

**Final Environmental Impact Statement (FEIS) and
Final Section 4(f) Evaluation
US-95 Thorncreek Road to Moscow**

Milepost 337.67 to Milepost 344.00; Latah County, Idaho
Project No. DHP-NII-4110 (156); Key No 9294

Submitted Pursuant to:
40 CFR 1500-1508; 23 CFR 771; 49 USC 303; 23 USC 109(h); 23 USC 128; 23 USC 138
by
U.S. Department of Transportation (USDOT); Federal Highway Administration (FHWA)
and
Idaho Transportation Department (ITD)
and
Cooperating Agency
U.S. Army Corps of Engineers (USACE)
July 2015



Sue Sullivan, Environmental Section Manager
ITD

7/28/15

Date of Approval:



Peter J. Hartman, Division Administrator
FHWA Idaho Division

07/28/2015

Date of Approval:

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

Ken Helm
ITD
P.O. Box 837
Lewiston, ID 83501
(208) 799-5090

Kyle P. Holman
FHWA
3050 Lakeharbor Lane, Suite 126
Boise, ID 83703
(208) 334-9180

Abstract:

The US-95 Thorncreek Road to Moscow project is located in Latah County, Idaho. The project begins near Thorncreek Road (MP 337.67) and continues north for approximately 6.34 miles, ending at the South Fork Palouse River Bridge (MP 344.00). The purpose of this project is to improve the safety and capacity on this segment of US-95. This FEIS analyzes the benefits and effects of the No Action and three Action Alternatives (Modified W-4, C-3 and E-2) on the natural and human environment. It makes corrections to the DEIS, presents new information and responds to public comments. It also identifies the Preferred Alternative and mitigation measures.

Any comments on this FEIS must be received by, September 14 2015 and should be sent to:

Adam Rush, Public Involvement Coordinator
ITD Office of Communications
3311 W. State Street, Boise, ID 83703
(208) 334-8119; adam.rush@itd.idaho.gov

TITLE VI OF THE CIVIL RIGHTS ACT of 1964

FHWA and ITD are committed to compliance with Title VI of the Civil Rights Act of 1964 and all related regulations and directives. FHWA and ITD assure that no person shall on the grounds of race, color, national origin, gender, age or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any FHWA or ITD service, program or activity. FHWA and ITD also assure that every effort will be made to prevent discrimination through the effects of its programs, policies and activities on minority and low-income populations. In addition, FHWA and ITD will take reasonable steps to provide meaningful access to services for persons with limited English proficiency.

For assistance call:

Adam Rush

Public Involvement Coordinator

ITD Office of Communications

(208) 334-8119

adam.rush@itd.idaho.gov

TABLE OF CONTENTS

TECHNICAL REPORTS	XV
<i>DEIS Technical Reports</i>	<i>xv</i>
<i>FEIS Technical Reports</i>	<i>xvii</i>
EXECUTIVE SUMMARY	1
ES.1 Introduction	1
ES.1.1 Project Background	2
ES.1.2 Project Location.....	3
ES.2 Purpose and Need	4
ES.2.1 Need.....	5
<i>Public Safety</i>	5
<i>Highway Capacity</i>	6
ES.3 Proposed Solution.....	7
ES.4 Alternatives Screening.....	9
ES.5 DEIS Alternatives.....	12
<i>No Action</i>	15
<i>W-4 Alternative</i>	15
<i>Modified W-4</i>	15
<i>C-3</i>	15
<i>E-2 (Preferred Alternative)</i>	15
ES.6 Alternative Benefits and Effects.....	16
<i>No Action</i>	17
<i>Modified W-4</i>	17
<i>C-3</i>	17
<i>E-2 (Preferred Alternative)</i>	18
ES.7 Preferred Alternative	18
ES.8 Topics of Concern or Controversy	18
ES.9 Planned Projects	21
ES.10 Permits and Approvals.....	21
ES.11 Next Steps.....	21
1 INTRODUCTION	23
1.1 Background	23
1.2 Setting.....	27
1.3 Project Location	27

1.4	Purpose	27
1.5	Need	27
1.5.1	Public Safety.....	29
	<i>Horizontal Curves and Vertical Grades</i>	29
	<i>Access</i>	29
	<i>Surface Conditions</i>	29
1.5.2	Highway Capacity	29
	<i>Capacity and Operations</i>	29
	<i>Roadway Width</i>	30
1.6	Public Concerns.....	31
1.6.1	Scoping Process.....	31
1.6.2	DEIS Comment Period	32
1.7	Permits and Approvals	33
1.8	Document Organization	33
	<i>FEIS Body</i>	33
	<i>Appendices</i>	34
	<i>Technical Reports</i>	35
2	ALTERNATIVES.....	37
2.1	Regulatory Framework and Policies	37
2.2	Methodology	37
2.3	Logical Termini.....	38
2.4	Level One Screening	39
2.4.1	Transportation Concepts.....	39
2.4.2	Design Elements and Typical Section for Action Alternatives.....	40
2.5	Level Two Screening	43
2.5.1	Develop Alignment Alternatives	43
	<i>Western Corridor</i>	44
	<i>Central Corridor</i>	44
	<i>Eastern Corridor</i>	45
2.5.2	Screen Alternatives.....	46
2.6	Comparison of Initial Alternatives.....	49
	<i>Western Corridor</i>	49
	<i>Central Corridor</i>	49
	<i>Eastern Corridor</i>	49
2.7	Comparison of Alternatives	58
	<i>No Action</i>	59
	<i>Modified W-4</i>	60

C-3	60
E-2 (<i>Preferred Alternative</i>).....	61
3 AFFECTED ENVIRONMENT	63
3.1 Socio-Economic Conditions and Environmental Justice	63
3.1.1 <i>Regulatory Framework and Policies</i>	63
3.1.2 <i>Methodology</i>	63
3.1.3 <i>Existing Conditions</i>	65
<i>Population</i>	66
<i>Age</i>	67
<i>Race and Hispanic Origin</i>	67
<i>Housing Units</i>	68
<i>Community Resources</i>	68
<i>Employment</i>	70
<i>Income</i>	71
3.1.4 <i>Environmental Justice Populations</i>	72
<i>Minority Populations</i>	72
<i>Low-income Populations</i>	72
<i>Subpopulations of Concern</i>	73
3.2 Land Use and Recreation	73
3.2.1 <i>Regulatory and Policy Framework</i>	73
3.2.2 <i>Methodology</i>	74
3.2.3 <i>Existing Conditions</i>	74
<i>Land Use</i>	74
<i>City of Moscow Comprehensive Plan</i>	75
<i>Latah County Comprehensive Plan</i>	76
<i>North Latah County Highway District Transportation Plan</i>	77
<i>Other Plans</i>	77
<i>Recreation</i>	77
3.2.4 <i>Paradise Ridge</i>	78
3.3 Farmland.....	80
3.3.1 <i>Regulatory Framework and Policies</i>	80
3.3.2 <i>Methodology</i>	80
3.3.3 <i>Existing Conditions</i>	82
3.4 Cultural Resources	83
3.4.1 <i>Regulatory Framework and Policies</i>	83
3.4.2 <i>Methodology</i>	84
3.4.3 <i>Existing Conditions</i>	86

<i>Cultural Resources in the APE</i>	86
<i>Arthur Snow Farm House and Garage (IHSI #57-13692)</i>	87
<i>Deesten/Davis Farmstead, Farmstead (Field #US 95 22)</i>	87
<i>Mountain Mart/Goodman Oil Convenience Store (HS-02)</i>	88
3.5 Floodplains	89
3.5.1 <i>Regulatory Framework and Policies</i>	89
3.5.2 <i>Methodology</i>	89
3.5.3 <i>Existing Conditions</i>	90
3.6 Wetlands and Tributaries	90
3.6.1 <i>Regulatory Framework and Policies</i>	90
3.6.2 <i>Methodology</i>	92
3.6.3 <i>Existing Conditions</i>	94
<i>Tributaries</i>	94
<i>Wetlands</i>	95
3.7 Groundwater	101
3.7.1 <i>Regulatory Framework and Policies</i>	101
3.7.2 <i>Methodology</i>	101
3.7.3 <i>Existing Conditions</i>	101
<i>Aquifers</i>	101
<i>Wells</i>	102
3.8 Vegetation, Fish and Wildlife	102
3.8.1 <i>Regulatory Framework and Policies</i>	102
3.8.2 <i>Methodology</i>	103
<i>Vegetation Studies</i>	103
<i>Wildlife Studies</i>	104
3.8.3 <i>Existing Conditions</i>	106
<i>The Palouse Bioregion</i>	107
<i>Vegetation</i>	107
<i>Palouse Grassland Remnants</i>	107
<i>Matrix Habitat</i>	109
<i>Rare Plants</i>	110
<i>Invasive Plants</i>	111
<i>Wildlife Species</i>	113
<i>Ungulates</i>	119
<i>Available Ungulate Habitat</i>	120
<i>Western Corridor</i>	120
<i>Central Corridor</i>	121
<i>Eastern Corridor</i>	121

<i>Ungulate Movement</i>	121
<i>Aquatic Species</i>	122
3.9 Threatened and Endangered Species.....	123
3.9.1 <i>Regulatory Framework and Policies</i>	123
3.9.2 <i>Methodology</i>	123
3.9.3 <i>Existing Conditions</i>	124
3.10 Transportation.....	125
3.10.1 <i>Regulatory Framework and Policies</i>	125
3.10.2 <i>Methodology</i>	125
3.10.3 <i>Existing Conditions</i>	128
<i>Safety</i>	128
<i>Highway Capacity and Operations</i>	131
<i>Access</i>	132
<i>Bicyclists and Pedestrians</i>	133
<i>Mass Transit</i>	133
<i>Weather Conditions</i>	133
3.11 Visual Quality.....	136
3.11.1 <i>Regulatory Framework and Policies</i>	136
3.11.2 <i>Methodology</i>	137
3.11.3 <i>Existing Conditions</i>	138
3.12 Traffic Noise.....	139
3.12.1 <i>Regulatory Framework and Policies</i>	139
3.12.2 <i>Methodology</i>	140
3.12.3 <i>Existing Conditions</i>	142
3.13 Air Quality.....	146
3.13.1 <i>Regulatory Framework and Policies</i>	146
3.13.2 <i>Methodology</i>	146
3.13.3 <i>Existing Conditions</i>	147
<i>Greenhouse Gas (GHG)</i>	147
3.14 Hazardous Materials.....	147
3.14.1 <i>Regulatory Framework and Policies</i>	147
3.14.2 <i>Methodology</i>	148
<i>National Response Center Public Report Database</i>	149
3.14.3 <i>Existing Conditions</i>	149
3.15 Energy.....	151
3.15.1 <i>Regulatory Framework and Policies</i>	151
3.15.2 <i>Methodology</i>	151
3.15.3 <i>Existing Conditions</i>	152

<i>Operational energy</i>	152
<i>Maintenance energy</i>	152
4 ENVIRONMENTAL CONSEQUENCES	153
4.1 Socio-economic and Environmental Justice Effects	154
4.1.1 <i>Social Effects</i>	154
<i>Potential Property Impacts</i>	155
<i>No Action Alternative</i>	156
<i>Modified W-4</i>	156
C-3	156
E-2 (<i>Preferred Alternative</i>).....	156
<i>Community Cohesion</i>	157
4.1.2 <i>Economic Effects</i>	157
4.1.3 <i>Environmental Justice Effects</i>	158
<i>Minority Populations</i>	158
<i>Low-Income Populations</i>	158
<i>No Action Alternative</i>	158
<i>Modified W-4</i>	158
C-3	159
E-2 (<i>Preferred Alternative</i>).....	159
4.2 Land Use and Recreation Effects	160
<i>No Action Alternative</i>	160
<i>Modified W-4</i>	161
C-3	161
E-2 (<i>Preferred Alternative</i>).....	161
4.3 Farmland Effects	161
<i>No Action</i>	166
<i>Modified W-4</i>	166
C-3	166
E-2 (<i>Preferred Alternative</i>).....	166
4.4 Cultural Resource Effects.....	167
4.5 Floodplain Effects	167
<i>No Action</i>	167
<i>Modified W-4</i>	169
C-3	169
E-2 (<i>Preferred Alternative</i>).....	169
4.6 Wetland and Tributary Effects	170
4.6.1 <i>Tributary Effects</i>	170

<i>No Action</i>	170
<i>Action Alternatives</i>	170
<i>Modified W-4</i>	172
<i>C-3</i>	172
<i>E-2 (Preferred Alternative)</i>	173
<i>Avoidance, Minimization and Mitigation</i>	173
4.6.2 <i>Wetland Effects</i>	173
<i>No Action</i>	173
<i>Action Alternatives</i>	173
<i>Modified W-4</i>	174
<i>C-3</i>	176
<i>E-2 (Preferred Alternative)</i>	176
<i>Executive Order 11990</i>	177
4.7 <i>Groundwater Effects</i>	179
4.7.1 <i>Affected Wells</i>	180
4.8 <i>Vegetation, Fish and Wildlife Effects</i>	182
4.8.1 <i>Vegetation and Habitat Effects</i>	182
<i>Pine Stand Effects</i>	182
<i>Riparian Habitat Effects</i>	183
<i>Palouse Remnant Effects</i>	184
<i>Matrix Habitat Effects</i>	184
<i>Palouse Restoration Projects Effects</i>	186
<i>Rare Plant Effects</i>	188
<i>Invasive Plant Effects</i>	188
4.8.2 <i>Wildlife Species Effects</i>	189
<i>Other Species Considered and Habitat Effects</i>	190
<i>No Action</i>	190
<i>Modified W-4</i>	190
<i>C-3</i>	190
<i>E-2 (Preferred Alternative)</i>	191
<i>Ungulate Effects</i>	191
<i>No Action</i>	192
<i>Modified W-4</i>	192
<i>C-3</i>	192
<i>E-2 (Preferred Alternative)</i>	193
4.9 <i>Threatened and Endangered Species Effects</i>	193
<i>Canada Lynx</i>	194
<i>Spalding's catchfly</i>	194

<i>Water howellia</i>	195
<i>Steelhead Trout and Designated Critical Habitat</i>	195
4.10 Transportation Effects	195
4.10.1 <i>Public Safety</i>	195
<i>Weather Conditions</i>	197
<i>Wildlife-related Safety</i>	203
4.10.2 <i>Highway Capacity</i>	203
4.10.3 <i>Access Effects</i>	204
4.10.4 <i>Mobility Effects and User Cost</i>	205
4.10.5 <i>Bicyclists and Pedestrians</i>	206
4.10.6 <i>Emergency Response Time</i>	207
4.10.7 <i>Safety of Alternatives</i>	207
<i>No Action</i>	207
<i>Modified W-4</i>	207
<i>C-3</i>	208
<i>E-2 (Preferred Alternative)</i>	208
4.11 Visual Quality Effects	209
4.11.1 <i>Visual Quality Assessment Findings</i>	209
<i>No Action</i>	210
<i>Modified W-4</i>	210
<i>C-3</i>	211
<i>E-2 (Preferred Alternative)</i>	211
4.11.2 <i>Community Perceptions</i>	212
4.12 Traffic Noise Effects	222
4.12.1 <i>Traffic Noise Impacts</i>	222
4.12.2 <i>Traffic Noise Abatement</i>	225
4.13 Air Quality Effects	226
4.13.1 <i>Air Quality</i>	226
4.13.2 <i>Mobile Source Air Toxins (MSAT)</i>	226
4.13.3 <i>Greenhouse Gas Emissions (GHG)</i>	227
4.14 Hazardous Materials Effects	228
<i>No Action</i>	229
<i>Modified W-4</i>	229
<i>C-3</i>	229
<i>E-2 (Preferred Alternative)</i>	229
4.15 Energy Effects	231
4.16 Relationship between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity	232

4.17 Irreversible and Irretrievable Commitment of Resources	232
5 SECTION 4F EVALUATION	235
5.1 Regulatory Framework and Policies	235
5.2 Proposed Action and Purpose and Need	235
5.3 Section 4(f) Properties.....	236
5.4 Section 4(f) Use.....	237
5.4.1 <i>Avoidance Alternatives</i>	239
<i>Modified W-4 Alternative</i>	239
5.5 Coordination.....	241
6 INDIRECT AND CUMULATIVE EFFECTS.....	243
6.1 Indirect Effects	243
6.1.1 <i>Regulatory Framework and Policies</i>	243
6.1.2 <i>Methodology</i>	243
6.1.3 <i>Existing Conditions</i>	244
<i>Growth Trends and Land Use</i>	244
<i>Indirect Effects</i>	245
<i>Indirect Effects by Resource</i>	246
6.2 Cumulative Effects.....	255
6.2.1 <i>Regulatory Framework and Policies</i>	255
6.2.2 <i>Methodology</i>	256
6.2.3 <i>Cumulative Effects to Resources</i>	257
<i>Development</i>	257
<i>Wildlife and Vegetation</i>	257
<i>Farmland</i>	261
<i>Wetlands and Tributaries</i>	262
<i>Floodplains</i>	263
<i>Visual Effects</i>	264
<i>Potential Mitigation Measures for Cumulative Effects</i>	265
7 PUBLIC INVOLVEMENT AND AGENCY COORDINATION.....	267
7.1 Public Involvement Since DEIS Publication	270
7.1.1 <i>Public Hearing</i>	270
7.1.2 <i>Notification of DEIS Availability</i>	271
<i>Federal Register Notification</i>	271
<i>Letter to Elected Officials</i>	271
<i>Property Owner Letter</i>	271

<i>Mailing to Stakeholder Database</i>	271
<i>Agency Notification</i>	271
<i>Legal Advertisement</i>	271
<i>Display Ad</i>	272
<i>News Releases</i>	272
<i>DEIS Guide</i>	272
<i>DVD and Project Video</i>	272
<i>Website</i>	272
8 CONSTRUCTION PHASING AND FUNDING	273
8.1 Regulatory Framework and Policies	273
8.2 Methodology	273
8.3 Construction Phasing.....	273
8.4 Project Funding	274
<i>Past Funding</i>	276
9 ENVIRONMENTAL COMMITMENTS	277
10 RESPONSE TO COMMENTS ON THE DEIS	285
10.1 Regulatory Framework.....	285
10.2 Summary of DEIS Comments.....	285
10.2.1 <i>General Responses to Issues</i>	297
10.3 Agency Comment Responses.....	322
10.4 Individual Public Comment Responses.....	323
11 REFERENCES	1016
INDEX.....	1030
APPENDIX 1. KEY AGENCY CORRESPONDENCE AND FORMS	
APPENDIX 2. LIST OF PREPARERS AND REVIEWERS	
APPENDIX 3. LIST OF AGENCIES, ORGANIZATIONS AND PERSONS RECEIVING THE DEIS AND FEIS	
<i>Public Viewing Locations</i>	
APPENDIX 4. SPECIES OF GREATEST CONSERVATION NEED; CONSERVATION RANKING DESCRIPTIONS	

APPENDIX 5. UNIFORM RELOCATION ACT SUMMARY

APPENDIX 6. HORIZONTAL AND VERTICAL ALIGNMENT CALCULATIONS

List of Tables

Table 1. High Accident Locations (HALs).....	5
Table 2. Updated High Accident Locations (HALs)	6
Table 3. Summary of Alternatives’ Benefits and Effects	16
Table 4. Existing and Projected ADTs	30
Table 5. Permits and Approvals.....	33
Table 6. Level One Screening Results.....	39
Table 7. Level Two Screening Results	47
Table 8. Summary of Alternatives’ Benefits and Effects	58
Table 9. Population	66
Table 10. Latah County Population Forecast.....	66
Table 11. Race and Hispanic Origin	67
Table 12. Percentage Race and Hispanic Origin	68
Table 13. Housing Characteristics	68
Table 14. 2009 Latah County Employment.....	70
Table 15. Major Employers in Latah County	71
Table 16. Latah County Employment Forecast	71
Table 17. Latah County Households by Income Range	72
Table 18. Families Living Below Poverty Level.....	73
Table 19. Latah County General Land Ownership.....	75
Table 20. Latah County Crop Production.....	82
Table 21. Farmland Classifications in Project Corridor	83
Table 22. Palouse Bioregion Rare Plant Species	110
Table 23. Invasive Plants for Prairie Habitats	111
Table 24. Invasive Plants in Remnant Grasslands.....	112
Table 25. Noxious Weeds in Project Corridor.....	113
Table 26. Representative Wildlife Species	114
Table 27. Quality of Available Ungulate Habitat.....	120
Table 28. Fish Species Occurring in the South Fork Palouse River.....	122
Table 29. Federally Listed Threatened and Endangered Species	124
Table 30. Crash Severity Data	128
Table 31. Crash Data.....	128
Table 32. High Accident Locations (HALs).....	130

Table 33. Updated High Accident Locations (HALs)	130
Table 34. Crashes by Ungulate Crossing Areas in Latah County.....	131
Table 35. Visual Variety Classifications	137
Table 36. FHWA Noise Abatement Criteria (NAC)	139
Table 37. TNM Model Traffic Volume Inputs	141
Table 38. Existing Noise Levels	142
Table 39. Hazardous Material Sites	149
Table 40. Existing and Projected Fuel Use.....	152
Table 41. Summary of Resource Effects	153
Table 42. Residential and Right-of-Way Impacts.....	155
Table 43. Business Effects	157
Table 44. Farmland Effects.....	164
Table 45. Floodplain Effects.....	167
Table 46. Tributary Effects	172
Table 47. Wetland Effects.....	174
Table 48. Affected Wells	180
Table 49. Habitat Type Effects	182
Table 50. Representative Wildlife Species Effects.....	189
Table 51. Ungulate Habitat Effects.....	191
Table 52. Threatened and Endangered Species Effects	194
Table 53. Projected Crashes for Proposed Alternatives and Remaining US-95 Loop	196
Table 54. Economic Costs of Crashes 2017 through 2036.....	196
Table 55. Length of Typical Sections	197
Table 56. Vertical Grades at Reisenauer Hill	197
Table 57. Access Types	205
Table 58. Overpass Structures and Total Travel Times.....	206
Table 59. Total Road User Cost.....	206
Table 60. Visual Quality Effects.....	210
Table 61. Predicted Noise Effects.....	222
Table 62. Summary of Noise Effects	225
Table 63. Estimated Vehicle Miles Traveled (VMT)	227
Table 64. Hazardous Material Sites Effects.....	228
Table 65. Estimated Operational Energy Use.....	231
Table 66. Right-of-Way Effects.....	233
Table 67. Comparison of W-4 Alternatives	241
Table 68. Palouse Remnants Near Alternatives.....	249
Table 69. Alternative Distances to Spalding’s Catchfly.....	252
Table 70. Project Milestones.....	274

Table 71. Cost Estimate for Alternatives.....	275
Table 72. Project Funding.....	275
Table 73. Federal Highway Funding for the State of Idaho	276
Table 74. Mitigation Measures	278
Table 75. List of Comments Received.....	286
Table 76. General Responses to Issues	298
Table 77. Public Comments and Responses	324

List of Figures

Exhibit 1. Project Location Map.....	4
Exhibit 2. Typical Section: Four-Lane Divided Highway	7
Exhibit 3. Typical Section: Four-lane Highway with Center Turn Lane and Curb, Gutter and Sidewalk.....	7
Exhibit 4. Initial Alternatives.....	13
Exhibit 5. DEIS Alternatives	14
Exhibit 6. Typical EIS Process Diagram	22
Exhibit 7. Project Location	28
Exhibit 8. Level of Services (LOS).....	31
Exhibit 9. Typical Section: Four-Lane Divided Highway	41
Exhibit 10. Typical Section: Four-lane Highway with Center Turn Lane, Curb, Gutter, and Sidewalk.....	41
Exhibit 11. Initial Alternatives.....	48
Exhibit 12. Alternatives Forwarded for Detailed Analysis.....	51
Exhibit 13. Alignment Alternatives	52
Exhibit 14. Alignment Alternatives	53
Exhibit 15. Alignment Alternatives	54
Exhibit 16. Alignment Alternatives	55
Exhibit 17. Alternatives Alignment	56
Exhibit 18. Alternatives Alignment	57
Exhibit 19. Points of Interest	69
Exhibit 20. Paradise Ridge.....	79
Exhibit 21. Deesten/Davis Farmstead as Viewed from US-95.....	88
Exhibit 22. Mountain Mart/Goodman Oil Convenience Store	89
Exhibit 23. Snow Cover.....	136
Exhibit 24. Noise Receptor Locations	145
Exhibit 25. Farmland Effects	163
Exhibit 26. Farm Operation Effects	165

Exhibit 27. Floodplain Effects	168
Exhibit 28. Tributary Effects	171
Exhibit 29. Wetland Effects	175
Exhibit 30. Affected Wells	181
Exhibit 31. Habitat Feature Effects.....	185
Exhibit 32. Farmed Land on the E-2 Alignment.....	186
Exhibit 33. Planned and Current Restoration Projects.....	187
Exhibit 34. View from E-2 Alignment Near Eid Road (facing north).....	212
Exhibit 35. Community Visual Impacts.....	214
Exhibit 36. Community Visual Impacts (Location 1).....	215
Exhibit 37. Community Visual Impacts (Location 2).....	216
Exhibit 38. Community Visual Impacts (Location 3).....	217
Exhibit 39. Community Visual Impacts (Location 4).....	218
Exhibit 40. Community Visual Impacts (Location 5).....	219
Exhibit 41. Community Visual Impacts (Location 6).....	220
Exhibit 42. Community Visual Impacts (Location 7).....	221
Exhibit 43. Hazardous Material Site Effects.....	230
Exhibit 44. Deesten/Davis Farmstead as viewed from US-95.....	236
Exhibit 45. Deesten/Davis Farmstead Section 4(f) Use by DEIS W-4 Alternative.....	238
Exhibit 46. Modified W-4 and DEIS W-4 Alternatives	240

TECHNICAL REPORTS

The following technical reports were prepared to evaluate the existing conditions and alternative effects during the DEIS preparation. Additional reports prepared after the DEIS publication are added under the FEIS Technical Reports.

DEIS Technical Reports

The following technical reports were prepared which support the DEIS and were circulated with the DEIS.

BIOLOGICAL ASSESSMENT TECHNICAL REPORT

- Biological Assessment, Thorncreek Road to Moscow Highway Construction Project (ITD 2007a)

COMMUNITY IMPACT TECHNICAL REPORTS

- Community Profile Update (HDR 2011a)
- Environmental Justice Update (HDR 2011b)
- Induced Development Update (HDR 2011c)
- Community Impact Assessment Update (HDR 2011d)
- Community Impact Assessment (HDR 2006)
- Community Profile & Induced Development (HDR 2005a)
- Environmental Justice (HDR 2005b)

CULTURAL RESOURCES TECHNICAL REPORTS

- Historic Resources Survey Update to An Historic Buildings/Structures Survey (Cardno-Entrix 2011)
- Cultural Resources Surveys; Short Report 898 (AHS 2006)
- An Historic Buildings/Structures Survey; Short Report 832 (Sharley 2005)

FARMLAND TECHNICAL REPORT

- Farmland Protection Policy Act (Haagen 2006)

FLOODPLAIN TECHNICAL REPORT

- Hydraulic Study for Affected Floodplains on Alternatives Carried Forward (ITD 2012b)

HAZARDOUS MATERIALS TECHNICAL REPORTS

- Phase I Database Inquiry 3134591.1s (EDR 2011)

- Hazardous Materials Scan (North Wind 2005)

TRAFFIC NOISE TECHNICAL REPORT

- Analysis of Noise Environment and Impacts (Bionomics 2012)

SCREENING OF ALTERNATIVES TECHNICAL REPORT

- Alignment Screening 1-US-95 Thorncreek Road to Moscow; Alignment Screening Report (ITD 2006)

SAFETY TECHNICAL REPORT

- US-95 Thorncreek Road to Moscow AASHTO Highway Safety Manual Analysis for Alignments Carried Forward (ITD 2012a)

VEGETATION TECHNICAL REPORTS

- A Scientific Evaluation for Noxious and Invasive Weeds of the Highway 95 Construction Project between Uniontown Cutoff and Moscow (Lass & Prather 2007)
- Biological Evaluation of Plant Species and Communities of Conservation Concern in the US Highway 95 Thorncreek Road to Moscow Project Area (Lichthardt 2005)

VISUAL RESOURCES TECHNICAL REPORT

- Final Visual Resources Report (Visual Genesis 2005)

WEATHER TECHNICAL REPORT

- Final Report for Weather Analysis of Proposed Realignment (Qualls 2005)

WETLAND DELINEATION TECHNICAL REPORT

- Wetland Delineation Technical Report (Gilmore 2012)

WILDLIFE TECHNICAL REPORTS

- Assessment of Potential Big Game Impacts and Mitigation Associated with Highway Alternatives from Thorncreek Road to Moscow (Sawyer 2010)
- Final Review of Wildlife Mitigation for the Thorncreek Road to Moscow Highway Development Project (US-95) (Ruediger 2007)
- General Wildlife Assessment (IDFG 2006)
- Biological Evaluation on the Potential Impacts of Corridor Alternatives from Thorncreek Road to Moscow on Large Ungulates (Melquist 2005a)

- Biological Evaluation on the Potential Impacts of Corridor Alternatives from Thorncreek Road to Moscow on Long-eared Myotis and Pygmy Nuthatches (Melquist 2005b)

FEIS Technical Reports

The following additional technical reports were prepared which support the FEIS. All reports are circulated with the FEIS with the exception of *A Cultural Resources Probability Study for Idaho Transportation Department's Proposed US 95 Thorn Creek Road to Moscow, Stage 1 Project, Latah County, Idaho* (Sharley and Gough, 2005). This was not released due to the confidentiality of the content.

BIOLOGICAL ASSESSMENT TECHNICAL REPORT

- Memo Documenting Resurvey for Spalding's Catchfly along US-95 Thorncreek to Moscow Project Area, (Lichthardt 2014)
- Updated USFWS Species List (USFWS 2015)

CULTURAL RESOURCES TECHNICAL REPORT

- Addendum A to the Cultural Resource Survey Reports for Modified W-4 Alternative (ITD 2015c)
- A Cultural Resources Probability Study for Idaho Transportation Department's Proposed US 95 Thorn Creek Road to Moscow, Stage 1 Project, Latah County, Idaho (Sharley and Gough, 2005)-Not circulated to the public

FLOODPLAIN TECHNICAL REPORT

- Hydraulic Study for Affected Floodplains on Alternatives Carried Forward (ITD 2014c)

VEGETATION TECHNICAL REPORT

- Memo: Effects Analysis of the US Highway 95-Thorncreek Road to Moscow Project for Plant Species and Communities of Conservation Concern (Lichthardt 2008)

WATER RESOURCES TECHNICAL REPORT

- Hydrogeologic Analysis of Alternative Alignments of Highway 95 from Thorncreek to Moscow (Ralston 2014)

TRAFFIC NOISE TECHNICAL REPORT

- Addendum to the Analysis of Noise Environment and Impacts (ITD 2015a)
- Analysis of Noise Environment and Impacts (Bionomics 2012)-updated in 2015 to correct right-of-way impacts)

SAFETY TECHNICAL REPORT

- Idaho Transportation Board Agenda and Minutes and sample of ITD 0606 Form.
- US-95 Thorncreek Road to Moscow; AASHTO Highway Safety Manual Analysis on Alternatives Carried Forward (ITD 2013)
- Addendum 1 US-95 Thorncreek Road to Moscow AASHTO Highway Safety Manual Analysis on Alternatives Carried Forward. (ITD 2015b)
- US-95 Thorncreek Road to Moscow; Mobility and Road User Cost Study on Alternatives Carried Forward (ITD 2014a)
- Addendum 1 US-95 Thorncreek Road to Moscow; Mobility and Road User Cost Study on Alternatives Carried Forward. (ITD 2014b)

WEATHER TECHNICAL REPORT

- Weather Analysis and Climate Study for US Highway 95, Thorncreek Road to Moscow, Four Proposed Alternatives, No-Build, W-4, C-3 and E-2 (Qualls 2014)

DEIS PUBLIC COMMENTS

- US-95 Thorncreek Road to Moscow, Draft Environmental Impact Statement Copies of Public Comments

ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AASHTO	American Association of State Highway and Transportation Officials
acc/mvm	accidents per million vehicle miles
ACHP	Advisory Council on Historic Preservation
ADT	Average Daily Traffic
AIRFA	American Indian Religious Freedom Act
Amsl	Above mean sea level
APE	Area of Potential Effect
AST	Above-ground Storage Tank
BA	Biological Assessment
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGP	Construction General Permit
CLOMR	Conditional Letter Of Map Revision
CO	Carbon monoxide
CO ₂	Carbon dioxide
CRP	Conservation Reserve Program
CWA	Clean Water Act
dBA	A-weighted decibels
DEIS	Draft Environmental Impact Statement
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	United States Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FINDS	Facility Index System
FIRM	Flood Insurance Rate Map
FPPA	Farmland Protection Policy Act
FR	Federal Register
ft	Feet
GHG	Greenhouse Gas

Acronym	Definition
GIS	Geographic Information System
GRP	Grassland Reserve Program
Ha	Hectare
HAL	High Accident Location
HTF	Highway Trust Fund
I/F	Injury/Fatality
ICDC	Idaho Conservation Data Center
IDAPA	Idaho Administrative Procedures Act
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IDT	Inter-disciplinary Team
IDWR	Idaho Department of Water Resources
ITD	Idaho Transportation Department
ITIP	Idaho Transportation Investment Program
Leq	Hourly-equivalent sound pressure levels
L _{eq} (h)	Hourly equivalent noise level in a-weighted decibels (dBA)
LIP	Landowner Incentives Program
LOMR	Letter Of Map Revision
LOS	Level of Service
LUST	Leaking Underground Storage Tank
LWCFA	Land and Water Conservation Fund Act
m	meter
MAP-21	Moving Ahead for Progress in the 21st Century
MP	Milepost
Mh	Moderately high
mpg	miles per gallon
mph	miles per hour
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAFTA	North American Free Trade Agreement
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NHS	National Highway System
NLHD	North Latah County Highway District

Acronym	Definition
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice Of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
PDO	Property Damage Only
PEM	Palustrine Emergent
PFO	Palustrine Forested
PFW	Partners for Fish and Wildlife
PM	Particulate Matter
PSF	Plant Sciences Farm
PSS	Palustrine Scrub-Shrub
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
ROW	Right-of-way
RV	Recreational Vehicle
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SCC	Species of Conservation Concern
SDWA	Safe Drinking Water Act
SGCN	Species of Greatest Conservation Need
SH	State Highway
SHPO	State Historic Preservation Office
STP	State Transportation Plan
SWPPP	Stormwater Pollution Prevention Plan
TDM	Transportation Demand Management
TEA-21	Transportation Equity Act for the 21 st Century
THPO	Tribal Historic Preservation Office
TMDL	Total Maximum Daily Load
TNM	Traffic Noise Model
TSM	Transportation System Management
US	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
UST	Underground Storage Tank

Acronym	Definition
VMT	Vehicle Miles Traveled
WCS	Idaho Comprehensive Wildlife Conservation Strategy
WRIA	Water Resource Inventory Area