-16
Table 6-6	Summary of Comments Received from Neighborhood Associations, Business Groups, and Non-Profits	6-19
Table 6-7	Local Community Representatives Contacted	6-22
Table 6-8	Special Outreach Activities for Low-Income or Minority Populations	6-23
Table 7-1	Project Phases and Priorities	7-5
Table 7-2	Project Objectives Addressed by Phase 1	7-9
Table 7-3	Surface Street Levels of Service – Phase 1	7-14
Table 7-4	Phase 1 Environmental Consequences, Mitigation Measures, and Monitoring.....	7-16
Table 7-5	Project Objectives Addressed by Phase 2	7-20
Table 7-6	Phase 2 Environmental Consequences, Mitigation Measures, and Monitoring.....	7-21
Table 7-7	Project Objectives Addressed by Phase 3	7-25
Table 7-8	Phase 3 Environmental Consequences, Mitigation Measures, and Monitoring.....	7-26
Table 7-9	Project Objectives Addressed by Phase 4	7-30
Table 7-10	Phase 4 Environmental Consequences, Mitigation Measures, and Monitoring.....	7-31
Table 7-11	Project Objectives Addressed by Phase 5	7-35
Table 7-12	Phase 5 Environmental Consequences, Mitigation Measures, and Monitoring.....	7-36
Table 7-13	Project Objectives Addressed by Phase 6	7-40
Table 7-14	Phase 6 Environmental Consequences, Mitigation Measures, and Monitoring.....	7-41

LIST OF ABBREVIATED TERMS

A	AASHTO	American Association of State Highway and Transportation Officials
	ACHP	Advisory Council on Historic Preservation
	ADA	Americans with Disabilities Act
	AM	morning
	APE	area of potential effects
	AST	aboveground storage tank
	ASTM	American Society for Testing and Materials
	AT&SF	Atchison, Topeka & Santa Fe Railroad
B	BARD	Broadway Area Revitalization District
	BMP	best management practice
	BNSF	Burlington Northern and Santa Fe Railroad
C	C&S	Colorado & Southern Railroad
	CaCO ₃	calcium carbonate
	CAQCC	Colorado Air Quality Control Commission
	CBD	Central Business District
	CCD	City and County of Denver
	CDM	Camp, Dresser, McKee
	CDOH	Colorado Department of Highways
	CDOT	Colorado Department of Transportation
	CDOW	Colorado Division of Wildlife
	CDPHE	Colorado Department of Public Health and Environment
	CDPS	Colorado Discharge Permit System
	CEQ	Council on Environmental Quality
	CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
	CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
	CFR	Code of Federal Regulations
	cfs	cubic feet per second
	CGS	Colorado Geological Survey
	CHS	Colorado Historical Society
	CNAP	Colorado Natural Areas Program
	CNHP	Colorado National Heritage Program
	CO	carbon monoxide

LIST OF ABBREVIATED TERMS

	CORRACTS	RCRA corrective action
	CORSIM	corridor simulation traffic microsimulation tool
	CPV	Central Platte Valley
	CURE	South Platte Coalition for Urban River Evaluation
D	D&NO	Denver and New Orleans Railroad
	DHV	design hourly volume
	DRS	Denver Radium Site
	D&RG	Denver & Rio Grande Railroad
	dB	decibels
	dBA	A-weighted decibels
	DDT	dichlorodiphenyltrichloroethane
	DRCOG	Denver Regional Council of Governments
	DS	dry swale
E	EA	Environmental Assessment
	EAC	Early Action Compact
	EB	eastbound
	EDB	extended detention basin
	EDR	Environmental Data Resources
	EIS	Environmental Impact Statement
	EPA	U.S. Environmental Protection Agency
	ERNS	Emergency Response Notification System
F	FEMA	Federal Emergency Management Agency
	FHWA	Federal Highway Administration
	FHU	Felsburg Holt & Ullevig
	FINDS	facility index system
	FRA	Federal Railroad Administration
	FTA	Federal Transit Administration
G	GIS	geographic information system
	gpm	gallons per minute
	gps	global positioning system
H	HABS	Historic American Buildings Survey
	HAER	Historic American Engineering Record

LIST OF ABBREVIATED TERMS

	HOV	high-occupancy vehicle
I	I-25	Interstate 25
	ISA	initial site assessment
	ISO	International Organization for Standardization
	ITS	intelligent transportation system
L	lbs	pounds
	L _{eq}	equivalent continuous sound level
	LF	linear feet
	LLE	lacustrine, littoral, emergent
	LLU	lacustrine, limnetic, unconsolidated bottom
	LOS	level-of-service
	LOSS	level-of-service of safety
	LRT	light rail transit
	LUST	leaking underground storage tank
M	MESA	Modified Environmental Site Assessment
	mg/L	milligrams per liter
	mph	miles per hour
	MS4	municipal separate storm sewer system
	MSATs	mobile source air toxics
N	N	nitrogen
	NAAQS	National Ambient Air Quality Standards
	NAC	Noise Abatement Criteria
	NAWQA	USGS National Water Quality Assessment Program
	NB	northbound
	NDIS	Colorado Natural Diversity Information Source
	NEPA	National Environmental Policy Act
	NFRAP	no further remedial action planned
	NPDES	National Pollutant Discharge Elimination System
	NPL	National Priority List
	NRHP	National Register of Historic Places
	NRCS	Natural Resources Conservation Service

LIST OF ABBREVIATED TERMS

O	O ₃	ozone
	OAHP	Office of Archaeology and Historic Preservation
	OAQPS	EPA Office of Air Quality Planning and Standards
	OPS	Colorado Department of Labor and Employment Division of Oil and Public Safety
P	PCB	polychlorinated biphenyl
	pCi/L	picocuries per liter
	PEP	palustrine, emergent, persistent wetland
	PFYC	probable fossil yield classification
	PM	afternoon and evening
	PM _{2.5}	particulate matter less than 2.5 microns in size
	PM ₁₀	particulate matter less than 10 microns in size
	ppm	parts per million
	PSI	preliminary site investigation
	PSS	palustrine, scrub-shrub wetland
	PUC	Public Utilities Commission
Q	Q ₁₀₀	100-year flow rate
	Q _b	Broadway Alluvium
	Q _p	Piney Creek Alluvium
	Q _{pp}	Post-Piney Creek Alluvium
R	RCRA	Resource Conservation and Recovery Act
	RCRIS	Resource Conservation and Recovery Information System
	RI/FS	remedial investigation/feasibility study
	RMC	Revised Municipal Code
	RMP	Rocky Mountain Paleontology
	RMU	Residential Mixed Use
	RTD	Regional Transportation District
	RTP	Regional Transportation Plan
	RU	riverine, unconsolidated bottom
S	SB	southbound
	SHPO	State Historic Preservation Officer
	SPUI	single-point urban interchange
	SW	shallow wetland basin

LIST OF ABBREVIATED TERMS

T	TAZ	transportation analysis zones
	TCE	trichloroethene (also called trichloroethylene)
	TIP	transportation improvement plan
	TMDL	total maximum daily load
	TMU	Transit Mixed Use
	T-REX	Transportation Expansion Project
	TRI	travel rate index
	TSIS	Traffic Software Integrated System
U	UDFCD	Urban Drainage and Flood Control District
	$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
	μm	micrometers
	UPRR	Union Pacific Railroad
	$\mu\text{S}/\text{cm}$	micro-Siemens per centimeter
	US 6	6 th Avenue
	USACE	U.S. Army Corps of Engineers
	USFWS	United States Department of Interior Fish and Wildlife Service
	USGS	United States Department of Interior Geological Survey
	UST	underground storage tank
V	VCUP	CDPHE Voluntary Clean-up Program
	Vdb	vibration decibels
	VE	value engineering
W	WB	westbound
	WET	Wetland Evaluation Technique
	WQCV	water quality capture value
	WQDV	water quality design volume
	WWTP	wastewater treatment plant



This page intentionally left blank