Table of Contents

Acronyms i

Executive Summary ES-1

Chapter 1: Purpose and Need
1.1 Introduction 1-1
1.2 Study Area 1-1
1.3 Project Purpose 1-2
1.4 Statement of Project Need 1-2
1.5 Project History 1-10
1.6 Other Proposed Actions in the Study Area 1-12
1.7 FTA Small Starts Program and NEPA 1-13

Chapter 2: Alternatives
2.1 Development of Alternatives 2-1
2.1.1 Community Input 2-1
2.1.2 Modes Considered 2-2
2.1.3 Alignments Considered 2-2
2.1.4 800 South Interchange 2-4
2.2 Alternatives Carried Forward for Further Analysis 2-7
2.2.1 The No-Action Alternative 2-7
2.2.2 The Enhanced Bus Alternative 2-8
2.2.3 The Preferred Alternative 2-8

Chapter 3: Affected Environment and Environmental Consequences
3.1 Economic 3-6
3.2 Community Character and Cohesion 3-7
3.3 Environmental Justice 3-10
3.4 Land Use and Zoning 3-13
3.5 Land Acquisition, Displacements, and Relocations of Existing Uses 3-20
3.6 Historic Properties 3-22
3.7 Paleontological Resources 3-29
3.8 Visual Quality 3-30
3.9 Parks and Recreation Resources 3-34
3.10 Air Quality 3-38
3.11 Noise and Vibration 3-42
3.12 Biological Resources 3-51
3.13 Water Resources 3-58
3.14 Hazardous Materials and Hazardous Waste 3-71
3.15 Utilities 3-73
3.16 Energy and Mineral Resources 3-76
3.17 Public Safety and Security 3-77
3.18 Construction Impacts 3-79
3.19 Cumulative Impacts 3-83

Chapter 4: Transportation Systems
4.1 Introduction 4-1
4.2 Methodology 4-2
4.3 Transit Ridership 4-2
4.4 Regional Mobility 4-5
4.5 Corridor Mobility 4-6
4.6 Localized Traffic Impacts and Accessibility 4-10
4.7 Mobility for Pedestrians and Cyclists 4-14
4.8 Safety 4-19
4.9 Effects on Parking 4-20
4.10 Construction Impacts on Traffic 4-20

Chapter 5: Comparison of Alternatives
5.1 How the Alternatives Meet Purpose and Need 5-1
5.2 Comparison of Transportation Benefits 5-2
5.3 Environmental Impacts 5-8
5.4 FTA Small Starts Criteria 5-10

Chapter 6: Financial Plan
6.1 Financial Planning Process and Structure 6-1
6.2 Sources of Funds 6-2
6.2.1 Sources of Revenues for O&M 6-2
6.2.2 Sources of Revenues for Capital Costs 6-5
6.3 Use of Funds 6-7
6.3.1 O&M Costs 6-7
6.3.2 Use of Funds for Projected Capital Costs 6-8
6.4 Financial Capacity Analysis 6-10
6.5 Proposed Capital Financing for the Provo-Orem Bus Rapid Transit Project 6-11
6.6 Risk and Uncertainty 6-12

Chapter 7: Section 4(f) Evaluation
7.1 Project Overview 7-1
7.2 Regulations 7-1
7.3 Preferred Alternative 7-3
7.4 Purpose and Need 7-3
7.5 Description of Section 4(f) Resources 7-4
7.6 Use of Section 4(f) Properties 7-15
7.7 Coordination 7-29
7.8 Section 4(f) Finding and Conclusion 7-29

Chapter 8: Comments and Coordination
8.1 Scoping 8-1
8.2 Public Outreach after Scoping Period 8-5
8.3 Additional Agency Coordination 8-13
8.4 Comments Received 8-14
8.5 Next Steps 8-15

List of Tables

Table ES-1: Summary of Environmental Impacts of the Preferred Alternative ES-7
Table 1-1: Local and Regional Travel Demand for 2005 and 2030 1-3
Table 1-2: Population and Employment Growth (Orem and Provo) 1-4
Table 1-3: University Populations 1-4
Table 1-4: Transit Reliability and Travel Times 1-5
Table 1-5: Regional Transit Trips 1-7
Table 1-6: Local (Provo and Orem) Transit Trip Types 1-8
Table 2-1: Initial Alignments Considered in the AA 2-2
Table 2-2: Interchange Alternatives Eliminated 2-7
Table 3.0: Summary of Environmental Impacts of the Preferred Alternative 3-2
Table 3.1-1: Projected Population and Employment in Provo and Orem 3-6
Table 3.3-1: 2000 Poverty Threshold 3-11
Table 3.3-2: UTA Service Area Population by Race or Ethnicity 3-11
Table 3.4-1: Orem Intermodal Center Section Land Use 3-14
Table 3.4-2: UVU Section Land Use 3-15
Table 3.4-3: Orem Shopping District Section Land Use 3-15
Table 3.4-4: Plum Tree Section Land Use 3-16
Table 3.4-5: BYU Section Land Use 3-16
Table 3.4-6: Downtown Provo Section Land Use 3-17
Table 3.4-7: Novell Campus Section Land Use 3-17
Table 3.5-1: Full Acquisitions and Relocations 3-21
Table 3.6-1: Archaeological and Linear Historic Resources 3-24
Table 3.6-2: NRHP-Listed Properties and Districts 3-25
Table 3.6-3: Historic Properties – Historic Buildings – Affected by the Preferred Alternative 3-27
Table 3.6-4: Historic Properties – Archaeological and Linear Historic Resources – Affected by the Preferred Alternative 3-28
Table 3.9-1: Existing Parks and Recreation Resources 3-35
Table 3.9-2: Planned Recreation Resources 3-36
Table 3.9-3: Impacts to Existing and Proposed Recreation Resources 3-37
Table 3.10-1: Predicted Maximum 1-Hour CO Concentrations at Selected Intersections 3-39
Table 3.10-2: Predicted Maximum 8-Hour CO Concentrations at Selected Intersections 3-39
Table 3.10-3: Total Peak-Hour Vehicle Delay at Selected Intersections 3-40
Table 3.11-1: FTA Land Use Categories and Noise Metrics 3-44
Table 3.11-2: UDOT Noise Abatement Criteria 3-44
Table 3.11-3: Results of the Baseline Noise Monitoring Program 3-45
Table 3.11-4: Predicted Noise Levels at Representative Monitoring Locations 3-47
Table 3.11-5: Overall Project-Related Noise Impacts under the Preferred Alternative 3-48
Table 3.11-6: Noise Barriers Evaluated to Mitigate Impacts under the Preferred Alternative 3-50
Table 3.13-1: Beneficial Use Assessment 3-60
Table 3.13-2: Public Drinking Water Wells within One-half Mile of Corridor 3-62
Table 3.13-3: Wells within Groundwater Study Area 3-62
Table 3.13-4: Proposed Detention Ponds 3-65
Table 3.13-5: Proposed Drainage 3-66
Table 3.13-6: Permits and Approvals 3-70

Table 3.14-1: Hazardous Materials Sites with Potential for Impacts 3-72
Table 3.15-1: Utilities within the Study Area 3-73
Table 3.15-2: Level of Utility Impact 3-75
Table 3.17-1: Schools within the Study Area 3-78
Table 3.19-1: Present and Reasonably Foreseeable Actions 3-85
Table 4-1: Transportation Benefits and Impacts of the Preferred Alternative 4-1
Table 4-2: 2030 Transit Ridership 4-3
Table 4-3: Projected Commuter Rail Boardings 4-4
Table 4-4: University Parkway Interchange Traffic Volumes 2030 4-5
Table 4-5: PM Peak Hour Travel Time Comparison 4-7
Table 4-6: Vehicle Miles Traveled Comparison 4-8
Table 4-7: Person-Throughput in the PM Peak Hour 4-9
Table 4-8: LOS Descriptions 4-10
Table 4-9: Future (2030) PM Peak Hour LOS 4-11
Table 4-10: Neighborhood Impacts of the 800 South HOT Interchange – 2030 Peak Hour .. 4-13
Table 4-11: Station Intersection Existing Pedestrian Facilities 4-15
Table 5-1: Comparison of Alternatives 5-3
Table 5-2: Person-Throughput in the PM Peak Hour 5-4
Table 5-3: Peak-Hour Travel Times 5-6
Table 5-4: Cost Comparison 5-8
Table 5-5: Environmental Impacts of the Preferred Alternative 5-8
Table 5-6: Small Starts Project Qualifications 5-10
Table 5-7: Preliminary Small Starts Ratings 5-10
Table 6-1: UTA Farebox Receipts 6-3
Table 6-2: UTA Sales and Use Tax Receipts 6-4
Table 6-3: Capital Costs of Phase I Transit Improvements 6-9
Table 6-4: Preferred Alternative Phase I Transit Improvements - Federal and Local Cost Sharing 6-11
Table 7-1: Historic Properties Protected under Section 4(f) 7-5
Table 7-2: Recreation Resources Evaluated for Section 4(f) Applicability 7-14
Table 7-3: Use of Historic Properties 7-16
Table 7-4: Use of Existing and Planned Publicly Owned Recreation Resources 7-27
Table 8-1: Cooperating and Participating Agencies 8-3
Table 8-2: Outreach Materials 8-6
Table 8-3: Target Group Meetings 8-7
Table 8-4: 800 South Meetings 8-12

List of Figures within Chapters

Figure ES-1: Preferred Alternative ES-2
Figure ES-2: Summary of Environmental Impacts ES-10
Figure 2-3: 800 South Cross-Section (Phase II) 2-15
Figure 2-4: Campus/College Drive Cross-Section (Phase II) 2-16
Figure 2-5: University Parkway Cross-Section: 400 West to 800 East 2-17
Figure 2-6: University Parkway Cross-Section: 800 East to University Avenue 2-18
Figure 2-7: 900 East Cross-Section 2-19
Figure 2-8: 700 North Cross-Section 2-20
Figure 2-9: University Avenue Cross-Section: 700 North to 500 South 2-21

Figure 2-10: Main Street Station Visualization (Orem) 2-22
Figure 2-11: 300 North Station Rendering (Provo) 2-23
Figure 2-12: Center Street Station Rendering (Provo) 2-23
Figure 2-13: Perspective Rendering of University Avenue 2-23
Figure 2-14: Plan View Rendering (Provo) 2-24
Figure 3.2-1: Community Entrance Visualization (800 South/800 West, Orem) 3-9
Figure 3.2-2: Cross-Section of 680 South Buffer Area 3-9
Figure 3.2-3: Visualization of Mitigation Measures South of 680 South 3-10
Figure 3.8-1: Viewpoint 1—University Parkway at LaVell Edwards Stadium 3-31
Figure 3.8-2: Viewpoint 2—University Parkway at Provo River 3-31
Figure 3.8-3: Viewpoint 3—680 South/800 South 3-31
Figure 3.8-4: Viewpoint 4—800 South, West of I-15 3-31
Figure 3.8-5: Viewpoint 5—University Avenue and Center Street 3-32
Figure 3.11-1: FTA Transit Noise Impact Criteria 3-43
Figure 3.13-2: Groundwater System in Northern Utah Valley 3-61
Figure 3.19-1: Nitrogen Annual Averages 3-87
Figure 3.19-2: Three-Year Average, 8-Hour O_3 Concentration 3-87
Figure 3.19-3: PM_{10} Highest 24-Hour Concentration 3-88
Figure 3.19-4: $PM_{2.5}$ Three-Year Average of 98th Percentile of 24-Hour Concentration 3-88
Figure 3.19-5: SO_2 24-Hour Value 3-89
Figure 4-1: Station-Level Daily Boardings for the Preferred Alternative 4-4
Figure 4-2: Traffic Conditions Relieved by 800 South HOT Interchange (2030) 4-6
Figure 4-3: Miles Traveled by Mode within the Study Area (Phase II) 4-8
Figure 4-4: Person-Throughput in the PM Peak Hour 4-9
Figure 5-1: Person-Throughput in the PM Peak Hour 5-4
Figure 5-2: Station-Level Daily Boardings for the Preferred Alternative 5-5

List of Figures at End of Chapters

Figure 1-1: Study Area Existing Conditions 1-15
Figure 1-2: Travel Demand within the Study Area 1-16
Figure 1-3: Volume-to-Capacity Ratio 2030 1-17
Figure 1-4: Roads in the Study Area 1-18
Figure 1-5: Future Intersection Level of Service 2030 for the PM Peak Hour 1-20
Figure 1-6: Existing UTA Bus Routes 1-21
Figure 1-7: Future UTA Bus Routes 1-22
Figure 1-8: UVU Student Transit Proximity 1-23
Figure 1-9: BYU Student Transit Proximity 1-24
Figure 1-10: Passenger Loads on Route 830 1-25
Figure 2-1: Preferred Alternative 2-25
Figure 2-2: Preferred Interchange Alternative (Phase II) 2-26
Figure 3.4-1: Land Use in the Study Area 3-91
Figure 3.5-1: Potential Relocations and Strip Takes 3-92
Figure 3.5-2: Potential Relocations and Strip Takes 3-93
Figure 3.5-3: Potential Relocations and Strip Takes 3-94
Figure 3.5-4: Potential Relocations and Strip Takes 3-95
Figure 3.5-5: Potential Relocations and Strip Takes 3-96
Figure 3.5-6: Potential Relocations and Strip Takes 3-97

Figure 3.5-7: Potential Relocations and Strip Takes 3-98
Figure 3.6-1: Historic Properties - 1 3-99
Figure 3.6-2: Historic Properties - 2 3-100
Figure 3.6-3: Historic Properties - 3 3-101
Figure 3.6-4: Historic Properties - 4 3-102
Figure 3.6-5: Historic Properties - 5 3-103
Figure 3.9-1: Parks and Recreation Resources 3-104
Figure 3.11-2: Predicted Noise Impacts under the Preferred Alternative 3-105
Figure 3.11-3: Predicted Noise Impacts under the Preferred Alternative 3-106
Figure 3.11-4: Predicted Noise Impacts under the Preferred Alternative 3-107
Figure 3.11-5: Predicted Noise Impacts under the Preferred Alternative 3-108
Figure 3.11-6: Predicted Noise Impacts under the Preferred Alternative 3-109
Figure 3.12-1: Wetlands and Water Resources 3-110
Figure 3.12-2: Wetlands and Water Resources 3-111
Figure 3.13-1: Existing and Proposed Storm Drainage 3-112
Figure 3.13-3: Groundwater 3-113
Figure 3.13-4: Surface Waters, Canals, and Floodplains 3-114
Figure 3.14-1: Hazardous Materials 3-115
Figure 4-5: Provo-Orem BRT Traffic Volumes 4-21
Figure 7-1: Preferred Alternative 7-31
Figure 7-2: Historic Properties Protected under Section 4(f) - 1 7-32
Figure 7-3: Historic Properties Protected under Section 4(f) - 2 7-33
Figure 7-4: Historic Properties Protected under Section 4(f) - 3 7-34
Figure 7-5: Historic Properties Protected under Section 4(f) - 4 7-35
Figure 7-6: Historic Properties Protected under Section 4(f) - 5 7-36
Figure 7-7: Recreation Resources Protected under Section 4(f) 7-37

References

List of Preparers

Distribution List

Appendix

Agency and Tribal Coordination Letters
Joint Lead, Cooperating, and Participating Agency Correspondence
Invitations to Comment/Attend Scoping Meeting (2007)
Request for Comments (May 2010 and June 2010)
Additional Agency Correspondence
Tribal and Section 106 Coordination (2008 and 2009)

Determination of Eligibility and Finding of Effect and Concurrence Letters for Historic Properties
Amended Determination of Eligibility, Finding of Effect, and Notification of Section 4(f) *De Minimis* Impact Findings, October 2010
SHPO Concurrence, November 2010

Determination of Eligibility, Finding of Effect, and Notification of Section 4(f) *De Minimis* Impact Findings, January 2010
SHPO Concurrence, April 2010

Section 4(f) *De Minimis* and Temporary Occupancy Letters and Concurrence
Orem City Correspondence Regarding Hillcrest Park and College Connector Trail
Provo City Correspondence Regarding College Connector Trail, Carterville Park, and Provo River Trail

Preliminary Jurisdictional Determination for Waters of the U.S.

Documentation of Local Support
BRT EIS Interlocal Agreement, July 2007
Orem City Resolution for LPA, August 2008
Provo City Resolution for LPA, May 2010
MAG Resolution for LPA, September 2010