



**PYRAMID
HIGHWAY**



**US 395
CONNECTION**
Washoe County, Nevada

Final Environmental Impact Statement and Section 4(f) Evaluation

FHWA-NV-EIS-12-02-F



Prepared for:



June 2018

Pyramid Highway/US 395 Connection Final Environmental Impact Statement

NDOT Project No.: 73390/73391

NDOT Highway Agreement No.: P461-07-063

Submitted Pursuant to 42 USC 4332(2)(c) and 49 USC 303 by the U.S. Department of Transportation, Federal Highway Administration, Nevada Department of Transportation, and Regional Transportation Commission, with the Bureau of Land Management as a cooperating agency:

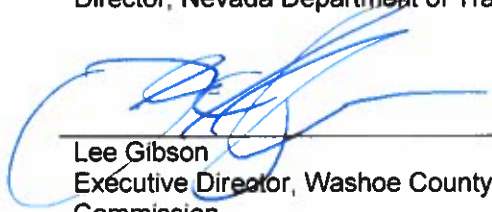
6/15/18
Date of Approval


Susan Klekar
Division Administrator, Federal Highway Administration

6-15-18
Date of Approval


Rudy Malfabon, PE
Director, Nevada Department of Transportation

6/14/18
Date of Approval


Lee Gibson
Executive Director, Washoe County Regional Transportation Commission

The following individuals may be contacted for additional information concerning this document:

Abdelmoez Abdalla, PhD
Environmental Program Manager
U.S. Department of Transportation
Federal Highway Administration-Nevada Division
705 North Plaza Street, Suite 220
Carson City, Nevada 89701
(775) 687-1231

Steve M. Cooke, PE
Environmental Services Division Chief
Nevada Department of Transportation
1263 South Stewart Street
Carson City, Nevada 89712
(775) 888-7013

Abstract

The Federal Highway Administration, in cooperation with the Nevada Department of Transportation and the Regional Transportation Commission of Washoe County, prepared this Final Environmental Impact Statement (Final EIS) to identify and evaluate transportation improvements along the Pyramid Highway (State Highway 445) corridor in the area of Northeast Truckee Meadows. Improvements considered in this Final EIS address the regional movement of people and goods; relieve congestion on Pyramid Highway; and provide improved east-west community connectivity between Pyramid Highway, United States Highway 395, and Vista Boulevard. This Final EIS provides a detailed evaluation of proposed improvements, including an examination of the purpose and need for the proposed action, alternatives under consideration, the affected environment, environmental consequences, impacts to Section 4(f) properties, and mitigation measures. Five alternatives, including the No-Action Alternative, were considered for implementation in the project area.

Comments on this Final EIS are due by July 30, 2018, or 30 days after the Notice of Availability is published in the *Federal Register*, whichever is later, and should be sent to Steve Cooke, Nevada Department of Transportation, 1263 South Stewart Street, Carson City, NV 89712.



FINAL ENVIRONMENTAL IMPACT STATEMENT

Prepared by:

**Regional Transportation Commission
Nevada Department of Transportation
and
Federal Highway Administration**

June 2018

LIST OF ACRONYMS AND ABBREVIATIONS

AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway Transportation Officials
ACM	Asbestos-Containing Materials
ADT	Average Daily Traffic
APE	Area of Potential Effect
BIA	U.S. Bureau of Indian Affairs
BLM	U.S. Bureau of Land Management
BMP	Best Management Practice
BRT	Bus Rapid Transit
BTU	British Thermal Unit
BWQP	Bureau of Water Quality Planning
CAA	Clean Air Act
CAB	Citizens Advisory Board
CCCRMP	Carson City Consolidated Resource Management Plan
CDP	Census Designated Place
CEQ	Council on Environmental Quality
CF	Consensus Forecast
CFR	Code of Federal Regulations
CMP	Pyramid Highway Corridor Management Plan
CO ₂	Carbon Dioxide
CWA	Clean Water Act
CWS	Carson Wandering Skipper
dBA	A Weighted Decibels
DCA	Development Constraints Areas
DEIS	Draft Environmental Impact Statement
DOT	Department of Transportation
DRI	Desert Research Institute
EA	Environmental Assessment
EDR	Environmental Data Resources
EIS	Environmental Impact Statement
EJ	Environmental Justice
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act

LIST OF ACRONYMS AND ABBREVIATIONS

FFPA	Farmland Protection Policy Act of 1981
FHWA	Federal Highway Administration
FIRMs	Flood Insurance Rate Maps
FTA	Federal Transit Administration
GAP	Gap Analysis Project
GHG	Greenhouse Gas
GID	General Improvement District
GIS	Geographic Information System
HCM	Highway Capacity Manual
HHS	U.S. Department of Health and Human Services
HOV	High Occupancy Vehicle
HRIF	Historic Resource Inventory Form
HRPS	Historic Reno Preservation Society
HUC	Hydrologic Unit Code
HUD	U.S. Department of Housing and Urban Development
IAC	Interagency Coordination
ICF	Interim Consensus Forecast
IMACS	Intermountain Archaeological Computer System
LBP	Lead-Based Paint
Leq	The energy equivalent of steady-state sound level, over a period of time usually an hour
LOS	Level of Service
LRMP	Land and Resource Management Plan
MBTA	Migratory Bird Treaty Act
MHC	Mobile Home Community
MHI	Median Household Income
MLRA	Major Land Resource Area
MOVES	Motor Vehicle Emissions Simulator
Mpg	Miles Per Gallon
mph	Miles Per Hour
MS4	Municipal Separate Storm Sewer Systems
MSA	Metropolitan Statistical Area
MSAT	Mobile Source Air Toxics
MU/DRC	Mixed-Use/Dandini Regional Center Overlay District
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code
NAC	Noise Abatement Criteria
NCHRP	National Cooperative Highway Research Program
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act



LIST OF ACRONYMS AND ABBREVIATIONS

NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NI	No Indicator Status
NNHP	Nevada Natural Heritage Program
NO ₂	Nitrogen Dioxide
NOA	Notice of Availability
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resource Conservation Service
NRDG	Noise Reduction Design Goal
NRHP	National Register of Historic Places
NUD	New Urban Development
OBL	Obligate Wetland
PA	Programmatic Agreement
Pb	Lead
PM ₁₀	Particulate Matter less than ten microns in diameter
PM _{2.5}	Particulate Matter less than 2.5 microns in diameter
POAQC	Projects of Air Quality Concern
ppm	Parts Per Million
R&PP	Recreation and Public Purposes
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Conditions
RMHQ	Requirements to Maintain Existing Higher Quality
RMP	Resource Management Plan
ROD	Record of Decision
RPC	Regional Planning Commission
RPGB	Regional Planning Governing Board
RTC	Regional Transportation Commission of Washoe County
RTP	Regional Transportation Plan
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act-A Legacy for Users
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
SOI	Sphere of Influence
SPL	Sound Pressure Levels
SSURGO	Soil Survey Geographic Database
STIP	State Transportation Improvement Program
SWG	Stakeholder Working Group
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plan
SWReGAP	Southwest Regional Gap Analysis Project

LIST OF ACRONYMS AND ABBREVIATIONS

TAC	Technical Advisory Committee
TART	Tahoe Area Regional Transit
TAZ	Traffic Analysis Zone
TMCC	Truckee Meadows Community College
TMDL	Total Maximum Daily Load
TMRPA	Truckee Meadows Regional Planning Agency
TMWA	Truckee Meadows Water Authority
TMWC	Truckee Meadows Watershed Committee
TMWRF	Truckee Meadows Water Reclamation Facility
TNM	Traffic Noise Model
TROA	Truckee River Operating Agreement
UPL	Obligate Upland
URA	Uniform Relocation Act
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey
USTs	Underground Storage Tanks
VHD	Vehicle Hours of Delay
VHT	Vehicle Hours Traveled
VMS	Variable Message Signs
VMT	Vehicle Miles Traveled
vph	Vehicles Per Hour
VRM	Visual Resource Management
WCAQMD	Washoe County Health District—Air Quality Management Division
WCRM	Western Cultural Resource Management
WCSD	Washoe County School District
WRWC	Western Regional Water Commission
WSA	Wilderness Study Area

TABLE OF CONTENTS

	Page No.
Executive Summary	ES-1
1.0 Purpose and Need	1-1
1.1 Introduction	1-1
1.2 Project Description and Location	1-1
1.3 Background and Project History	1-1
1.4 Project Objective	1-3
1.5 Project Purpose and Need	1-3
1.5.1 Purpose: Provide improvements to serve existing and future growth	1-4
1.5.2 Purpose: Alleviate existing congestion problems on Pyramid Highway.	1-6
1.5.3 Purpose: Provide direct and efficient travel routes to address existing travel inefficiencies	1-9
1.5.4 Purpose: Respond to regional and local plans.	1-12
1.5.5 BLM Purpose and Need	1-13
1.6 Relationship to the Transportation Planning Process	1-14
1.7 Relationship to NEPA	1-14
2.0 Alternatives	2-1
2.1 Introduction	2-1
2.2 Alternatives Development and Screening Process	2-2
2.2.1 Decision-Making Process	2-4
2.2.2 Screening Criteria	2-5
2.3 Alternatives Considered	2-12
2.3.1 Arterial Expansion Alternatives	2-12
2.3.2 North-South Alignment Alternatives	2-13
2.3.3 East-West Alignment Alternatives	2-16
2.3.4 Cross-Section Alternatives	2-18
2.3.5 Interchange Locations and Configurations	2-18
2.3.6 Bicycle and Pedestrian Alternatives	2-24
2.3.7 Transit Alternatives	2-24
2.3.8 Alternative Lane Types	2-26
2.3.9 Congestion Management Alternative	2-27
2.4 Alternatives Advanced and Fully Evaluated in the Draft EIS	2-28
2.4.1 Logical Termini	2-28
2.4.2 No-Action Alternative	2-29
2.4.3 Freeway Alternatives Summary	2-29
2.5 Initial Identification of the Preferred Alternative	2-32
2.5.1 Draft EIS Public Comment Period	2-32
2.5.2 Initial Identification of Preferred Alternative after Draft EIS	2-33
2.6 Changes to the Project After the Draft EIS	2-33
2.6.1 Revised Traffic Forecasts	2-33

	Page No.
2.6.2	Validation of Purpose and Need 2-34
2.6.3	Rescreening of Alternatives 2-34
2.7	Alternatives Advanced in this Final EIS 2-35
2.7.1	Logical Termini 2-36
2.7.2	No-Action Alternative..... 2-36
2.7.3	Arterial Alternatives – Common Elements 2-38
2.7.4	Arterial Alternative 1 2-48
2.7.5	Arterial Alternative 2 2-50
2.7.6	Arterial Alternative 3 2-52
2.7.7	Arterial Alternative 4 2-54
2.8	Arterial Alternative Cost Ranges..... 2-56
3.0	Environmental Resources, Impacts, and Mitigation..... 3-1
3.1	Land Use..... 3-1
3.1.1	Methods..... 3-3
3.1.2	Existing Conditions..... 3-3
3.1.3	Existing Land Use and Zoning 3-9
3.1.4	Future Land Use..... 3-13
3.1.5	Land Use Impacts 3-16
3.1.6	Land Use Mitigation..... 3-28
3.2	Social Resources 3-28
3.2.1	Methods..... 3-29
3.2.2	Existing Conditions..... 3-29
3.2.3	Social Resources Impacts..... 3-35
3.2.4	Social Resources Mitigation 3-42
3.3	Environmental Justice..... 3-43
3.3.1	Regulatory Background..... 3-43
3.3.2	Methods..... 3-43
3.3.3	Existing Conditions..... 3-46
3.3.4	Specialized Outreach 3-46
3.3.5	Environmental Justice Impacts 3-47
3.3.6	Environmental Justice Mitigation..... 3-62
3.3.7	Conclusion..... 3-65
3.4	Economic Resources 3-69
3.4.1	Methods..... 3-69
3.4.2	Existing Conditions..... 3-69
3.4.3	Economic Impacts 3-75
3.4.4	Economic Mitigation 3-85
3.5	Right-of-Way/Relocation 3-86
3.5.1	Methods..... 3-86
3.5.2	Existing Conditions..... 3-87
3.5.3	Right-of-Way/Relocation Impacts..... 3-89
3.5.4	Right-of-Way/Relocation Mitigation 3-99



	Page No.
3.6	Transportation..... 3-104
3.6.1	Methods..... 3-104
3.6.2	Existing Conditions..... 3-106
3.6.3	Transportation Impacts..... 3-106
3.6.4	Transportation Mitigation Measures..... 3-121
3.7	Pedestrian and Bicycle Safety 3-122
3.7.1	Methods..... 3-122
3.7.2	Existing Conditions..... 3-123
3.7.3	Arterial Alternatives Bicycle and Pedestrian Facilities 3-128
3.7.4	Bicycle and Pedestrian Facility Impacts..... 3-136
3.7.5	Bicycle and Pedestrian Facility Mitigation 3-138
3.8	Air Quality..... 3-139
3.8.1	Air Quality Regulations..... 3-139
3.8.2	Attainment Status 3-141
3.8.3	Methods..... 3-142
3.8.4	Existing Conditions..... 3-144
3.8.5	Air Quality Impacts 3-145
3.8.6	Air Quality Mitigation 3-146
3.8.7	Transportation Conformity..... 3-148
3.8.8	Mobile Source Air Toxics 3-149
3.8.9	Greenhouse Gases 3-150
3.9	Traffic Noise 3-151
3.9.1	Noise Standards and Criteria 3-151
3.9.2	Noise Fundamentals 3-152
3.9.3	Methods..... 3-153
3.9.4	Traffic Data..... 3-154
3.9.5	Existing Conditions..... 3-154
3.9.6	Noise Impacts..... 3-157
3.9.7	Traffic Noise Mitigation..... 3-167
3.10	Water Resources and Water Quality 3-173
3.10.1	Methods..... 3-173
3.10.2	Existing Conditions..... 3-174
3.10.3	Water Resources and Water Quality Impacts..... 3-178
3.10.4	Water Resources and Water Quality Mitigation 3-186
3.11	Wetlands and Waters of the U.S. 3-188
3.11.1	Methods..... 3-189
3.11.2	Existing Conditions..... 3-191
3.11.3	Wetlands and Waters of the U.S. Impacts 3-193
3.11.4	Wetlands and Waters of the U.S. Mitigation 3-200
3.12	Floodplains..... 3-202
3.12.1	Methods..... 3-202
3.12.2	Existing Conditions..... 3-203

	Page No.
3.12.3 Floodplain Impacts	3-204
3.12.4 Floodplain Mitigation	3-210
3.13 Vegetation and Noxious Weeds	3-211
3.13.1 Methods.....	3-211
3.13.2 Existing Conditions.....	3-212
3.13.3 Vegetation and Noxious Weeds Impacts	3-217
3.13.4 Vegetation and Noxious Weeds Mitigation	3-220
3.14 Wildlife.....	3-221
3.14.1 Methods.....	3-221
3.14.2 Existing Conditions.....	3-221
3.14.3 Wildlife Impacts	3-223
3.14.4 Wildlife Mitigation	3-228
3.15 Special-Status Species	3-229
3.15.1 Methods.....	3-230
3.15.2 Existing Conditions.....	3-231
3.15.3 Special-Status Species Impacts.....	3-250
3.15.4 Special-Status Species Mitigation	3-258
3.16 Visual Quality	3-259
3.16.1 Methods.....	3-259
3.16.2 Local and Regional Planning Efforts	3-260
3.16.3 Existing Conditions.....	3-260
3.16.4 BLM Parcel.....	3-272
3.16.5 Visual Quality Impacts.....	3-274
3.16.6 Visual Quality Mitigation	3-294
3.17 Historic Preservation	3-296
3.17.1 Methods.....	3-296
3.17.2 Existing Conditions.....	3-299
3.17.3 Historic Property Impacts	3-307
3.17.4 Measures Undertaken to Avoid or Minimize Impacts.....	3-310
3.17.5 Determination of Effect.....	3-311
3.17.6 Historic Property Mitigation	3-313
3.17.7 Summary of Coordination	3-313
3.18 Hazardous Materials	3-319
3.18.1 Regulatory Standards.....	3-319
3.18.2 Methods.....	3-320
3.18.3 Existing Conditions.....	3-320
3.18.4 Hazardous Materials Impacts.....	3-327
3.18.5 Hazardous Materials Mitigation	3-334
3.19 Parks and Recreation	3-335
3.19.1 Methods.....	3-335
3.19.2 Existing Conditions.....	3-336



	Page No.
3.19.3 Parks and Recreation Impacts	3-341
3.19.4 Parks and Recreation Mitigation	3-348
3.20 Farmland	3-349
3.20.1 Methods	3-350
3.20.2 Existing Conditions	3-350
3.20.3 Farmland Impacts	3-350
3.20.4 Farmland Mitigation	3-353
3.21 Energy	3-353
3.21.1 Methods	3-353
3.21.2 Existing Conditions	3-353
3.21.3 Energy Impacts	3-354
3.21.4 Energy Mitigation	3-357
3.22 Relationship Between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity	3-357
3.22.1 Local Short-Term Uses Versus Long-Term Productivity	3-357
3.23 Irreversible and Irrecoverable Commitment Of Resources	3-358
3.23.1 Natural Resources	3-358
3.23.2 Physical Resources	3-358
3.23.3 Human Resources	3-359
3.23.4 Fiscal Resources	3-359
3.23.5 Impact Summary	3-359
3.24 Cumulative Effects	3-359
3.24.1 Methods	3-360
3.24.2 Agency Scoping and Identification of Resources for Cumulative Impact Analysis	3-360
3.24.3 Geographic Area of Analysis	3-361
3.24.4 Time Frame for Analysis	3-363
3.24.5 Reasonably Foreseeable Future Projects	3-363
3.24.6 Existing Conditions	3-365
3.24.7 Cumulative Effects Impacts	3-369
3.24.8 Cumulative Effects Mitigation	3-383
3.24.9 Summary	3-384
3.25 BLM Resources	3-385
3.26 Summary of Environmental Impacts	3-387
4.0 Comments and Coordination	4-1
4.1 Introduction	4-1
4.2 Agency Coordination	4-1
4.2.1 Lead Agencies	4-1
4.2.2 Letters of Intent	4-1
4.2.3 Coordination Plan	4-2
4.2.4 Cooperating and Participating Agencies	4-3
4.2.5 Agency Scoping Meeting	4-4

	Page No.
4.2.6	Section 106 Consulting Parties 4-5
4.2.7	Technical Advisory Committee..... 4-5
4.2.8	Individual Agency Meetings 4-8
4.2.9	Coordination with Other Local, State, and Federal Agencies 4-8
4.3	Public Involvement Process..... 4-8
4.3.1	Notice of Intent 4-8
4.3.2	Project Web Site..... 4-8
4.3.3	Stakeholder Working Group 4-9
4.3.4	Public Meetings/Open Houses/Workshops..... 4-10
4.3.5	Small Group Meetings..... 4-13
4.3.6	Specialized Environmental Justice Outreach..... 4-15
4.3.7	Project Contact..... 4-17
4.3.8	Public Input Summary 4-17
4.4	Distribution and Review of the Draft EIS 4-19
4.5	Comments and Public Hearings on the Draft EIS 4-20
4.6	Final EIS and Record of Decision 4-23
5.0	Section 4(f) Evaluation..... 5-1
5.1	Introduction 5-1
5.2	Section 4(f) "Use"..... 5-2
5.3	Purpose and Need 5-3
5.3.1	Bureau of Land Management Purpose and Need 5-5
5.4	Alternatives 5-5
5.5	Identification of Section 4(f) Properties 5-8
5.5.1	Public Parks and Recreation Areas 5-8
5.5.2	Historic Resources 5-10
5.6	Use of Section 4(f) Properties..... 5-17
5.6.1	Park and Recreation Resources 5-17
5.6.2	Wedekind Park – <i>De Minimis</i> Use Evaluation..... 5-18
5.6.3	Historic Resources 5-23
5.6.4	Prosser Valley Ditch – <i>De Minimis</i> Use Evaluation..... 5-24
5.7	Consultation and Coordination 5-30
6.0	Evaluation of Alternatives 6-1
6.1	Introduction 6-1
6.2	Meeting the Project’s Purpose and Need 6-1
6.2.1	Purpose: Provide improvements to serve existing and future growth..... 6-1
6.2.2	Purpose: Alleviate existing congestion problems on Pyramid Highway. 6-2
6.2.3	Purpose: Provide direct and efficient travel routes to address existing travel inefficiencies..... 6-3
6.2.4	Purpose: Respond to regional and local plans. 6-4
6.2.5	Summary 6-5
6.3	Environmental Impacts 6-5



	Page No.
6.4 Environmental Impact Comparison.....	6-5
6.5 Identification of the Preferred Alternative.....	6-16
6.5.1 Initial Identification of the Preferred Alternative	6-17
6.5.2 Identification of the Preferred Alternative	6-17
6.6 Description of the Preferred Alternative.....	6-19
6.6.1 Roadway Improvements	6-19
6.6.2 Bicycle/Pedestrian Facility Improvements.....	6-25
6.6.3 Transit and ITS.....	6-26
6.6.4 Bridges	6-26
6.6.5 Retaining Walls	6-27
6.6.6 Water Quality and Drainage Improvements	6-28
6.6.7 Project Costs and Phasing	6-29
6.7 Mitigation Measures.....	6-33
7.0 List of Preparers	7-1
8.0 List of Recipients	8-1
8.1 Local Agencies.....	8-1
8.2 State Agencies.....	8-3
8.3 Federal Agencies	8-4
8.4 Native American Tribes.....	8-5
9.0 References	9-1
10.0 Glossary of Terms	10-1

APPENDICES

Appendix A: Agency Coordination

Appendix B: Public Involvement

Appendix C: Plan Sheets

Appendix D: Draft EIS Comments and Responses

Appendix E: Analysis of BLM Required Design Features for Greater Sage Grouse

Appendix F: Traffic Sensitivity Analysis – April 2018

(Note: All appendices are included on the computer disc attached to the back cover of this document due to their large file size.)

LIST OF FIGURES

	Page No.
Figure 1-1. Study Area	1-2
Figure 1-2. Intersection LOS	1-7
Figure 1-3. Existing Roadway Network	1-10
Figure 1-4. McCarran Boulevard Existing and Future (2035) Average Daily Traffic.....	1-12
Figure 2-1. Alternatives Screening Process	2-3
Figure 2-2. North-South Alignment Alternatives.....	2-15
Figure 2-3. East-West Alignment Alternatives.....	2-17
Figure 2-4. Cross-Section Alternatives.....	2-19
Figure 2-5. LOS with Arterial Cross-Sections.....	2-21
Figure 2-6. On-Street Bicycle Lanes with Sidewalks.....	2-25
Figure 2-7. Shared-Use Paths.....	2-25
Figure 2-8. Freeway Alternatives Evaluated in the Draft EIS.....	2-30
Figure 2-9. No-Action Alternative	2-37
Figure 2-10. Elements Common to All Arterial Alternatives	2-40
Figure 2-11. Arterial Alternative 1	2-49
Figure 2-12. Arterial Alternative 2.....	2-51
Figure 2-13. Arterial Alternative 3.....	2-53
Figure 2-14. Arterial Alternative 4.....	2-55
Figure 3-1. Existing Land Use	3-2
Figure 3-2. Future Land Use	3-10
Figure 3-3. Land Use Impact Locations – Arterial Alternatives	3-17
Figure 3-4. Land Use Impacts – Arterial Alternatives 1 and 2.....	3-18
Figure 3-5. Land Use Impacts – Arterial Alternatives 3 and 4.....	3-19
Figure 3-6. Washoe County Population Projections.....	3-29
Figure 3-7. Community Facilities in the Study Area	3-34
Figure 3-8. Minority and Low-Income Populations in the Study Area	3-45
Figure 3-9. Sun Valley Neighborhood Impacts – Arterial Alternatives 1 and 2	3-54
Figure 3-10. Sun Valley Neighborhood Impacts – Arterial Alternatives 3 and 4	3-55
Figure 3-11. Blue Gem Estates and Oasis Mobile Estates Impacts – Arterial Alternatives 1 and 2	3-58
Figure 3-12. Blue Gem Estates and Oasis Mobile Estates Impacts – Arterial Alternatives 3 and 4	3-59
Figure 3-13. Unemployment Trends, 2002 to 2015.....	3-71
Figure 3-14. Economic Activity Centers	3-74
Figure 3-15. Potential Relocations – Arterial Alternative 1.....	3-92
Figure 3-16. Potential Relocations – Arterial Alternative 2.....	3-94
Figure 3-17. Potential Relocations – Arterial Alternative 3.....	3-96
Figure 3-18. Potential Relocations – Arterial Alternative 4.....	3-98



	Page No.
Figure 3-19. Existing Transit Service and Ridership	3-107
Figure 3-20. 2008 and 2035 Estimated Peak Hour Volumes Along Representative Roadway Segments	3-111
Figure 3-21. Existing Bicycle and Pedestrian Facilities within the Study Area	3-126
Figure 3-22. Planned Bicycle, Pedestrian, and Trail Facilities in the Study Area	3-127
Figure 3-23. Proposed Bicycle and Pedestrian Facilities – Arterial Alternative 1	3-129
Figure 3-24. Proposed Bicycle and Pedestrian Facilities – Arterial Alternative 2	3-130
Figure 3-25. Proposed Bicycle and Pedestrian Facilities – Arterial Alternative 3	3-131
Figure 3-26. Proposed Bicycle and Pedestrian Facilities – Arterial Alternative 4	3-132
Figure 3-27. Examples of Common Outdoor Noise and dB(A) Levels.....	3-153
Figure 3-28. Field Noise Monitoring Sites in the Study Area	3-156
Figure 3-29. Noise Monitoring Locations and Index Map for Areas Common to All Arterial Alternatives	3-158
Figure 3-30. Traffic Noise Impacts Common to All Arterial Alternatives	3-159
Figure 3-31. Traffic Noise Impacts Common to All Arterial Alternatives	3-160
Figure 3-32. Traffic Noise Impacts near the US 395 Connector – Arterial Alternatives 1 and 2.....	3-162
Figure 3-33. Traffic Noise Impacts near the US 395 Connector – Arterial Alternatives 3 and 4.....	3-163
Figure 3-34. Traffic Noise Impacts Along Pyramid Highway – Arterial Alternatives 1 and 2	3-164
Figure 3-35. Traffic Noise Impacts Along Pyramid Highway – Arterial Alternatives 3 and 4	3-165
Figure 3-36. Water Resources and Permanent Water Quality Features for All Arterial Alternatives	3-179
Figure 3-37. Water Resources and Permanent Water Quality Features – Arterial Alternatives 1 and 2	3-180
Figure 3-38. Water Resources and Permanent Water Quality Features – Arterial Alternatives 3 and 4	3-181
Figure 3-39. Wetlands and Waters of the U.S. Impacts Locations – September 2017.....	3-194
Figure 3-40. Wetlands and Waters of the U.S. Impacts – Arterial Alternative Common Elements	3-195
Figure 3-41. Wetlands and Waters of the U.S. Impacts – Arterial Alternatives 1 Through 4.....	3-196
Figure 3-42. Floodplains Locations	3-205
Figure 3-43. Floodplains Impacts Common to All Arterial Alternatives	3-206
Figure 3-44. Floodplains Impacts – Arterial Alternatives 1, 2, 3, and 4.....	3-207
Figure 3-45. Ecological Units Mapped in the Study Area (SWReGAP)	3-216
Figure 3-46. Greater Sage-Grouse Habitat within BLM Land	3-251
Figure 3-47. Study Area Viewsheds and Landscape Units.....	3-261
Figure 3-48. Viewpoint Locations and BLM Visual Resource Management Classifications.....	3-266
Figure 3-49. Retaining Wall Examples	3-287
Figure 3-50. Traffic Noise Barrier Examples	3-288
Figure 3-51. NRHP-Eligible Historic Architecture Properties	3-298
Figure 3-52. Hazardous Material Site Locations	3-329
Figure 3-53. Hazardous Material Site Locations – Arterial Alternatives 1 and 2.....	3-330

	Page No.
Figure 3-54. Hazardous Material Site Locations – Arterial Alternatives 3 and 4.....	3-331
Figure 3-55. Existing and Planned Parks and Recreation Areas in the Study Area	3-339
Figure 3-56. Improvements within Section 6(f) Boundary at Spanish Springs Library and Lazy 5 Regional Park – All Arterial Alternatives	3-344
Figure 3-57. Wedekind Park Impacts – Arterial Alternatives 1 and 3.....	3-345
Figure 3-58. Wedekind Park Impacts – Arterial Alternatives 2 and 4.....	3-347
Figure 3-59. Farmlands Prime Soils if Irrigated.....	3-352
Figure 3-60. Regional Study Area	3-362
Figure 3-61. Planned Transportation Projects in the Regional Study Area	3-366
Figure 3-62. New Residential Building Permits, 2002 to 2014.....	3-369
Figure 3-63. Regional Study Area Growth, 1940 to 2004	3-370
Figure 3-64. Regional Development Constraints	3-372
Figure 3-65. Regional Study Area Air Quality Trend, 2006 to 2015.....	3-377
Figure 3-66. Transportation Capacity Improvements in Relation to Minority and Low-Income Populations Income Populations.....	3-382
Figure 5-1. Arterial Alternatives – Overview Map.....	5-7
Figure 5-2. Park and Recreational Properties Potentially Used by Arterial Alternatives.....	5-9
Figure 5-3. Wedekind Park Development Plan	5-11
Figure 5-4. NRHP-Eligible Historic Properties.....	5-13
Figure 5-5. Prosser Valley Ditch.....	5-16
Figure 5-6. Wedekind Park Use: Arterial Alternatives 1 and 3.....	5-19
Figure 5-7. Wedekind Park Use: Arterial Alternatives 2 and 4.....	5-21
Figure 5-8. Arterial Alternative Impacts at Prosser Valley Ditch: Initial Path Alignment	5-25
Figure 5-9. Arterial Alternative Impacts at Prosser Valley Ditch: Realigned Path.....	5-26
Figure 5-10. Photographs of Prosser Valley Ditch at Proposed Path Crossing.....	5-28
Figure 6-1. Arterial Alternative 3 (Preferred Alternative)	6-20
Figure 6-2. Project Phasing and Estimated Costs.....	6-30

LIST OF TABLES

Table 1-1. Historical Population Growth.....	1-4
Table 1-2. Population Statistics by Planning Area, 2015 to 2035.....	1-5
Table 1-3. Employment Statistics by Planning Area, 2015 to 2035	1-5
Table 1-4. LOS Criteria for Intersections.....	1-6
Table 1-5. Intersection LOS, Base Operation Year (2007)	1-8
Table 1-6. Available NDOT Traffic Count Data along Pyramid Highway (2007-2014)	1-8
Table 1-7. Intersection LOS, Future (2035)	1-9
Table 2-1. Level 2A Traffic Screening Criteria	2-7



	Page No.
Table 2-2.	Level 2A Environmental Screening Criteria 2-8
Table 2-3.	Level 2B Design and Traffic Screening Criteria 2-9
Table 2-4.	Level 2B Environmental Screening Criteria 2-10
Table 2-5.	Level 3 Design and Traffic Screening Criteria 2-11
Table 2-6.	Level 3 Environmental Screening Criteria 2-12
Table 2-7.	Arterial Expansion Alternatives 2-13
Table 2-8.	North-South Alignment Alternatives Screening Summary 2-13
Table 2-9.	East-West Alignment Alternatives Screening Summary 2-16
Table 2-10.	Transit Alternative Screening Summary 2-26
Table 2-11.	Major Design Elements of the Freeway Alternatives 2-31
Table 2-12.	Purpose and Need Confirmation..... 2-34
Table 2-13.	Proposed Retaining Wall Locations for Arterial Alternatives 2-45
Table 2-14.	Water Quality and Drainage Facilities..... 2-47
Table 2-15.	Arterial Alternative Net Earthwork Volumes..... 2-48
Table 2-16.	Arterial Alternative Cost Estimates 2-56
Table 3-1.	Approved Residential Developments in Washoe County 3-15
Table 3-2.	Existing Land Uses Permanently Converted to a Transportation Use by Arterial Alternative 3-28
Table 3-3.	Age Distribution in Washoe County 3-30
Table 3-4.	Housing Statistics..... 3-31
Table 3-5.	New Family Units: Washoe County – 2001 to 2016 3-31
Table 3-6.	Community Facilities in the Study Area 3-32
Table 3-7.	Potential Environmental Justice Residential Relocations by Neighborhood and Arterial Alternative..... 3-56
Table 3-8.	Traffic Noise Impacts by Community under All Arterial Alternatives 3-66
Table 3-9.	Environmental Justice Impacts, Benefits, and Mitigation Measures..... 3-68
Table 3-10.	Population and Employment Trends, 2000 to 2015..... 3-70
Table 3-11.	Future Employment and Population Data by Planning Area 3-70
Table 3-12.	Median Household Income, 2000 to 2015 3-71
Table 3-13.	Ad Valorem Tax Revenue, 2004 to 2015..... 3-72
Table 3-14.	Potential Commercial Relocations by Arterial Alternative..... 3-84
Table 3-15.	Full and Partial Property Impacts by Arterial Alternative 3-97
Table 3-16.	Summary of Potential Relocations by Arterial Alternatives 3-99
Table 3-17.	Number of Potential Residential Relocations and Comparable Properties by Area in 2017 3-102
Table 3-18.	Number of Potential Business Relocations and Comparable Properties by Area in 2017 3-103
Table 3-19.	VMT and VHT Analysis 3-109
Table 3-20.	Arterial Alternative Interchange Locations 3-115
Table 3-21.	Access Modifications/Closures by Arterial Alternative..... 3-117

	Page No.
Table 3-22. Summary of Transportation Impacts.....	3-120
Table 3-23. National Ambient Air Quality Standards for Criteria Pollutants.....	3-139
Table 3-24. Monitoring Stations in Washoe County.....	3-145
Table 3-25. Noise Abatement Criteria, Hourly A-Weighted Sound Level Decibels (dBA)	3-152
Table 3-26. Summary of Impacted Receptors for the No-Action and Arterial Alternatives.....	3-167
Table 3-27. Summary of Traffic Noise Barrier Analysis for All Arterial Alternatives	3-171
Table 3-28. Summary of Traffic Noise Barrier Analysis by Arterial Alternative.....	3-172
Table 3-29. Public Wells.....	3-178
Table 3-30. Excavation and Embankment Amounts by Arterial Alternative	3-182
Table 3-31. Impervious Surface by Arterial Alternative.....	3-186
Table 3-32. Plant Indicator Status Categories	3-190
Table 3-33. Wetlands in the Study Area – 2010 and 2015	3-192
Table 3-34. Permanent and Temporary Wetlands and Other Waters of the U.S. Impacts.....	3-200
Table 3-35. Potential Floodplain Encroachment by Arterial Alternatives.....	3-210
Table 3-36. SWReGap Habitats and Ecological Units Mapped in the Study Area.....	3-213
Table 3-37. Temporary and Permanent Impacts to Habitat by Arterial Alternative	3-219
Table 3-38. Impacts Common to All Arterial Alternatives	3-224
Table 3-39. Federally Listed Species with Potential to Occur in the Study Area.....	3-232
Table 3-40. Federal and State Listed, and BLM or NNHP Sensitive Species*	3-235
Table 3-41. BLM Sensitive Species*	3-247
Table 3-42. Summary of Visual Impacts for the No-Action and Arterial Alternatives.....	3-293
Table 3-43. Previously Documented Historic Architecture Resources	3-300
Table 3-44. Summary of Effects to Historic Architecture and Archaeological Resources	3-312
Table 3-45. Results of 2017 EDR Database Report	3-321
Table 3-46. Summary of Database Listing and Relative Risk Ranking	3-328
Table 3-47. Summary of Risks and Listed Sites within the Project Limits of the Arterial Alternatives	3-333
Table 3-48. Number of Listed Sites within Project Limits by Risk Ranking.....	3-334
Table 3-49. Existing and Planned Parks and Recreation Areas within the Study Area.....	3-336
Table 3-50. Summary of Parks and Recreation Resource Impacts for the No-Action and Arterial Alternatives.....	3-348
Table 3-51. 2035 Daily Vehicle Hours Traveled by Alternative.....	3-355
Table 3-52. Reasonably Foreseeable Future Projects in the Regional Study Area	3-364
Table 3-53. Population by Municipality, 1950 to 2010	3-368
Table 3-54. Effects to BLM Resources	3-385
Table 3-55. Impact Summary	3-387
Table 4-1. TAC Meeting Summary.....	4-6
Table 4-2. SWG Meetings Summary	4-9
Table 4-3. Small Group Meetings Summary.....	4-13
Table 4-4. GID Meetings Summary.....	4-14



	Page No.
Table 4-5. CAB Outreach Summary	4-14
Table 4-6. Public Input Summary	4-18
Table 4-7. Draft EIS Comment Summary	4-22
Table 6-1. Purpose and Need Summary by Alternative.....	6-6
Table 6-2. Impact Summary	6-7
Table 6-3. Major Design Elements of the Arterial Alternatives	6-18
Table 6-4. Arterial Alternative 3 Proposed Retaining Wall Locations	6-27
Table 6-5. Arterial Alternative 3 Phases and Cost Estimates	6-31
Table 6-6. Summary of Mitigation Measures for Preferred Alternative (Arterial Alternative 3)	6-33
Table 7-1. List of Preparers.....	7-1

LIST OF TECHNICAL REPORTS AND MEMORANDA

Following is a list of technical reports and memoranda prepared as part of this EIS. Except where noted, these reports are included on the computer disc attached to the back cover of this report:

*A Class III Cultural Resources Inventory for the Pyramid Highway/US 395 Connection Project in Washoe County, Nevada. April 2015.**

Air Quality Technical Report for Pyramid Highway and US 395 Connector, September 2017.

Alternatives Development and Screening for Pyramid Highway and US 395 Connector, June 2012.

Alternatives Development and Screening Update: Identification of a Preferred Alternative for Pyramid Highway and US 395 Connector, September 2017.

*Architectural Inventory: Pyramid Highway/US 395 Connection Project (historic architecture), January 2012; Revised December 2012 (Note: Redacted version to protect sensitive resources). **

*File and Literature Search and Preliminary Field Survey: Archaeological Inventory of the Pyramid Highway/US 395 Connection Projects, Sparks, Washoe County, Nevada. March 2012; Revised May 2012.**

Pyramid Highway & US 395 Connector Project Conceptual Drainage Report, September 2011.

Revised Drainage Requirements for the Preferred Arterial Alternative 3 Based on Revised Designs, Pyramid Highway/US 395 Connection Environmental Impact Statement, June 2017.

Social Considerations, Right-of-Way/Relocation Impacts, and Environmental Justice Technical Report, September 2017.

Summary of Environmental Database Search Results Pyramid Highway and US 395 Connector Project Technical Memorandum, June 2017.

Traffic Noise Technical Report, September 2017.

Traffic Report, December 2011.

Addendum to the Pyramid Highway/US 395 Connector Traffic Report (December 2011), for Arterial Alternatives for Pyramid Highway and US 395 Connector, June 2017.

Visual Technical Memorandum, September 2017.

*Not provided on CD to protect location of sensitive resources.